

82-#773 - #10770
11

KUTCHO CREEK DRILLING REPORT
ON THE
SMRB 14 and 16 MINERAL CLAIMS

58°12'N - 128°22'W

N.T.S. M1041/1W

LIARD MINING DIVISION

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT

10770
No.

Owned and Operated by:

SUMAC MINES LTD.

Prepared by

E.S. Holt, P.Eng (B.C.)

Holt Engineering Ltd.

November, 1982

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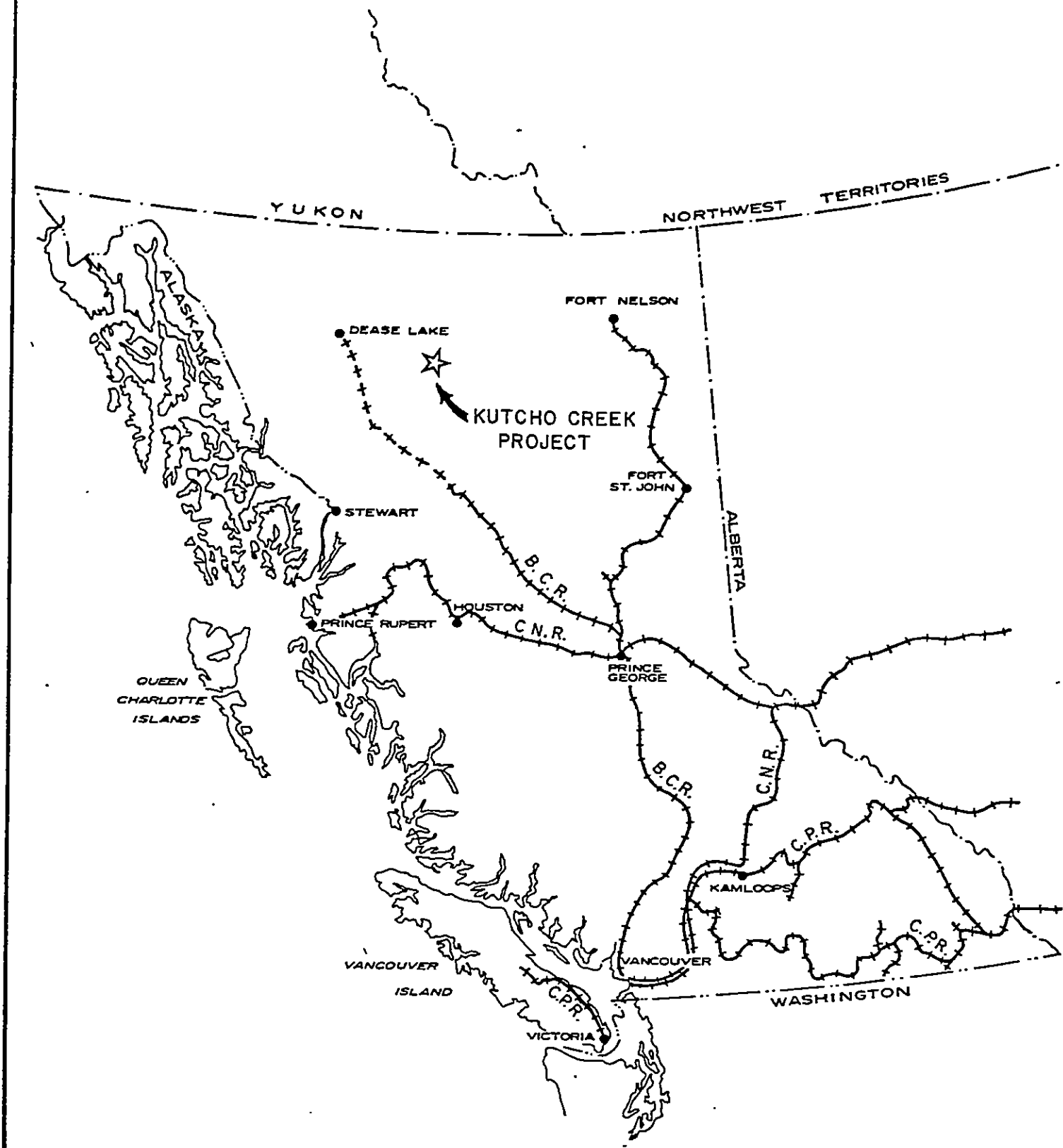
INTRODUCTION

The Kutcho Creek property is located in the Liard Mining Division in the northern interior of British Columbia, approximately 100 kilometres east of Dease Lake. The geodetic coordinates are $58^{\circ}12'N$, $128^{\circ}22'W$.

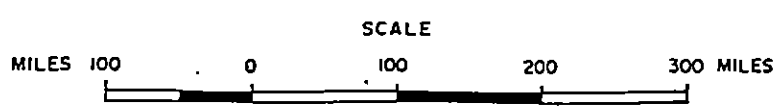
The property is not directly accessible by road. The Kutcho Creek airstrip is located 10 kilometres west of the site and serves as the main transportation link with the property. Usual access is via fixed wing aircraft from Watson Lake in the Yukon Territory or from Dease Lake to the Kutcho Creek airstrip. Onward transportation to the site is by 4-wheel drive vehicle or helicopter.

To date, two significant concentrations of copper-zinc-silver mineralization have been located at Kutcho Creek. The principal minerals of economic importance are chalcopyrite, bornite and sphalerite. Mineral claims covering the known deposits are owned in part by Sumac Mines Ltd., while Esso Resources Canada Limited hold adjoining key claims.

The initial discovery and claim staking occurred in 1972. Exploration programs have been carried out on an annual basis since that time. Sumac's 1982 program consisted primarily of road construction, underground bulk sampling, pilot-plant scale metallurgical test work and diamond drilling. The drilling described in this report is part of Sumac's continuing program to determine the potential viability of the project. Eleven NQ size holes totaling 1591 metres of drilling were completed during the 1982 field season. The holes were numbered KT119 to KT129 inclusive.



MAP 1: LOCATION OF KUTCHO CREEK DEPOSITS



DRILLING REPORT

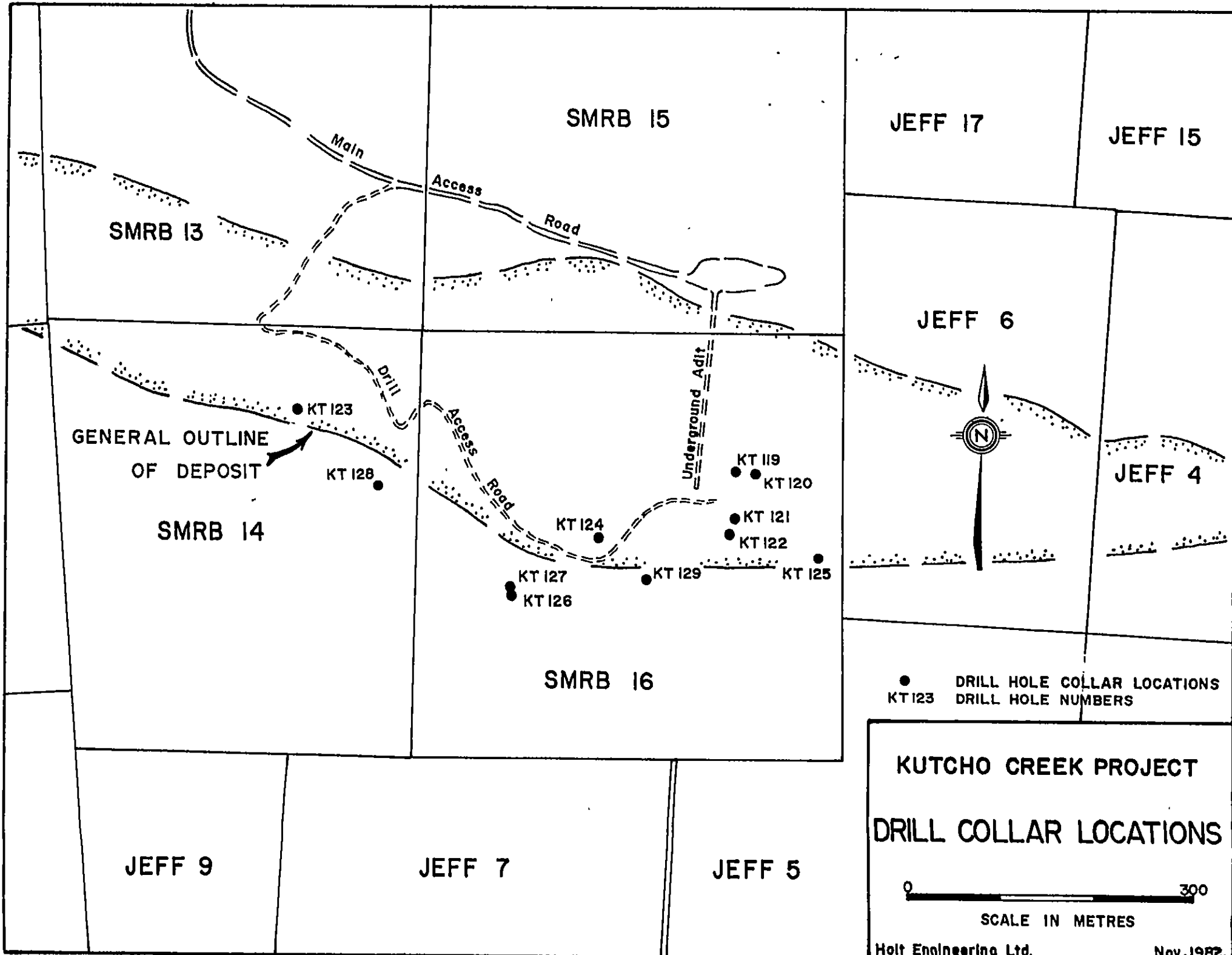
During the period July 9 to August 11 an eleven hole diamond drilling program was completed on the Kutcho Creek property. The drill hole collar survey data is as follows:

