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DIAMOND DRILLING REPORT  
ON THE  
WHEAL TAMAR C.G.  
LOT NO 2126

KAMLOOPS MINING DIVISION  
NTS 92I/9W

Latitude: 50 35' N      Longitude: 120 25' W

AFTON OPERATING CORPORATION  
P.O. Box 937  
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by  
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Senior Geologist

FILMED

Kamloops, B.C.

October 6, 1988

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

17,964

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## 1. INTRODUCTION

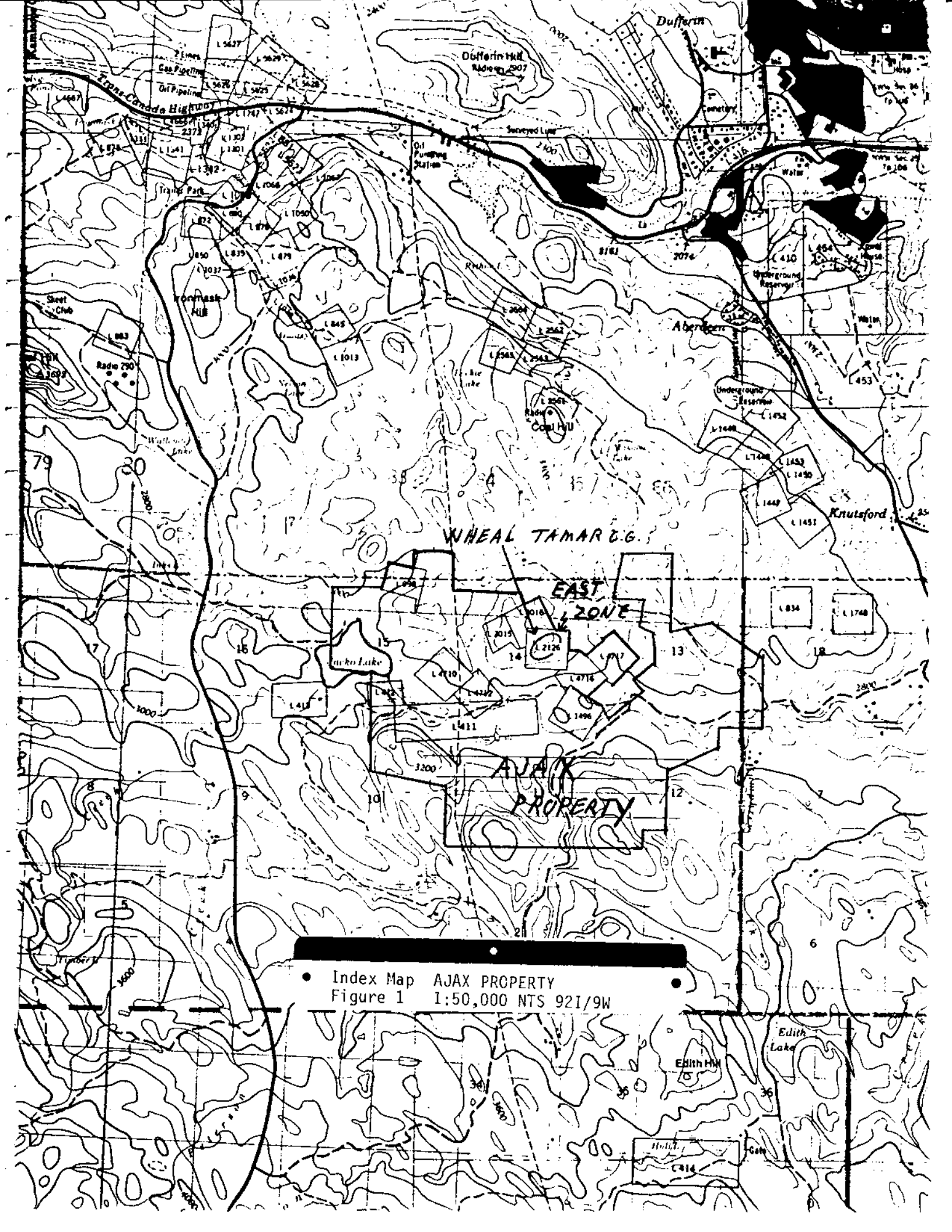
The Ajax property is located some ten kilometers southeast of the Afton minesite, and south of the City of Kamloops (Fig.1A). It is located in the Kamloops Mining Division at latitude 50 35'N and longitude 120 25'W on NTS Map 92I/9W. The property consists of eight crown grants, fifty-two located claims with seventy-four units, and the base metal rights on thirty-one parcels. Total surface area of the mineral claims amounts to some 1,600 hectares (Fig.1).

