## 840735

Geological and Geochemical Report

Mint 1-4, King 3-4 Claims

M580 PROJECT FILE Apr. 1987

# PROJECT FILE

GEOLOGICAL AND GEOCHEMICAL

REPORT

On the MINT 1-4, KING 3-4 CLAIMS

**CLINTON MINING DIVISION** 

NTS 920/7E and 8W

51º23'N 122º29'W

Owner: MineQuest Exploration Associates Ltd.

Operator: Chevron Canada Resources Limited

Author: S. G. McAllister

**April 1987** 



#### Province of British Columbia

Ministry of Energy, Mines and Petroleum Resources

#### ASSESSMENT REPOR TITLE PAGE AND SUMMARY

TOTAL COST TYPE OF REPORT/SURVEY(S) Geological and Geochemical \$15,951.10 AUTHORIS S. McAllister SIGNATUREIS L. M. COLLISTA K. V. Campbell tetau call DATE STATEMENT OF EXPLORATION AND DEVELOPMENT FILED March 23, 1987 .... YEAR OF WORK 1986-1987 PROPERTY NAME(S) Churn Creek COMMODITIES PRESENT ...... B.C MINERAL INVENTORY NUMBER(S), IF KNOWN ...... MINING DIVISION Clinton NTS 920/7, 920/8 NAMES and NUMBERS of all mineral tenures in good standing (when work was done) that form the property. [Examples: TAX 1-4, FIRE 2 (12 units); PHOENIX (Lot 1706); Mineral Lease M 123; Mining or Certified Mining Lease ML 12 (claims involved)): KING 3 1364 (20 units) MINT 2 1369 (20 units) KING 4 1365 (15 units) MINT 3 1370 (5 units) MINT 1 1368 (20 units) MINT 4 1371 (5 units) OWNER(S) MineQuest Exploration Associated Ltd. (2) MAILING ADDRESS 500 - 164 Water St. Vancouver, B. C. V6B 1B5 OPERATOR(S) (that is, Company paying for the work) Welcome North Mines Ltd. Chevron Canada Resources Limited (2) MAILING ADDRESS 1900 - 1055 West Hastings St., 1027 - 470 Granville St., Vancouver, B. C. Vancouver B. C. V6C 1V5 V6E 2E9 SUMMARY GEOLOGY (fithology, age, structure, alteration, mineralization, size, and attitude). Eocene rhyolites, dacites and basalts are covered by Miocene basalts.

REFERENCES TO PREVIOUS WORK Longe, R. V., December 1986, Mint, Mink, Pearl Claims -Preliminary Geology

TYPE OF WORK IN THIS REPORT		ENT OF WORK METRIC UNITS)		N-Born Barring	ON	WHICH CLAIMS		COST APPORTIONED
GEOLOGICAL (scale, area) Ground Photo		Sept.18,1986 Quest report)	Mint 1,	Mint 2,	Mink I	, Mink II, Pearl	6	\$1,580.55
GEOPHYSICAL (line-kilometres) Ground								\$ C.
Magnetic Electromagnetic Induced Polarization								
Radiometric Seismic						<u> </u>		
Other Airborne GEOCHEMICAL (number of samp				· · · · · · · · · · · · · · · · · · ·		1 8 8		¢10.754.04
Soil Silt		ag, As, Hg, Sb)				.5, Queen .4, Ace .	King 3	\$10,754.24 2,875.48
Other Panned Conc.  DRILLING (total metres; number	. 40 (Au, .A 28 (Au)		King 3,	Reborin,	Borin	VI, Queen 5 1, Queen 4, Quee	n VI, Ace 1 Queen 5	740.83
Core	4 5 2	ž			ā.a			
Non-core RELATED TECHNICAL	64.09	Nelc Melc			7,7		3	
Sampling/assaying Patrographic								
Mineralogic Metallurgic								
PROSPECTING (scale, area)	: '							1 2 8
PREPARATORY/PHYSICAL Legal surveys (scale, area)		5						
Topographic (scale, area) Photogrammetric (scale, area) Line/grid (kliometres)								
Road, focal access (kilometres) Trench (metres)								3.5
Underground (metres)	160	H He set	3	08)		3, M FOU MOWB	TOTAL COS	\$15,951.10
FOR MINISTRY USE ONLY		NAME OF PAC ACCOUN	T DE	віт с	REDIT	REMARKS:		
Value claimed (from statement) Value credited to PAC account Value debited to PAC account.					2 200	EBYT MASKAL	CEOJOG	
Accepted Date		Hept. No.				Information Class		







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4.	Geochemistry - Rock, soils, panned concentrates - east half	in pocket

#### 1.0 INTRODUCTION

The MINT 1-4 and KING 3-4 claims were staked in 1983 on the basis of gold associated with anomalous quantities of arsenic in heavy mineral samples taken from stream sediments. Follow-up work in 1983 consisted of silt sampling and contour soil sampling. This work was directed at finding the source of the gold in the heavy mineral concentrates. During 1986 limited VLF-EM surveys were conducted on the claims to outline structural features.

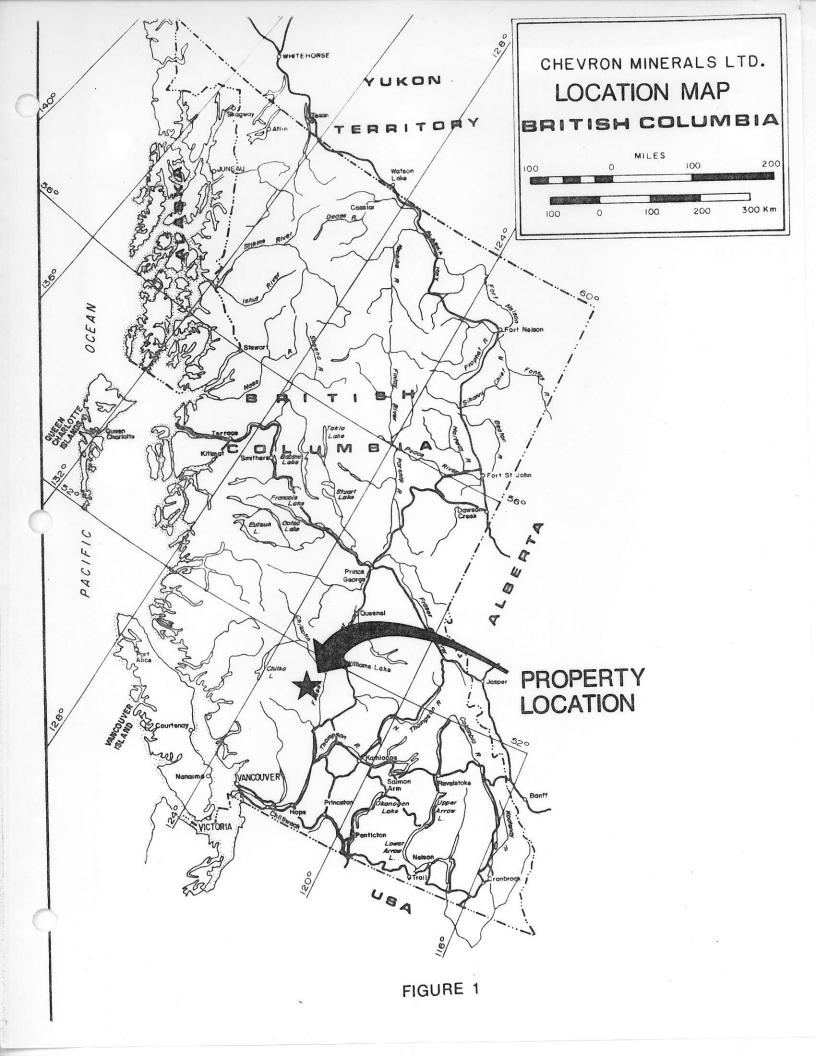
This report describes the work carried out in 1986 and 1987 directed at evaluating the property's potential, as well as targeting structural features (Landsat study, Appendix VI) for more detailed follow-up.

#### 2.0 LOCATION, ACCESS AND TOPOGRAPHY

The claims are located in south central British Columbia (Fig. 1) on the west side of Fraser River, 230 km north-northeast of Vancouver and 70 km northwest of Clinton on the northern flank of Blackdome Mountain. Blackdome Mine lies 6 km to the south of the claims.

The property may be accessed by helicopter from Williams Lake or via a dirt road leading off the Blackdome Mine access road. The mine access road is maintained all year-round and under dry conditions 2-wheel drive is adequate.

The claims lie at the northern edge of the Camelsfoot Range on the gentle north facing slope of Blackdome Mountain. The slope descends northward into the Churn Creek valley. Elevations range from 1550 m to 2000 m.



