

LOG: 1012	RD.
ADDITION:	
FILE NO:	

Diamond Drilling Report

Canamera Property

FILMED

Victoria Mining Division

NIS 92B/13W

48° <sup>52</sup>/<sub>59</sub>' N Latitude

123° <sup>50</sup>/<sub>48</sub>' W Longitude

Owner: Minnova Inc.

Operator: Minnova Inc.

by: G. S. Wells

August, 1988

Claims

Coppermint Group

Coppermint I

Coppermint II

Coppermint III

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

17,836

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Canamera Property1. Introduction

Minnova Inc. optioned the Canamera property from Canamera Exploration Inc. in June, 1986. The claim group which is located between Minnova's Mt. Sicker property and Abermin's Lara property was acquired to evaluate the strike extent of Abermin's polymetallic Coronation zone. This report summarizes the results from diamond drill hole CM-9 which was drilled on the Victoria claim during the period June 2 to June 4, 1988.

1.1 Location and Access

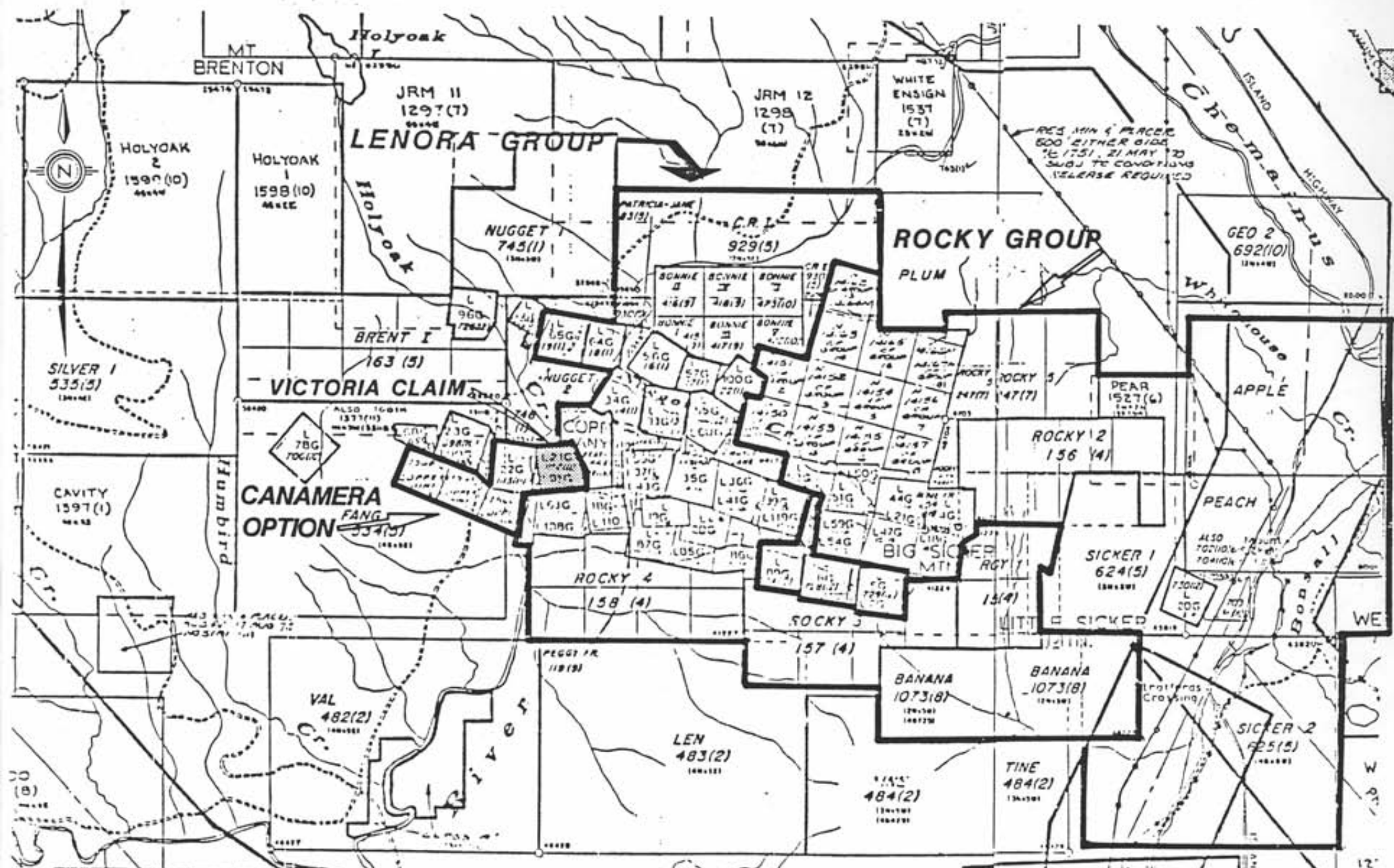
The Canamera property is located on Vancouver Island approximately 12 km northwest of Duncan (Figure 1). The property is readily accessible from Highways 1 and 18 using a network of logging roads.

