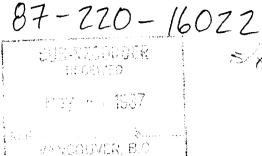


## Shangrí-La Minerals Limited



#### AIRBORNE GEOPHYSICAL REPORT

ON THE

DEAC 11 AND DEAC 12 CLAIMS

FOR Owner/Operator: MOCHE RESOURCES INC.

NTS 93B/16E AND 93B/16W

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CARIBOO M.D. BRITISH COLUMBIA

52° DEG. 58.4' NORTH LATITUDE WEST LONGITUDE 122° DEG. 154 14.Z'

ΒY

F. DI SPIRITO, B.A.SC., P.ENG. J.C. GRAHAM, B.SC., M.ENG.

SHANGRI-LA MINERALS LIMITED VANCOUVER, BRITISH COLUMBIA

**DECEMBER 22, 1986** 

#### TABLE OF CONTENTS

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#### PAGE

SUMMA	ARY.	••	• •	•••	•	• •	•	•	•	•	•	•	• •	•	•	•	•	•	•	•	• •	•••	•	•	•	•	•	•	••	•	•	•	•	•	• •	•	•	•	•	•	•	•	•	•	1	
PART	Α.	••	• •	••	•	••	•	•	•	•	•	• •		•	•	•	•	•	•	•	• •		•	•	•	•	•	• •	•	•	•	•	•	•		•	•	•	•		•	•	•	•	3	
	Inti Proj Loca Hist	pe at	rt ic	t y on	,	St A	a lo	it c	u e	s s :	s	• •	Ē	Ph	1 y	· s	i	0	g:	ra	 a p	, . b h	v	•	•	•	•	• •	•••	•	•	•	•	•		•••	•••	•	•	•	•	•	•	•	3	
PART	B	A	IF	RB	01	R N	IE		V	L																				;	•	•	•	• •		•	•	•		•	•		•	•	4	
PART	С	R	EC	31	01	N A	L		G	E	01	50	)6	Y		•	•	•	•	•		••	•	•	•	•	• •		•	•	•	•	•	• •		•	•	•	•	•	•	•	•	•	5	
PART	D	D	IS	5 C	ឋ	SS	S I	0	N	(	01	F	A	I	R	B	0	R	N	E	Ģ	ĢE	20	P	H	Y	S I	EC	CA	L	I	R	ES	5 I	JI	J	's	;	•	•	•	•	•	•	6	
	Airl Airl Airl	bo	rt	ıe	1	V I	F	'-	E	M	5	Sι	1 I	v	'e	y		(	S	ea	a t	t t	:1	e	)		• •		•		•	•	•			•	•				•	•			7	
PART	Ε.		••	•	•		•	•	•	•	• •		•	•	•	•	•	•	•	•		••	•	•	•	•	• •		•	•	•	•	•			•	•	•	•	•	•	•	•		8	
	Conc Est																																												8 9	
REFER	ENCE	ES			•					•			•	•		•	•		•			•	•			•			•				• •									•			10	)

#### APPENDICES

APPENDIX	Α	COST	BREA	KDOWN	0 F	AIRBORNE	GEOPHYSICAL	SURVEY
APPENDIX	В	CERTI	FICA	TES				
						B.A.Sc., Sc., M.H		
APPENDIX	С	AIRBC	RNE	EQUIPN	1 E N T	SPECIFIC	CATIONS	

# ILLUSTRATIONS

Figure	1	Location Map	followin	n g	page 3
Figure	2	Total Magnetic Field Strength		in	pocket
Figure	3a	VLF-EM (Seattle) Field Strength	••••• i	in	pocket
Figure	3 b	VLF-EM (Annapolis) Field Strengt	:h i	ίn	pocket

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#### SUMMARY

On December 14, 1986, Shangri-La Minerals Limited conducted an airborne VLF-EM and magnetometer survey of the Deac 11 and Deac 12 claims with the object of defining geophysical targets which may indicate the presence of precious metal deposits. The survey was undertaken on behalf of Moche Resources Inc. A total of 79 line-km was surveyed. The results of the survey are presented in this report.

The Deac 11 and Deac 12 claims are modified grid system claims of 8 and 16 units respectively. The claims are situated in the Cariboo Mining Division, British Columbia.

The claims are approximately 15 km from Quesnel, and are easily accessed by road. Logging roads and tracks traverse the property. Parts of the property have been logged out; the remainder is moderately forested with evergreen trees.

There are no records of early exploration activity at the Deac claim area, although trenches at mineralized showings were observed during a reconnaissance geological, geochemical and geophysical survey conducted by Shangri-La Minerals Limited on the adjacent Deac 1-10 claim area in the spring of 1986.