Much of the area is occupied by rolling grassland with timber only on the higher slopes. Relief is generally moderate with elevations between 800 and 1,100 metres above sea level. Extensive glacial action has created a topography of low rolling hills with local deep accumulations of glacial till on the southeast flanks of larger rock outcroppings.

The low annual precipitation level is reflected in the flora of the area. Bunchgrass, sagebrush, and cacti are abundant on the lower grassy slopes being joined by stands of ponderosa pine at higher elevations. Water is abundant in the spring in numerous small saline ponds and sloughs. However, year-round fresh water is restricted to the Jacko Lake and Edith Lake drainage systems and these sources are heavily committed to irrigation use.

Ranching is currently the predominant land use. Most of the surface rights are privately owned with grazing leases granted on much of the outstanding crown land. The area is close to all forms of infrastructure and is served by a network of roads including the all-weather gravel Goose Lake Road, which traverses the property.

During the period February 27-28, 1988, a diamond drillhole with a total length of 151.2m was completed to test for mineralization east of previously established reserves.



• Index Map AJAX PROPERTY  
Figure 1 1:50,000 NTS 921/9W

## 2. PROPERTY DESCRIPTION

The property designated as the Wheal Tamar Claim Group consists of the following:

Claim Name	Record No.	Expiry Date
Kim (20 units)	4331	1 Feb, 1999
Wade 3	41625	28 Feb, 1999
Pam 8-9	41326-27	22 Jan, 1999
Pam 10a Fr.	6021	18 Dec, 1999*
Pam 11-17	41329-35	22 Jan, 1999
Pam 22-33	41340-41	22 Jan, 1999
Pam 28-29	41436-47	22 Jan, 1999
Pam 32	75885	3 Feb, 1999
Ajax 11	2662	19 Jun, 1999
Ajax 300 Fr.	6046	15 Jan, 1999
Ajax 500 Fr.	6050	15 Jan, 1999
Ajax 600 Fr.	6051	15 Jan, 1999
Ajax 700 Fr.	6052	15 Jan, 1999
Ajax 1100 Fr.	6250	12 Jun, 1999
Jacko 8 Fr.	13936	2 Sep, 1999
Jacko 10 Fr.	13938	2 Sep, 1999
Jacko 18 Fr.	16917	17 Nov, 2000
Dave 1c Fr.	2890	20 Aug, 1999
Dave 44a	107449	22 Mar, 1999
Don 5 Fr.	110694	18 Apr, 1999
Don 7,8,9 Fr.	123078-80	23 Oct, 1999*
Map 3 Fr.	123137	16 Nov, 1999*
Map 4 Fr.	123229	29 Nov, 1999*
Wheal Tamar C.G.	Lot 2126	
Foxlorn C.G.	Lot 3016	
Copper Star C.G.	Lot 3015	
Monte Carlo C.G.	Lot 4716	
Sultan C.G.	Lot 4717	
Grass Roots C.G.	Lot 1496	

\* Note: Upon approval of assessment work described in this report and covered in a Statement of Exploration and Development submitted in October 1988.

### 3. HISTORY AND PREVIOUS WORK

Exploration activity in the Iron Mask area is first noted in government reports in 1896, when over two hundred claims were recorded. By 1900, underground work had been done on several properties in the area including the Wheal Tamar claim. Trenching was carried out on the Ajax claim between 1904 and 1910 and additional underground development and sampling was done in the nineteen-twenties.

In 1929, the Consolidated Mining and Smelting Company trenched and sampled the area and drilled ten holes from surface. Berens River Mines Limited (Newmont) optioned the property in 1952 and drilled on a narrow high grade shear zone on the Monte Carlo claim.

In 1954, Cominco again optioned the four original crown grants together with adjacent crown grants and staked additional ground. Exploration work proceeded on an intermittent basis until 1980.