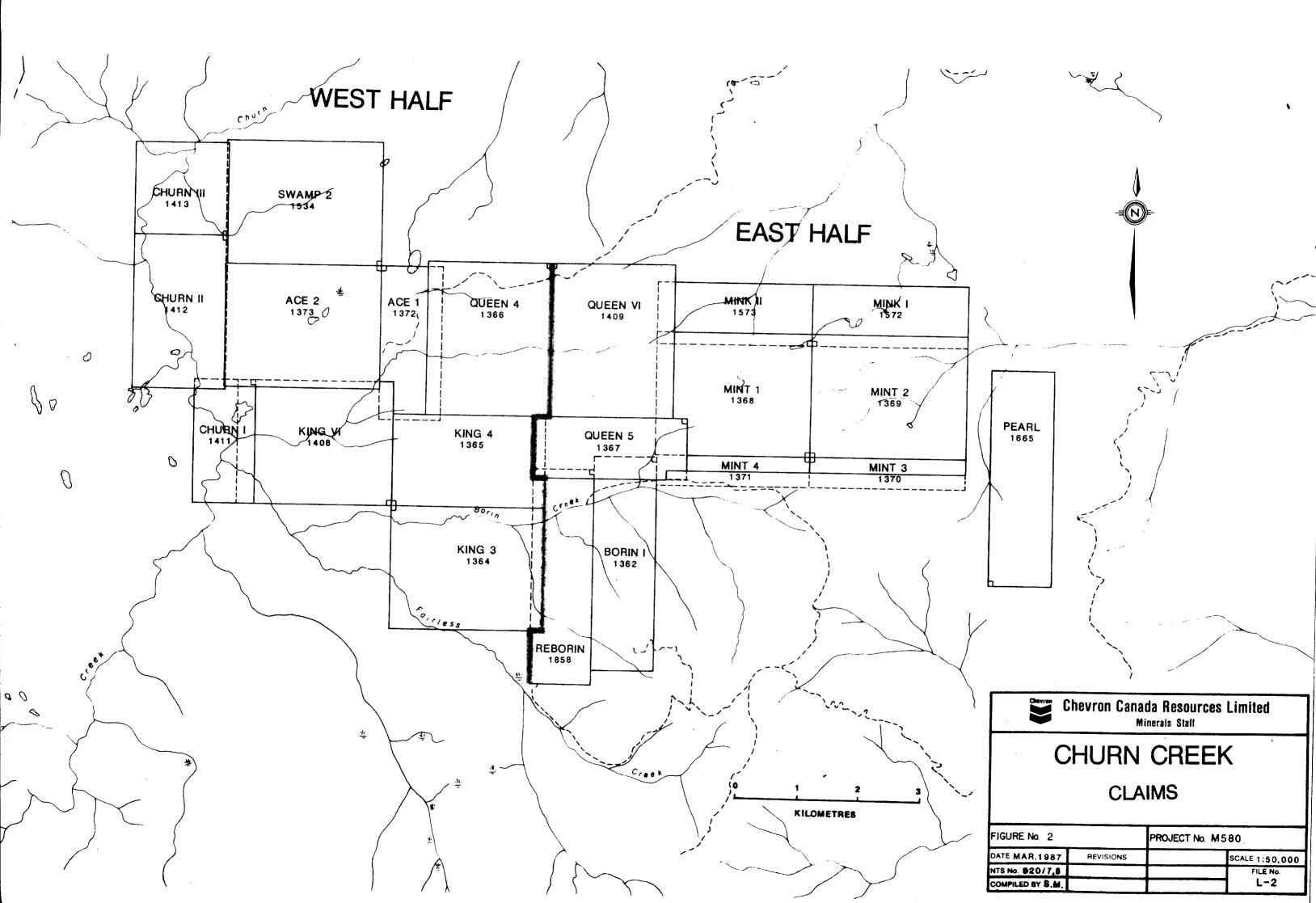
#### 3.0 CLAIM STATUS

The work outlined in this report was conducted primarily by Chevron Canada Resources Limited on some of the following claims (Fig. 2) owned by MineQuest Exploration Associates Ltd.;

<u>Claim</u>	Record #	No. of Units	Record Date	Expiry Date (before submission of this report)
King #3 King #4 Mint #1 Mint #2 Mint #3 Mink #4 Mink I	1364 1365 1368 1369 1370 1371	20 15 20 20 5 5	21-Mar-83 21-Mar-83 21-Mar-83 21-Mar-83 21-Mar-83 21-Mar-83 19-Sep-83	21-Mar-87 21-Mar-87 21-Mar-87 21-Mar-87 21-Mar-87 21-Mar-87 19-Sep-87
Mint II Reborin Pearl Ace #1 Ace #2 Borin I	1573 1858 1665 1372 1373 1362	10 14 14 10 20 14	19-Sep-83 16-Nov-84 17-Nov-83 21-Mar-83 21-Mar-83 21-Mar-83	19-Sep-87 16-Nov-87 17-Nov-87 21-Mar-88 21-Mar-88 21-Mar-88
Queen #4 Queen 5 Churn I Churn II Churn III King VI Queen VI Swamp 2	1366 1367 1411 1412 1413 1408 1409	20 10 8 15 9 20 20 20	21-Mar-83 21-Mar-83 25-May-83 25-May-83 25-May-83 25-May-83 07-Sep-83	21-Mar-88 21-Mar-88 25-May-88 25-May-88 25-May-88 25-May-88 07-Sep-88
•	Total	<del></del>	•	•

#### 4.0 HISTORY AND PREVIOUS WORK

The MINT I-4 and KING 3-4 claims lie 6 km north of Blackdome Mine. Gold bearing quartz veins were first discovered on Blackdome Mountain in the late 1940's. Serious exploration began in 1977 with production commencing in April 1986. The published reserves stand at 276,000 tons grading 0.72 oz/ton Au and 2.58 oz/ton Ag (Blackdome Mining Corporation, 1986 Annual Report).



The MINT 1-4 and KING 3-4 claims were staked in 1983 by MineQuest Exploration Associates Ltd. The 1983 program consisted of silt, soil and rock sampling. In 1986 limited VLF-EM surveys were carried out on these claims. No lode mineral occurrences are known on the claims.

#### 5.0 WORK CARRIED OUT IN 1986-1987

Two days were spent on the claims by Chevron Canada Resources Limited personnel prospecting and collecting rock samples. As well, Welcome North's crew spent five days on the property collecting soils and panned concentrate samples. The above work was done as part of a property examination.

MineQuest's crew spent two days on the claims running geological traverses, followed by two days of photo geological studies. The results of this work are described by R. V. Longe in MINT, MINK, PEARL Claims Preliminary Geology Report, December 1986.

A comprehensive remote sensing analysis of the claim area was conducted by MineQuest (Appendix VI).

#### 6.0 GEOCHEMICAL RESULTS

A total of 40 rocks, 150 soils and 28 panned concentrates were collected and analyzed for all or some of the following elements; gold, arsenic, silver, mercury and antimony (Figs. 3 & 4). The geochemical values are outlined in Appendix III.

#### 6.1 Rock Geochemistry

The 40 rocks collected were analyzed for gold, silver, arsenic and antimony at Chemex Labs in North Vancouver by the methods outlined in Appendix IV.

Rock samples were collected while prospecting and most of these were taken from float found within creek beds. Minimal outcrop was seen during the traverses. Gold values were uniformly low except for five samples that had values of 70-920 ppb gold. These are all fine grained buff coloured highly altered volcanic rocks cut by small quartz veins. The quartz veins are thought to be the source of the gold anomaly. These five samples had corresponding arsenic peaks.

#### 6.2 Soil Geochemistry

The 150 soils were collected by Welcome North's crew from the B horizon and analyzed at Min-En Labs in North Vancouver for gold. Subsequently, these soils were analyzed at Chemex Labs for silver, arsenic, mercury and antimony.

Soils were collected from four lines (2 east-west and 2 north-south) at 100 m spacings. The gold values range from 5-2500 ppb. The spot highs are in areas of minimal outcrop and no source for these anomalies has yet been found. Silver, arsenic and antimony values are all uniformly low. Mercury values are flat with a few higher values.

#### 6.3 Panned Concentrate Geochemistry

The 28 panned concentrate samples were collected from streams on the property by Welcome North's crew and were analyzed at Min-En Labs in North Vancouver for gold.

Gold values range from 3-1030 ppb and the anomalous values warrant

follow-up, although they appear to be downslope from known quartz-gold

veins on Blackdome's ground.

7.0 GEOLOGY

The geology of the property is described by R. V. Longe in a report on the MINT,

MINK, PEARL claims Preliminary Geology dated December 1986. This work was

filed for assessment credit on September 18, 1986.

8.0 CONCLUSIONS

The rocks, soils and panned concentrates sampled during this property

examination indicated some localized zones of gold enrichment on the claims.

Coincident with some of these values are moderate antimony, mercury, silver

and arsenic levels. These are worthy of a more detailed follow-up.

The remote sensing analysis of the claim area (Appendix VI) has outlined a

number of lineaments. These potential structures warrant follow-up on the

ground directed at determining their true nature.

9.0 REFERENCES

Blackdome Mining Corporation, 1986 Annual Report

Longe, R. V. December 1986,

Mint, Mink, Pearl Claims - Preliminary Geology

MineQuest Exploration Associates Ltd. Report #139

(Submitted as Assessment Report)

a33/02/8

#### APPENDIX I

Statement of Qualifications

#### Statement of Qualifications

#### 1, Sandy G. McAllister, hereby certify that:

- 1. I am presently employed as a geologist by Chevron Canada Resources Limited at 1900 1055 West Hastings Street, Vancouver, B. C.
- 2. I graduated from Queen's University in Kingston, Ontario with a B.Sc. (Honours, Geological Sciences) in May 1981.
- 3. I have practiced geology for the past 6 years in B. C.
- 4. I am a member in good standing of the Geological Association of Canada, Society of Economic Geologists and a Licensee of the Association of Professional Engineers, Geologists and Geophysists of Alberta.
- 5. I conducted the work outlined in this report.

