

DATE: Jan 7th, 1992
A
TO: AJD, DHW
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COPIES TO: ~~CSW~~, DRH, JK, CMB,
DE
FROM: IDP
SUJET
SUBJECT: Progress Report - Western Canada Exploration - December, 1991

PORPHYRY AND EPITHERMAL EXPLORATION

Rainbow - Tam O'Shanter PN 661 Wild Rose PN 672

All results from the drill program have now been received. Of most interest were results from two holes drilled at the south end of the '91 work area. TM-20A returned 27.07 m of 1.09 g/t Au including 3.3 m of 7.3 g/t Au from a chalcopyrite bearing stockwork zone. TM-19, located 150 m further to the east, intersected a 53.5m zone grading 0.266 g/t Au including 9 m of 0.51 g/t. The mineralization is probably Tertiary related. It is open in all directions and will require follow up in 1992.

GENERAL

With the reduced funding level for 1992 we have trimmed our staff to a minimum. This included laying off one permanent geologist. All hiring of contract staff for 1992 is on hold pending the shuffling of staff for Izok and the firming up of outside funding. At this stage Brenda have not indicated whether or not they will fund in '92. Kokanee have verbally indicated their interest in funding a Gataga (Cirque area) program, probably at around the \$500,000 level.

Option payments for Clisbako have been negotiated down to \$50,000 for at least the next two years. This reflects the

abundance, but reduced priority, of targets remaining.

We have been unofficially informed that Chevron have accepted an offer from Granges for their interest in Seneca. Upon official notification Curater will have 90 days to exercise their right of first refusal. We have indicated our interest in financing this in return for concessions in our deal with Curator.

Negotiations

Horn - ready to sign
Mahon - agreement still tied up with Chevron

DRILLING SUMMARY

<u>Project</u>	<u>meters to date (1991)</u>	<u>forecast</u>
240 Sam	6,305.2	6,305.2
247 Cana	1,810.1	1,810.1
248 Griz	287.4	287.4
616 Chu Chua	4,957.0	4,600.0
623 Stoney	285.6	285.6
661 Rainbow	2,594.6	2,500.0
663 Seneca	5,359.3	5,321.4
665 Fireweed	2,979.2	2,979.2
666 Athelstan	945.7	945.7
667 Clisbako	3,017.7	3,017.7
668 Plateau	2,231.4	2,231.4
671 Sidney W.	511.0	511.0
672 Wild Rose	550.2	500.0
674 Mahon	1,256.0	1,256.0
TOTALS	33,090.4	32,550.7

**SUMMARY OF WESTERN CANADA EXPLORATION EXPENDITURES
TO DEC 31st, 1991
(\$000's)**

100% MINNOVA PROJECTS

<u>ADAMS - BARRIERE AREA</u>	<u>EXPENDITURES</u>		<u>PROJECT BUDGET</u>	<u>PROJECT BALANCE</u>
	<u>Month</u>	<u>YTD</u>		
206 Ad - Bar General	0.0	6.4	6.4	-0.1
215 Bar	0.0	3.2	3.2	-0.0
240 Sam Ex JV Share	5.3	375.2	371.0	-4.2 6305
246 Bev	0.0	2.3	2.3	0.0
247 Cana	0.0	90.4	90.4	0.0
248 Griz	0.0	54.7	54.7	0.0
	<u>5.3</u>	<u>532.1</u>	<u>528.0</u>	<u>-4.2</u>
<u>OTHER</u>				
211 Fording	0.0	0.6	0.6	0.0
242 Lara	0.0	25.2	25.2	0.0
760 Regional Office	3.1	48.6	51.0	2.4
	<u>3.1</u>	<u>74.3</u>	<u>76.8</u>	<u>2.5</u>
001 Admin Recovered	-0.3	-17.4	-17.0	0.4
TOTALS	<u>8.1</u>	<u>589.0</u>	<u>587.8</u>	<u>-1.2</u>