In 1980, under a joint venture agreement with E & B Explorations Limited, a major exploration program was initiated and continued through 1981. With these expenditures, E & B Explorations Limited acquired a thirty percent interest in the property. Results of the program indicated a large low grade deposit with open pit potential.

In 1986, an agreement was reached between Cominco, E & B Explorations, and Afton Operating Corporation under which Afton acquired controlling interest in the Ajax property in respect of certain expenditures and ultimately placing the property into production. During 1987, Afton carried out an extensive drilling and evaluation program.

The 1987 program is described in assessment report numbers 17198 and 17199. The net result of that program was the delineation of open pit reserves in two separate zones on the Ajax property. Open pit reserves of 20,200,000 tons at .47%Cu and .010 oz/t Au were outlined in the West Zone on the Ajax-Neptune Claim Group. On the Wheal Tamar Claim Group, 7,000,000 tons at .44% Cu and .010 oz/t Au were proven up in the East Zone.



#### 4. CURRENT PROGRAM

The purpose of the 1988 drilling program on the Wheal Tamar Claim Group was to determine the continuity of mineralization outlined in broadly spaced reconnaissance percussion drill holes completed in earlier programs. The area tested is immediately east of open pit reserves blocked out in the East Zone during 1987.

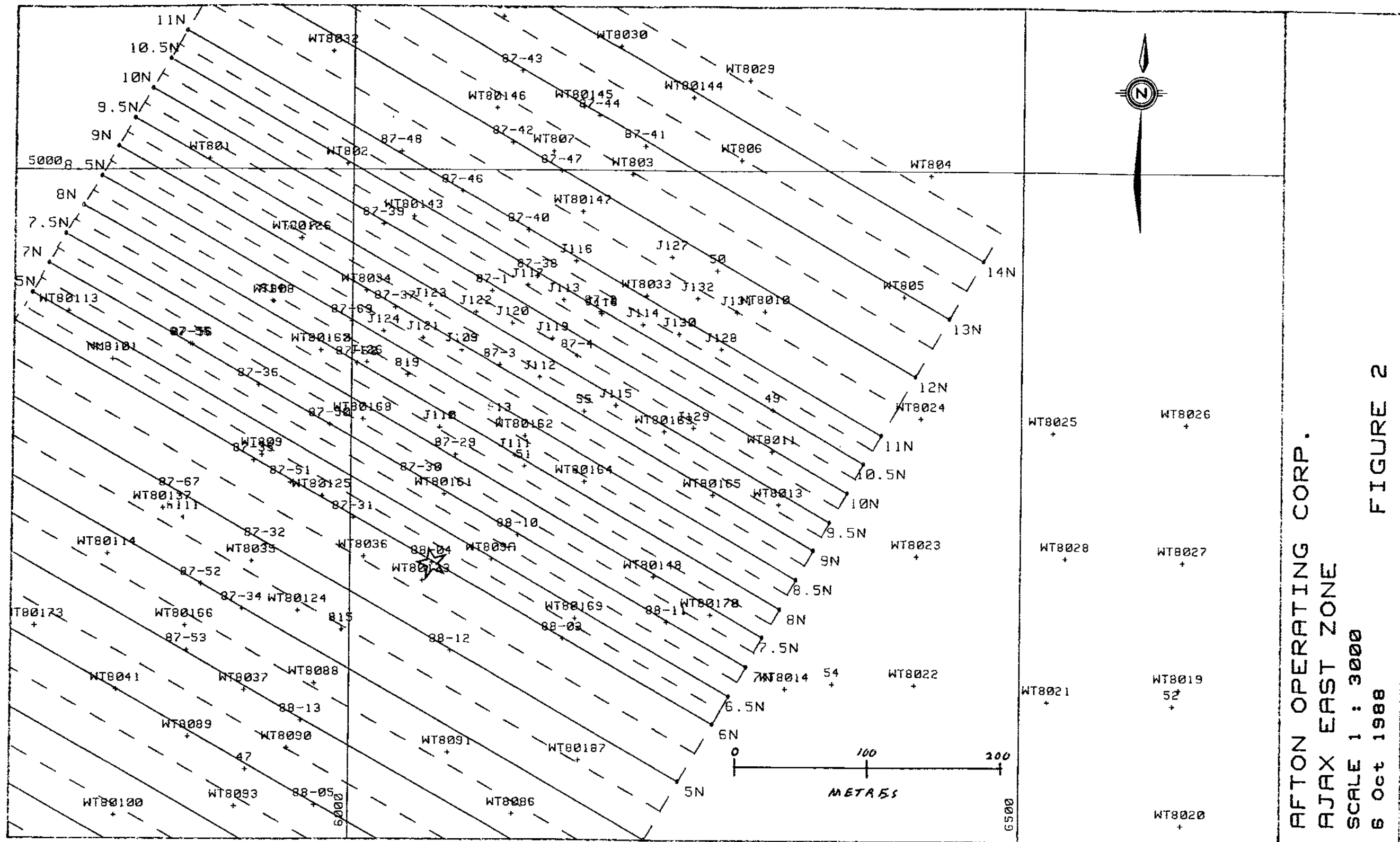
To that end, D.D.H. 88-4 was drilled during the period February 27 to 28, 1988. The collar of the hole was located on Section 6N in the East Zone (Figure 2) and drilled to the southeast at a 50 degree dip. The purpose of the hole was to determine the continuity of mineralization intersected by percussion holes WT80-9A and WT80-169. Total length of the hole was 151.2m (496 feet). Core size was NQ.