Dated the 30 day of April, 1987 Signed Signed Signed

Sandy G. McAllister

APPENDIX II

Cost Statement

## COST STATEMENT MINT 1 - 4 and KING 3 - 4

$\sim$	<b>JEVRON</b>	
/ 'F	4F-VI-Z( 1K)	
<b>L</b>	IL ALIOLA	

C _1	
Sai	aries:

S. McAllister	4 days	Sept. 4-7/86
T. Zanager	4 days	Sept. 4-7/86

0 ddys (w \$150.	8 days @ \$150.	\$ 1,200.000
------------------	-----------------	--------------

#### Disbursements:

Rocks (analysed for Au, Ag, As, Sb) - 40 @\$18.90	756.00
Soils (analysed for Ag,As,Hg,Sb) - 150 @\$13.675	2,047.50
Sample shipping	12.00
Drafting - 5.7 days @\$150.	850.00
Reprographics	280.40
Report preparation - 2 days @\$150.	300.00
Food	126.00
Gas	76.00
Accommodation	98.44

#### Landsat Study:

Landsat computer compatible tape	1,181.85
BC Research (machine & operator) 12 hrs. @180.	2,160.00
Photography	50.00
Imagery analysis - 6 hrs. @\$80.	480.00
Report preparation – 12 hrs. \$80.	960.00
Reprographics	150.00
Drafting	300.00
10% on disbursements	155.00

Total - Chevron \$11,183.19

#### **WELCOME NORTH**

#### Salaries:

A. Schmidt	5 days	Sept. 8-12/86
M. Heino		Sept. 8-12/86

10 days @\$153.95 \$	1,539.50
----------------------	----------

#### Disbursements:

Soils (analysed for Au) - 150 @\$5.35	802.50
Panned concentrates (analysed for Au) 28 @\$7.00	196.00
Camp maintenance	141.22
Redhawk rentals	508.14

Total - Welcome North \$ 3,187.36

#### **MINEQUEST**

Expense carried forward from MineQuest report #139 on Mint, Mink and Pearl Claims	
(filed for assessment Sept. 18, 1986)	\$ 1,580.55
TOTAL COSTS	\$15,951.10

Specialists in Mineral Environments 705 West 15th Street Worth Vancouver, B.C. Canada V7M 1T2

JONE: (604) 980-5814 DR (604) 988-4524

TELEX: VIA USA 7601067 UC

#### Certificate of GEOCHEM

Company: WELCOME NORTH MINES Froject:

Attention: ANDY SCHMIDT

File:6-793
Date:SEPT 18/86
Type:PAN CONC.

We hereby certify the following results for samples submitted.

Sample	Heino Panned Concentrater AU FFB	
Number	Panned Concerned FIFE	
21451	10	
21452	5	
21453	10	
21454	5	
21455		
21456	10	
21457	10	
21458	5	
21459	5	
21460	10	
	# 'n'	
21461	5	
21462	35	
21463	1030	
21464	5	
21465	105	
21466	10	
21467	800	<b>-</b>
21468	5	
21469	10	
21470	5	
21471	10	
21472	5	
21473	10	
21474	5	
21475	ე ნ	
21476	10	
21477	10	
21478		
		V

Certified by

MIN-EN CABORATORIES LTD.



Analytical Chemists • Geochemists

Geochemists • Registered Assayers

ERCarfad

North Vancouver, B.C. Car<del>ad</del> V7J 2C1

212 Brooksbank Ave.

Phone: Telex:

(604) 984-0221 043-52597

#### CERTIFICATE OF ANALYSIS

TO : CHEVRON CANADA RESOURCES LTD.

MINERALS STAFF

1900 - 1055 W. HASTINGS ST.

VANCOUVER. B.C.

V6E 2E9

CERT. # : A3617883-001-A

INVOICE #: 18617883
DATE : 21-SEP-86

P.O. # : NONE

M543

ATTN: S. MCALLISTER

ATTN: S. MCA							
Sample	Prep	Ag ppm	AS	Sb	Au ppb		
description	code	Aqua R	ppm	ppm	FA+AA		
SM6T4-242	205	0.1	90	1.0	<5		
SM6T4-243	205	0.1	1	0.3	<b>&lt;</b> 5		
SM6T4-244	205	0.1	7	1.0	<b>&lt;</b> 5		
SM6T4-245	205	0.1	1	0.2	<b>&lt;</b> 5		
SM6T4-246	205	0.1	1	0.2	<b>&lt;</b> 5		
SM6T4-247	205	0.1	36	14.0	<5		
SM6T4-248	205	0.1	1	0.1	<b>&lt;</b> 5	·	
SM6T4-249	205	0.1	1	0.3	<b>&lt;</b> 5		
SM6T4-250	205	0.1	1	0.2	<b>&lt;</b> 5		
SM6T4-251	205	0.1	38	18.8	<b>&lt;</b> 5		
SM6T4-252	205	0-1	1	0.2	<b>&lt;</b> 5		
SM6T1-253	205	0.1	15	0.2	<b>&lt;</b> 5		
SM6T1-254	205	0.1	11	2 • C	<b>&lt;</b> 5		
SM6T1-255	205	0.1	12	0.5	<b>&lt;</b> 5		
SM6T1-256	205	0.1	1	0.2	<5		
SM6T1-257	205	0.1	1	0.1	<b>&lt;</b> 5		
SM6T1-258	205	0.1	10	1.2	<b>&lt;</b> 5		
TZ6T4-244	205	0.1	10	0.1	<5		
TZ6T4-245	205	0.1	2	0.4	<b>&lt;</b> 5		
TZ6T4-246	205	0.1	1	0.2	<b>&lt;</b> 5		
TZ6T4-247	205	0.1	1	0.5	<5		
TZ6T4-248	205	0.1	1	0.3	<b>&lt;</b> 5		
TZ6T4-249	205	0.1	1	0.6	<b>&lt;</b> 5		
TZ6T4-25C	205	0.1	1	0.2	<b>&lt;</b> 5		
TZ6T4-251	205	0.1	1	0.3	<b>&lt;</b> 5		
TZ6T4-252	205	0.1	1	1.0	<b>&lt;</b> 5		
TZ6T4-253	205	0.1	7	0.5	95		
TZ6T4-254	205	0.1	1	0.5	<b>&lt;</b> 5		
TZ6T4-255	205	6.3	6	1.2	30		
TZ6T4-256	205	0.1	4	0.3	<5		
TZ6T4-257	205	0.1	6	0.6	<b>&lt;</b> 5		
TZ6T4-258	205	0.1	22	1.0	135		
TZ6T4-259	205	0.1	7	9.0	60		
TZ6T4-26C	205	0.1	24	6.0	<b>&lt;</b> 5		
TZ6T4-261	205	1.3	17	3.2	920		
TZ6T4-262	205	0.9	70	1.6	10		
TZ6T4-263	205	0.6	90	8.8	75		
TZ6T4-264	205	0.3	24	2 • C	<b>&lt;</b> 5		
TZ6T4-265	205	0.7	5	1.4	5		
TZ6T4-266	205	0.1	9	0.7	<b>&lt;</b> 5		

Haut Bichler

VOI rev. 4/85

Certified by

Specialists in Mineral Environments 705 West 15th Street North Vancouver. R.C. Canada V7M 1T2

~HONE: (604)980-5814 OR (604)988-4524

TELEX: VIA USA 7601067 UC

#### Certificate of GEOCHEM

Company: WELCOME NORTH MINES

Project:

Attention: ANDY SCHMIDT

File:6-793/P1
Date:SEPT 18/86
Type:SOIL GEOCHEM

He hereby certify the following results for samples submitted SEP 1 9 1986

Sample Number	50165	AU PPB	MINERALLIS - SCACKDOHEMI
E A0+00	T	10	40MESH
A1+00N	•	5	
A2+00N		160	
N00+7A		5	
A4+00N	· 	10	
A5+QON		5	
A6+00N		10	
A7+00N		5	
AB+OON		5	
A9+00N		10	
A10+00N		5	
A11+00N		5	
A12+00N		10	
A13+00N		5	
A14+00N		5	
A15+00N		10	
A16+00N		5	40MESH
A17+00N		5	
A18+00N		10	
A19+00N		<b>5</b>	
A20+00N		5	
A21+00N		10	
A22+00N		5	40MESH
A23+00N		5	
A24+00N		5	
A25+00N		<del></del> 5	
A26+00N		5	
A27+00N		5	
A2B+00N		10	
A29+00N		5	

Certified by\_\_\_\_

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#### Specialists in Mineral Environments

705 West 15th Street North Vancouver. R.C. Canada V7M 1T2

PHONE: (604) 980-5814 DR (604) 988-4524

TELEX: VIA USA 7601067 UC

#### Certificate of GEOCHEM

Company: WELCOME NORTH MINES

Project:

Attention: ANDY SCHMIDT

File:6-793/P2

Date: SEPT 18/86

Type:SOIL GEOCHEM

He	hereby certify	the	following	results	for	samples	submitted.

Sample	AU	
Number	PPB	
A30+00N	20	
A31+00N	5	
A32+00N	5	
433+00N	120	
A34+00N	10	40MESH
A35+00N	5	
A36+00N	5	40MESH
A37+00N	5	
A37+60N	5	
^38+00N	5	
A39+00N	10	
B0+00	10	
B1+00N	10	
B2+00N	5	
B3+00N	10	
B4+00N	10	
B5+00N	5	
B6+00N	5	
B7+00N	5	
B8+OON	5	
B9+00N	15	
B10+00N	10	
B11+00N	5	
B12+00N	20	
B13+00N	10	40MESH
B14+00N	<u> </u>	40MESH
B15+00N	10	
B16+00N	5	
B17+00N	15	
818+00N	25	

Certified by ///

MIN-FA LABORATORIES LTD.

