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Abstract

Seventy-five lithogeochemical samples were collected from the Paiute claim blocks and analyzed for Ag, As, Au, Ba, K, Sb, Sr, and Tl. Au values range from <.002 to 0.01 oz/ton and Ag values range from <0.01 to 0.09 oz/ton. A fluid inclusion survey reveals the presence of type I fluid inclusions. Temperature of homogenization ranged from 135-288 ^{o}C. Equivalent weight percent NaCl ranged from .18 to 4.0 percent. The fluid inclusions do not indicating boiling. However, a boiling zone exsists at depth based on the wide temperature range, low salinities and variable phase ratios.

Anomalous values of Ag, As, Au, Ba, Sb and Tl indicate a supra-ore body. The geochemical pathfinders delineate mineralization along the Paiute fault zone in 3 seperate areas and in Section 8. As, Sb, K/Tl, Ba/Tl and Tl/Sr indicate potential mineralization in section 8. Gold and silver values delineate mineralization in the far west and west zone.

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Introduction

A lithogeochemical survey was undertaken to confirm and delineate mineralized zones at the Paiute claim blocks. To determine potential targets, a suite of geochemical pathfinders consisting of Ag, As, Au, Ba, K, Sb, Sr, and Tl were utilized. Geochemical analyses were conducted by Chemex Labs Ltd of Vancouver, British Columbia. A total of 75 lithogeochemical samples were collected from July 13 through July 23, 1986. A fluid inclusion survey was conducted to determine the vertical position of the claim blocks in a volcanic hosted epithermal precious metal system. Twenty-four vein samples were collected from July 13 through July 15, 1986. Heating and freezing measurements were conducted using the fluid inclusion system at Eastern Washington University from August 19 through August 21, 1986.

Lithogeochemical Survey

Seventy-five 1 kg lithogeochemical samples were collected for geochemical analyses. The samples are a composite of several chips taken from outcrop. They were analyzed for Ag, Au, by fire assay; As Sb, Tl, by selective method; and a package of 24 elements by ICP-ES. Plate 1 shows the sample locations.

Orientation Survey

Fifteen unmineralized lithogeochemical samples were collected during an orientation survey to determine background values for the Paiute prospect. Thirteen samples were collected from the lower member and 2 from the middle and upper members. Appendix Table A lists the 15 samples. The lower member varies between a purple crystalline tuff and a purple lapilli tuff containing purple and/or green lapilli. Samples 86-0054-PR, 072, 075, 087, 089, 091, and 093 effervesce with 10 % HCl.

Samples 86-030-PR and 86-037-PR were collected from the middle member. Sample 86-030-PR is a gray lithic tuff and sample 86-037-PR is a purple lapilli tuff containing green lapilli. Sample 86-064-PR and 86-065-PR were collected from the upper member. They are a purple crystalline tuff and sample 86-065-PR effervesces. Eventhough the samples appear unalterd in hand specimen all maybe slightly altered. Sixty altered samples were collected from the lower and middle member. The lower unit is exhibiting silicification and/or propylization. The middle unit is bleached (argillization) and silicified (Payne, 1984 Denison Mines in-house document). The background samples mean value, standard deviation, and threshold value for Ag, As, Au, Ba, K, Sb, Sr, Tl, K/Tl, Ba/Tl and Tl/Sr are shown in Table 1. Threshold values were determined using the mean plus 2 standard deviations (Levinson, 1980; Rose and others, 1983).

Supra-ore vs. Sub-ore

Table 1 Mean values, standard deviation, and threshold value for non mineralized samples.

Element		$\bar{X}$	$\bar{S}$	n	threshold
Ag	oz/ton	*		15	0.01
Au	oz/ton	*		15	.002
As	ppm	6.20	3.90	15	14.0
Ba	ppm	1279	270	15	
K	%	4.27	.705	15	
Sb	ppm	.887	.583	15	2.05
Sr	ppm	391	191	15	
Tl	ppm	.567	.052	6**	
K/Tl		6.83	.751	6	5.33
Ba/Tl		24.0	5.25	6	13.5
Tl/Sr		14.0	8.03	6	30.1

$\bar{X}$ = Mean

$\bar{S}$ = Standard deviation

n = number of samples

* = not calculated due to detection limit

**= 9 samples are being re-analyzed at report time

Levinson, 1980 cites an example of a supra-ore and sub-ore halo (Figure 1). At the Paiute prospect at least two levels of erosion are present. The highest level represented by bleaching (argillization) and a lower level represented by silicification and/or propylization.