1.2 Mineral Rights

Drill hole CM-9 is located on the Victoria claim which is part of the Coppermint group (551) (Figure 2,3). The claim status of the property is as follows;

Coppermint Group (551)

<u>Name</u>	<u>No. of Units</u>	<u>Record No.</u>	<u>Month of Record</u>
Copper Canon	1	1113	Nov.
Victoria	1	1114	Nov.
Elmore Fraction	1	1115	Nov.
Copper Mint No. 1	1	17556	Aug.
Copper Mint No. 2	1	17567	Aug.
Copper Mint No. 3	1	17568	Aug.



**MINNOVA**

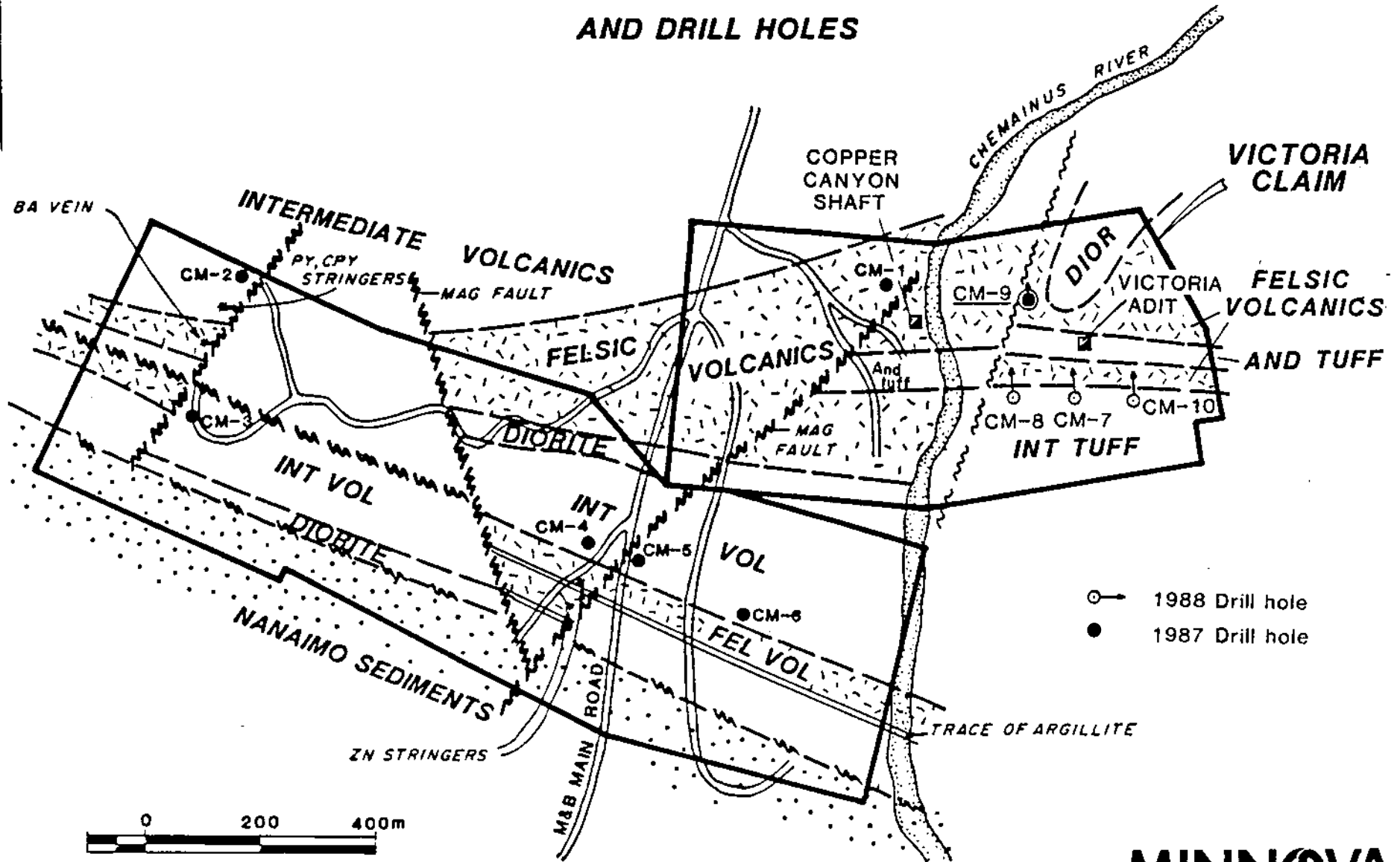
1:50,000

**MT. SICKER PROPERTY  
CANAMERA OPTION  
LOCATION MAP**

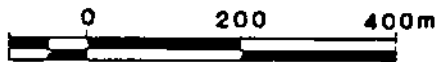
FIGURE 1



# CANAMERA OPTION GENERALIZED GEOLOGY AND DRILL HOLES



- — 1988 Drill hole
- — 1987 Drill hole



Revised JULY 1988 (GSW)

# MINNOVA

### 1.3 History

Initial work was done on the claims following the discovery of the Lenora-Tyee ore-bodies in 1897. Pits and adits were driven on 2 showings - the Copper Canyon showing located on the western side of the Chemainus River and the Victoria showing located in the center of the Victoria claim. Both showings consist of quartz-pyrite-chalcopyrite stringers. The latter occurrence is reported to have yielded 120 tons of ore grading 4% Cu and 79 tons grading 0.05 oz/T Au. Little work was done on the property between the turn of the century and 1970 when it was acquired by a group of people who subsequently formed Viva Ventures. Between 1971 and 1973 they carried out soil geochemical, geological and geophysical surveys (JEM, VLF, magnetics, IP, seismic, gravity, SP). Umex acquired the property in 1979 and they conducted soil sampling, VLF and magnetic surveys. Canamera optioned the claims in 1985 and they did linecutting, a limited amount of IP, soil sampling, a "Genie" EM survey, 3 trenches and 5 diamond drill holes totalling 670 m. No significant zones of mineralization were located.