Core from the program was transported to the Afton minesite for processing. All core was geologically logged. Recovery and RQD measurements were taken and the core photographed. Rock strength testing was performed on selected pieces of core from all rock types. The core was then split and one-half retained for core storage. The other half was bagged, generally in three metre samples, and sent to the property analytical lab for copper, gold, and silver assays. Some selective analyses for other elements were done as well. Afton personnel supervised the program, processed the core, and provided survey control in the field. All core from the program is stored at the Afton minesite. Connors Drilling Limited was the contractor for the drilling program.

In the lab, core samples were crushed in two stages utilizing a jaw crusher and a cone crusher. Sample volume was reduced to 250 grams using a Jones riffle. This smaller sample was then pulverized. Reject material from the splitter was bagged, labelled and stored.

Assays for copper were performed by dissolution followed by atomic absorption spectrophotometry analysis. Gold assays were performed by fire assaying with atomic absorption analysis of the resultant bead in a methyl isobutyl ketone medium. Silver assays were carried out by acid dissolution followed by atomic absorption spectrophotometry analysis.

Geological, assay and survey data from the program were stored on computer files using an in-house HP9000 Series computer and Geomin software. This data base was then available for computer generated plans and sections, statistical analyses, compositing, ore reserve modelling and pit optimizations.



## 5. RESULTS OF THE PROGRAM

The geology of the Ajax property and the East Zone are extensively described in Assessment Report No. 17198 submitted by Afton Operating Corporation.

Ajax property mineralization is hosted by intrusive units of the Triassic Iron Mask Batholith. The Sugarloaf Diorite unit is a younger intrusive phase of the batholith and is directly associated with emplacement of copper mineralization on the Ajax property.

In the East Zone, mineralization occurs along the northeast trending and west dipping contact zone between the Hybrid Diorite unit to the northwest and the main lobe of the Sugarloaf Diorite unit to the south and east (Figure 3).

Other known but less persistent mineralized zones occur to the southeast in an "en echelon" fashion and fall outside the initial East Zone pit. The 1988 drilling program was designed to test for the continuity of these zones.

A copy of the drill log and assay results are included in the appendix. The entire length of the hole was drilled in varieties of the Sugarloaf Unit hornblende diorite or albitized equivalent. In addition to the prominent albitization, normal propylitic alteration consisting of epidote-calcite-chlorite mineralization was evident throughout. Two significant mineralized intersections were cut (Figure 4). Sulphide mineralization was chalcopyrite with some associated pyrite. Trace amounts of molybdenite were also noted.

It was concluded that mineralized zones existed in this area but variable widths and lack of continuity along strike make it difficult to block out a mineable tonnage.