Beus and Grigorian, 1977; Levinson, 1980; Rose and others, 1983, document the vertical zonation of trace elements in steeply dipping ore bodies. From top (supra-ore) to bottom (sub-ore) the sequence is:

Ba-(Sb,As,Hg)-Cd-Ag-Pb-Zn-Au-Cu-Bi-Ni-Co-Mo-U-Sn-Be-W

Thallium being a lithophile element and found in high concentrations in active near surface geothermal systems can be included with Sb, As, Hg and can be used as an indicator of a supra-ore body (De Alburque and Shaw, 1972; White, 1981). All the above elements, except Hg, U and Sn, were utilized as geochemical pathfinders in the sampling survey. Table 2 compares the background values of granites and granodiorites against the ranges of the elements at the prospect. The data shows that Ba, Sb, As, Tl, Ag, Pb, Zn and Au are anomalous, whereas, the sub-ore elements are not. This strongly indicates the current erosion level at the Paiute prospect is above a supra-ore body.

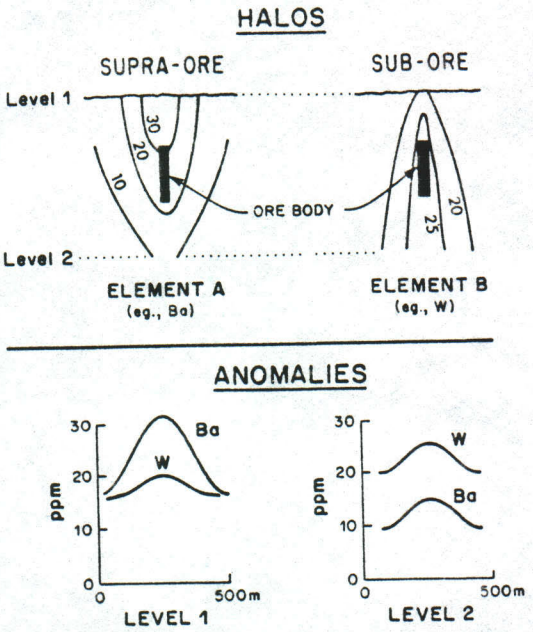


Figure 1. Supra-ore vs. Sub-ore halo
(Levinson, 1980)

Table 2 Comparison of Granite and Granodiorite background values to Paiute prospect values.

	Levinson, 1980		Paiute Range *
Element	Granite	Granodiorite	
Ba	600	500	145-1870
Sb	.200	.200	.2-6.8
As	1.5	2.0	2-180
Tl	.750	.500	.3-1.6
Cd	.200	.200	<.5
Ag	.04	.07	<.2-5.6
Pb	20.0	15.0	14-56
Zn	40.0	60.0	3-120
Au	.004	.004	<.002-.01**
Cu	10.0	30.0	4-29
Bi	.010	--	<2
Ni	.500	20.0	<1-7
Co	1.00	10.0	<1-8
Mo	2.00	1.00	<1-135
Be	5.00	2.00	<.5-14.5
W	2.00	1.00	<10-20

* = Range includes non-mineralized and mineralized samples
**= All values report as ppm except Au at Paiute prospect which is reported as oz/ton

Au and Ag

The precious metal values of the survey were generally below the detection limit of .002 oz/ton Au and 0.01 oz/ton Ag. However, using a threshold value of .002 oz/ton Au 7 of the 60 mineralized samples are anomalous. A silver threshold of 0.01 oz/ton indicates 8 of the 60 mineralized samples are anomalous. Plate 3 is a plot of Au and Ag. The plot indicates 2 potential zones of mineralization. The S 1/2, NW 1/4 section 17 (far west zone) and the center of section 17, which has been identified as the west mineralized zone during the 1984 lithogeochemical sampling survey.