Specialists in Mineral Environments
705 West 15th Street North Vancouver. R.C. Canada V7M 172

PHONE: (604) 980-5814 OR (604) 988-4524

TELEX: VIA USA 7601067 UC

#### Certificate of GEOCHEM

Company: WELCOME NORTH MINES Project: Attention: ANDY SCHMIDT

File:6-793/P3
Date:SEPT 18/86
Type:SOIL GEOCHEM

He hereby certify the following results for samples submitted.

Sample	AU		
Number	РРВ		
B19+00N	10	40MESH	
B20+00N	5		
B21+00N	10		
B22+00N	5		
B23+00N	5		
B24+00N			
B25+00N			
M1+00W	5		
M2+00W	5		
7+00W	5.		
M4+00W	5		
M5+00W	5		
M6+00W	15		
M7+00W	5		
MB+00W	10		
M9+00W	2500		
M10+00W	5		
M11+00W	10		
M12+00W	5		
M13+00W	5		
M14+00W	10		
M15+00W	5		
M16+00W	20		
M17+00W	5		
M18+00W	5		
M19+00W	. 5		
M20+00W	5		
M21+00N	10		
M22+00W	5		
M23+00W	10		

Certified by\_\_\_\_

MIN-EN LABORATORIES LTD.

Specialists in Mineral Environments
705 West 15th Street North Vancouver, B.C. Canada V7M 1T2

HONE: (604)980-5814 OR (604)988-4524

TELEX: VIA USA 7601067 UC

#### Certificate of GEOCHEM

Company: WELCOME NORTH MINES Froiect: Attention: ANDY SCHMIDT File:6-793/P4
Date:SEPT 17/86
Type:SOIL GEOCHEM

We hereby certify the following results for samples submitted.

Sample	AU	
Number	PPB	$\cdot$
M24+00W	<u> </u>	
M25+00W	5	
M26+00W	10	
M27+00W	5	
M28+00W	5	
M29+00W	**************************************	
M30+00W	20	
M31+00W	5	
M32+00W	5	
M33+00W	5	
34+00W	5	
M35+00W	5	
M36+00W	10	
M37+00W	10	
M38+00M	10	
M39+00W	5	
M40+00W	5	/ 40MESH
M41+00W	_ 5	$\checkmark$
N1+00W	10	
N2+00W	<b></b> 5	
N3+00W	10	
N4+00W	10	
N5+00W	15	
N6+00W	10	
N7+00W	5	
N8+00W	5	
N9+00W	10	
N10+00W	5	
N11+00W	5	40MESH
N12+00W	5	

Certified by\_\_\_\_

MIN-EN LABORATORIES LTD.

Specialists in Mineral Environments
705 West 15th Street North Vancouver. B.C. Canada V7H 1T2

"HDNE: (604) 980-5814 OR (604) 988-4524

TELEXIVIA USA 7601067 UC

#### Certificate of GEOCHEM

Company: WELCOME NORTH MINES

Project:

Attention: ANDY SCHMIDT

File:6-793/P5
Date:SEPT 17/86
Type:SOIL GEOCHEM

He hereby certify the following results for samples submitted.

Sample	AU	
Number	PPB	
N13+00W	5	
N14+00W	10	
N15+00W	5	
N16+00W	5	
N17+00W	10	
N18+00W	<u> </u>	
N19+00W	5	
N21+00W	3	
N22+00W	5	
N23+00W	5	40MESH
4+00W	5	
N25+00W	10	40MESH
N26+00W	5	
N27+00W	5	40MESH
N28+00W	5	
N29+00W	10	
N30+00W	5	
N31+00W	5	
N32+00W	5	
M33+00M	10	
N34+00W	5	
W00+25N	5	
N36+00M	3	
N37+00W	5	
N3B+00M	5	
N39+00W	10	
N40+00W	5	
N41+00W	10	
N42+00W	5	
N43+00W	10	<b>/</b>

Certified by

MIN-EN LABORATORIES LTD.



Analytical Chemists \* Geochemists \* Registered Assayers 212 BROOKSBANK AVE., NORTH VANCOUVER, BRITISH COLUMBIA, CANADA V7J-2C1

PHONE (604) 984-0221

#### CERTIFICATE OF ANALYSIS

To: CHEVRON CANADA RESOURCES LTD. MINERALS STAFF

1900 - 1055 W. HASTINGS ST. VANCOUVER, B.C.

V6E 2E9 Project : M580

Comments: ATTN: S. McALLISTER

Page No. :1 Tot. Pages: 4 Date :09-MAR-87

76

A871.

Invoice #: I-8711976 P.O. # :36828

MASTER FILE

SAMPLE DESCRIPTION	PREP CODE	Ag ppm Aqua R	AS ppm	Hg ppb	Sb ppm				
A 0+00N A 1+00N A 2+00N A 3+00N A 4+00N	214 214 214 214 214	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1	5 2 1 2 2	1 1 0 4 0 3 0 4 0 4 0	0 . 2 0 . 1 0 . 1 0 . 1 0 . 1	·			
A 5+00N A 6+00N A 7+00N A 8+00N A 9+00N	214 214 214 214 214	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1	3 3 3 2 2	30 30 30 30 20	0 · 1 0 · 1 0 · 1 0 · 1 0 · 1				
A 10+00N A 11+00N A 12+00N A 13+00N A 14+00N	214 214 214 214 214	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1	1 2 2 2 1	2 0 2 0 3 0 2 0 2 0	0 · i 0 · 1 0 · 1 0 · 2 0 · 2				
A 15+00N A 16+00N A 17+00N A 18+00N A 19+00N	214 214 214 214 214	0 . I 0 . 1 0 . 1 0 . 1 0 . 1	2 9 2 2 2 3	2 0 5 0 2 0 2 0 2 0	0 · 2 0 · 2 0 · 1 0 · 1 0 · 1				
A 20+00N A 21+00N A 22+00N A 26+00N A 24+00N	214 — 214 — 214 — 214 — 214 —	0 · 1 0 · 1 0 · 1 0 · 1 0 · 1	4 4 3 2 3	50 50 30 30 20	0 · 1 0 · 1 0 · 1 0 · 1 0 · 2				
A 25+00N A 26+00N A 27+00N A 28+00N A 29+00N	214 214 214 214 214	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1	1 2 1 2	2 0 3 0 2 0 2 0 2 0	0 · 1 0 · 1 0 · 1 0 · 1 0 · 1				
A 304-00N A 31+00N A 32+00N A 33+00N A 34+00N	214 214 214 214 214	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1	1 1 1 1 2	30 30 30 40 40	0 · 1 0 · 1 0 · 1 0 · 2 0 · 1				
A 35+00N A 36+00N A 37+00N A 37+60N A 38+00N	214 214 214 214 214	0 1 0 1 0 1 0 1	2 2 1 1 3	50 30 30 40 50	0 · 1 0 · 2 0 · 1 0 · 1 0 · 1			•	

CERTIFICATION: KuthSichler



212 BROOKSBANK AVE., NORTH VANCOUVER, BRITISH COLUMBIA, CANADA V7J-2CI PHONE (604) 984-0221

CERTIFICATE OF ANALYSIS A871

1. CHEVRON CANADA RESOURCES LTD. MINERALS STAFF

1900 - 1055 W. HASTINGS ST. VANCOUVER, B.C.

V6E 2E9 Project : M580

Comments: ATTN: S. McALLISTER

Page No. :2 Tot. Pages:4

Date :09-MAR-87 Invoice #: I-8711976

P.O. # :36828

76

SAMPLE DESCRIPTION	PREP CODE	Ag ppm Aqua R	AS ppm	Hg ppb	Sb ppm		:	
A 39+00N B 0+00N B 1+00N B 2+00N B 3+00N	214 214 214 214 214	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1	1 1 1 1	3 0 5 0 3 0 2 0 4 0	0 . 1 0 . 2 0 . 1 0 . 1 0 . 1			
B 4+00N B 5+00N B 6+00N B 7+00N B 8+00N	214 214 214 214 214	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1	1 2 1 1 1	30 20 40 40 50	0 · 1 0 · 2 0 · 1 0 · 1 0 · 1			
B 9+00N B 10+00N B 11+00N B 12+00N B 13+00N	214 214 214 214 214	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1	2 2 2 1 2	3 0 8 0 3 0 8 0 4 0	0 · 1 0 · 1 0 · 1 0 · 1 0 · 1			
B 14+00N B 15+00N B 16+00N B 17+00N B 18+00N	214 214 214 214 214	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1	7 6 3 5 5	40 50 40 50 40	0 · 2 0 · 1 0 · 1 0 · 1 0 · 1			
B 19+00N B 20+00N B 21+00N B 22+00N B 23+00N	214 214 214 214 214	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1	1 1 5 1	70 90 40 40 40	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1			
B 24+00N B 25+00N M 1+00W M 2+00W M 3+00W	214 214 214 214 214	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1	1 1 1 3 1	40 30 30 40 20	0 · 1 0 · 1 0 · 1 0 · 1 0 · 1			
M 4+00W M 5+00W M 6+00W M 7+00W M 8+00W	214 214 214 214 214	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1	2 1 2 1 1	30 20 30 20 30	0 · 1 0 · 1 0 · 1 0 · 1 0 · 1			
M 9+00W M 10+00W M 11+00W M 12+00W M 13+00W	214 214 214 214 214	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1	2 2 2 2 2 2	40 40 30 30 40	0 · 1 0 · 1 0 · 1 0 · 1 0 · 1			

CERTIFICATION : \_\_



ytical Chemists \* Geochemists \* Registered Assayers
212 BROOKSBANK AVE., NORTH VANCOUVER,
BRITISH COLUMBIA, CANADA V7J-2CI
PHONE (604) 984-0221

CERTIFICATE OF ANALYSIS A871

To: CHEVRON CANADA RESOURCES LTD.
MINERALS STAFF

1900 - 1055 W. HASTINGS ST. VANCOUVER, B.C.