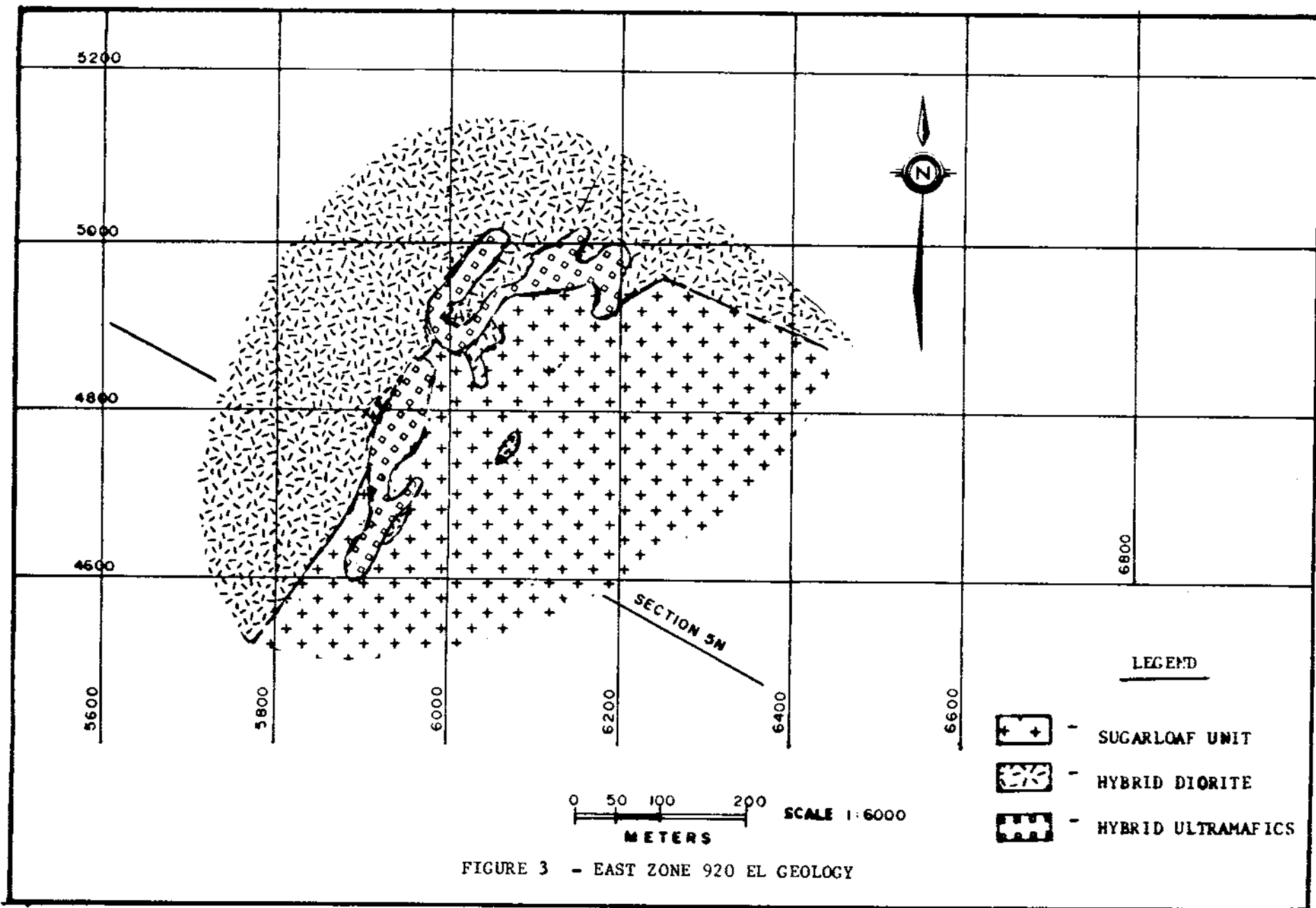


FIGURE 3 - EAST ZONE 920 EL GEOLOGY



## REFERENCES

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## STATEMENT OF COSTS

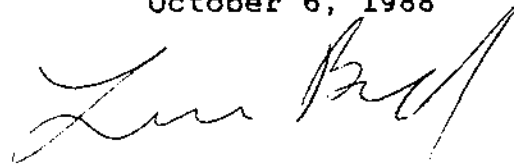
Diamond Drilling	
Connors Drilling Limited	\$ 7,852.33
Assay Costs	
49 samples assayed for Cu and Au	
@ \$13.60 ea.	666.40
Truck Rental	
3 days @ \$25 per day	75.00
Core Boxes	
28 boxes @ \$5.35 ea	149.80
Personnel	
L. Tsang, Exploration Geologist,	
logging core, supervision	
3 days @ \$185 per day	555.00
S. Porter, core splitter	
2 days @ \$115 per day	230.00
L. Bond, Senior Geologist	
program planning, report writing	
2 days @ \$225 per day	450.00
 TOTAL COST	 <hr/> \$ 9,978.53