As and Sb

The mean background value of As is 6.20 ppm, standard deviation of 3.90 ppm and a threshold value of 14.0 ppm. Eighteen of the 60 mineralized samples are anomalous (Appendix, Table A). Plate 4 is a plot and contour diagram of As. Arsenic as a pathfinder delineates a potential mineralized zone in section 8 and in the NE 1/4 of section 17. Arsenic in active geothermal systems and epithermal vein systems occur in the upper levels (Buess and Grigorian, 1977; Ewars and Keys, 1977; White, 1981). At the Paiute prospect As appears to be anomalous in the areas where least erosion has occurred indicating the upper levels of hydrothermal activity. Samples 86-051-PR, 86-053-PR and

86-068-PR are anomalous indicating potential mineralization in the far west zone.

Antimony has a mean background value of .887 ppm, standard deviation of .553 ppm and a threshold value of 2.05 ppm. Eleven of the 60 mineralized samples have anomalous values. Plate 4 is a plot and contour diagram of Sb. This diagram indicates a potential mineralized zone in the far west zone. Generally Sb appears to be delineating a widespread alteration.

K/Tl X 10^4 Ratio

Due to K+ (1.33 A) geochemical relationship with Tl+ (1.47 A), thallium is incorporated into K-bearing minerals (Vlasov, 1966; De Alburque and Shaw, 1972; Hahn, 1986, Ikramuddin, 1982; Ikramuddin and others, 1983; 1986; Massa and Ikramuddin, 1986). Due to their relationship Tl will increase relative to K from non-mineralized rocks to mineralized rocks resulting in a decreasing K/Tl X 10^4 ratio. At the Paiute prospect the mean background value is 6.83, standard deviation .052 and a threshold value of 5.33 (Table 1). Twenty-six of the 60 mineralized samples have anomalous ratios (Appendix Table A). Plate 5 is a plot and contour diagram of the anomalous values. The diagram shows 4 areas of potential mineralization. The ratio confirms mineralization in the east and west zone. It delineates potential mineralization in the far west zone and in section 8.

Ba/Tl X 10^2 Ratio

Barium is depleted during magmatic differention and during hydrothermal processes it will decrease (Brobst, 1958; Fischer, 1972: Puchelt, 1972). K+ (1.33 A) and Ba 2+ (1.34 A) have similiar ionic radii amd Ba 2+ will be incorporated into K bearing minerals. Therefore, during hydrothermal processes Ba will decrease and Thallium will increase resulting in the Ba/Tl X 10^2 ratio to decrease from non-mineralized to mineralized rocks (Hahn, 1986; Ikramuddin, 1983; Massa and Ikramuddin, 1986). The mean background value is 24.0, standard deviation of 5.25 and a threshold value of 13.5 (Table 1). Forty-six of the 60 mineralized samples have anomalous values (Appendix, Table A). Plate 5 is a plot and contour diagram of the anomalous values. The diagram confirms the east, west and far west zones along the Paiute fault. The ratio also indicates potential mineralization in section 8.

Tl X 10^4 /Sr Ratio

Strontium is progressively depleted during magmatic differentiation and its concentration is low in hydrothermal solutions. Sr 2+ (1.13 A) normally follows the distribution of Ca 2+ (0.99 A). The depletion of Sr during hydrothermal alteration is the result of the breakdown of the Ca bearing minerals (Hahn, 1986; Ikramuddin and others, 1983; Massa and

Ikramuddin, 1986; Stueber, 1978; Tooker, 1963). Therefore, during hydrothermal processes Sr will deplete and Tl will increase resulting in an increase in the Tl X 10^4/Sr ratio from non-mineralized to mineralized rocks. The mean background value is 14.0, standard deviation 8.03 and threshold value of 30.1 (Table 1). Fifty-three of the 60 mineralized samples are anomalous (Appendix, Table A). Plate 6 is a plot and contour diagram of the anomalous values. The diagram delineates 6 potential mineralized zone. The east, west and far west zones. It confirms a potential zone in section 8.