In June, 1987 Canamera and Minnova Inc. entered into a joint venture agreement to explore the property with Minnova as the operator. They carried out VLF, magnetic, geological, soil and litho-geochemical surveys, a limited amount of trenching and 6 diamond drill holes totalling 892 meters. An assessment report describing the results of a diamond drill hole which tested the strike extent of the Copper Canyon shaft mineralization was submitted in October 1987 (Wells, 1987).

## 1.4 Work Done

This report summarizes the results of diamond drill hole CM-9 which was part of a 4 hole program testing geological and geophysical targets on the property. Hole CM-9 which is 150.9 meters deep was drilled by Burwash Contract Drilling on the Victoria claim (record #1114).

Lithochemical samples were taken routinely throughout the hole, sent to Min-En Laboratories in Vancouver, and analyzed for major and Trace elements ( $\text{SiO}_2$ ,  $\text{TiO}_2$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{CaO}$ ,  $\text{Na}_2\text{O}$ ,  $\text{K}_2\text{O}$ ,  $\text{MgO}$ ,  $\text{Fe}_2\text{O}_3$ ,  $\text{Pb}$ ,  $\text{Ba}$ ,  $\text{Cu}$ ,  $\text{Zn}$ ,  $\text{Au}$ ,  $\text{Ag}$ ,  $\text{Zr}$ ,  $\text{Sr}$ ,  $\text{As}$ ,  $\text{Sb}$ ) using an ICP technique. Mineralized sections were analyzed for  $\text{Cu}$ ,  $\text{Zn}$ ,  $\text{Ag}$  and  $\text{Au}$  using an atomic absorption method. The drill core is stored at 6722 Lakes Road, Duncan, B.C.

## 2.0 Canamera Area Geology

The Canamera property is underlain by volcanic rocks of the Paleozoic Sicker Group and sediments of the Cretaceous Nanaimo Group (Figure 2). Muller (1980) has subdivided the Sicker Group as follows:

1. Buttle Lake Formation
2. Sediment - Sill Unit
3. Myra Formation
4. Nitinat Formation

Although outcrop density on the property is less than 5%, geological mapping has indicated that felsic and intermediate volcanic tuffs and ashes of the Myra formation are the most common rock type on the claim group. These units are cut by two northeasterly trending faults and one northwesterly trending fault which have been defined on the basis of magnetic data. The amount of movement along these faults is unknown due to the lack of a distinctive marker horizon.