<u>Hole</u>	<u>Northing</u>	<u>Easting</u>	<u>Elevation</u>	<u>Dip</u>	<u>Bearing</u>	<u>Length</u>
TK119	22,464.20	38,263.34	1635.2	-65 ⁰	245 ⁰	84.4m
TK120	22,462.28	38,283.60	1637.2	-70 ⁰	245 ⁰	90.5m
TK121	22,413.13	38,260.54	1645.4	-62 ⁰	305 ⁰	99.7m
TK122	22,396.85	38,254.30	1647.5	-65 ⁰	305 ⁰	99.7m
TK123	22,525.05	37,783.08	1608.2	-70 ⁰	120 ⁰	246.0m
TK124	22,392.91	38,116.70	1658.7	-70 ⁰	245 ⁰	212.4m
TK125	22,373.22	38,351.69	1648.9	-70 ⁰	245 ⁰	212.4m
TK126	22,330.48	38,018.05	1662.5	-45 ⁰	180 ⁰	93.0m
TK127	22,331.98	38,018.08	1662.6	-85 ⁰	180 ⁰	154.5m
TK128	22,442.93	37,872.14	1629.7	-70 ⁰	180 ⁰	165.2m
TK129	22,348.53	38,167.08	1653.8	-55 ⁰	180 ⁰	136.2m

Dip tests were taken and the detailed data is provided on the appended drill logs.

The 1982 diamond drilling program had two principal objectives:

- (1) to provide geotechnical data with regard to pit slope stability and
- (2) to explore for possible footwall mineralization



JEFF 17

JEFF 15

SMRB 15

SMRB 13

JEFF 6

GENERAL OUTLINE
OF DEPOSIT

SMRB 14

JEFF 4

SMRB 16

● DRILL HOLE COLLAR LOCATIONS
KT 123 DRILL HOLE NUMBERS

KUTCHO CREEK PROJECT
DRILL COLLAR LOCATIONS

0 300

SCALE IN METRES

Holt Engineering Ltd.

Nov, 1982.

JEFF 9

JEFF 7

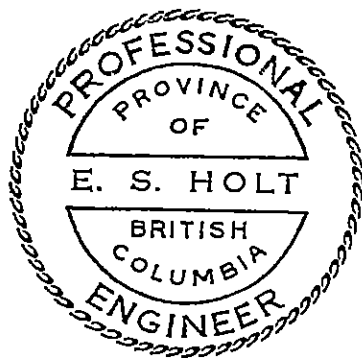
JEFF 5

Seven holes, KT119 to KT125 inclusive, were drilled as part of a geotechnical program under the guidance of Golder Associates. They logged the core for rock quality characteristics and installed pizometers in the holes so that hydrological data could be obtained as the underground development penetrated the area.

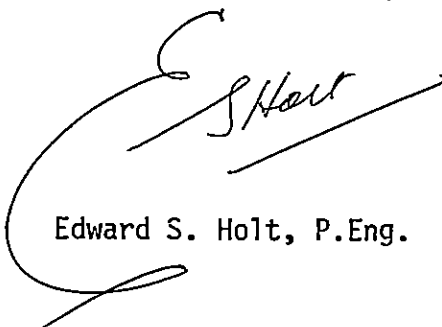
Holes KT126 to KT129 were primarily exploration holes and were drilled under the direct supervision of Sumac staff. They tested a zone in the footwall of the known deposit for possible additional reserves.

All of the holes were geologically logged and sections containing economic sulphides were split and sent for assay. Geologic descriptions and detailed assay results are provided in the appended drill hole logs.

The core is in storage at the camp site on the property.



Respectfully submitted,
HOLT ENGINEERING LTD.



Edward S. Holt, P.Eng.

APPENDIX A

STATEMENT OF DRILLING COSTS

HOLES KT119 to KT129 INCLUSIVE

DRILLING CONTRACTOR - Arctic Diamond Drilling

PERSONNEL: K. Orleski - Driller/Foreman
V. Berry - Driller
S. Frost - Helper
K. Smith - Helper

SCHEDULE:

July 9 to 11 - mobilization
July 12 to 14 - drill hole KT120
July 15 & 16 - drill hole KT119
July 17 & 18 - drill hole KT122
July 19 & 20 - drill hole Kt121
July 21 to 23 - drill hole Kt125
July 24 to 26 - drill hole KT124
July 27 & 28 - drill hole KT126
July 29 & 30 - drill hole KT127
July 31, Aug2.- drill hole KT 123
Aug. 3 to 7 - drill hole KT128
Aug. 8 & 9 - drill hole KT129
Aug. 10 & 11 - moving out

PRINCIPAL SUPPORT PERSONNEL:

T. Ueno - Senior On-Site Supervisor
R. Suzuki - Staff
T. Lackmar - Geotechnical Engineer (\$38.59/hr.)
D. Dirk - Cook (\$100/day)
L. Renshaw - Bullcook (\$75.62/day)
R. Selnes - First Aid Attendant (\$75.62/day)
J. Scarf - Tractor Operator (\$16.50/hr.)
S. Boon Sang Ng - Geological Assistant (\$7.70/hr.)
S. Butterfield - Assistant (\$7.70/hr.)

Total Man-days		
Contractor - 4 men x 34 days		136 man-days
Support 9 men x 25 days		<u>225</u>
Total		361 man-days

DISCUSSION of DRILLING COSTS

The drilling program was carried out in conjunction with other field work and the cost of support personnel, mobilization, camp operation etc. has therefore been prorated to reflect appropriate costs. Sumac crew mobilization commenced on June 12 and the camp was closed for the season on September 9. The core splitting, reclamation and related drilling work was essentially completed by August 27.

The drilling cost has been adversely affected by the logistics of the project. This is particularly true with regard to the lack of road access and the consequent need for aircraft support to deliver personnel and supplies from Watson Lake or Dease Lake. During 1982 a road was constructed to provide vehicle access between Kutcho Creek airstrip and the site, thereby eliminating the need for continuous helicopter support.