## STATEMENT OF QUALIFICATIONS

I, Lorne Allan Bond, of the City of Kamloops, British Columbia do hereby certify that:

1. I am a qualified, practising Geologist.
2. I am a graduate of Loyola College (University of Montreal), with a B.Sc. (1967) in Geotechnical Sciences.
3. I have practised my profession since 1967 while employed with Sherritt-Gordon Mines Ltd., Cominco Ltd., and Afton Operating Corporation.
4. This report describes a diamond drilling program performed under my supervision from February 27 through February 28, 1988.

Lorne A. Bond  
Senior Geologist  
Afton Operating Corporation  
October 6, 1988



## STATEMENT OF QUALIFICATIONS

I, Louis Hee-Choi Tsang, of the City of Kamloops, British Columbia do hereby certify that:

1. I am a qualified, practising geologist.
2. I am a graduate of the University of British Columbia with a B.Sc. (1972) in Geology and Geophysics.
3. I have practised my profession since 1972 while employed with Granisle Copper Ltd., Highmont Operating Corporation and Afton Operating Corporation.
4. I have logged the drill core from the diamond drill holes in this program during the period February 27 through March 1, 1988.

Louis H.C. Tsang  
Exploration Geologist  
Afton Operating Corporation  
October 6, 1988

APPENDIX

## AJAX PROJECT

### KEY TO GEOLOGICAL LOGS

Dist. - distance in feet  
Rec. - recovery in percent  
Rqd. - rock quality designation in percent

Cu grade - in percent  
Au grade - oz. per short ton  
Ag grade - oz. per short ton

#### ROCK

ALBU - Albitized Unit	OVEN - Overburden
CHCR - Cherry Creek Unit	SUGL - Sugarloaf Unit
HYBR - Hybrid Unit	ULMF - Ultramafic Unit
NICL (NVOL)	VOLC - Volcanics
- Nicola Group Volcanics	

#### LITHOLOGY

ALBT - Albitite	MDIO - Microdiorite
BREC - Breccia	MONZ - Monzonite
DIOR - Diorite	SYEN - Syenite
DYKE - Dyke	TILL - Till
HORN - Hornfels	VOLC - Volcanics

#### A1 - A4 ALTERATION MINERALS

AB - albite	KA - kaolinite
CH - chlorite	LM - limonite
CL - calcite	MG - magnetite
CY - clay	PF - pink feldspar
EP - epidote	QZ - quartz
GY - gypsum	
HM - hematite	

#### M1 - M5 ORE MINERALS

AZ - azurite	CU - native copper
BN - bornite	MC - malachite
CC - chalcocite	MO - molybdenite
CP - chalcopyrite	PY - pyrite