TOTAL EXPENDITURE = 3301.2 BUDGET = 3300.0

MINNOVA - KERR JV

<u>ADAMS - BARRIERE AREA</u>	<u>EXPENDITURES</u>		<u>PROJECT BUDGET</u>	<u>PROJECT BALANCE</u>
	<u>Month</u>	<u>YTD</u>		
608 Ad-Bar General	0.0	3.9	3.8	-0.1 DDM
616 Chu Chua	6.3	239.5	237.1	-2.4 4957m
664 Zoo	0.0	2.0	2.0	0.0
668 Plateau	1.9	369.0	367.1	-1.9 2231
	<u>8.2</u>	<u>614.3</u>	<u>610.0</u>	<u>-4.3</u> 90 of bud
<u>SOUTHWEST BC</u>				
603 Harrison Recce	0.0	7.4	7.4	0.0
614 Fleck Option	0.0	3.6	3.6	0.0
663 Seneca	7.9	511.6	515.0	3.4
	<u>7.9</u>	<u>522.5</u>	<u>526.0</u>	<u>3.5</u>
<u>HAZELTON</u>				
665 Fireweed	0.0	228.2	228.2	0.0
669 Hazelton General	2.8	19.2	16.4	-2.8
	<u>2.8</u>	<u>247.4</u>	<u>244.6</u>	<u>-2.8</u>
<u>PORPHYRY & EPITHERMAL</u>				
632 Hoodoo	0.0	18.4	18.4	-0.0
657 Stewart	0.0	9.9	9.9	0.0
667 Clisbako	3.3	642.7	646.0	3.3
671 Sidney Williams	0.0	274.3	274.3	0.0
673 Wolf	0.0	100.8	102.0	1.2
	<u>3.3</u>	<u>1046.1</u>	<u>1050.6</u>	<u>4.5</u>
<u>OTHER</u>				
602 B.C.General	11.6	170.9	171.0	0.1
623 Stoney	0.0	20.8	22.0	1.2
674 Mahon	0.8	88.9	90.0	1.1
760 Regional Office	6.0	94.2	97.0	2.8
	<u>18.4</u>	<u>374.9</u>	<u>380.0</u>	<u>5.1</u>
601 Admin Recovered	-20.9	-93.1	-98.9	-5.9
TOTALS	<u>19.6</u>	<u>2712.2</u>	<u>2712.3</u>	<u>0.1</u>

**SUMMARY OF EXPENDITURES
WESTERN CANADA EXPLORATION
TO DEC 31st, 1991
(\$000's)**

	MINNOVA		PARTNER		TOTAL DIRECT EXPENDITURES		CREDITS		TOTALS		BUDGET
	month	YTD	month	YTD	month	YTD	month	YTD	month	YTD	
SAM AREA	13.5	1146.5	5.4	306.5	18.9	1453.0	-27.2	-333.7	-8.3	1119.3	841.9
MASSIVE SULPHIDE	7.9	522.5	0.0	0.0	7.9	522.5	0.0	0.0	7.9	522.5	822.1
PORPHYRY & EPITHERMAL	6.1	1293.5	63.4	740.7	69.5	2034.2	-255.1	-824.1	-185.6	1210.2	1295.2
OTHER (incl. Reg. Off.)	21.4	449.2	0.0	0.0	21.4	449.2	0.0	0.0	21.4	449.2	456.8
ADMIN REC'D	-21.2	-110.5	0.0	0.0	-21.2	-110.5	0.0	0.0	-21.2	-110.5	-115.9
TOTALS	27.7	3301.2	68.9	1047.2	96.6	4348.4	-282.3	-1157.7	-185.7	3190.7	3300.0
BUDGET		3300.0		1050.6		4350.6		-1185.1		3300.0	
BALANCE		-1.2		3.3		2.1		-27.3		109.3	