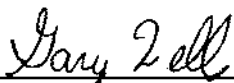
Two old mineralized showings occur on the property - the Copper Canyon showing and the Victoria showing. The mineralization at each is characterized by quartz-pyrite-chalcopyrite stringers of subeconomic grades. The property is strategically placed along strike and east of Abermin's polymetallic Coronation zone and to the west of Minnova's Mt. Sicker property which includes the old Lenora-Tyee Mines which yielded 300,000 tons of ore grading 3.31% Cu, 7.51% Zn, 2.75 oz/T Ag and 0.13 oz/T Au.

### 3. Diamond Drill Results

Hole CM-9 tested a weak VLF anomaly associated with barium and zinc-enriched felsic tuffs (Figures 2,3). The VLF anomaly is due to finely disseminated pyrite (1-2%) and thin pyritic stringer zones (up to 10% pyrite over 1.5 m). No zones of economic mineralization were intersected. A detailed log for hole CM-9 is included in Appendix I.

### 4. Conclusions

The VLF anomaly which CM-9 was testing is explained by finely disseminated pyrite and thin pyritic stringer zones which are hosted in a felsic tuff sequence. No zones of economic mineralization are present in hole CM-9. Further work in the northern part of the Victoria claim is not warranted at this time.

  
\_\_\_\_\_  
G. S. Wells



5. Statement of Costs

Victoria Claim - hole CM-9	filed for	\$11,081.27
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CM-9

Footage costs (see attached invoice)	9,681.27
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P. Baxter 2 days at \$300/day	600.00
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G. S. Wells 2 days at \$400/day	800.00
---------------------------------	--------

Total	<u>\$11,081.27</u>
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6. References

Muller, J. E.

1980: The Palaeozoic Sicker Group of Vancouver Island, B.C.  
GSC Paper 79-30

Wells, G. S.

1987: Diamond Drilling Report, Canamera Property  
Assessment Report -16871

Whittles, A. B. L. and Loring, F. C.

1971: Geophysical - Geochemical Report on the Copper Canion  
Group  
Assessment report - 3099

Whittles, A. B. L.

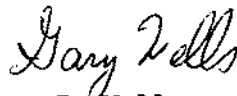
1973: Geophysical, Geological, Geochemical Report on the  
Copper Canion Group Assessment report - 4626

7. Statement of Qualifications

I, Gary S. Wells, hereby certify that:

1. I hold an Honours Bachelor of Science degree in combined geology and chemistry (1975) from Carleton University, Ottawa, Ontario and a Ph.D degree in geology (1980) from Queen's University, Kingston, Ontario.
2. I am an associate member of the Geological Association of Canada and a member of the Canadian Institute of Mining and Metallurgy.
3. I have practised my profession in exploration continuously since graduation in 1980.
4. I have based conclusions contained in this report on knowledge of the area, my previous experience and results of field work conducted on the property.

Date: August 19, 1988



Gary S. Wells

Vancouver, British Columbia

Statement of Qualifications of Field Personnel

Paul Baxter:            B.Sc. (Geology) 1985, University of Alberta  
                             2 years full-time experience in mineral exploration  
                             3 years part-time experience in mineral exploration

Address: c/o Minnova Inc. 4th Floor - 311 Water Street  
Vancouver, B.C. Phone: 681-3771

# Burwash Contract Drilling

1236 WILDER ROAD - R.R. 2 - COBBLE HILL, B.C. V0R 1L0 - VANCOUVER ISLAND - TEL. 743-3092

June 20, 1988

70580-600-326-100%  
G.Z.

Minnova Inc.  
4th Floor, 311 Water Street  
Vancouver, B.C. V6B 1B8

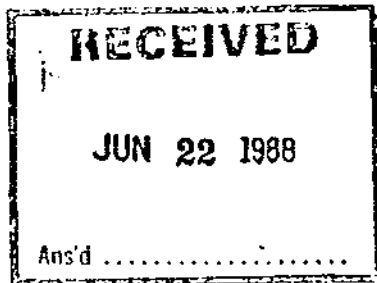
Dear Sirs:

Please find enclosed invoices for diamond drilling from June 1 - June 8, 1988.