DETAIL of DRILLING COSTS

Artic Diamond Drilling (as per invoice)	\$142,572.83
Caribou aircraft (10% of \$80,679.50)	8,067.95
B.C. Yukon Air Services (30% of \$36,248.15)	10,874.44
Other freight (30% of \$21,040.77)	6,312.23)
Fuel, on site (13,500l @ 78¢/l)	10,530.00
Assaying (90% of \$5,775.73)	5,198.16
Vehicles (1.5 x 1.5mo x \$850/mo)	1,912.50
Supplies - lumber, core boxes, plastic pipe, bags etc.	1,312.00

Camp operation (361 man-days @ \$45)	16,245.00
Tractor rental (84 hrs. @ \$65)	5,460.00
Support personnel (225 man-days @ \$110)	<u>24,750.00</u>

Total drilling cost \$233,235.11

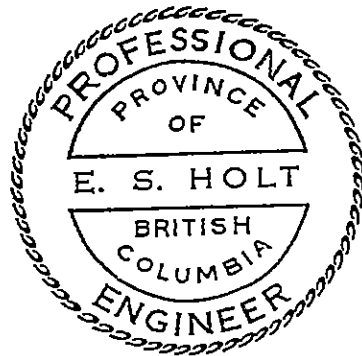
Cost per metre = \$146.59

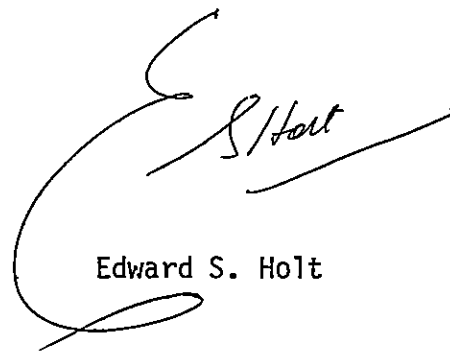
APPENDIX B

STATEMENT OF QUALIFICATIONS

I, Edward S. Holt of North Vancouver, British Columbia, do hereby certify:

1. that I am a geologist residing at 4091 St. Albans Avenue, North Vancouver, British Columbia,
2. that I am a Professional Engineer registered in the Province of British Columbia,
3. that I am employed by Holt Engineering Ltd., 4091 St. Albans Avenue, North Vancouver, British Columbia,
4. that I have practiced my profession for more than 20 years, and
5. that I have personal knowledge of the Kutcho Creek deposits being developed by Sumac Mines Ltd., having personally spent extensive time on the property during the 1982 field season. I have examined the drill core, supervised the underground development and familiarized myself with the property.




Edward S. Holt

November 8, 1982
North Vancouver, B.C.

APPENDIX C

Depth in Meters	Graphic Log	Depth in Feet	Location		Dip	Elev. Collar	Date Began	Finished	Assay												
			Latitude 22,484,204 Longitude 38,263,341	Petrographic Name					Descriptive	Note	Sample Interval	Wt%	Elements								
										As	Fe	Ca	Zn	Pb	Sn	SC					
							July 15, 1982	July 16, 1982													
0																					
5.6		18.5		QUARTZ EYE SCHIST		18.5-47.0	Quartz Eye schist 18.5-42.5 Gray to pale greenish gray, massive, limonite stained Quartz eye av. 0.7 cm rich														
13.0		42.5				42.5-47.0	Green to greenish gray, massive. Qtz eye 0.5-1.0 cm														
16.5		54.0				54.0-47.0	Calcite speckled bg.														
20.9		67.0		(ALTERED)		67.0-	White to pale gray, massive (bleached). Qtz eye (0.3-1.0 cm)														
23.5		77.0				77.0-81.0	Siderite speckled														
27.7		91.0				91.0-93.5	Limonite stained														
28.5		93.5				93.5-103.0	White (bleached)														
31.4		103.0				103.0-110.0	Limonite speckled														
33.5		110.0				110.0-117.0	White to beige massive, siderite speckle abundant (partly limonitized)														
35.7		117.0				117.0-126.2	Gray to gray white, f-gr-py imp. along schistosity (5-7%) Qtz eye (0.3-1.0 cm)														
38.5		126.2				126.2-129.0	White to beige, sid. bg. Qtz eye decreasing toward bottom														
39.3		129.0				129.0-142.0	White to light gray, massive Qtz eye, sid. seam bg (common)														
40		129.0				142.0-145.0	Porous, limonite stained														
		150				145.0-159.0	Beige to light brown. Qtz eye & siliceous elongated frag. bg. sid. seam abundant, (lapilli tuff), moderately schistose														
48.3		152.0				152.0-159.0	Gray, (v.f.-gr)py diss. (5-7%)SQS	157.7-188.7	1.0	<.003	0.05	0.03	0.04	<.01	32.5	3.70					
48.3		159.0				159.0-169.0	Beige to gray, elongated frag. py, moderately schistose (lapilli tuff)	238.5-237.2	0.7	<.003	0.08	0.47	6.03	0.01	17.0	3.21					
50.9		165.0		SERICITIC QUARTZ SCHIST		165.0-174.0	Siliceous (f)py-3-5% dark gray to brown SQS, with cp Bn along schistosity, green mine- ral (seri, chl ?) (f)py=20%	252.7-254.0	1.3	<.003	0.10	0.20	0.34	<.01	17.1	3.07					
51.3		168.0				168.0-177.0	Semi-massive (fram-f)py in car- bonate rock py=40-85%, sph(2")	254.0-254.8	0.9	0.15	27	35.5	0.10	0.01	16.9	3.90					
51.5		169.0				177.0-182.0	(fram)py band in siliceous car- bonate rock, py=10-15%	168.5-174.0	5.7	<.003	0.12	0.34	0.67	0.01	10.9	2.87					
53.0		174.0				182.0-188.5	(fram)py band in gray silic. SQS py=15-20%	-177.0	3.0	<.003	1.00	0.78	8.94	0.18	3.0	2.93					
53.9		177.0				188.5-199.5	Semi-massive (fram)py=50% in sil- iceous schist	-182.0	5.0	<.003	0.01	0.02	0.12	<.01	9.42	2.88					
57.2		187.7				199.5-208.5	(fram-f)py band in silic. gray SQS, siliceous schist, (f)py=7- 10%	-187.7	5.7	<.003	0.01	0.01	0.04	<.01	15.0	3.06					
57.5		188.7				208.5-211.0	Gray white (siliceous) carbonate unmetamorphosed	188.7-192.4	3.7	<.003	0.01	<.01	0.01	<.01	5.71	2.90					
57.8		189.5				211.0-216.0	Gray white carbonate rock, semi- massive (fram)py diss. at top, py cp(3-5%) stringer bleb in bre- cciated matrix	-192.0	8.6	<.003	0.01	<.01	0.02	<.01	13.2	3.02					
58.6		192.4				216.0-221.0	Gray white carbonate rock, Bn (cp)=3-5%, py=10%	-208.0	9.0	<.003	0.01	0.11	0.17	<.01	7.15	2.85					
60		199.0				221.0-227.0	Gray white carbonate rock, Bn (cp)=3-5%, py=10-15%	-211.0	3.0	<.003	0.01	0.14	0.25	0.02	0.74	2.84					
60.7		200.0				227.0-234.0	Gray white carbonate rock, net- work & stringer of Bn(cp)=2-3%	-216.0	5.0	<.003	0.50	1.46	1.22	0.15	4.73	3.04					
63.4		208.0				234.0-236.9	Massive (f)py=75-80% with 2-3% cp. Qtz frag.=10%	-221.0	5.0	<.005	1.48	1.21	0.54	0.23	2.03	2.90					
63.6		208.5				236.9-242.0	Beige to gray SQS, sid. seam. Qtz (scal) frag. on top. (f)py=30% sph (1.5") band	-227.0	6.0	<.003	0.40	4.85	0.10	0.04	3.37	2.97					
64.3		211.0				242.0-247.0	Massive (f-m)py=85-90%, cp(3-5%) diss. or bleb	-237.2	6.0	<.005	0.70	1.64	0.15	0.06	4.13	2.84					
64.3		211.0				247.0-253.0	Massive (f-m)py=70-80%, cp=3-5% Qtz frag. 5-10%, 2" sph seam at 253.0	-242.0	3.5	<.003	0.28	0.89	1.51	0.01	41	4.38					
65.8		216.0				253.0-254.3	Dark gray siliceous schist with (f-frm)py=20-25%	-247.0	5.0	<.005	0.98	2.84	4.35	0.04	40	4.50					
67.4		221.0				254.3-255.0	Bn. galena(cp) stringer in sili- ceous rock. Bn=15%, gn=3-5%	-253.0	4.8	<.003	0.56	1.64	4.43	0.03	47	3.47					
67.4		221.0				255.0-260.1	Gray siliceous schist with (fram- c)py=30-35%	-254.3	5.7	<.003	0.40	2.27	3.84	0.03	43	4.37					
69.2		227.0				260.1-267.5	Gray to dark gray siliceous schist with (fram.-c)py=40-50%, elongated Qtz frag.	-255.0	7.1	<.003	0.08	0.16	0.06	<.01	70	0.28					
70		233.0				267.5-271.5	Gray white siliceous schist (f) py band=10%	-267.5	5.5	<.003	0.01	0.08	0.12	<.01	13.5	3.02					
71.0		235.0				271.5-274.0	Gray white siliceous schist (f- fram)py=30-40%														
71.3		234.0				274.0-277.0	Gray white siliceous schist (f- fram)py=30-40%														
72.1		236.5				277.0-281.5	Bn spot along schistosity 273.5														
72.2		236.9				281.5-284.4	Gray siliceous schist with (f- fram)py=25-30%														
72.3		237.0																			
72.8		242.0																			
75.3		247.0																			
77.0		252.7																			
77.1		252.7																			
77.4		254.0																			
77.4		254.0																			
78.9		262.0																			
80		267.5																			
81.5		267.5																			
82.8		271.5																			
83.5		274.0																			
84.4		277.0																			
90																					

Drill Hole Measurement

0'	-85°	245°
37'	-86°	245°
141'	-85.5°	244°
261'	-84.5°	243°

End of the hole.