V6E 2E9

Project : M580

Comments: ATTN: S. McALLISTER

Page No. :3 Tot. Pages: 4

Date : 09-MAR-87 Invoice #: I-8711976

76

P.O. # :36828

SAMPLE DESCRIPTION	PREP CODE	Ag ppm Aqua R	AS ppm	Hg ppb	Sb ppm			
M 14+00W M 15+00W M 16+00W M 17+00W M 18+00W	214 214 214 214 214	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1	1 1 3 1 2	5 0 5 0 3 0 4 0 4 0	0 · 1 0 · 1 0 · 1 0 · 1 0 · 1			
M 19+00W M 20+00W M 21+00W M 22+00W M 23+00W	214 214 214 214 214	0 · 1 0 · 1 0 · 1 0 · 1 0 · 1	1 1 2 1 2	30 40 30 40 50	0 · 1 0 · 2 0 · 1 0 · 1 0 · 1			
M 24+00W M 25+00W M 26+00W M 27+00W M 28+00W	214 214 214 214 214	0 · 1 0 · 1 0 · 1 0 · 1 0 · 1	3 1 1 2 2	30 20 30 20 30	0 · 1 0 · 1 0 · 1 0 · 1 0 · 1			
M 29+00W M 30+00W M 31+00W M 32+00W M 33+00W	214 214 214 214 214	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1	1 2 1 1	40 40 30 30 40	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1			
M 34+00W M 35+00W M 36+00W M 37+00W M 38+00W	214 214 214 214 214	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1	1 1 1 1 2	50 50 30 20 20	0 · 1 0 · 1 0 · 1 0 · 1 0 · 1			
M 39+00W M 40+00W M 41+00W N 1+00W N 2+00W	214 214 214 214 214	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1	2 2 1 1 2	2 0 2 0 2 0 2 0 3 0	0 · 1 0 · 1 0 · 1 0 · 1 0 · 1			
N 3+00W N 4+00W N 5+00W N 6+00W N 7+00W	214 214 214 214 214	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1	2 3 2 1 2	30 60 40 30 40	0.1 0.1 0.1 0.1 0.1			
N 8+00W N 9+00W N 10+00W N 11+00W N 12+00W	214 214 214 214 214	0 · 1 0 · 1 0 · 1 0 · 1 0 · 1	1 2 3 2 4	30 30 30 30 20	0 . 1 0 . 1 0 . i 0 . 1 0 . 1			

CERTIFICATION: StartBuchler



## Chemex Labs Ltd Analytical Chemists - Geochemists - Registered Assayers

212 BROOKSBANK AVE., NORTH VANCOUVER, BRITISH COLUMBIA, CANADA V7J-2C1 PHONE (604) 984-0221 CERTIFICATE OF ANALYSIS

To: CHEVRON CANADA RESOURCES LTD. MINERALS STAFF 1900 - 1055 W. HASTINGS ST.

VANCOUVER, B.C. V6E 2E9

Project : M580

Comments: ATTN: S. McALLISTER

Page No. :4 Tot. Pages: 4

A8711

Date :09-MAR-87 Invoice #:I-8711976

76

P.O. # :36828

SAMPLE DESCRIPTION	PREP	Ag ppm Aqua R	AS ppm	Hg ppb	Sb ppm			
N 13+00W N 14+00W N 15+00W N 16+00W N 17+00W	214 214 214 214 214	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1	1 2 1 2 1	50 50 20 20 30	0.1 0.1 0.1 0.1 0.1			
N 18+00W N 19+00W N 21+00W N 22+00W N 23+00W	214 214 214 214 214	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1	2 3 2 1 2	2 0 4 0 2 0 2 0 2 0	0 · 1 0 · 1 0 · 1 0 · 1 0 · 1			
N 24+00W N 25+00W N 26+00W N 27+00W N 28+00W	214 214 214 214 214	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1	2 5 3 2 1	30 40 30 30 20	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1			
N 29+00W N 30+00W N 31+00W N 32+00W N 33+00W	214 214 214 214 214	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1	1 1 1 1 2	30 30 30 20 30	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1			
N 34+00W N 35+00W N 36+00W N 37+00W N 38+00W	214 214 214 214 214	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1	1 1 1 1 1	40 50 30 30 20	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1			
N 39+00W N 40+00W N 41+00W N 42+00W N 43+00W	214 214 214 214 214	0 . 1 0 . 1 0 . 1 0 . 1 0 . 1	2 1 2 2 2 3	2 0 3 0 2 0 3 0 3 0	0 · 1 0 · 1 0 · 1 0 · 1 0 · 1			

CERTIFICATION: Harry Suchler

the state of the state of the state of



Analytical Chemists

**Geochemists** 

Registered Assayers

212 Brooksbank Ave. North Vancouver, B.C. **V7J 2C1** Canada

(604) 984-0221 Phone:

Telex: 043-52597

Gold F.A.-A.A. Combo Method ppb:

For low grade samples and geochemical materials, 10 gram samples are fused in litharge, carbonate and siliceous flux with the addition of 10 mg of Au-free Ag metal and cupelled. The silver bead is parted with dilute HNO3 and then treated with aqua regia. The salts are dissolved in dilute HCl and analyzed for Au on an atomic absorption spectrophotometer.

Detection limit: 5 ppb



Analytical Chemists Geochemists

Registered Assayers

212 Brooksbank Ave. North Vancouver, B.C.

Canada V7J 2C1

Phone: (604) 984-0221

Telex: 043-52597

Antimony ppm:

A 2.0 gm sample is digested with conc. HCl-KClO3 at low heat. The iron is reduced to Fe+2 state and the Sb extracted with TOPO-MIBK and analyzed via A.A. Correcting for background absorption.

Detection Limit: 0.2 + /- 0.2



Analytical Chemists

Geochemists

Registered Assayers

212 Brooksbank Ave. North Vancouver, B.C.

V7J 2C1

(604) 984-0221 Phone:

Telex: 043-52597

Copper, Lead, Zinc, Silver ppm:

1.0 gm sample is digested with perchloric-nitric acid (HCl04-HN03) for approximately 2 hours. The digested sample is cooled and made up to 25 mls with distilled water. The solution is mixed and solids are allowed to settle. Copper, lead, zinc and silver are determined by atomic absorption techniques. Silver and lead are corrected for background absorption.

Detection limit: Copper, Zinc - 1 ppm

Silver - 0.2 ppm Lead - 2 ppm



Analytical Chemists

Geochemists

Registered Assayers

212 Brooksbank Ave. North Vancouver, B.C. Canada V7J 2C1

Phone: (604) 984-0221

Telex: 043-52597

Arsenic ppm:

A 1.0 gm sample is digested with a mixture of perchloric and nitric acid to strong fumes of perchloric acid. The digested solution is diluted to volume and mixed. An aliquot of the digest is acidified, reduced with and mixed. A portion of the reduced solution is converted to arsine with NaBH4 and the arsenic content determined using flameless atomic absorption.

Detection limit: 1 ppm

#### APPENDIX V

Statement of Exploration and Development

Province o itish Columbia Ministry of Energy, Mines 1 Petroleum Resources ECEIVED
MINERAL RESOURCES DIVISION — TITLES BRANCH

MAR 23 1987

### MINERAL ACT

STATEMENT OF EXPLORATION AND DEVELOPMENT

	CAllister (Name)	Agentior Minequest Exp	loration Associate
201 - 1286	W. 14th Ave.	311 Water Str	eet
Vancouver,	(Address) B.C.	Vancouver, B.	
V6H 1P9 (Postal Code)	736-2149 (Talephone Numb	V6B 1B8 er) (Postal Code)	669-2251 (Telephone Numbe
Valid subsisting F.M.C.	No. MCALS 218642	Valid subsisting F.M.C. No. 2	96272
TE THAT			
	ed to be done, work on the Mint 1,	Mint 2, Mink I, Mink II, Q	ueen 4,
Que	een VI (Queen 1987 Group)		
	368, 1369, 1572, 1573, 1366		
Situate at 70 km		the Clinton	<del>-</del>
to the value of at leas		dollars. Work was done from the	
of Septemb	Der 19 85 to the	13th <sub>day of</sub> March	19.87
2. The following work w	as done in the 12 months in which such work i	s required to be done:	
	[COMPLETE APPROPRIATE SEC	CTION(S) A, B, C, D, FOLLOWING	
PHYSICAL	(Trenches, open cuts, adits, pits, shafts, recli	amation, and construction of roads and trails	.)
,	(Give details as required by section 13 of regu	lations.)	COST
		TOTAL PHYSICAL	
I wish to apply \$	of physical work to the	claims listed below.	
(State number o	f years to be applied to each claim, its month	of record, and identify each claim by name a	ind record number.)
		a total to a commission of the	
DDOODEOTHE			
PROSPECTING	(Details in report submitted as per section 9 (The itemized cost statement must be part of		COST
		<b>I</b>	