Hole CM-8 (to completion)	\$5,380.78
Hole CM-9	9,681.27
Hole CM-10	12,411.91
	<u>\$27,473.96</u>

Yours truly,  
BURWASH CONTRACT DRILLING  
Per:

*D. Burwash*



## CORPORATION FALCONBRIDGE COPPER

VENDOR NAME		INVOICE NUMBER OR DATE	CURRENCY	CH
BURWASH CONTRACT		20 JUN 88	1 2 US	X
ACCOUNT CODE			AMOUNT	
GENERAL LEDGER	DETAIL	EXPLORATION PROJECTS		
70580	600	326	27473.96	
APPROVED	COD'D	EXT & ADDITION	A/PAY	
<i>G.Z.</i>	<i>[Signature]</i>	<i>[Signature]</i>		

Vendor #317

HOLE CM-9

Moving

5 tractor hours @ \$60.00/hr.	\$300.00
5 man hours cat operating @ \$24.00/hr.	120.00

Overburden

20' @ \$16.00/ft.	320.00
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Core

475' @ \$16.00/ft.	7,600.00
--------------------	----------

Consumables

2 x 10' NW Casing @ \$150.00 ea.	300.00
1 NW Casing shoe @ \$152.00	152.00
1 NW Casing cap @ \$40.00	40.00
4 pails polymer mud @ \$110.00 ea.	440.00
16 bags gel @ \$10.00 ea.	160.00

6% P.S.T.	65.52
Cost + 10%	115.75

Hole Stabilizing

2 man hours @ \$24.00/hr.	48.00
1 drill hour @ \$20.00/hr.	20.00

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\$9,681.27

Appendix I

Drill Logs

Hole: CM-9

HOLE NUMBER: CM-9

MINROVA INC.  
DRILL HOLE RECORD

IMPERIAL UNITS: METRIC UNITS: X

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PROJECT NAME: CANAKERA	PLOTTING COORDS	GRID: NTS GRID	ALTERNATE COORDS	GRID:	COLLAR DIP: -45° 0' 0"
PROJECT NUMBER: 326	NORTH: 440.005	EAST: 1496.00W	NORTH: 0+ 0	EAST: 0+ 0	LENGTH OF THE HOLE: 150.90m
CLAIM NUMBER: VICTORIA	ELEV: 209.00		ELEV: 0.00		START DEPTH: 0.00m
LOCATION: NTS 92B/13					FINAL DEPTH: 150.90m

COLLAR GRID AZIMUTH: 20° 0' 0"

COLLAR ASTRONOMIC AZIMUTH: 20° 0' 0"

DATE STARTED: June 2, 1988	COLLAR SURVEY: NO	PULSE EM SURVEY: NO	CONTRACTOR: BURNASH ENTERPRISES
DATE COMPLETED: June 4, 1988	MULTISHOT SURVEY: NO	PLUGGED: NO	CASING: 6.1M
DATE LOGGED: 0, 0	RWD LOG: NO	HOLE SIZE: NO	CORE STORAGE: 6722 LAKES ROAD, DUNCAN

---

PURPOSE: TO TEST A VLF ANOMALY ASSOCIATED WITH BA AND ZN ENRICHED FELSIC TUFFS.

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DIRECTIONAL DATA:

Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments	Depth (m)	Astronomic Azimuth	Dip degrees	Type of Test	FLAG	Comments
42.70	-	-44° 0'	ACID	OK		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	
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-	-	-	-	-		-	-	-	-	-	
-	-	-	-	-		-	-	-	-	-	