The Deac 11/12 claim area is within the Quesnel Trough. The rock types in the Quesnel Trough are dominantly Takla Group basic to intermediate volcanic flows, pyroclastic rocks, and argillaceous sedimentary rocks overlying Early Paleozoic and Precambrian rocks. The Takla Group hosts coeval alkalic intrusions and Early Cretaceous quartz monzonites and diorites (the Naver Intrusions).

Economic mineralization occurs in several styles in the Quesnel Trough, including gold deposits associated with alkalic intrusives.

The results of the 1986 survey on the Deac 1-10 claims indicate that the rock units there are a syenite intrusive, andesites and related tuffs and breccias, basalts, debris flows, and argillites. Alteration and significant precious metal mineralization were noted on the Deac 10 claim, which is immediately adjacent to the Deac 11 claim. As well, a stream sediment sample collected on the Deac 11 claim yielded 5400 ppb gold.

The results of the airborne geophysical survey indicate areas of interest on the Deac 11 and Deac 12 claims. The southern portion of the Deac 11 claim is of particular interest. The stream sediment sample which yielded 5400 ppb gold was collected in this area. This area is characterized by high magnetic field strength, high magnetic gradient, and high VLF-EM field strength.

In order to determine the economic significance of these results, a second phase of exploration is recommended. It is recommended that this program be concentrated on the eastern portion of the Deac 11/12 claim area. The proposed work consists of grid establishment, reconnaissance geochemical soil sampling, geologic mapping and sampling, as well as ground magnetometer and VLF-EM surveys. A sum of \$25,000 should be allocated for this exploration program.

Contingent upon favourable results from the recommended program, trenching and diamond drilling will be necessary in order to further evaluate the economic potential of the Deac 11 and Deac 12 claims.

Respectfully submitted at Vancouver, B.C., ne DIGPIRA Sc., P.Eng.

#### PART A

#### INTRODUCTION

On December 14, 1986, Shangri-La Minerals Limited conducted an airborne VLF-EM and magnetometer survey of the Deac 11 and Deac 12 claims with the object of defining geophysical targets which may indicate the presence of precious metal deposits. The survey was undertaken on behalf of Moche Resources Inc. A total of 79 line-km was surveyed. The results of the survey are presented in this report.

#### PROPERTY STATUS

The Deac 11 and Deac 12 claims are modified grid system claims situated in the Cariboo Mining Division, British Columbia. The claims are shown on Mineral Claim maps 93B/16W and 93B/16E. The Deac 11 and 12 claims are owned by Moche Resources Inc.

NAME	RECORD NO.	ANNIVERSARY	AREA
Deac 11	7665	May 5, 1987	8 units
Deac 12	7654	May 5, 1987	16 units