	Minnova \$		Total \$	
Portion of budget expended		100.0%		100.0%
Target:			(budget)	(budget)
Replace reserves	28.4%		28.2%	26.0%
VMS	29.6%		29.8%	21.9%
Porphyry/epithermal	30.1%		30.2%	38.8%
Other	9.2%		9.2%	8.7%

**SUMMARY OF JV EXPENDITURES
WESTERN CANADA
TO DEC 31st, 1991
(\$000's)**

	EXPENDITURES		PROJECT	PROJECT
	Month	YTD	BUDGET	BALANCE
240 SAM EX JV				
Expenditures	7.6	536.0	530.0	-6.0
Rea Gold Share (30%)	2.3	160.8	159.0	-1.8
Administration	0.5	13.2	13.7	
Rea Gold Credit	-5.1	-174.0	-172.7	1.3
247 CANA JV				
Expenditures	0.0	129.1	130.0	0.9
Rea Gold Share (30%)	0.0	38.7	39.0	0.3
Administration	0.0	4.3	4.3	
Rea Gold Credit	-0.5	-43.0	-43.3	-0.3
616 CHU CHUA JV				
Expenditures	9.5	346.5	346.9	0.4
Partners Share	3.2	107.0	107.2	0.1
Administration	2.1	9.7	12.2	
Partners Credit	-21.6	-116.7	-119.4	-2.6
var BRENDA				
Expenditures	63.4	740.7	745.4	4.7
Brenda Share (100%)	63.4	740.7	745.4	4.7
Administration	24.4	83.4	86.7	
Brenda Credit	-255.1	-824.1	-849.7	-25.7
TOTAL JV EXPENDITURES	80.5	1752.3	1752.3	0.0
TOTAL PARTNERS SHARE	68.9	1047.2	1050.6	3.3
ADMINISTRATION	26.9	110.5	116.9	
TOTAL CREDITS	-282.3	-1157.7	-1185.1	-27.3

BRENDA JV PROJECT SUMMARY

622	LC	0.0	2.6	2.6	0.0
624	Recce-Discovery area	0.0	0.0	0.0	0.0
656	Richter	0.0	10.3	10.3	0.0
658	Brenda Recce-Other	12.7	76.8	80.0	3.2
661	Rainbow - Tam O'S.	42.0	423.3	425.0	1.7
666	Athelstan Jackpot	0.0	76.3	76.3	0.0
670	Whipsaw	0.0	1.2	1.2	0.0
672	Wild Rose	8.8	150.2	150.0	-0.2
	TOTALS	63.4	740.7	745.4	4.7

DATE: January 2, 1992
A
TO: A. J. Davidson
COPIES A
COPIES TO: I. D. Pirie
DE
FROM: G. S. Wells
SUJET
SUBJECT: Progress Report - December, 1991

1. Chu Chua PN 616

Assessment and summary reports for the Chu Chua project were completed in December. Further deep drilling is recommended to test the down-dip extent of massive sulphide mineralization intersected during the 1991 program. However due to budget constraints, this program will not be done in 1992. Sufficient assessment work has been filed so that all but one of the claims are in good standing until their anniversary dates in 2000 or 2001.

2. Iskut Compilation

Although the 1992 budget no longer has enough funding to acquire and explore an Iskut River area project, compilation of data from the area is continuing. J. Bradford reviewed assessment data from 29 properties in the camp. His work has confirmed our original observation that much of the work has focused on narrow, gold-rich quartz veins and very few companies have explored their properties' VMS potential using standard techniques such as lithogeochemistry or detailed geological mapping. In 1992 we should continue to enhance our understanding of the metallogeny and geology of the area and arrange site visits to the more promising prospects such as Granges' Cove-Springer property.