Fluid Inclusion Survey

Double polished thin sections were prepared from 24 vein samples (Plate 2; Appendix Table B). Heating and freezing measurements were made on 80 fluid inclusions using a Fluid Incorporated adapted U.S.G.S. heating and freezing stage, as described by Werre and others (1979). Due to the small size of the fluid inclusions and intense fracturing of the vein material all inclusions were classified as secondary (Roedder, 1984).

Description of Fluid Inclusions

Heating and Freezing Measurements

All 80 fluid inclusions were Type I (liquid rich) as described by Nash (1972). Type II (vapor rich) fluid inclusions were

observed however, heating and freezing measurements were not recorded due to their small size, < 4 um (Figure 2). Temperature of homogenization of the vapor phase to liquid (T_h V (L)) ranged from 135.3-288.7 ^{o}C, mean of 227 ^{o}C (Figure 3; Appendix Table B). Equivalent weight percent NaCl was determined using the equation of Potter and others (1978) and ranged from .18 to 4.0 percent, mean of 1.3 (Figure 4; Appendix Table B). The volume percent vapor ranged from 3-52 percent (Appendix Table B).

Discussion

Recently boiling of hydrothermal solutions has been documented as a means to alter fluid chemistry, resulting in gold precipitation. (Bodnar, 1981; Romberger, 1982; Roedder, 1984; Cunningham, 1985). Therefore, identification of a boiling zone will delineate the higest concentration of precious metals. Bodnar, 1981 and Cunningham, 1985 use fluid inclusions to determine if a buried boiling horizon exists. In the boiling-water model (Figure 5) fluid inclusions above the boiling zone will have variable phase ratios and a wide range in temperatures. Below the boiling zone the fluid inclusions will be water rich, uniform phase ratios and restricted in temperature range. In the boiling zone both liquid rich and vapor rich fluid inclusions will be observed (Bodnar, 1981; Cunningham, 1985). At the Paiute prospect the fluid inclusions have a wide range of temperatures, 135-288 ^{o}C, and varying phase

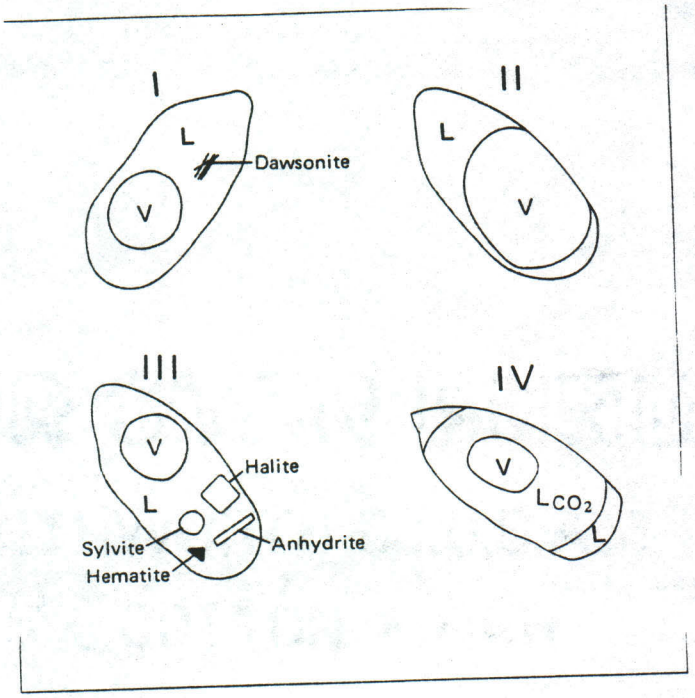


FIGURE 2.—Sketches of typical fluid inclusions obsderved in porphyry copper deposits. Types I to IV correspond to those described in text. L, liquid; V, vapor; L_{CO_2}, liquid CO_2.