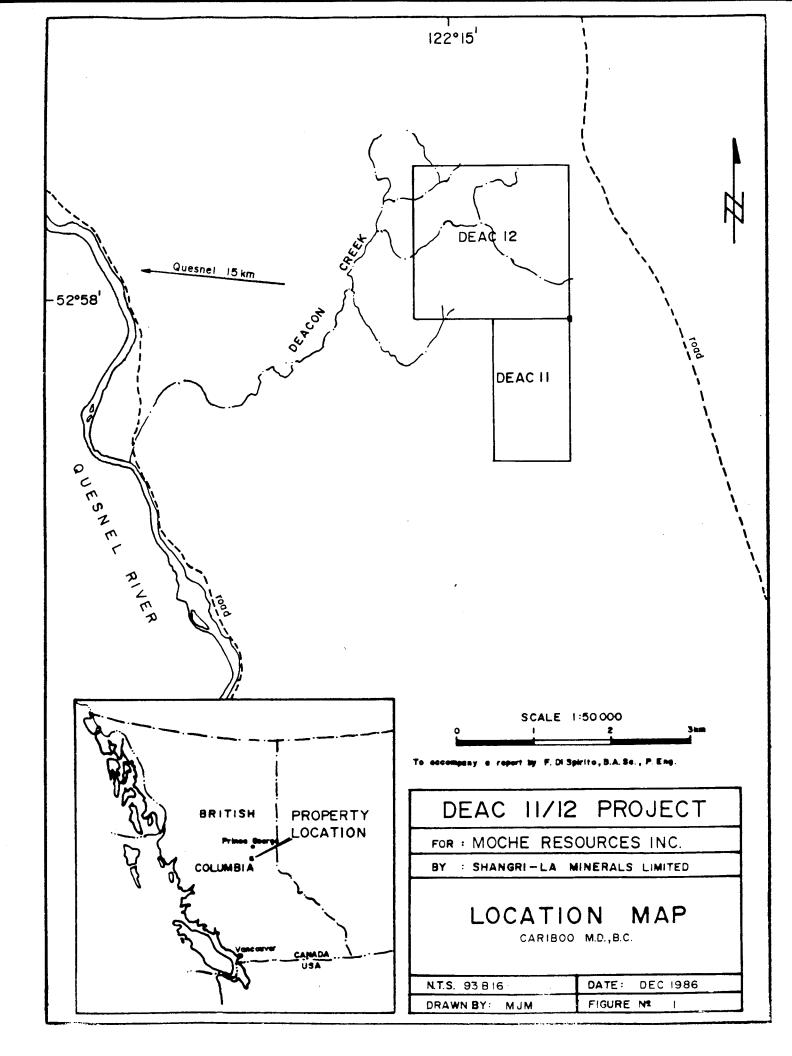
#### LOCATION, ACCESS, PHYSIOGRAPHY

The claims are located approximately 15 km east of Quesnel, British Columbia (see Location Map, Fig. 1). Access is best via Highway 26 from Quesnel. Numerous logging roads and tracks were observed on the property during the course of the survey, although they are not indicated on maps of the area because they were constructed quite recently - probably within the last 5 years or so.

The property is quite flat, and is approximately 1000 m above sea level. Most of the property is moderately forested with evergreens, and some areas are logged out.

#### HISTORY

The Quesnel area was first explored by placer miners in the 1860's, during the Cariboo gold rush. Most of the major creeks have been worked by placer operations.



There are no records of early exploration activity at the Deac claim area, although trenches at mineralized showings were observed during a reconnaissance geological, geochemical and geophysical survey conducted by Shangri-La Minerals Limited on the adjacent Deac 1-10 claims in the spring of 1986 (Falconer et al, 1986). The results of that survey indicate significant alteration and precious metal mineralization close to the Deac 11/12 claim area:

- samples from altered and mineralized shear zones within a syenite stock approximately 3 km east of the Deac 11 claim (on the Deac 10 claim) yielded anomalous gold values (up to 156 ppb);

- elevated copper and zinc values were noted in rock samples (up to 0.43% Cu, 0.27% Zn).

A stream sediment sample collected in the extreme south-central part of the Deac 11 claim during the survey of the Deac 1-10 claim area yielded very high gold values (5400 ppb).

PART B

#### AIRBORNE VLF-EM AND MAGNETOMETER SURVEY SPECIFICATIONS

The survey system equipment simultaneously monitors and records the output signals from a proton precession magnetometer and two VLF-EM receivers installed in a bird which is towed over the survey area at an altitude of approximately 75 m by helicopter. The average flying speed while surveying is about 110 km/hr. Landmarks along the flight lines are plotted on aerial photographs as the lines are flown. This allows subsequent production of a flight line map on which to plot the survey results.

The two VLF-EM receivers respond to signals from two different transmitters - one in Seattle, Washington and one in Annapolis, Maryland. Conductors will respond most strongly to the transmitter in the direction of their strike. For most areas in British Columbia, conductors which strike northerly will respond most strongly to the Seattle transmitter, while those striking easterly will respond most strongly to the Annapolis transmitter.

The three channels of geophysical data and one navigational marker channel are each digitized at a sample rate of approximately once every 1.6 seconds (resulting in a station spacing of approximately 50 m) using an 8 channel analog to digital converter. The data is then recorded digitally on one channel of a stereo cassette tape recorder, while the other channel records the operators' voice descriptions of landmarks,

line identification, and other details. As well, the data is displayed on the screen of a TRS-80 Model 100 lap computer as it is recorded. Instrument specifications are detailed in Appendix C.

The flight lines run north-south. The line spacing is roughly 100 m.

PART C

REGIONAL GEOLOGY

The Deac 11/12 claim area is within the Quesnel Trough, a tectonic division of the Intermontane Belt. The Quesnel Trough is bounded by the Pinchi Fault to the west, and the Omineca Crystalline Belt to the east. The Pinchi Fault is a strike-slip fault which is thought to have been active as early as the Mesozoic Era.

The Upper Triassic Takla Group is widespread in the Quesnel Trough. The Takla Group consists of basic to intermediate volcanic flows, pyroclastic rocks, and argillaceous sedimentary rocks. The Takla Group overlies Early Paleozoic and Precambrian rocks, and is thought to be a result of island-arc type volcanism. The Takla Group hosts coeval alkalic intrusions and Early Cretaceous quartz monzonites and diorites (the Naver Intrusions).

Economic mineralization occurs in several styles in the Quesnel Trough (Carter, 1985):

- alkalic intrusive complexes host copper porphyry deposits with some gold;

- propylitically altered sedimentary and fragmental volcanic rocks marginal to small alkalic intrusions host apparently strata-bound gold deposits;

- schistose Takla rocks host gold-bearing quartz veins;

- molybdenum and tungsten mineralization occurs near the margins of Early Cretaceous Naver Intrusions.