3. General

Two properties were reviewed but neither warrants further action at this time:

1. Discovery Creek Project - Aurchem Exploration

-Mt. Hansen area - Yukon - 30 claims + 7 mineral leases (surveyed claims)

-porphyry/epithermal Au target

-geophysical (IP) targets in area of "anomalous" geochem (no values given)

-too grassroots

2. Dunira Island - S. Toduruk

-looking for JV partner to stake claims and do work

-located on islands 30 km NW of Prince Rupert

-target - VMS in Alexander Terrane rocks

-graphitic shales have anomalous zinc values (1000+ ppm)

-no showings - conductors = graphitic shales

-too grassroots - area looks interesting geologically but needs a base metal showing to generate a visit.

DATE: December 24, 1991
A TO: ✓ I. Pirie
COPIES A: A. Davidson
COPIES TO:
DE FROM: C. Burge
SUBJECT: Progress Report - Aldridge Belt - December, 1991

Mt. Mahon

A set of sections with all litho data has been generated for the Mt. Mahon property. A system of tight litho (20 meters in seds) and frequent geochems was employed to try and detect subtle changes in the rock geochem. The key indicator elements in the Sullivan camp are boron (tourmalinite), soda (albitite) and fluorine. The sediments are generally poor (depleted?) in lead and zinc and therefore elevated Pb-Zn is considered to be Pb>60 ppm and Zn>120 ppm. Boron>300 ppm, Na₂O>4.00% and F>1100ppm represent suitable thresholds for the indicator elements. Manganese does not show any useful trends in this data set.

MM-91-1 our eastern most hole on the Cold Creek road did not encounter any elevated trace elements and the indicators were flat. Only slightly enriched soda (5%) occurs in the immediate footwall of the large gabbro sill. The sill contains trace amounts of disseminated chalcopyrite.

MM-91-2 drilled 1.2 km downdip of the YA-6 MS bands encountered elevated soda (6%) at the base of the sill. No boron enrichment was detected. A quartz veinlet carrying sphalerite occurs at 320 meters. A number of lithos and geochems show elevated Pb (176-309ppm) and Zn (213-236ppm) in the bottom 50 meters of this hole (400-450 meters). This zone is associated with strong biotite alteration, frequent concentrations of garnets and shows fluorine enrichment.

MM-91-3, our northernmost hole, encountered two zones rich in boron indicating the presence of tourmaline (122 and 212m). A narrow zone of conglomerate was intersected at 256 meters. Trace element, fluorine and soda were all dead.

The Stoney hole ST-91-03, by comparison, shows no alteration of indicator elements and only trace amounts of zinc in the B-Marker stratigraphy. The hole was terminated approximately 550 meters above Sullivan time.

In conclusion I recommend we complete the program by drilling P4 (on the dighem conductors) and drill a follow-up hole between YA-6 and MM-91-2 to test the elevated base metals in the bottom of MM-91-2 and a portion of the gravity high that section work suggests is not due to the gabbro.