Depth in Meters	Depth in Feet	Latitude 32°13.135	Longitude 102°40.541	Dip -62.5°	Elev. Collar 1845.4m	Date Begun July 19, 1962	Finished July 20, 1962	Assay							
								Element							
		Unit Name	Petrographic Name	Descriptive Note	Sample Interval	Width	As	Fe	Cu	Zn	Pb	S	SG		
				0 - 18.0 Overburden											
6.5	18.0														
7.6	25.0		QUARTZ EYE SCHIST	18.0-108.6 Quartz Eye Schist											
10.4	34.0			18.0-25.0 light brown-beige, weathered py (limonite) diss. sericitized, sid. seam abundant, well-moderately schistose											
11.0	36.0			25.0-81.0 gray white-light brownish gray qtz eye & elongated siliceous frag. py diss. (5-5%) sid seam abundant (85.0-75.0)											
	50			34.0-38.0 limonite stains along fracture											
	50			77.0-81.0 bleached											
23.5	77.0														
24.7	81.0			81.0-100.0 pale green-greenish white Qtz. (feld) & elongated siliceous frag. sid. seam py diss. (2-3%)											
30.5	100.0			100.0-108.6 pale green, well schistose Qtz. eye & elongated siliceous frag. sericite, (f) py=2-3%											
35.1	108.6														
35.7	117.0		Sericite quartz schist	108.6-163.5 Sericite Quartz Schist											
				168.6-117.0 gray to gray white, banded by 7-10%, Qtz eye bg	*1)										
				117.0-138.0 gray to dark gray, elongated siliceous frag. py diss-banded with cp py=15-20%, cp=1%	*2)										
40				138.0-157.0 gray to pale green, qtz eye elongated siliceous frag. sid. seam (lapillituff), py diss-banded (7-10%)	*3)										
42.1	138.0			157.0-163.5 white, Qtz eye & siliceous frag. sid. seam (f) py=1%, (Tuff Breccia)											
47.9	157.0			163.5-167.0 Qtz eye & elongated siliceous frag. sid. seam abundant (7.8-1.7%) py diss 3-5%, cp seam (0.5-1.0cm) on top											
49.5	163.5			-171.2 massive (f) py=70% with cp (10-15%) Bn, spot on top. 168-167.2 brown sid. (lime) network. Calcareous quartz on top.	163.5-167.0	3.5	<0.03	0.02	0.38	0.05	<0.01	4.63	2.84		
50.9	167.0			-170.2 massive (f) py=70% with cp (10-15%) Bn, spot on top. 168-167.2 brown sid. (lime) network. Calcareous quartz on top.	170.2-171.2	3.2	<0.03	1.22	7.10	0.15	0.01	31.3	4.05		
52.3	171.2			-173.2 (fram) py band in siliceous schist. Bn=4% Cp=1%, py=10%	173.2-174.5	3.5	<0.03	0.56	1.20	0.09	<0.01	6.52	2.90		
53.8	174.5			-176.5 massive (f) py=90% with (f) sph seam (10%) Bn spot, bleb on top, cp=2-3%	176.5-180.0	2.8	<0.03	0.07	0.10	0.11	<0.01	3.79	2.87		
54.9	180.0			-180.5 massive (f) py=90-95% with cp (5-6%)	180.0-185.0	3.5	<0.03	0.39	0.74	0.90	0.02	44.9	4.61		
56.4	185.0			-180.5 massive (f) py=90-95% with cp (5-6%)	185.0-190.0	5.0	<0.03	0.32	0.70	7.16	0.02	48.3	4.48		
57.9	190.0			-185.3 massive (f) py=90-95% with cp (5-6%)	190.0-195.0	5.0	<0.03	0.10	1.00	3.15	0.02	43.0	4.31		
58.4	195.0			-185.3 massive (f) py=90-95% with cp (5-6%)	195.0-201.0	5.0	<0.03	0.50	2.10	0.82	0.03	43.9	4.33		
60.0	198.0			-190.3 massive (f=) py=85-90%, elongated qtz frag. abundant in lower part cp=3% sph seam	198.0-201.0	4.8	<0.03	0.48	0.88	0.74	0.01	28.9	3.59		
61.3	201.0			-195.0 massive (f) py=80-85%, Bn with qtz on top, Cp=2-4%, cal qtz. grains bg	201.0-205.0	6.0	<0.03	0.12	0.32	0.33	0.02	8.41	2.83		
62.5	203.0			-195.0 massive (f) py=80-85%, Bn with qtz on top, Cp=2-4%, cal qtz. grains bg											
64.3	211.0			-195.5 massive (w-c) py=80-85%, Bn bleb (4%)											
65.8	216.0			-197.9 gray siliceous rock with (fram) py and Bn diss											
67.4	221.0			-201.0 massive (fram) py=65-70% with qtz.	SG 223 FT (68.8m)								3.33		
68.9	226.0			-205.5 banded (fram) py in gray siliceous schist py=15-20% Cp, Bn band at 204', cp=2%, Bn 1%	SG 232 FT (70.7m)								3.05		
70.5	231.0			-211.0 gray siliceous schist with banded (f=fram) py (10-15%) partly with Bn, Cp (0.5%)	SG 240 FT (73.2m)								2.86		
72.2	237.0			211.0-270.0 gray siliceous schist with banded py	SG 248 FT (75.6m)								2.67		
75.2	246.0			-221.0 (fram) py band (15-20%)	SG 260 FT (79.2m)								3.28		
76.4	250.0			-221.0 " py=35-40% (81.1m)	SG 266 FT (81.1m)								3.40		
79.6	261.0			-226.0 " py=25-30% (85.0m)	SG 278 FT (85.0m)								2.61		
80.6	264.0			-231.0 elongated siliceous frag. bg py=35-40% (87.2m)	SG 286 FT (87.2m)								2.74		
82.3	270.0			-246.6 py=10-15% (89.3m)	SG 293 FT (89.3m)								2.70		
				-250.6 sid. seam py=5-7%											
				-251.0 py=25-30%											
				-264.5 sid seam py=7-10%											
87.9	288.0			-270.0 siliceous frag. abundant py=25-30% (91.7m)	SG 301 FT (91.7m)								2.76		
89.3	293.0			270.0-327.0 "Pale green" schist	SG 309 FT (94.2m)								2.95		
90				270.0-306.0 pale green, sid. seam rare elongated siliceous frag. common (tuff), py=3-5%	SG 316 FT (96.3m)								2.72		
93.3	306.0			288.0-293.0 py=5-7%	SG 326 FT (99.4m)								2.64		
94.5	310.0			305.5-306.6 segregated qtz.											
				306.0-310.0 gray, (fram) py=15-20%											
				310.0-327.0 pale green, feld. crystal replaced by calcite py 1%. well schistose											
99.7	327.0														

END OF THE HOLE

Depth in Metres	Graphic Log	Depth in Feet	Latitude Departure	Dip Azimuth	Elev. Cor. Total Depth	Date Began	Finished	ANALYSIS									
Unit Name	Stratigraphic Name	Descriptive Note	Sample Interval	Weight	Elements												
					A%	Al%	Ca%	Fe%	Mg%	Si%	Sr%	Ti%	Zn%	Other			
0 - 13.0		Overburden															
4.0		13.0															
10		10															
16.7		54.7															
18.6		61.0															
19.2		63.0															
20.3		66.5															
21.8		71.5															
22.8		74.7															
23.0		75.5															
23.2		76.0															
30		30															
32.9		108.0															
34.5		112.5															
38.3		125.0															
38.7		127.0															
40		40															
40.1		131.5															
50		50															
55.6		176.0															
55.5		181.0															
60		60															
70		70															
71.4		235.0															
73.5		241.0															
78.5		257.5															
80		80															
90		90															
92.7		304.0															
93.3		306.0															
99.7		327.0															