Rock units mapped during the survey of the adjacent Deac 1-10 claim area were a syenite intrusive, andesites and related tuffs and breccias, basalts, debris flows, and argillites. As mentioned above (see History), alteration and significant precious metal mineralization were also noted.

#### DISCUSSION OF AIRBORNE GEOPHYSICAL RESULTS

#### Airborne Magnetometer Survey

The results of the airborne magnetometer survey are presented in Figure 2. The magnetic field strength on the Deac 11/12 property ranges from less than 100 to greater than 900 gammas, relative to a datum level of 57,500 gammas.

The southern portion of the property has the highest magnetic field strength, and is also an area of strong magnetic gradient because of a localized magnetic low. The magnetic field strength in the south is generally over 600 gammas, and ranges to greater than 900 gammas, the highest on the property. The magnetic low occurs on the southern part of line 20 and to a lesser degree on lines 19 and 21. The high magnetic field strength is probably related to the presence of a mafic The magnetic low indicates a rock type which is intrusion. relatively depleted in magnetic minerals - possibly an alteration This high field strength/high gradient area is of zone(?). particular interest because the VLF-EM field strengths are also anomalously high in this area, indicating a conductive area which may be related to mineralization.

There is a pronounced linear magnetic low on line 20, which also occurs to a lesser extent on lines 18, 19, 21, and 22. A similar feature was observed during the ground magnetometer survey of the adjacent Deac 1-10 claims. The relationship to geology is not known, but the magnetic low indicates an area depleted in magnetic minerals. This may be due to alteration, or to the presence of a relatively non-mafic rock type, such as argillite.

The magnetic field in the north-central part of the property is quite active, with several localized highs and lows on the order of 100-300 m in diameter. The magnetic field strength of these isolated areas ranges from less than 200 gammas to greater than 800 gammas. These anomalies indicate that the rock types there have a highly variable magnetic mineral content.

The magnetic field strength on lines 1-5 is generally lower than the rest of the property, possibly due to an increased thickness of overburden.

#### Airborne VLF-EM Survey (Seattle)

The results of the airborne VLF-EM survey using the Seattle transmitter are presented in Fig. 3a. There are numerous small high field strength anomalies, most of which are concentrated in the north central portion of the property. This indicates that there are zones of quite high conductivity in this area. The magnetic field strength was quite variable in this area.

The southern portion of the property is indicated to be quite conductive by both the Seattle and Annapolis VLF-EM results. This is especially significant since this is also an area of high magnetic field strength and high magnetic gradient. The high conductivity may be related to mineralization.

The Seattle results indicate the northeastern and extreme southeastern portions of the property to be quite conductive. These areas are not anomalous for the Annapolis results. The extreme southeastern portion of the property is an area of anomalously high magnetic field strength. The Seattle VLF-EM field strength anomaly may be related to the magnetic anomaly.

#### Airborne VLF-EM Survey (Annapolis)

The results of the airborne VLF-EM survey using the Annapolis transmitter are presented in Fig. 3b. The southern portion of the property has areas of anomalously high VLF-EM field strength. The extreme southern portions of lines 18, 19, and 20 have a generally high VLF-EM field strength, and there is a possibly related high field strength zone on lines 14, 15, and This indicates a fairly extensive zone of high field 16. strength, which is coincident with a zone of high magnetic field and high magnetic gradient. The area is also strength anomalously high for the Seattle VLF-EM results. This zone represents the best geophysical target for further investigation.

There is an area of high VLF-EM field strength on lines 15 and 16 just to the north of the middle of the property which may be significant. This area also has high VLF-EM field strength for the Seattle transmitter.

There are 2 single station high field strength anomalies on line 23, approximately 1 km north of the southern property boundary. These may be of significance, in that they are very nearly coincident with a pronounced magnetic high which occurs on lines 23 and 24.

#### PART E

#### CONCLUSIONS AND RECOMMENDATIONS

The Deac 11/12 claims have geology favourable to precious metal mineralization, and precious metal mineralization was noted in an altered shear zone some 3 km east of the Deac 11 claim. The geophysical results indicate areas of interest, particularly the southern portion of the Deac 11 claim. This is the area where a stream sediment sample yielding 5400 ppb gold was collected during the earlier survey of the adjacent Deac 1-10 claim group. The results of the airborne geophysical survey show that the area has high magnetic field strength, high magnetic gradient, and high VLF-EM field strength.

In order to determine the economic significance of these results, a second phase of exploration is recommended. This program is to be concentrated on the eastern portion of the Deac 11/12 claim area. The recommended work consists of grid establishment, reconnaissance geochemical soil sampling, geologic mapping and sampling, as well as ground magnetometer and VLF-EM surveys.