HOLE NUMBER: CM-9

MINNOVA INC.  
DRILL HOLE RECORD

DATE: 1-January-1980

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE TO CA:	ALTERATION	MINERALIZATION	REMARKS
0.00 TO 6.10	OVERBURDEN <OB>					Casing
6.10 TO 102.90	FELSIC ASH, TUFF <FA, FT>	Colour - greenish grey to light grey. Grain Size - fine grained. Well-foliated in altered patches. 3-5I mm-sized quartz crystals & 1-2Z white specks= fsp? - unit fairly homogeneous  17.0m (foliation)  48.2 - 102.9 - have patches with 5-10Z epidotized fsp crystals (subrounded) (1-2m across)  73.0m (foliation)  85.0m (foliation) 101.0m (foliation)	45   45  45 45	<W chl, W-M ser>  - weak to moderate sericite with weakly chloritic patches - commonly chlorite associated with pyritic stringers  74.4 - 76.1 2-3I hematized specks	{6.1 - 35.1} <1-2Z py> - pyrite occurs as stringers and disseminations - larger stringers noted below  {33.95 - 34.15} <30Z py> - coarse grained pyrite in stringer  {35.1 - 102.9} <tr py> - tr pyrite in stringers & as disseminations  {76.4 - 77.9} <10Z py> - 10Z coarse grained pyrite in stringer type mineralized zone	
102.90 TO 113.90	MAFIC ASH, TUFF <MA, MT>	Colour - dark green. Grain Size - fine grained. Generally massive to weakly foliated.  102.9m (contact)  105.8m 4-5cm wide cherty layer 105.8m (bedding)  111.0 - 111.1 Fault gouge	60  65	<S cal>  - strongly chloritic	<1-2Z py, tr cp>  - 1-2Z finely disseminated pyrite, trace cp        {111.45 - 111.6} <1-2Z py, tr cp>	

HOLE NUMBER: CM-9

DRILL HOLE RECORD

DATE: 1-January-1980

PAGE: 1

HOLE NUMBER: CM-9

MIMNOVA INC.  
DRILL HOLE RECORD

DATE: 1-January-1980

FROM TO	ROCK TYPE	TEXTURE AND STRUCTURE	ANGLE: TO CA:	ALTERATION	MINERALIZATION	REMARKS
					- sulphide-rich, disseminated zone spans contact between mafic & felsic units	
113.90 TO 150.90	FELSIC ASH, TUFF <FA,FT>	Colour - grey. Grain Size - fine grained. Similar to unit in upper part of hole. 3-5% aa-sized Qtz crystals.		<M-M ser, M chl>  - weakly to moderately sericitic	<tr py>  - tr disseminated pyrite	
		{117.3 - 117.8} <M Ash, Dyke?> - dark green, fine grained, strongly chloritic mafic ash/dyke?		{122.0 - 123.4} <qtz-chl veins>  Chloritic stringers at: 147.45 - 147.7 149.5 - 150.0	{147.45 - 147.7} <SZ py> {149.5 - 150.0} <I-2% py>	

HOLE NUMBER: CM-9

DRILL HOLE RECORD

LOGGED BY: J. S. KELLS

PAGE: 3

HOLE NUMBER: CM-9

ASSAY SHEET

DATE: 1-January-1980

Sample	From (m)	To (m)	Length (m)	ASSAYS					GEOCHEMICAL					COMMENTS	
				CU %	ZN %	PB %	AG g/t	AU g/t	CU ppm	ZN ppm	PB ppm	AG ppm	AU ppb		BA ppm
11038	76.40	77.90	1.50							152	28		0.6	5	
11039	113.45	114.20	0.75							510	147		1.1	10	