Depth in Meters	Graphic Log	Depth in Feet	Lithologic Unit Name	Dip Azimuth	Elev. Collar Total Depth	Date Began	Finished	Assay										
								Sample Interval	Width	Elements								SG
								Si	Al	Fe	Mn	Mg	Zn	Cu	Pb	Ag	SG	
0 - 16.0																		
16.0 - 18.0			QUARTZ EYE SCHIST															
18.0 - 26.0			(A Zone)															
26.0 - 37.0																		
37.0 - 41.0																		
41.0 - 44.0																		
44.0 - 45.0																		
45.0 - 48.0																		
48.0 - 57.0																		
57.0 - 64.0																		
64.0 - 65.0																		
65.0 - 68.0																		
68.0 - 72.0																		
72.0 - 73.0																		
73.0 - 74.0																		
74.0 - 75.0																		
75.0 - 76.0																		
76.0 - 77.0																		
77.0 - 78.0																		
78.0 - 79.0																		
79.0 - 80.0																		
80.0 - 81.0																		
81.0 - 81.7																		
81.7 - 82.2																		
82.2 - 83.2																		
83.2 - 84.0																		
84.0 - 85.0																		
85.0 - 86.0																		
86.0 - 87.0																		
87.0 - 88.0																		
88.0 - 89.0																		
89.0 - 90.0																		
90.0 - 91.0																		
91.0 - 92.0																		
92.0 - 93.0																		
93.0 - 94.0																		

Depth in Meters	Graphic Log	Depth in Feet	Latitude 22.323.05N	Longitude 107.783.08E	Dip -70°	Elev Collar 1408.2m	Date Began July 31, 1962	Freshed Aug. 2, 1962	Assay											
									Unit Name	Petrographic Name	Descriptive	Note	Sample Interval	Moist %	Elements					
Wt %	Av	AF	Ca%	Zn%	Py %	%	%													
100.0		328.5																		
103.0		338.5																		
105.0		345.0																		
110.0																				
114.0		374.0																		
115.7		379.5																		
120.0																				
130.0																				
131.5		431.5																		
140.0																				
146.9		482.0																		
147.2		483.0																		
147.5		484.0																		
150.0																				
160.0																				
160.5		526.5																		
162.0		531.5																		
167.9		551.0																		
169.3		557.5																		
170.0																				
177.7		583.0																		
180.0																				
181.5		599.5																		
186.1		610.5																		
190.0																				
192.9		633.0																		
194.2		637.0																		
198.7		652.0																		
199.2		653.5																		

Depth in Meters	Depth in Log	Depth in Feet	Latitude Departure	Longitude Departure	Dip Azimuth	Elev. Cont. Total Depth	Date		Sample Interval	Notes	Assay							
							Start	Finish			Al	Si	Ca	Mg	Fe	S	SG	
			22,525.0N	37,783.0W	-70°	1402.0	July 31, 1982	Aug. 2, 1982										
203.1		666.5			40°	248.0m												
207.6		681.0																
210									SG 689 FT (210.0m)									2.73
214.3		705.0																
217.0		712.0							SG 698 FT (212.0m)									
217.5		713.5							SG 709 FT (216.1)									2.75
218.2		716.0							SG 719 FT (219.2)									2.93
220									SG 728.0 FT (728.0) py=10%									3.03
221.8		728.0							SG 737 FT (224.6)									2.89
									SG 748 FT (227.4)									
230									SG 756 FT (230.4)									2.96
233.6		747.0							SG 768 FT (233.5)									2.88
									SG 787 FT (239.9)									2.92
240									SG 800 FT (243.8)									2.87
242.0		794.0																
245.0		807.0																
			END OF THE HOLE															
			DRILL HOLE MEASUREMENT															
			0' -70° 120°															
			241' -69.5° 111°															
			611' -68.0° 133°															
			807' -62.0° 156°															
250																		
260																		
270																		
280																		
290																		

Depth in Meters	Depth in Log	Depth in Feet	Latitude 22,327.91N Longitude 38,114.70E	Dip -30° Azimuth 245	Elev. Corer 1452.7m Total Depth 212.4m	Date		Assay							
						Began July 24, 1967	Finished July 26, 1967	Sample Interval	Weight	Elements					
			Unit Name	Petrographic Name	Description	Notes									
							A%	Si%	Al%	Ca%	Zn%	Py%	S%	SG	
						0 - 20.0 Overburden									
4.1		20.0				20.0-									
9.4		31.0				20.0-31.0 light brown, Qtz frag. abundant (75-80%) siliceous schist (tuff breccia) weathered (limonitized)	SG 26 FT (7.9m)							2.80	
11.6		38.0				31.0-31.2 massive white quartz									
12.5		41.0				31.2-32.2 light brown, weathered (limonite) siliceous schist									
						32.2-41.0 massive white quartz									
						38.0-41.0 carbonate bg									
18.1		59.5				41.0-59.5 creamy white-beige, siliceous schist py dias (5-3%), sid. seam, massive	SG 51 FT (15.5)							2.79	
						41.0-48.0 moderately schistose									
20						59.5-84.0 gray white, elongated siliceous frag. bg sid. seam	SG 62 FT (18.9)							2.74	
						common, (f) py dias at matrix	SG 72 FT (21.9)							2.78	
						py=10-15%									
24.7		81.0				81.0 microfolding (hink fold)	SG 82 FT (25.0)							2.70	
25.3		83.0				83.0 "									
25.8		84.0				84.0-94.0 gray, arg (m-st.) (f)py=15% elongated siliceous frag. (lost core)									
28.7		94.0				94.0-103.0 gray to dark gray, well schistose siliceous schist - 50% (f)py=30-35%									
29.0		95.0				95.0: microfolding									
29.9		98.0				98.0-99.0: microfolding									
30.2		99.0				103.0-158.0 gray to gray white elongated siliceous frag. (lapilli tuff) (f)py=5-7%, fold, replaced by calcite	SG 138 FT (41.3)							2.78	
31.4		103.0					SG 142 FT (43.3)							2.73	
						158.0-187.5 gray white, moderately schistose elongated siliceous frag. (f)py=5-7% sid. fine seam common	SG 165 FT (50.3)							2.82	
48.2		158.0													
60						187.5-220.0 pale green schist well schistose Qtz fold (w cal) frag. bg. (f)py=1-3% sid. seam common toward lower part lapilli tuff	SG 194 FT (59.1)							2.72	
57.2		187.5				198.0-200.0 bleached (white)									
67.1		220.0				220.0-264.5 gray white to beige, elongated frag. moderately schistose (tuff breccia) (f)py=5-7%, sid. seam common frag.-(vf) py dias gray Qtz.	SG 220 FT (67.1)							2.75	
70							SG 228 FT (70.1)							2.73	
							SG 232 FT (76.8)							2.73	
80						264.5-272.0 pale green, elongated mineralized frag. bg (tuff breccia), sid seam common	SG 247 FT (81.4)							2.71	
80.6		264.5													
82.9		272.0				272.0-287.0 gray white, elongated mineralized (vf py) breccia bg. (tuff breccia) py=10% ±	SG 277 FT (84.4)							3.30	
						282.7-283.5 semi-massive (f)py=40-45% with sid seam	SG 286 FT (87.2)							2.77	
						283.5-343.5 pale green, elongated siliceous frag. bg. (lapilli tuff) (f)py=3-5%	SG 299 FT (91.1)								
80															
90.5		297.0					SG 316 FT (96.3)							2.73	
							SG 327 FT (99.7)							2.68	