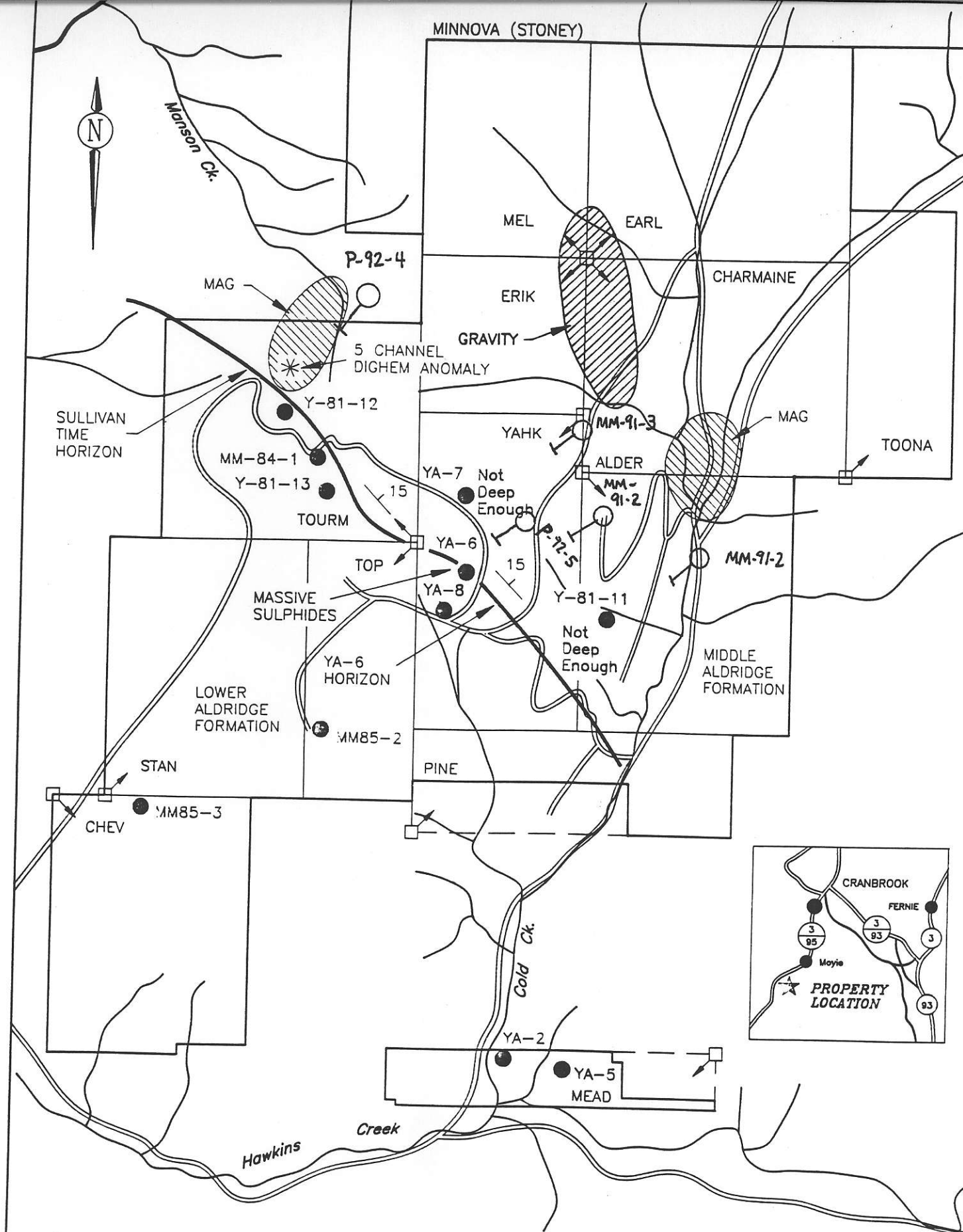
McNeil Creek Property

The McNeil property is +300 unit property situated 20 km. SW of Cranbrook and 35 km. south of the Sullivan Mine in the second structural block. The ground is adjacent to the Lew property (Dragoon's skarn) and south of the Lookout (Leasks) and is held by Bob McGowan.

30 holes were drilled on the property between 1988 and 1990. About half were targeted on Sullivan time while the remainder test a set of at least 6 narrow (<2m) Pb-Ag veins in the hanging wall of a gabbro sill.

3 holes hit stratabound mineralization of some interest with the best intercept being 1.75% Zn/0.4m. The drill logs and accompanying reports do not describe the sulphide mineralogy very well hence it is difficult to judge the significance of these zones. The program has not been well planned and if these zones are significant there is certainly room for follow-up work.

We should examine the core from all significant zones in the spring.



DATE: 3 January 1992
 TO: Ian Pirie
 COPIES TO: Alex Davidson, Dave Heberlein
 FROM: Cam Clayton
 RE: December 1991 Monthly Report

Rainbow-Tam O'Shanter/Wildrose Drilling: All results from the drilling program on the Rainbow-Tam O'Shanter and Wildrose properties have been received. Some encouraging Au results from holes TM91-19 and TM91-20 were the highlights. These two holes are located on the same line as TM91-16 reported last month containing 35.99 metres of 0.180 g/t Au. Important intersections are summarised below.