HOLE NUMBER: CM-9

ASSAY SHEET

DATE: 1-January-1980

HOLE NUMBER: CH-9

## GEOCHEM. SHEET

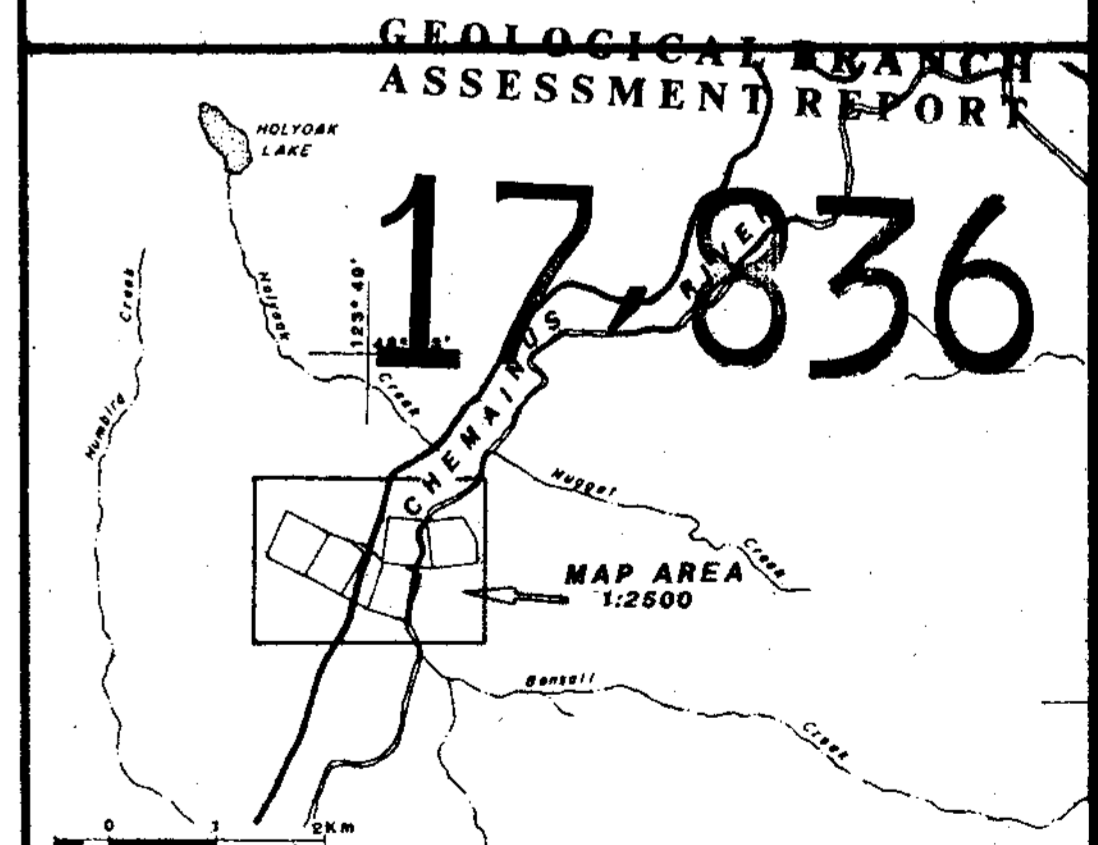
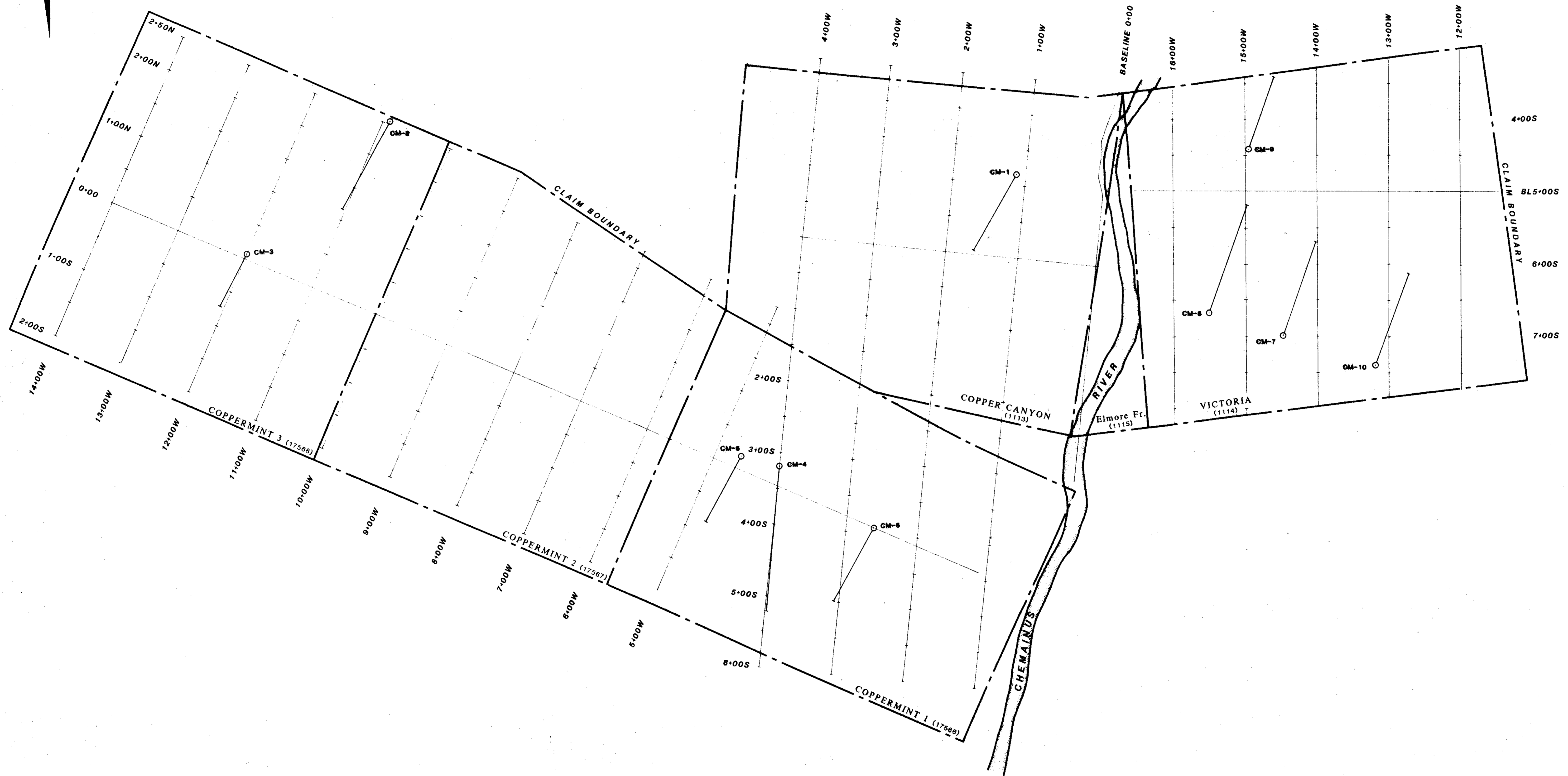
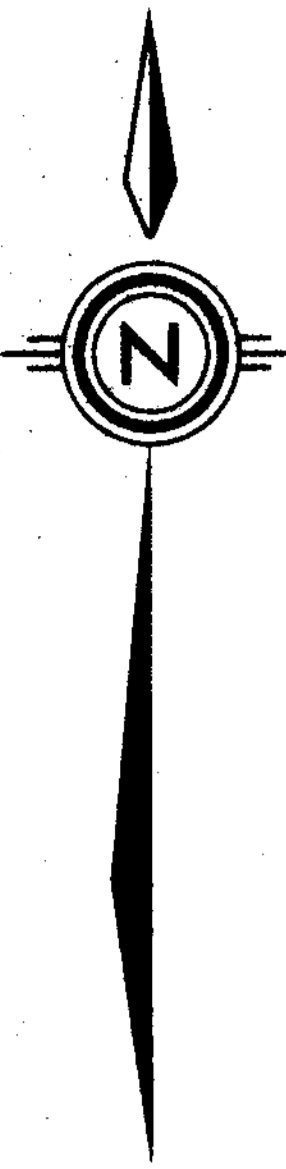
DATE: 1-January-1990