Depth in Metre	Graph Log	Depth in Feet	Latitude 22,322.815	Longitude 38,118.706	Dip -70°	Elev. Cor. 1858.7m	Date Begun July 24, 1961	Total Depth 212.4m	Finished July 29, 1961	Assay							
										Unit Name	Petrographic Name	Descriptive	Note	Sample Interval	When	Elements	
									Sample Interval	When	Si	Al	Ca	Zn	Pb	Cu	Fe
										SG 356 FT (102.4m)							2.71
104.7		343.5								343.5-358.5 pale greenish gray, (fram-f) py diss=10%, elongated siliceous frag. bg sid. seam common							
109.3		358.5								358.5-362.0 pale green, sid seam common elongated siliceous frag. py= 1-3% (lapilli tuff-tuff breccia)							
110.5		362.0								362.0-364.0 (fram-c) py=23-30% diss, gray siliceous schist	SG 365 FT (111.3)						2.73
114.6		376.0								364.0-376.0 creamy white to gray white sid. seam common, elongated frag. (c) py diss (1-3%)							
116.4		382.0								376.0-382.0 gray white, moderately schist- osed (f) py diss=5-7%, (tuff breccia-lapilli tuff)							
119.5		392.0								382.0-397.5 creamy white, moderately schis- tosed sericite common (tuff?)							
120.1		394.0								392', 394': microfolding							
121.2		397.5								397.5-465.0 pale green to green (basaltic tuff) feld+cal. porphyroblast, py=1%	SG 405 FT (123.4)						2.91
										443.5-445.5 creamy white, sid. seam common	SG 417 FT (127.1)						2.73
											SG 427 FT (130.1)						2.70
											SG 437 FT (133.2)						2.69
130																	
135.2		443.5									SG 450 FT (137.2)						2.71
135.8		445.5									SG 459 FT (140.1)						2.70
140																	
141.7		465.0								465.0-468.5 creamy white, siliceous (f) py diss. 3-5%	SG 469 FT (143.0)						2.83
142.8		468.5								468.5-470.5 gray white, siliceous (f) py= 10-15%, elongated frag. bg							
143.4		470.5								470.5-489.5 gray, siliceous, moderately schistosed (vf) py=15-20% diss	SG 477 FT (145.4)						2.79
149.2		489.5								489.5-505.5 gray, siliceous, moderately schistosed sid. seam common (vf) py diss 15-20%							
150										504.5: py(cp) seam, stringer	SG 496 FT (151.2)						2.71
154.1		505.5								505.5-507.0 dark green, (fram-c) py diss 35-40%, sid seam, abundant							
154.5		507.0								507.0-564.0 dark green schist light brown calcite porphyro- blast (fram) py=3-5%							
156.7		514.0								514.0: 1.5" massive (c) py hard							
157.3		516.0								516.0: 2" " "							
158.5		520.0								517.5: 6" " "							
160.0		525.0								520.0: " " "	SG 525 FT (160.0)						2.84
161.7		530.5								525.0: " " "							
163.8		537.5								539.0: 0.8" massive (c) py=65%							
164.3		539.0								541.5-546.0 (c-fram) py=35-40%	SG 536 FT (163.4)						2.72
165.0		541.5								546.6-557.2 massive (s) py=70%							
166.4		546.0								563.0-564.0 seam-massive (c) py= 35-40%							
169.7		556.6									SG 549 FT (167.3)						2.82
171.6		563.0									SG 563 FT (171.6)						2.78
171.9		564.0								564.0-570.0 greenish gray, moderately schis- tosed elongated gray minera- lized frag. bg							
173.7		570.0								(c) py=5-7% (tuff breccia)							
174.1		571.5								570.0-574.5 gray, siliceous frag. bg, banded py (cp=1%) sph=4%							
174.7		573.0								574.5-610.0 gray, siliceous frag. bg. mod- erately schistosed							
175.1		574.5								574.0-610.0 (f) py 5-7%							
										610.0-631.0 (f) py=10-15%							
180										624.0-626.0 py=35%							
											SG 594 FT (181.7)						2.72
185.9		610.0									SG 606 FT (184.7)						2.78
190																	
192.5		631.0								631.0-649.0 creamy white to gray lapilli size elongated frag. bg sid fane seam abundant py=3-5%	SG 637 FT (194.2)						2.63
										(gradual color change)	SG 647 FT (197.2)						2.58
197.8		649.0								649.0-697.0 pale green to white siliceous (f) py=1-3%							

Depth in Meters	Depth in Feet	Lithologic Description	Dip Azimuth	Elev. Corer Total Depth	Date Begun	Finished	Assay										
							Sample Interval	Wt%	Au	Ag	Cu	Zn	Pb	SG			
203.0	666.0	649-687 argillaceous moderately 666.0: 0.3cm cp stringer or band 671.8: 0.5cm 678.5: 0.4cm 687.2: 0.5cm			July 26, 1962	July 26, 1962	SG 680 FT (207.3m)										
203.3	667.0																
204.7	671.0																
208.4	678.2																
208.5	687.2																
212.0	697.0	END OF THE HOLE															
DRILL HOLE MEASUREMENT																	
		0'	-70°	245°													
		47'	-70.5°	241°													
		261'	-69°	231°													
		481'	-64°	219°													
		681'	-58.5°	212°													
220																	
230																	
240																	
250																	
260																	
270																	
280																	
290																	

PROJECT KUTCHO

HOLE NO. KT-125

Depth in Meters	Original Log	Depth in Feet	Latitude 22,321.22N		Dip -70		Elev. Color 1448.0m		Date Began July 21, 1982		Finished July 21, 1982		Assay								
			Departure 34,351.69E		Azimuth 245		Total Depth 212.4m		Sample Interval	Length	Elements										
			Unit Name	Petrographic Name	Descriptive	Note					As	Al	Si	Ca	Ti	Fe	Mn	Mg	Zn	Pb	Cu
					0 - 26.0	Overburden															
7.9		26.0			26.0-34.5	sericite quartz schist, gray well schistosed, py diss=20-25%															
10.9		34.5			26.0-28.0	microfolding															
11.0		37.0			28.0-34.5	elongated siliceous frag. bg. (T.B)															
					34.5-37.0	massive white quartz															
					34.5	accharoidal, py=1%															
					37.0-82.5	white to creamy white, bleached sericite abundant, periphyblast (feld->calcite) (s-m)py=1% (basic tuff?)			SG 56 FT (17.1m)											2.71	
					55.5:	3" massive quartz			SG 64 FT (19.5)											2.68	
					28.2																
					30																
					28.2	92.5-147.0	pale green, well schistosed feld (calcite) periphyblast, arg. (w) no pyrite			SG 95 FT (29.0)											2.66
					30		128.0-147.0	arg. (st)													
					40																
					44.8																
					50																
					50.8																
					53.9																
					53.9																
					60																
					61.1																
					61.1					SG 203 FT (61.9)											2.74
					70																
					72.5																
					72.5					SG 231 FT (70.4)											2.79
					80																
					81.1																
					81.1					SG 254 FT (77.4)											2.76
					81.1																
					81.1					SG 267 FT (81.4)											2.78
					81.1					SG 278 FT (84.7)											2.74
					86.9																
					86.9																
					86.9																
					86.9					SG 293 FT (89.3)											2.71
					90																
					94.8																
					94.8					SG 311 FT (94.8)											2.85
					99.4																
					99.4																

Depth in Meters	Depth in Feet	Latitude 22.373.22N	Longitude 108.351.6W	Dip -70°	Elev. Collar 1848.5m	Total Depth 21.4m	Date Began July 21, 1987		Finished July 23, 1987										
							Arms	245	Arms	21.4m									
							Assay												
							Sample Interval	Meth	Elements										
									Au	Ag	Cu	Zn	Pb	S	SG				
103.8	340.5						328.0-340.5 gray to creamy white altered basic tuff with (vf) banded												
							340.5-363.0 creamy white (bleached) fine sid. seam abundant, partly (f) py seam (<1%)	SG 342 FT (104.2m)											2.75
110.0	363.0						363.0-426.0 pale green to green, elongated frag. & porphyroblast, moderately schistose (tuff to tuff breccia toward bottom)	SG 362 FT (110.3)											2.77
							369.0-375.0 py=1-3%	SG 378 FT (115.5)											2.75
117.0	384.0						384.0-387.0 (vf) py diss 3-7%, greenish gray												
118.0	387.0						412.0-412.5 (c)py=10%												
							420.5 gray (f. py diss) breccia bg												
123.8	426.0						426.0-440.0 gray to dark gray, well schistose siliceous. py=15-20% fine banding.	SG 420 FT (128.0)											2.73
134.0	440.0						440.0-446.6 milky gray, (f) py band 10-15% sid seam abundant	SG 441 FT (134.4)											2.75
136.1	448.8						445.5 : 2" massive white quartz												
137.3	450.5						446.6-450.5 gray white, silic py=5-7% partly cp(Bn) spot												
							449.5 microfolding texture												
140.0	460.0						450.5-465.0 gray, moderately schistose (f-frag) py band=20-25%, sid. seam common, plagioclase (→ calcite) perphyroblast cp spot (rare)	SG 453 FT (138.1)											2.75
141.7	465.0						465.0-472.0 pale greenish gray, moderately schistose. (f-frag) py=10%, perphyroblast (calcite)	SG 457 FT (139.3)											3.00
144.0	472.0						471.0-471.6 semi-massive py (65-70%)												
							472.1-472.6 semi-massive (frag) py=70%												
							472.0-529.0 dark green, massive, plagioclase (→ cal) perphyroblast, (frag) py=3-5% diss	SG 499 FT (152.1)											2.93
150.0	500.0						477.3-478.0 semi-massive (frag) py=55-60%												
							479.0-479.7 semi-massive (frag) py=40-45%												
							487.0-498.3 semi-massive (frag) py=50%												
							511.8-512.4 " "												
							513.4-514.1 semi-massive (frag) py=40-45%												
160.0	528.0						529.0-559.0 pale greenish gray, elongated siliceous frag.-bg (f) py=3-5% diss moderately schistose (lapilli tuff)	SG 522 FT (159.1)											2.85
161.2	528.0							SG 534 FT (162.8)											2.75
								SG 551 FT (167.9)											2.80
171.6	563.0						559.0-568.0 ore zone												
173.1	568.0						banded py (cp, sph) in pale greenish gray siliceous schist, sericite sid. seam, elongated siliceous frag. bg	559.0-563.0 4.0 .003 0.22 1.44 3.38 <.01	Au	Ag	Cu	Zn	Pb	S					2.82
								568.0 5.0 <.003 0.10 0.36 2.77 <.01											2.96
178.0	586.0						568.0-603.5 gray, moderately schistose sid seam bg. siliceous schist - SQS-py=3%												
178.9	587.0						588.2 sph seam (2cm X 2)	*1 588.0-587.0 1.0 <.003 0.02 0.02 1.43 <.01											2.80
183.9	603.5							SG 595 FT (181.4)											2.73
187.0	616.0						603.5-658.7 gray arg (w), moderately schistose, (f) py=3-5% diss SQS(?)	SG 614 FT (187.1)											2.74
188.2	617.0						616.6-617.0 cp, Zn qtz band (3cm, 1cm)												
								*2 616.0-617.0 1.0 <.003 0.10 0.71 3.31 <.01											2.89
190.0	630.0							SG 642 FT (195.7)											2.72