C. DRILLING	(Details in rep (The itemized	cost statement must be part of th	e repart.)			
D. GEOLOGIC	AL GEOPHYSIC	CAL, GEOCHEMICAL				
5. GEOLOGIO	(Details in rep (The itemized	ort submitted as per section 5, 6, cost statement must be part of th work in space below.)				
Geology, ge	ochemical sa	ampling			6,200	
					***************************************	
			TOTAL OF C AN	ND D	6,200	
Report to 1	follow within	n 90 days.		1		
Where t	he above statement	requires a technical report as per s of the ASSESSMENT REPORT T				
Who was the operato	r (provid <b>ed</b>	Name Chevro	n Canada Resourc	ces Limited	<u> </u>	
the financing)?		Address 1900 -	1055 West Hast	ings Street		
		Vancou	ver, B.C.			
,		* see	attached list			
mount to be withdra  May be no more that of value of the ap	wn from owner(s) of n 30 per cent proved work	AC) Withdrawal Request r operator(s) account(s):  Name of Owner/C  MineQuest Explorat	Operator	Ltd.	\$1,800	NT .
unount to be withdra	n 30 per cent proved work ssment work	r operator(s) account(s):  Name of Owner/C	operator ion Associates		\$1,800	
May be no more that of value of the ap submitted as asse	n 30 per cent proved work ssment work	Name of Owner/C  MineQuest Explorat  2	Operator	AWAL	\$1,800	NT
May be no more that of value of the ap submitted as asse in C and (or) D.	n 30 per cent proved work ssment work	Name of Owner/C  MineQuest Explorat  2	operator  ion Associates  TOTAL WITHDRAWA  D PLUS PAC WITHDRAWA  e claims listed below.	AWAL	\$1,800 \$1,800 \$8,000	
May be no more that of value of the apsubmitted as asserin C and (or) D.]	n 30 per cent proved work ssment work	Name of Owner/C  Name of Owner/C  MineQuest Explorat  TOTAL OF C AND (OR)	TOTAL WITHDRAWA  PLUS PAC WITHDRAWA  claims listed below.  and identify each cla	AWAL	\$1,800 \$1,800 \$8,000	97.)
May be no more than of value of the apsubmitted as asse in C and (or) D.   I wish to apply \$  (State numb	n 30 per cent proved work ssment work 8,000.	Name of Owner/C  Name of Owner/C  MineQuest Explorat  TOTAL OF C AND (OR) i  of this work to the	TOTAL WITHDRAWA  PLUS PAC WITHDRAWA  claims listed below.  cord, and identify each cla	AWAL  AL  aim by name and  WORK API	\$1,800 \$1,800 \$8,000	er) YEARS EARNE
May be no more that of value of the ap submitted as asse in C and (or) D.   I wish to apply \$  (State numb	8,000.  BECORD #	Name of Owner/C  Name of Owner/C  MineQuest Explorat  TOTAL OF C AND (OR)  of this work to the option of the country of the co	TOTAL WITHDRAW  TOTAL WITHDRAW  D PLUS PAC WITHDRAW  e claims listed below.  cord. and identify each cla  UNITS  20	AWAL  AL  aim by name and  WORK API  \$4,000	\$1,800 \$1,800 \$8,000 record number	er) YEARS EARNE
May be no more that of value of the ap submitted as asse in C and (or) D.   I wish to apply \$  (State numb	an 30 per cent proved work ssment work  8,000. er of years to be approved work state of years to be approved to the proventies of years to be approved to the years to the years to be approved to the years to year years year.	Name of Owner/C  Name of Owner/C  MineQuest Explorat  TOTAL OF C AND (OR) to the plied to each claim, its month of re  RECORD MONTH  March	TOTAL WITHDRAW  TOTAL WITHDRAW  D PLUS PAC WITHDRAW  e claims listed below.  cord. and identify each cla  UNITS  20	AWAL  AL  aim by name and  WORK API  \$4,000	\$1,800 \$1,800 \$8,000 record number	years Earni
May be no more that of value of the apsubmitted as asserting to and (or) D.   I wish to apply \$ (State numbmitted as asserting C and (or) D.   I wish to apply \$ Value of work to	an 30 per cent proved work ssment work  8,000.  er of years to be applications of the state of t	Name of Owner/C  Name of Owner/C  MineQuest Explorat  TOTAL OF C AND (OR) i  of this work to the plied to each claim, its month of re  RECORD MONTH  March  March  Die assessment credit (PAC) according to the plied	TOTAL WITHDRAMA  D PLUS PAC WITHDRAWA  e claims listed below.  ecord, and identify each cla  UNITS  20  20	AWAL  AL  aim by name and  WORK API  \$4,000	\$1,800 \$1,800 \$8,000 record number	PF.) YEARS EARNE 1
May be no more that of value of the apsubmitted as asserting to and (or) D.   I wish to apply \$ (State numb at M first 1 conditions)  Note that 1 conditions are the	an 30 per cent proved work ssment work  8,000.  er of years to be applications of the state of t	Name of Owner/C  Name of Owner/C  MineQuest Explorat  TOTAL OF C AND (OR) (  of this work to the option of the complete of the	TOTAL WITHDRAMA  D PLUS PAC WITHDRAWA  e claims listed below.  ecord, and identify each cla  UNITS  20  20	AWAL  AL  aim by name and  WORK API  \$4,000	\$1,800 \$1,800 \$8,000 record number	years Earns 1 1
May be no more that of value of the apsubmitted as asse in C and (or) D.   I wish to apply \$ (State numb	8,000.  er of years to be appled to portal a credited from the a	Name of Owner/C  Name of Owner/C  MineQuest Explorat  TOTAL OF C AND (OR) (OR) (OR) (OR) (OR) (OR) (OR) (OR)	TOTAL WITHDRAMA  D PLUS PAC WITHDRAWA  e claims listed below.  ecord, and identify each cla  UNITS  20  20	AWAL  AL  aim by name and  WORK API  \$4,000	\$1,800 \$1,800 \$8,000 record number PLIED	years Earne
May be no more that of value of the apsubmitted as asserin C and (or) D.]  I wish to apply \$ (State numblint 1	8,000.  er of years to be applicated to portal a credited from the a	Name of Owner/C  Name of Owner/C  MineQuest Explorat  TOTAL OF C AND (OR) (OR) (OR) (OR) (OR) (OR) (OR) (OR)	TOTAL WITHDRAMA  D PLUS PAC WITHDRAWA  e claims listed below.  ecord, and identify each cla  UNITS  20  20	AWAL  AL  aim by name and  WORK API  \$4,000	\$1,800 \$1,800 \$8,000 record number PLIED	years Earne

I, the undersigned Free Miner, hereby acknowledge and understand that it is an offence to knowingly make a false statement or provide false information under the *Mineral Act*. I further acknowledge and understand that if the statements made, or information given, in this Statement of Exploration and Development are found to be false and the exploration and development has not been performed, as alleged in this Statement of Exploration and Development, then the work reported on this statement will be cancelled and the subject mineral claim(s) may, as a result, forfeit to and vest back to the Province.

S. M. Elysta Signature of Applicant

### Financing was provided by:

- Chevron Canada Resources Limited 1900 - 1055 West Hastings Street Vancouver, B.C. V6E 2E9
- 2. MineQuest Exploration Associates Ltd. 311 Water Street Vancouver, B.C. V6B 1B8
- 3. Welcome North Mines Ltd. 1027 - 470 Granville Street Vancouver, B.C. V6C 1V5

AINERAL RESOURCES DIVISION - TITLES BRAN

RECEIVED

MINERAL ACT STATEMENT OF EXPLORATION AND DEVELOPMENT

VANCOUVER, B.C.

(Name)	Agent forM1DEQ	uest Exploration	n Associates I
14th Avenue	311 N	ater Street	
(ALO422)		•	
736-23 (Tale	149 V6B 1	B8	669-2251 (Yelephone Humber)
MCALS 218642	Valid subsisting EM.C	No. 296272	
_			
- · · · · · · · · · · · · · · · · · · ·			•
			-
done in the 12 months in which s	uch work is required to be done:		
		FOLLOWING]	
Trenches, open cuts, adits, pits, s	hafts, reclamation, and construction o	of roads and trails.)	
ive details as required by section	13 of regulations.)	,	COST
	e e e e e e e e e e e e e e e e e e e		
4 4 4			
<del></del>			<del> </del>
• •			
ears to be applied to each claim,	its month of record, and identify each	claim by name and record	d number.)
Details in report submitted as per			
Details in report submitted as per The itemized cost statement mus			COST
	MCALS 218642  to be done, work on the Acc.  4, (King 1987 Group 172, 1364, 1365, 1856)  NW of Clinton 7,000  19 86  done in the 12 months in which selection with the 12 months of the selection of physical of physical selection.	736–2149 (Veleprone Number) (Postal Code)  MCALS 218642  Valid subsisting FM.C  to be done, work on the Ace 1, King 3, King 4, R 4, (King 1987 Group)  722, 1364, 1365, 1858, 1362, 1367, 1370, 1  NW of Clinton in the Clinton 7,000  dottars. Work 19 86 to the 13th day of Ma  done in the 12 months in which such work is required to be done:  [COMPLETE APPROPRIATE SECTION(S) A, B, C, D, the complete of the construction of the details as required by section 13 of regulations.)  TOTAL PHYS  of physical work to the claims listed below.  ears to be applied to each claim, its month of record, and identify each	TOTAL PHYSICAL  MCALS 21842  736-2149 (Featal Cose)  MCALS 218642  Valid subsisting FM.C. No. 296272  Valid subsisting FM