#### ESTIMATED COST OF PROPOSED EXPLORATION PROGRAM

Grid establishment, allow	\$6,000.00
Geochemical survey (including analyses), allow	7,000.00
Geological support, allow	1,500.00
Assays, allow	500.00
Magnetometer survey, allow	3,000.00
VLF-EM survey, allow	3,000.00
Engineering, report, allow	4,000.00

Total Cost of Proposed Program: \$25,000.00

Contingent upon favourable results from the recommended program, trenching and diamond drilling will be necessary in order to further evaluate the economic potential of the Deac 11/12 claim area.

mitted at Vancouver, B.C., Resp B.A.Sc., P.Eng.

#### REFERENCES

the Geological report on Government Carter, N.C. Creek, Yardley Lake, and Abhau Properties; Gabriel Resources Inc. Prospectus, 1985. Geological, geophysical, and geochemical Falconer, J.S., report on the Deacon Creek Group of Baldys, C., Graham, J.C. mineral claims, 1986. Economic Geology Report No. 1, Ch. 8, Geological Survey of Canada 1981. Tipper, H.W., Geology Map 1424A, Sheet 93, Parsnip River, Geological Survey of Canada, Campbell, R.B., Taylor, G.C., Scott, D.F. Tectonic assemblage map of the Canadian Tipper, H.W., Cordillera and adjacent parts of the Woodsworth, G.J., United States of America, Map 1505A, Gabrielse, H. 1981.

#### APPENDIX A

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#### COST BREAKDOWN OF AIRBORNE GEOPHYSICAL SURVEY

Costs for the Deac 11/12 Airborne Survey

VLF-EM survey	
79 kilometers @ \$125	\$9,875
Compilation of historical data	1,200
Report preparation and engineering	600
Total	11,675
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APPENDIX B

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#### CERTIFICATES

#### CERTIFICATE

I, Frank Di Spirito, of the City of Vancouver in the Province of British Columbia, do hereby certify:

- I) I am a Consulting Engineer with the firm of Shangri-La Minerals Limited, based at 706-675 West Hastings Street, Vancouver, B.C., V6B 1N2.
- II) I am a graduate of the University of British Columbia (1974) and hold a Bachelor of Applied Science in Geological Engineering.
- III) I am a registered member, in good standing, of the Association of Professional Engineers of British Columbia.
- IV) Since graduation, I have been involved in numerous mineral exploration programs throughout Canada and the United States of America.
- V) This report is based on an evaluation of data obtained by a Shangri-La Minerals Limited crew on December 14, 1986 and an evaluation of publicly and privately held data pertaining to the claim area.
- VI) I have no direct or indirect interest in the property described herein, or in any securities of Moche Resources Inc., nor do I expect to receive any.
- VII) This report may be utilized by Moche Resources Inc. for inclusion in a Prospectus or Statement of Material Facts.

submitted at Vancouver, B.C. Respec B. U.Sc., P.Eng. Ito BRIP ember

#### CERTIFICATE

I, James Campbell Graham of the City of Vancouver in the Province of British Columbia, do hereby certify:

- I) I am a Consulting Geophysical Engineer with the firm of Shangri-La Minerals Limited at 706-675 West Hastings Street, Vancouver, B.C., V6B 1N2.
- II) I graduated in 1985 with a M.Eng. degree in Geophysical Engineering and in 1982 with a B.Sc. in Geophysical Engineering from the Colorado School of Mines in Golden, Colorado.
- III) I have been involved in numerous mineral exploration programs since 1975.
- IV) This report is based upon field work carried out by this author and a Shangri-La Minerals Limited crew on December 14, 1986, and a review of published and privately held literature pertaining to the claim area.
- V) I hold no direct or indirect interest in the property described herein, or in any securities of Moche Resources Inc., or in any associated companies, nor do I expect to receive any.
- VI) This report may be utilized by Moche Resources Inc. for inclusion in a Prospectus or Statement of Material Facts.

Respectfully submitted at Vancouver, B.C.

J.C./ Graham, B.Sc., M.Eng. 22 December 1986.

APPENDIX C

#### AIRBORNE EQUIPMENT SPECIFICATIONS

#### SPECIFICATIONS: SABRE AIRBORNE VLF-EM SYSTEM

Antenna System: 2 separate omnidirectional arrays, housed in same bird as proton magnetometer detector.

Parameters measured: Horizontal field strength on 2 stations simultaneously (Seattle and Annapolis). Designed for use in steep terrain where dip angle information is confusing and often useless.