HOLE TM 91-19 (P-17): 53.48 metres @ 0.266 g/t Au
 incl: 5.08 m @ 0.442 g/t Au
 15.0 m @ 0.440 g/t Au
 9.00 m @ 0.510 g/t Au
 Cu < 0.1%

<u>Interval</u>	<u>Length</u>	<u>Cu (ppm)</u>	<u>Au (ppb)</u>	<u>Au Assay</u>
55.32-58.32	3.0	245	266	
58.32-61.32	3.0	196	304	
61.32-63.40	2.08	270	642	
63.40-65.00	1.6	250	115	
65.00-67.35	2.35	92	91	
67.35-70.35	3.0	93	74	
70.35-73.35	3.0	51	458	
73.35-76.35	3.0	197	114	
76.35-79.35	3.0	160	122	
79.35-82.35	3.0	103	108	
82.35-85.35	3.0	49	63	
85.35-88.35	3.0	204	112	
88.35-91.35	3.0	350	119	
91.35-94.35	3.0	319	639	
94.35-97.35	3.0	98	133	
97.35-100.35	3.0	97	788	
100.35-103.35	3.0	99	368	
103.35-106.35	3.0	51	376	
106.35-108.8	2.45	79	158	

Comments: The hole was originally planned to test resistivity and chargeability anomalies, as well as a strong magnetic anomaly. The location of the hole was changed due to weather conditions and access difficulty. The I.P. anomalies were explained by high pyrite content in chert and andesitic volcanics, but the strong magnetic anomaly was not explained.

From 55.3 to 65.0 the core is cut by 15% fine stockwork quartz and quartz carbonate veinlets. From approximately 65.0 m to 108.8 m (EOH) is feldspar porphyry and diorite to quartz diorite intrusive with weak potassic, propylitic, and argillic alteration seen. The interval is cut by occasional quartz carbonate veins as well as hydrothermal breccias.

HOLE TM 91-20A: 27.07 metres @ 1.09 g/t Au
 incl: 19.42 m @ 1.5 g/t Au
 16.42 m @ 1.71 g/t Au
 3.30 m @ 7.3 g/t Au

<u>Interval</u>	<u>Length</u>	<u>Cu (ppm)</u>	<u>Au (ppb)</u>	<u>Au Assay</u>
145.14-147.65	2.51	1663	425	
147.65-150.65	3.00	668	160	
150.65-153.40	2.75	616	280	
153.40-156.70	3.30	8321	5900	7.30 g/t
156.70-158.56	1.86	726	220	
158.56-161.56	3.0	254	412	
161.56-164.56	3.0	228	120	
164.56-167.56	3.0	170	81	
167.56-170.56	3.0	148	57	
170.56-172.21	1.65	291	339	

Comments: The main mineralized zone carrying most of the grade for the entire interval is what has been called a chalcopyrite stockwork zone. The thickness of the interval in core is 3.3 metres however it is questionable whether or not this is true thickness. Two distinct structural textures are seen through the interval from 153.4 m to 156.7 m. The first texture appears to be a fairly restricted set of mineralized quartz veins and chalcopyrite veins occupying a specific orientation at 10° to the core axis. Veins are up to 2 cm in width but more commonly 1/2 to 1 cm, occurring as parallel sets every 5 to 10 cm. The second type of structural texture seen is a reticulate, or "step-like" texture of 1/2 cm quartz/chalcopyrite veins with one orientation at 48° to the core axis, and the other at 45°. Mineralization is thought to be Tertiary as the veins cross-cut a number of different rock types, one appearing to be a Tertiary dyke. The purpose of this hole was to test for mineralization related to major west-northwesterly trending structures in this particular

area, and to that end the hole was quite successful. A true orientation and thickness on this zone could be obtained by a further drill hole followed by trenching along the projected strike of the zone.