		ort submitted as per section 8 of r		COST
		cost statement must be part of th	e report.)	
D. GEOLOGICA		CAL, GEOCHEMICAL	or 7 of mandations	
	(The itemized	ort submitted as per section 5, 6, cost statement must be part of th work in space below.)		
Geochemi	cal sampling	3		\$7,000.
		,		
				<b>67</b> ,000
			TOTAL OF C AND D	\$7,000.
Report	to follow w	within 90 days.		
shall co		of the ASSESSMENT REPORT T	section C of the Mineral Act Regula TITLE PAGE AND SUMMARY form	
Vho was the operato	r (provid <b>ed</b>	Name Chevi	ron Canada Resources	Limited
the financing)?	,	Address 1900	- 1055 W. Hastings	Street
		Vanco	ouver, B.C. V6E 2	E9
			e attached list	
			e actached 115c	1
	·	C) Withdrawal Request operator(s) account(s): Name of Owner/C	Operator	AMOUNT
Amount to be withdra	wn Irom owner(s) or	operator(s) account(s):  Name of Owner/0	Operator ration Associates Lt	
Amount to be withdra	wn from owner(s) or 130 per cent proved work	operator(s) account(s):  Name of Owner/0		
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Amount to be withdrain to be no more than of value of the ap submitted as assets	wn from owner(s) or 130 per cent proved work ssment work	Name of Owner/On MineQuest Explored.	TOTAL WITHDRAWAL	\$2,000. \$2,000.
Amount to be withdraw  May be no more than of value of the apsubmitted as asset in C and (or) D.]	wn Irom owner(s) or 130 per cent proved work ssment work	Name of Owner/C  Name of Owner/C  MineQuest Explore  TOTAL OF C AND (OR)	TOTAL WITHDRAWAL	\$2,000. \$2,000. \$9,000.
Amount to be withdraw  May be no more than of value of the apsubmitted as asset in C and (or) D.]	wn Irom owner(s) or 130 per cent proved work ssment work	Name of Owner/C  Name of Owner/C  MineQuest Explore  TOTAL OF C AND (OR)	TOTAL WITHDRAWAL  D PLUS PAC WITHDRAWAL  e claims listed below.  scord, and identify each claim by respectively.	\$2,000. \$2,000. \$9,000.
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May be no more than of value of the apsubmitted as asset in C and (or) D.]  I wish to apply \$ (State numb)  CLAIM  King 3  King 4  Mint 3  Mint 4  Value of work to I (May only be)	9,000. er of years to be app  RECORD #  1365  1370  1371 be credited to portate	Name of Owner/Control MineQuest Explored  TOTAL OF C AND (OR)  of this work to the control of th	TOTAL WITHDRAWAL  D PLUS PAC WITHDRAWAL  e claims listed below.  ecord, and identify each claim by r  UNITS WORK AP:  20 \$4,00:  15 \$3,00:  5 \$1,00:  5 \$1,00:  unit(s).	\$2,000. \$2,000. \$9,000.  PLIED YEARS EARNE 0. 1 0. 1 0. 1

I, the undersigned Free Miner, hereby acknowledge and understand that it is an offence to knowingly make a false statement or provide false information under the *Mineral Act*. I further acknowledge and understand that if the statements made, or information given, in this Statement of Exploration and Development are found to be false and the exploration and development has not been performed, as alleged in this Statement of Exploration and Development, then the work reported on this statement will be cancelled and the subject mineral claim(s) may, as a result, forfeit to and vest back to the Province.

Signature of Applicant

# Financing was provided by:

- Chevron Canada Resources Limited 1900 - 1055 West Hastings Street Vancouver, B.C. V6E 2E9
- 2. MineQuest Exploration Associates Ltd. 311 Water Street Vancouver, B.C. V6B 1B8
- 3. Welcome North Mines Ltd. 1027 - 470 Granville Street Vancouver, B.C. V6C 1V5

# APPENDIX VI

Remote Sensing Anaylsis

MineQuest Report #152 Ref. No. RM3802

# REMOTE SENSING ANALYSIS CHURN CREEK CLAIMS

Churn Creek Area Clinton Mining Division

N.T.S. 920/7, 0/8

for

Chevron Canada

by

K.V. Campbell

of

MineQuest Exploration Associates Ltd.

Vancouver, B.C.

April, 1987

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#### 1.0

## INTRODUCTION

This brief report describes the results of a remote sensing analysis on the CHURN CREEK claims, Clinton Mining Division, British Columbia. The objective of the work was to identify lineaments using digitally enhanced Thematic Mapper data.

Thematic Mapper (Landsat 5) computer tapes were used in this study. Particulars of the imagery are given in Table I.

TABLE I
Description of Data

Tape ID	Image Date	Scene
TM1543	September 22, 1985	Track 48 Figure 24 Bands 1,2,3,4,5,7
Spectral	wavebands included on	the tape were:
TM-1 TM-2 TM-3 TM-4 TM-5 TM-7	0.45 - 0.52 0.52 - 0.60 0.63 - 0.69 0.76 - 0.90 1.55 - 1.75 2.08 - 2.35	visible blue visible green visible red infrared infrared infrared

Figure 1 shows the relation of the Thematic Mapper (TM) bands in relation to other satellite scanners. The TM spectral sampling area (i.e. pixel dimension) is  $30 \times 30 \text{ m}$ .

Supporting data consisted of 1:50,000 topographic maps (N.T.S. 920/7, 0/8).

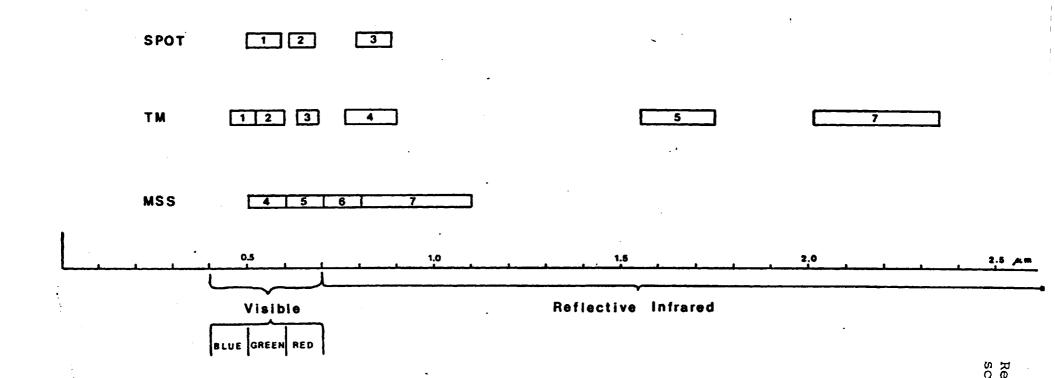


FIGURE I
Remote sensing
scanner bands

sing satellite

### **METHOD**

TM computer compatible tapes (CCT) are acquired from the Canadian Centre for Remote Sensing, Prince Albert, Saskatchewan. The imagery contained on each tape covers an area about 90 kilometres square. A portion of the imagery, 1024 x 1024 pixels or 30.72 kilometres square, is transferred to a hard disk on the Vax 780 main frame computer at the B.C. Research Council facility. The software program used in the analysis is EASI-PACE produced by Perception Computing Inc.

The method of digital analysis is outlined below:

- 1. Histograms of raw spectral data are produced.
- 2. The spectral data are 'stretched' from their raw distribution (determined in Step 1) over the available brightness sensitivity range, 0-255. The nature of the stretch is proprietary.
- 3. Ratios of the six bands of raw data are then produced and stretched according to the configuration of their histograms. Ratios produced were 1/2, 1/7, 2/3, 3/4, 4/5 and 5/7.
- 4. Each waveband and ratio is then viewed independently and a judgement made as to the quality of contrast and ability of the enhancement to identify geological stuctures.
- 5. Based on the above, a number of colour composites are made using combinations of various bands and band ratios. Any three bands or band ratios can be composited and projected onto the computer monitor (512 x 512 pixel display). Any one channel (band or band ratio) can be projected with blue, green or red light, the operator determining which colour combination is most suitable for lineament definition.

- 6. Each composite is photographed with 35mm colour positive film (Ektachrome 200). Eight x ten inch enlargements are then made, with a nominal scale of 1:75,000.
- Lineament analysis is performed on overlays directly on the enlarged photographs. The overlays are then enlarged to a scale of 1:50,000 with a photocopy machine. For this work lineaments were transferred by overlaying a 1:50,000 topographic map and getting the best fit. The surface features making up a lineament may be geomorphic (caused by relief) or tonal (caused by contrast in colour or brightness). Surface features may be landforms, linear boundaries between different types of terrain, or breaks within a uniform terrain. Tonal lineaments are caused by differences in vegetation, moisture content, and soil or rock composition.