- Type of Readout: 2 analog meters, one for each station, and 2 analog outputs at rear of console. These analog outputs, along with those of the proton magnetometer and a marker channel, are digitized by a CCC-Maron Remote Monitoring and Logging System (an 8 channel, 8 bit analog-to-digital converter custom manufactured by Maron Engineering Ltd., Burnaby B.C.) and stored in multiplex format on one channel of a conventional stereo cassette tape deck.
- Receiver Console: 2 separate receiver channels, both housed in 30x10x25 cm case.

Operating Temperature Range:

Instrument Console: -10 deg. C to +50 deg. C Antenna System: -10 deg. C to +50 deg. C

Power Source:

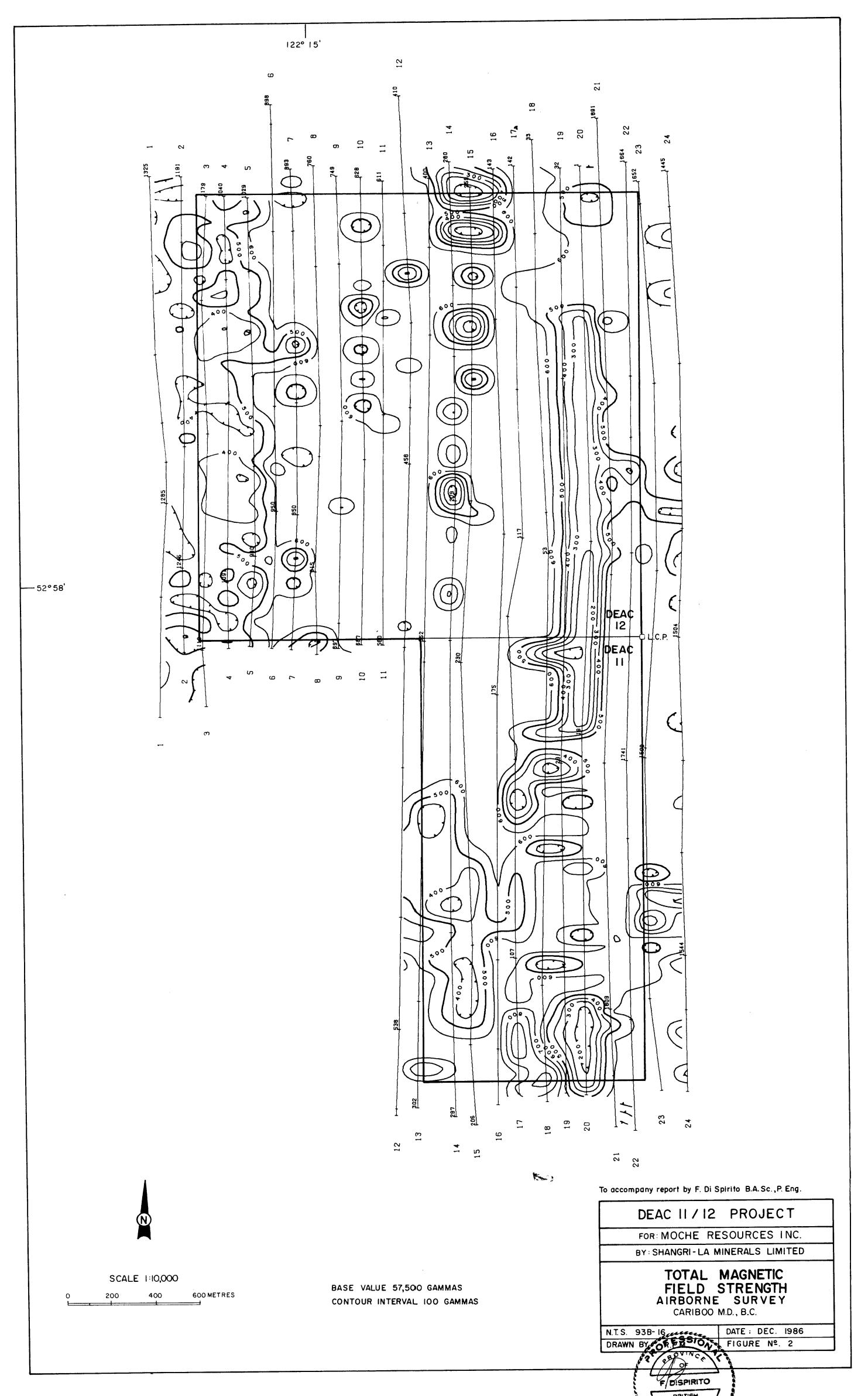
Receiver Console: 8 alkaline penlite cells Instrument Console: 2 9V transistor batteries

Manufacturer: Sabre Electronic Instruments Ltd. Burnaby, B.C.