Sample	From (m)	To (m)	Length (m)	SiO2 %	Al2O3 %	CaO %	MgO %	Na2O %	K2O %	Fe2O3 %	MnO2 %	TiO2 %	BA %	Cu PPM	Zn PPM	Pb PPM	Ag PPM	Au PPB	AS PPM	SB PPM	SR %	Zr %	TOTAL %
11009	29.20	32.20	3.00	72.18	12.63	1.42	0.67	0.78	3.17	3.02	0.04	0.25	0.175	13	22	11	1.1	5	4	2	.01	.016	96.43
11010	65.40	68.40	3.00	75.75	12.87	0.90	0.89	0.95	3.09	1.75	0.04	0.14	0.094	51	31	8	1.1	5	9	2	.01	.011	97.17
11011	93.00	96.00	3.00	75.43	12.59	0.37	1.60	0.11	3.23	2.27	0.06	0.15	0.129	5	34	17	0.9	10	12	1	.01	.010	96.86
11012	108.20	111.20	3.00	54.70	17.51	0.93	7.75	1.78	1.30	9.43	0.43	0.65	0.055	5	51	23	0.9	15	12	5	.01	.006	95.87
11013	143.20	146.20	3.00	71.99	13.16	0.39	1.90	1.31	2.71	2.75	0.07	0.15	0.181	56	116	34	0.4	5	11	5	.01	.014	95.07

HOLE NUMBER: CH-9

GEOCHEM. SHEET

PAGE: 4



**MINNOVA Inc.**  
**CANAMERA OPTION**

**1987 + 1988**  
**DRILL HOLE LOCATIONS**

0 50 100 150 200 250m  
SCALE: 1:2500

*Jay Wells*

N.T.S. 92B/13	MAP:
DRAWN BY: GW/dm	
DATE: NOV. 1987	Revised AUG. 1988