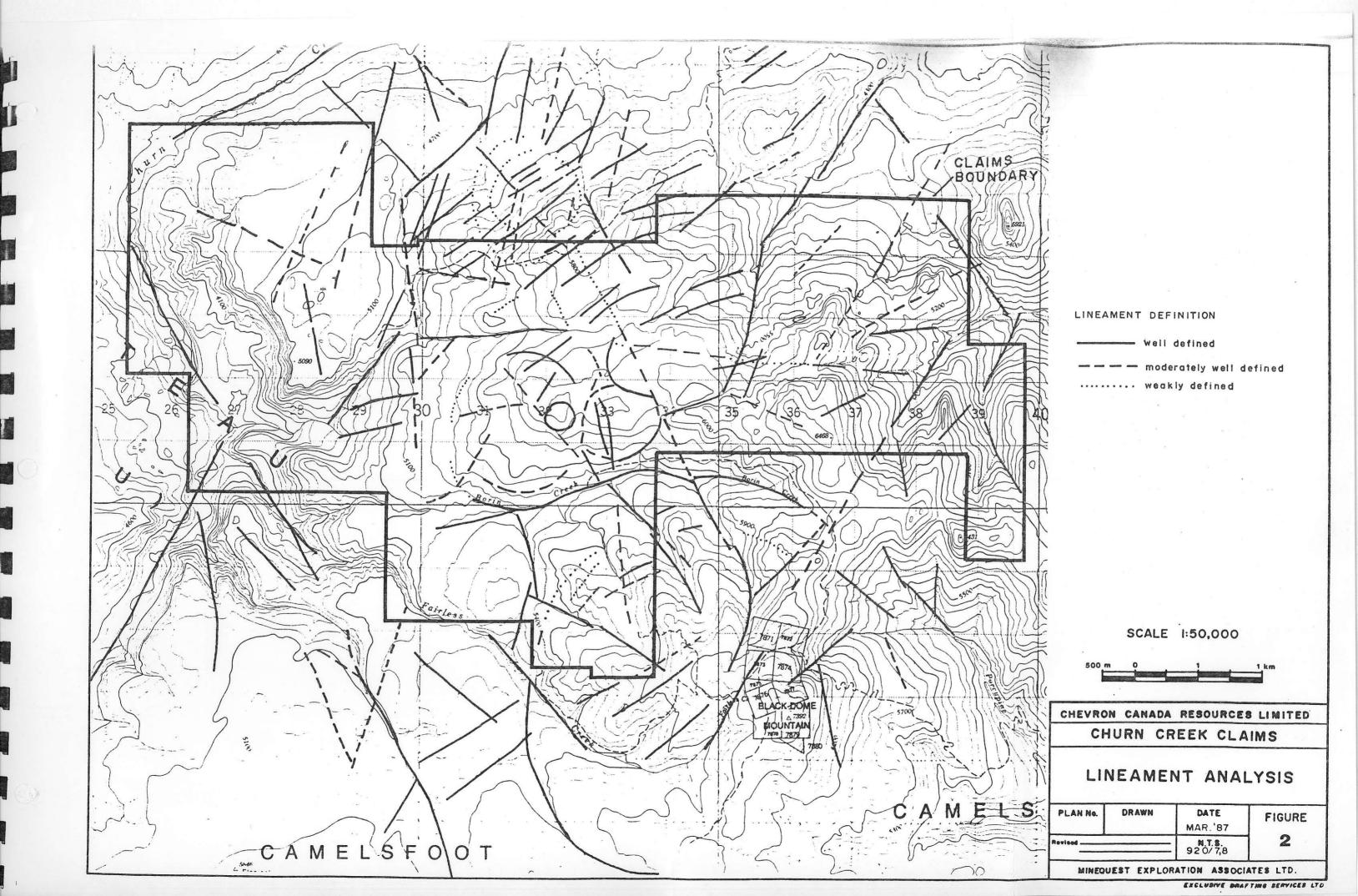
### RESULTS

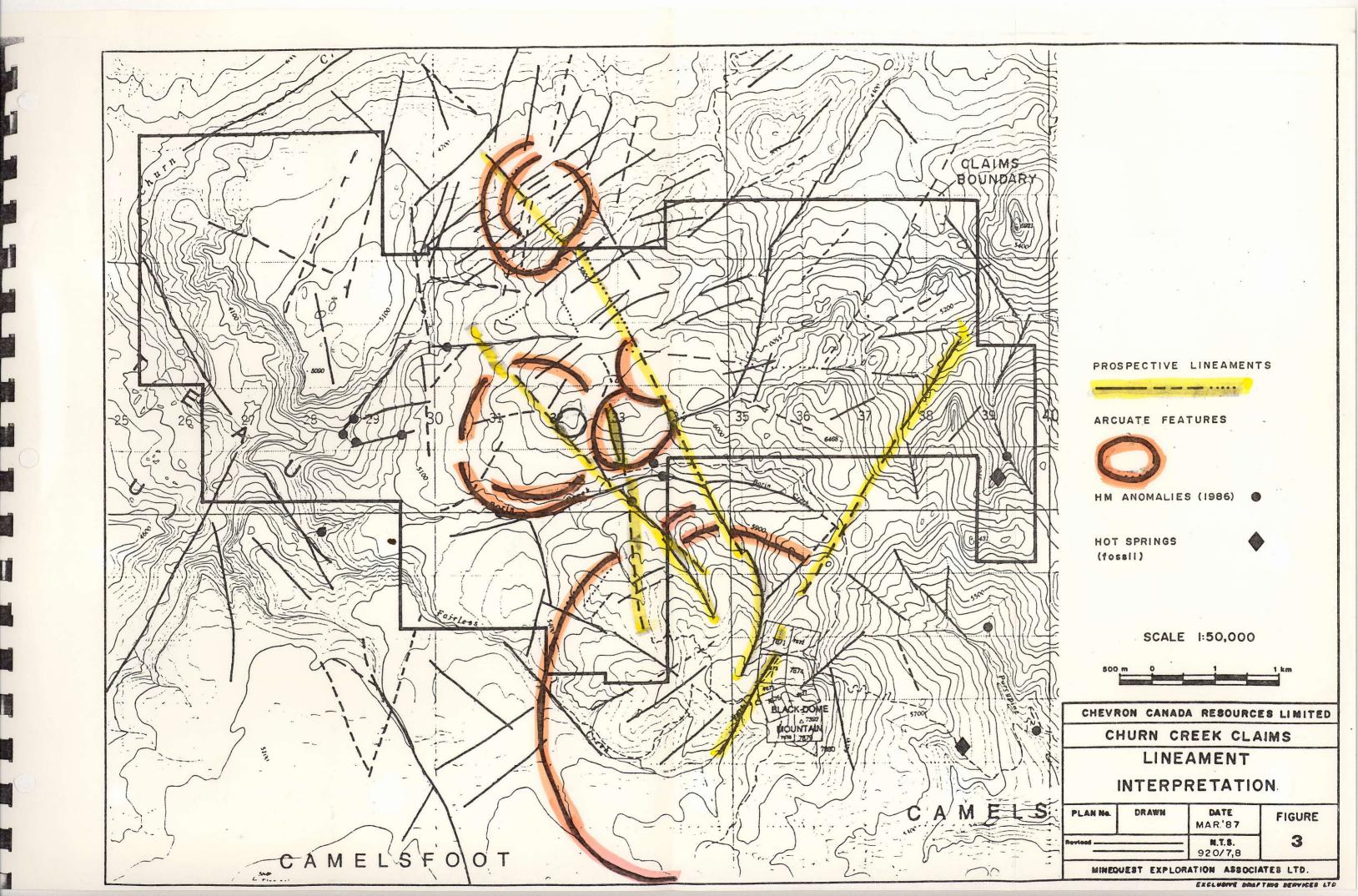
Figure 2 is the lineament analysis of the project area, compiled from all composited images. A three-fold classification is used; well defined, moderately well defined and weakly defined. This has no relation to the relative geological significance or ranking of the lineaments.

Figure 3 is the same lineament base as Figure 2, but with particular lineaments highlighted by the author as being worthy of ground verification and prospecting. Silt anomalies identified in earlier work (1983) and fossil hot springs are also shown. The following observations are made:

- 1. The majority of lineaments fall into three sets: northeast, north-northeast and northwest.
- 2. There are four arcuate features:
  - a) centered in Black Dome Mountain area, diameter 5-6 kilometres, well defined by drainage and weakly defined by tonal contrasts.
  - b) and (c) centered one kilometre north of Borin Creek, diameter of (b)  $1 \ ^{1}/_{2} 2$  kilometres, diameter of (c)  $^{3}/_{4}$  kilometre, well defined to weakly defined by tonal contrasts.
  - d) centered five kilometres north of Borin Creek, diameter  $1 \frac{1}{2} 2$  kilometres, weakly defined by tonal contrasts.

It is considered noteworthy that these features are aligned on a north-northwest trend extending from the Black Dome area. The possibility that these curvilineaments represent ring structures caused by doming or collapse should be examined. Of particular exploration interest are the longer lineaments that cross or project into the circular features.





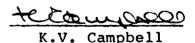
## 4.0

## RECOMMENDATIONS

Prior to field verification the lineaments in Figures 2 and 3 should be identified or approximated as closely as possible on 1:15,000 or 1:20,000 air photos. This is most cheaply done by sketch transferring directly from the colour enlargements to the photos.

Geomorphic lineaments are relatively easy to transfer accurately. Tonal lineaments are more difficult to transfer as they can be invisible to the human eye (or panchromatic film). Hand-held colour infrared photography from fixed or rotary wing aircraft can bridge this problem.

Once the lineaments have been located on the photos they should be examined in the field and quantified as to definition and apparent geological significance. Geochemical soil sampling both along and across lineaments, especially where they intersect the arcuate lineaments is an established reconnaissance technique that has been used successfully elsewhere.



### STATEMENT OF QUALIFICATIONS

I, KENNETH VINCENT CAMPBELL, resident of Vancouver, Province of British Columbia, hereby certify as follows:

- 1) I am a Consulting Geologist with MineQuest Exploration Associates Ltd. at 201-311 Water Street, Vancouver, British Columbia, V6B 1B8.
- I graduated with a degree of Bachelor of Science, Honours Geology, from the University of British Columbia in 1966, a degree of Master of Science, Geology, from the University of Washington in 1969, and a degree of Doctor of Philosophy, Geology, from the University of Washington in 1971.
- 3) I have practiced my profession for 21 years. I am a Fellow of the Geological Association of Canada (F0078).
- I am a member of good standing with the following professional societies; The American Society of Photogrammetry and Remote Sensing and the International Association of Engineering Geologists.
- 5) This report is based on my analysis and interpretation of remote sensing data covering the Churn Property, Cariboo Mining Division, British Columbia.

K.V. Campbell, Ph.D. Geologist

Dated at Vancouver, B.C., this 9th day of April, 1987