#### SPECIFICATIONS: SABRE AIRBORNE MAGNETOMETER

Proton Precession Type: 20,000 to 75,000 gammas Range: Approximately once every 1.6 seconds Repetition Rate: Analog meter on instrument console, 0-Output: 100 mV analog output on rear of console. Full scale deflection can be 1000, 2500, 5000, or 10000 gammas, selected by operator. The analog output is digitized with the CCC-Maron Remote Monitoring and Logging System and stored on one channel of a conventional stereo cassette tape deck along with the VLF-EM data and the navigational marker channel. of instrument itself Resolution: Resolution is better than 1 gamma, but recorded resolution is limited to about 4 gammas at 1000 gamma full scale deflection (1000 gammas resolved to 1 part in 255 with 8 bit analog-to-digital converter). Kerosene-filled coil, 9 cm long by 8 cm Detector: diameter. Inductance 60 millihenries, resistance 7.5 ohms, weight 2.2 kg. Operating Temperature: Instrument: -10 deg. C to +60 deg. C -10 deg. C to +60 deg. C Detector: Dimensions: Instrument Console: 30x10x25 cm, wt. 3.5 kg Towed bird: 1.7 m x21 cm diameter, wt. 30 kg Power Source: 12 V 20 amp-hr lead-acid batteries Manufacturer: Sabre Electronics Ltd.,

Burnaby, B.C.