BASIC DRILL DATA FOR HOLE : 88-04

HOLE # NORTH EAST ELWV LGTH OB1 OB2 INC LEASE CG  
 0001 88-04 4707.137 6060.123 949.760151.175.0 1

DIST AZIM DIP DIST AZIM DIP DIST AZIM DIP DIST AZIM DIP DIST AZIM DIP  
 0002 0 117.650.5 151 117.650

DIST	Rcv	Rad	Rock	Lith	A1	A2	A3	A4	M1	M2	M3	M4	M5	Ecw	P1t	Cu	Au	Ag	Hg	As	S
0003	5			OVBN TILL																	
0004	8	34	2	DYKE	MCDI	CL	PF			PY						.003	.0002				
0005	11	85	38	DYKE	MCDI	CL	PF			PY						.007	.0005				
0006	14	95	55	ALBU	ALBT	AB	CL	PF	EP	CP	PY					.187	.0037				
0007	17	78	55	ALBU	ALBT	AB	EP	CL	PF	CP	PY					.080	.0016				
0008	20	77	52	ALBU	ALBT	AB	EP	CL	PF	CP	PY					.050	.0014				
0009	23	95	51	ALBU	ALBT	AB	EP	CL								.046	.0015				
0010	26	92	78	ALBU	ALBT	AB	EP	CL		PY	CP					.040	.0021				
0011	29	100	82	SUGL	POBP	AB	EP	CL		CP						.012	.0005				
0012	32	94	88	ALBU	ALBT	AB	EP	CL		CP						.108	.0021				
0013	35	100	83	SUGL	ALBT	AB	EP	CL		CP						.059	.0031				
0014	38	96	77	SUGL	DIOR	AB	EP	CL		PY						.025	.0017				
0015	41	96	50	SUGL	DIOR	AB	EP	CL		CP	PY					.027	.0020				
0016	44	95	47	SUGL	DIOR	EP	CL	AB		CP	PY					.044	.0020				
0017	47	97	87	SUGL	ALBT	AB	EP	CL	PF	CP	PY					.239	.0048				
0018	50	78	44	ALBU	ALBT	EP	CL	AB	PF	CP	PY					.164	.0043				
0019	53	92	52	SUGL	ALBT	CL	EP	CH	AB	CP	PY					.110	.0028				
0020	56	100	93	SUGL	ALBT	AB	EP	CL	MG	CP	PY					.321	.0061				
0021	59	94	66	SUGL	DIOR	EP	CH	AB	MG	CP	PY					.113	.0022				
0022	62	100	97	SUGL	DIOR	AB	EP	CL	MG	CP	PY					.708	.0160				
0023	65	92	53	SUGL	DIOR	EP	CL	AB		CP	PY					.403	.0078				
0024	68	98	55	SUGL	DIOR	AB	EP	CL		CP						.403	.0006				
0025	71	100	62	SUGL	DIOR	AB	EP	CL								.003	.0002				
0026	74	97	66	SUGL	MCDI	EP	CL									.032	.0005				
0027	77	100	87	SUGL	MCDI	EP	CL									.018	.0002				
0028	80	100	84	SUGL	MCDI	EP	CH			PY						.020	.0007				
0029	83	100	78	SUGL	MCDI	EP	CL	PF		PY						.039	.0009				
0030	86	100	80	SUGL	MCDI	EP	CL			CP	PY					.079	.0010				
0031	89	98	75	SUGL	MCDI	EP	CL	PF	HM	CP	PY					.321	.0080				
0032	92	97	75	ALBU	ALBT	AB	HM	CL	EP							.122	.0042				
0033	95	94	73	ALBU	ALBT	AB	HM	CL								.041	.0007				
0034	98	92	64	ALBU	ALBT	AB	CL	HM	EP							.037	.0002				
0035	101	88	55	ALBU	BREC	AB	CL	HM		PY						.076	.0010				
0036	104	100	94	ALBU	ALBT	AB	CL	HM		PY						.128	.0017				
0037	107	94	83	SUGL	MCDI	CL	PF	EP		PY						.043	.0008				
0038	110	100	90	SUGL	MCDI	CL	HM	EP	CH	PY	CP					.043	.0002				
0039	113	87	58	SUGL	DIOR	CL	PF	HM	EP	PY						.056	.0008				
0040	116	98	42	SUGL	DIOR	EP	CL	CH		PY						.038	.0006				
0041	119	100	44	SUGL	ALBT	CL	PF	AB		CP	PY	MO				2.51	.0420				
0042	122	97	22	SUGL	ALBT	CL	AB			CP	PY	MO				1.52	.0203				
0043	125	91	57	ALBU	ALBT	CL	AB	PF		CP	PY	MO				.945	.0160				
0044	128	94	63	SUGL	MCDI	CL	PF	EP		CP	PY					.400	.0090				
0045	131	93	85	SUGL	MCDI	CL	EP			CP	PY					.394	.0052				
0046	134	100	88	SUGL	MCDI	CL	EP			CP	PY					.941	.0209				
0047	137	92	33	SUGL	MCDI	CL	EP	AB		CP	PY					1.78	.0457				
0048	140	95	98	SUGL	DIOR	EP	CL			PY						.270	.0032				
0049	143	100	98	SUGL	MCDI	EP	CL			PY	CP					.139	.0022				
0050	146	100	87	SUGL	DIOR	EP	CL	CH		CP	PY					.742	.0084				
0051	149	97	96	SUGL	MCDI	CL	EP	CH		PY						.060	.0010				
0052	151	97	75	SUGL	MCDI	CL	HM	EP		PY						.013	.0009				