Depth in Metre	Graphic Log	Depth in Feet	Latitude <u>22,373.22N</u>		Dip <u>-70°</u>		Elev Collar <u>1818.0M</u>		Date Began <u>July 21, 1962</u> Finished <u>July 25, 1962</u>										
			Longitude <u>38,351.69E</u>		Azimuth <u>245</u>		Total Depth <u>212.4m</u>		Assay										
			Unit Name	Petrographic Name	Descriptive	Note	Sample Interval	Wt%	Elements										
											Au	Ag	Cu	Zn	Pb	Sr	SC		
200.0		658.7			658.7-697.0	pale green, well schistosee plagioclase (+ calc) porphyroblast, (f) py-S-SX SOS or altered basic tuff													
212.4		697.0	END OF THE HOLE																
											DRILL HOLE MEASUREMENT								
					0'	-70°	245°												
					47'	-70°	251°												
					181'	-69°	246°												
					401'	-66.5°	235°												
					541'	-63°	229°												
					681'	-57.5°	216°												
220																			
240																			
260																			
280																			
300																			
320																			
340																			
360																			
380																			
400																			
420																			
440																			
460																			
480																			
500																			
520																			
540																			
560																			
580																			
600																			
620																			
640																			
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2960																			
2980																			
3000																			

SG 694 FT
(211.5)

2.73

Depth in Meters	Original Log	Depth in Feet	Latitude 22,330.18° Longitude 98,018.03°	Dip -45° Azimuth 180°	Elev Collar 1862.5m Total Depth 93.0m	Date (begin July 27, 1987 Finished July 28, 1987)		Assay									
						Sample Interval	Width	Elements									
			Unit Name	Petrographic Name	Descriptive	Note			Au	Ag	Cu	Zn	Pb	S	SG		
									g/t	g/t	g/t	g/t	g/t	g/t	g/t	g/t	g/t
					Overburden, gravel and sand			SG 51.0 FT (15.5m)								2.68	
10																	
12.6		42			42 - 85 ft. Sericitic quartz schist light grey - greenish grey well foliated sericite-carbonate (semi)-py.												
20					85 - 85 ft. very phyllitic, poor RQD												
25.9		85															
30				Green Schist	85 - 159 ft. Pale green - green Sericitic-chlorite-carbonate-pyrite. so-called "basic tuff"?												
40					85 - 159 ft. very phyllitic, poor RQD												
								SG 154 FT (46.9)								2.71	
48.5		159						*J1 187.5-188.5	1.0	<.003	0.12	0.03	0.03	<.01		2.72	
								*J2 200.0-202.0	2.0	<.003	0.02	0.06	0.02	<.01		2.80	
50				Sericitic Quartz Schist	159 - 176 ft.			*J3 202.0-203.7	1.7	<.003	0.10	0.32	2.61	<.01		2.95	
53.8		176.0															
54.3		178.0			178 - 235 ft. Banded sulfide, Pyrite + sphalerite + chalcopyrite grey - greenish grey siliceous			178.0-178.0	2.0	<.003	0.02	0.23	1.28	<.01		2.87	
56.7		186.0						186.0-187.5	1.5	<.003	0.04	0.08	0.32	<.01		2.74	
57.2		187.5						187.5-191.5	4.0	<.003	0.12	0.56	0.03	<.01		2.88	
57.5		188.5															
58.4		181.5															
60		197.0															
61.0		200.0															
61.6		202.0															
62.1		203.7															
63.7		209.0															
64.8		213.0			207 - 209 ft. fault clay,												
65.3		215.0						209.0-213.0	4.0	<.003	0.08	0.31	0.92	0.03		3.13	
66.8		219.0															
68.0		221.0						215.0-219.0	4.0	<.003	0.24	0.08	1.82	0.08		7.84	
68.4		224.5						219.0-223.0	4.0	<.008	0.80	0.51	3.05	0.03		2.93	
68.3		227.5															
70.0		231.0						224.5-227.5	3.0	<.005	0.05	0.08	1.87	0.02		2.75	
71.4		235.0						227.5-231.0	3.5	<.003	0.08	0.10	3.15	<.01		2.83	
74.7		245		Quartz Schist	235 - 245 ft. Quartz schist with banded Sulfide (Py > ZnS > Cp.)			231.0-235.0	4.0	<.003	0.04	0.09	1.00	<.01		2.87	
				Green Schist	245 - 287.4 ft. green - pale green sericite-chlorite-carbonate -banded pyrite.			SG 244 FT (74.4)								2.86	
80								*J4 213.0-215.0	2.0	<.003	0.22	0.09	0.92	0.02		2.82	
								*J5 223.0-224.5	1.5	<.003	0.24	0.43	0.71	0.02		2.75	
								SG 257 FT (78.3)								2.84	
								SG 273 FT (83.2)								2.75	
								SG 281 FT (85.6)								2.84	
86.9		285.0						285.0-287.4	2.4			0.77	0.09	<.01	18.10	-	
87.5		287.4		Quartz Schist	287.4 - 305.0 ft. grey - greenish grey, Qtz - seri - carbonate with banded pyrite.			SG 293 FT (89.3)								2.73	
93.0		305.0			END OF THE HOLE												
<p>DRILL HOLE MEASUREMENT</p> <p>0° -45° 180°</p> <p>69° -45.5° 179°</p> <p>240° -41° 100°</p>																	

Depth in Meters	Depth in Feet	Lithology Description	Dip Azimuth	Elev. Collar Total Depth	Date		Assay									
					Start	Finish	Sample Interval	Width	Elements							
		Unit Name	Petrographic Name	Descriptive Notes			As	AT	Ca	Fe	Mg	Mn	Ni	Sr	Zn	
				Overburden												
10.1	33			33 - 154 ft. Sericite Quartz Schist pale green - greenish grey partly elongated breccia bearing quartz-sericite-chlorite-carbonate seam.			SG 47 FT (14.3m)									2.73
20							SG 70 FT (21.3)									2.71
30							SG 108 FT (32.3)									2.74
40							SG 128 FT (39.0)									2.69
46.9	154			154 - 227 ft. Dark Green Schist dark green - green chlorite-sericite-carbonate spot phyllitic, poor MQD												
80				171 - 227 ft. very brittle, poor core recovery												
60																
69.2	227			227 - 310 ft. Green Schist greyish green - pale green, chlorite-sericite-carbonate spot			SG 230 FT (70.1)									2.78
70																
80				229 - 232 ft. milky brown sericite schist abundant in sericite-carbonate												
80							SG 277 FT (84.4)									2.81
80							SG 305 FT (93.0)									2.89
90																
94.5	310															
95.4	313.0			313 - 326 ft Mineralized zone, pyrite-chalcopyrite - ZnS very siliceous, mainly banded Py												
96.6	317.0						313.0-317.0	4.0	<0.003	0.14	0.25	0.04	<0.01	8.67	2.89	
97.7	320.5						317.0-320.5	3.5	<0.003	0.08	0.32	0.02	<0.01	8.85	2.89	
98.0	321.5															
98.2	322.5						321.5-322.5	1.0	<0.003	0.04	0.10	0.02	<0.01	7.16	2.84	
98.2	322.5															
98.2	322.5						322.5-326.0	3.5	<0.003	0.04	0.34	0.01	<0.01	8.72	2.85	