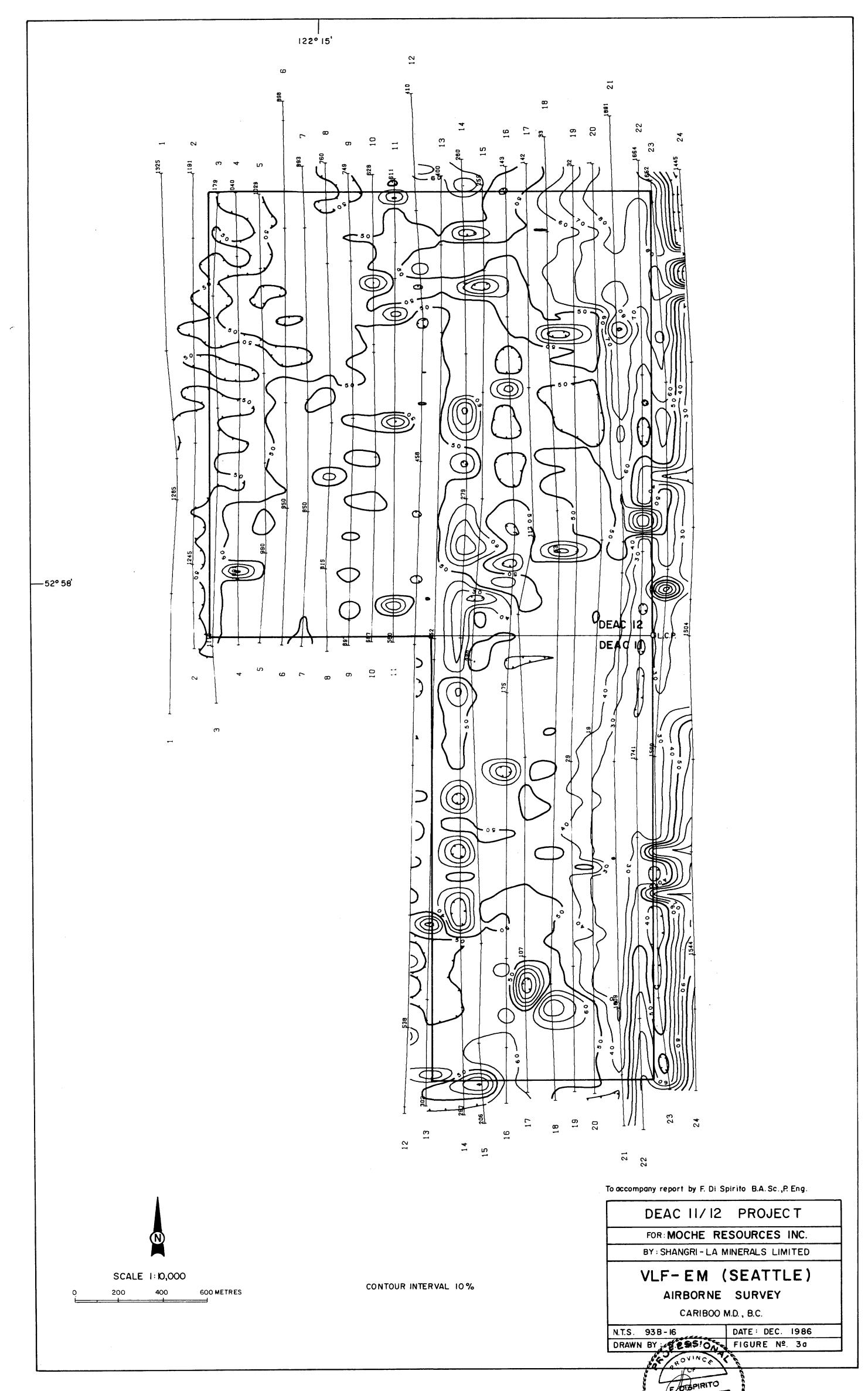


### GEOLOGICAL BRANCH SSESSMENT REPORT





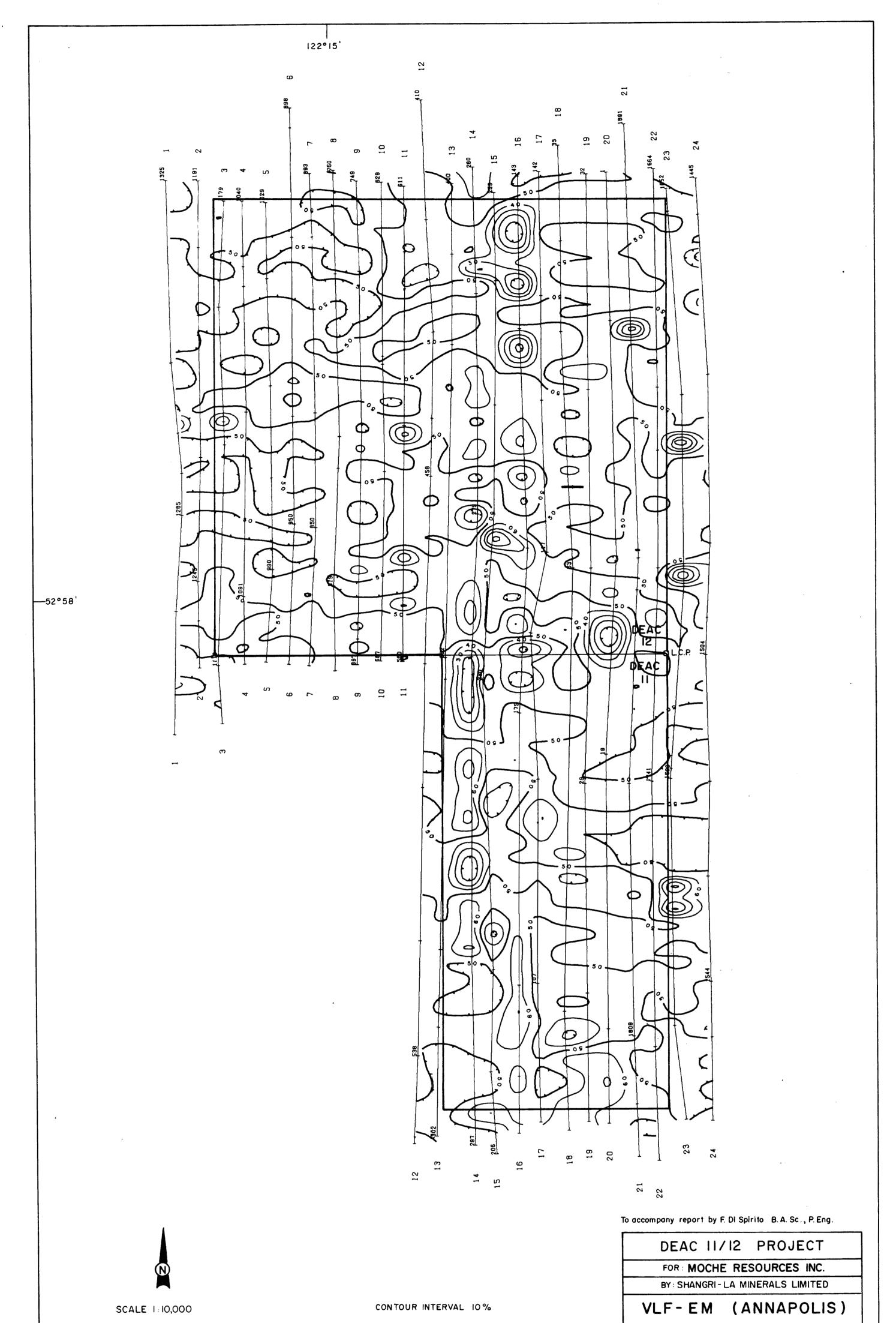
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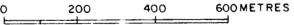




## GEOLOGICAL BRANCH ASSESSMENT REPORT







AIRBORNE SURVEY

 CARIBOO
 M.D., B.C.

 N.T.S.
 93 B - 16
 DATE : DEC. 1986

 DRAWN\_BY:
 R.P.M.
 FIGURE Nº. 3b