Depth		Depth		Latitude		Dip		Elev Contour		Date Begun		Finished						
in	Log	in	Feet	22.331.924	Departure	85°	180°	1862.92	Total Depth	July 29, 1982	July 30, 1982	ASSAY						
Metre				2E.018.081	Unit Name	Azimuth				Sample Interval	Width	Elements						
					Petrographic Name							As	Al	Ca	Fe	Mg	Si	SG
100.4		329.5								328 - 348 ft. Quartz Schist quartz-sericite-chlorite-banded pyrite								
										*13 328.0-328.5	2.5	<.003	0.04	0.05	0.01	<.01	6.31	2.86
										*14 328.5-329.5	1.0	<.003	0.05	0.30	0.01	<.01	5.77	2.81
104.2		348.0								348 - 411.5 ft. Mineralized zone Pyrite-chalcopyrite-ZnS mainly banded Py in siliceous green schist								
										348.0-352.0	4.0	<.003	0.01	0.07	0.07	<.01	4.48	3.20
107.3		352.0								355.0-357.5	2.5	<.004	0.04	0.41	<.01	4.02	7.21	3.19
108.2		355.0								SG 361 FT (110.0)								2.83
109.0		357.5								367.1 - 367.8 ft. at 369 ft. Electrode for Cp								
109.6		358.5								367.1 - 367.8 ft.								
109.9		360.5								367.8 - 358.6 ft. small massive sulfide, mainly Py								
111.9		367.1								367.8 - 358.6 ft.								
112.1		367.8								massive sulfide, mainly py								
112.3		372.8								389 - 507 ft. sericite quartz schist grey, phyllitic								
113.3		372.8								Qtz - sericite-carbonate spot and semi-chlorite								
114.1		374.2								389 - 390 ft banded py								
115.7		379.5								394 - 395 ft. Fault ?								
116.3		381.5								402 - 411.5 ft.								
117.0		384.0								411.5 - 412.5 ft. crushed zone with clay Fault ?								
118.6		389.0								*15 357.5-359.5	2.0	<.003	0.01	0.08	0.02	<.01	3.15	3.08
118.9		390.0								*16 359.5-360.5	1.0	<.003	0.02	0.77	0.02	<.01	1.43	3.05
120					Sericite Quartz Schist					*17 367.1-367.8	0.7	<.010	0.04	0.09	0.01	<.01	80.46	3.75
122.5		402.0								*18 367.8-368.6	0.8	<.028	0.08	0.25	<.01	<.01	85.90	4.24
123.7		408.0								*19 372.5-374.5	2.0	<.004	0.08	0.23	0.02	<.01	1.30	3.02
124.2		408.0								*20 379.5-381.5	2.0	<.003	0.03	0.81	0.04	<.01	2.44	3.05
124.7		409.0								*21 389.0-390.0	1.0	<.006	0.10	0.63	0.14	<.01	7.80	3.20
125.4		411.5								*22 408.0-409.0	1.0	<.003	0.10	1.35	0.04	<.01	6.60	3.11
										*23 409.0-411.5	2.5	<.003	0.06	0.11	0.02	<.01	3.59	2.78
										sericite quartz schist green-greenish grey Qtz-sericite-carbonate seam								
										SG 332 FT (101.2)								2.82
										SG 415 FT (124.5)								2.80
										SG 463 FT (141.1)								2.72
										SG 505 FT (153.9)								2.75
154.5		507.0								END OF THE HOLE								
										DRILL HOLE MEASUREMENT								
										0° -85° 180°								
										51° -84.5° 176°								
										271° -80.5° 176°								
										491° -73° 184°								

Depth in Meters	Graphical Log	Depth in Feet	Latitude 22,442-814		Dip -70°	Elev Collar 1624.7m	Date Begun Aug. 3, 1982	Finished Aug. 7, 1982								
			Longitude 37,872.141		Azimuth 180°	Total Depth 162.2m	ASSAY									
			Unit Name	Petrographic Name	Descriptive	Note	Sample Interval	Width	ELEMENTS							
										Ar	As	Cu%	Zn%	Pb%	Sr	SG
						Overburden										
9.1 18		30			30 - 127 ft Sericitic Quartz Schist grey-pale green, very phyllitic, loose soft argillaceous chlorite-sericite-pyrite											
20			Sericitic Quartz Schist		very poor R0D:											
38.7 40		127			127 - 307 ft Pale Green Schist pale green, with abundant patch (patch tuff?) soft, loose, phyllitic sericite-carbonate semi-chloritic.											
50							SC 180 FT (48.0)									2.72
60			Pale Green Schist													
67.1 67.7		220 222			220 - 222 ft crushed zone with clay fault?											
81.7 82.0		268 269			268 - 269 ft fault ?											
93.6		307	Dark Green Schist		307 - 350 ft Dark Green Schist Dark green, argillaceous very soft and brittle chlorite-sericite-carbonate spot (perphyreblast)											

Depth in Meters	Graphic Log	Depth in Feet	Location		Dip	Elev. Cor. 1653.0m	Date Began AUG. 8. 1982	Finished AUG. 9. 1982	ASSAY											
			Latitude 22.348.51N	Longitude 108.167.08E					Armuth 180°	Total Depth 338.2m	Sample Interval	Method	Elements							
			Unit Name	Petrographic Name	Descriptive	Notes														
							As	Al	Ca	Zn	Pb	SK	NC							
11.5		37			Overburden															
20				Sericite Quartz Schist	37 - 162 ft Sericite Quartz Schist grey, soft, brittle argillaceous sericite-qtz-chlorite + py. abundant sericite															
40							SG 129 FT (39.3)													2.84
48.4 50		162			162 - 269 ft. Pale Green Schist pale green, soft, sericite-chlorite-carbonate spot (porphyroblast)-pyrite															
60				Pale Green Schist																
70							SG 237 FT (72.8)													2.70
80							SG 265 FT (80.8)													2.70
82.0		269		Sericite Quartz Schist	269 - 279 ft Sericite qtz schist, grey		SG 270 FT (82.3)													2.70
85.0		279																		
87.1		286			279 - 318 ft Dark Green Schist dark green, massive chlorite-carbonate spot		SG 288 FT (87.8)													2.81
90				Dark Green Schist																
96.9		318		Sericite Quartz Schist	318 - 418.5 ft Sericite Quartz Schist		SG 317 FT (96.6)													2.70

Depth in Meters	Depth in Feet	Latitude 22-348.524	Longitude -107-187.081	Dip -52°	Elev. Contour 1853.8m	Dip Azimuth 180	Total Depth 138.8m	Date		Assay											
								Began Aug. 11, 1987	Finished Aug. 2, 1988	Sample Interval	Width	Elements									
										Ag	Al	Ca	Co	Cu	Fe	Mn	Pb	S	Zn	SC	
							318 - 418.5 ft														
							Sericite Quartz Schist with mineralized zone	SC 341 FT (103.9)													2.82
106.5	349.5						gray, with abundant patch (patch tuff?)	SC 345 FT (105.2)													2.66
107.1	351.2						sericite-qtz-carbonate seam - py	418.2-351.5	2.0	0.003	0.01	0.16	2.00	0.015	8.8						2.74
110							Sericite Quartz Schist	SC 378 FT (115.2)													2.71
114.3	375.0						Mineralization: Banded pyrite with spheralite and minor amount of chalcopyrite	375.0-378.5	1.5	0.003	0.05	0.20	11.34	0.01	2.73						2.78
114.6	378.5																				
116.7	382.8																				
117.3	385.0																				
120																					
120.7	396.0																				
120.9	398.5																				
125.2	410.3																				
125.2	410.6																				
127.4	418.0																				
127.6							418.5 - (447) ft.														
							Pale green schist														
							sericite-carbonate spot	418.0-418.5	0.5	0.003	0.04	0.31	3.31	0.01	3.42						2.74
130							Pale Green Schist	SC 397 FT (121.0)													2.71
								SC 417 FT (127.1)													2.63
136.2	447.0							SC 445 FT (135.8)													2.64
							END OF THE HOLE														
							DRILL HOLE MEASUREMENT														
							0' -55° 180°														
							81' -54° 175°														
							231' -31° 180°														
							431' -44° 187°														