Figure 2. Fluid inclusion Type classification (Nash, 1972)

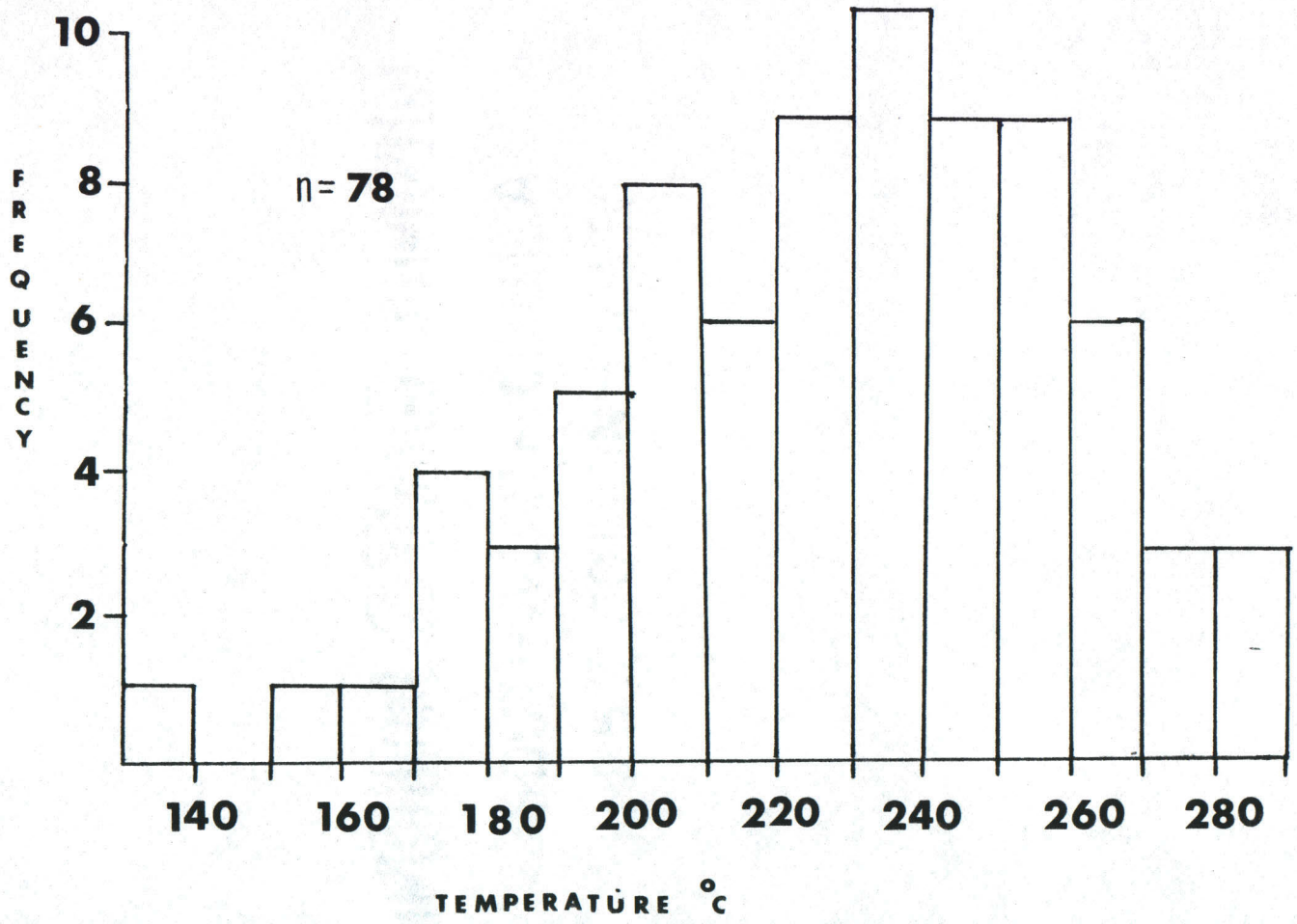


Figure 3. Temperature of homogenization

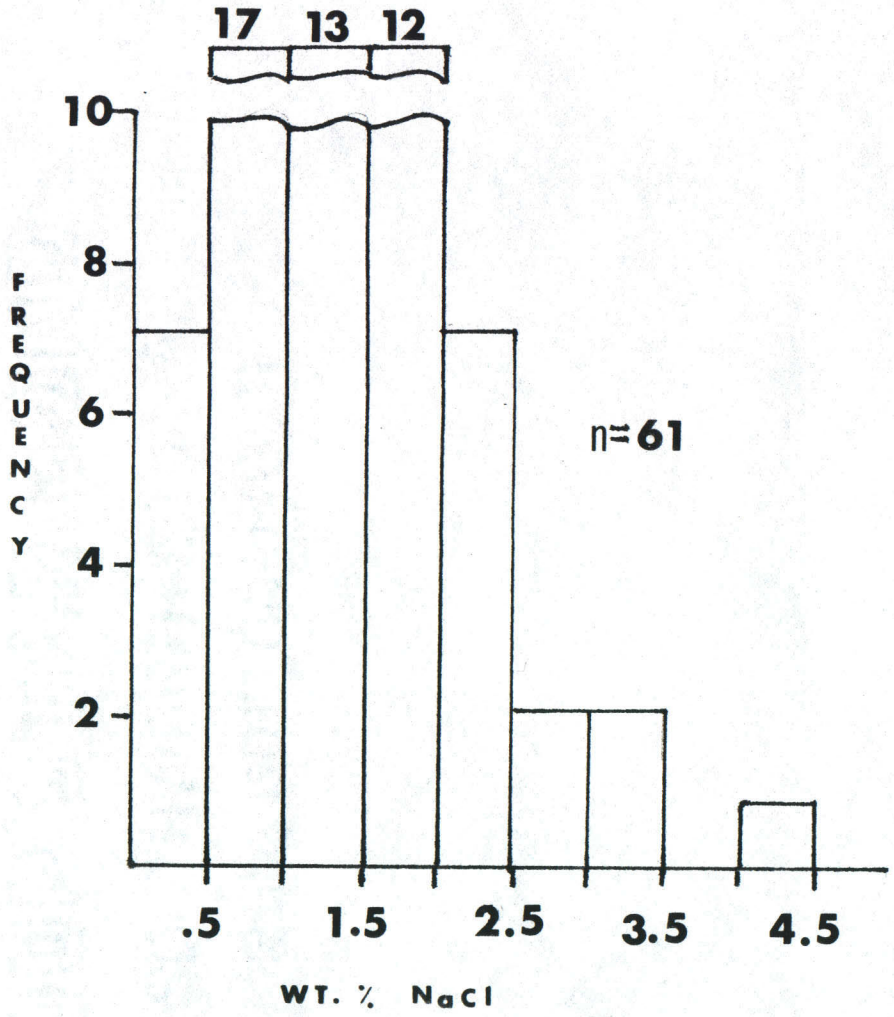


Figure 4. Equivalent weight percent NaCl

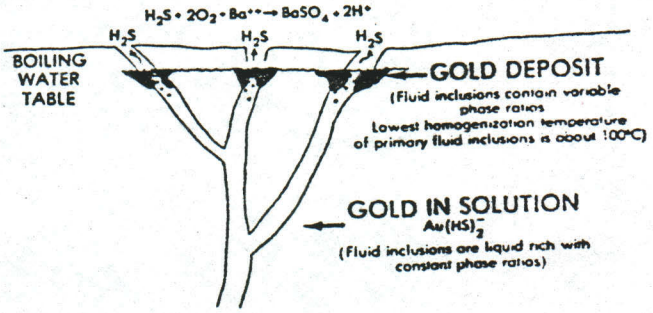


Figure Boiling-water-table model for epithermal gold deposition.

Figure 5. Boiling-water tabel model (Cunningham, 1985)

ratios, 3-52 percent (Figure 4, Appendix Table B). A few liquid rich inclusions were observed however due to their small size heating and freezing measurements were unsuccessful. The fluid inclusion data of wide temperatures and variable phase ratios strongly indicate a boiling zone at depth.. Figure 6 is a temperature vs. salinity plot of super-giant gold districts,> 10^7 oz gold, and giant gold districts, < 10^7 and > 10^6 oz gold (Buchanan, 1980; Etienne and others, 1985). Two distinct fields develop, super-giant districts have fluids inclusions < 200^{o}C and salinities < 3 equivalent weight percent NaCl. Whereas, giant camps have temperatures betwen 200-300 ^{o}C and salinities between 3-8 percent. The Paiute pospect plots within the giant gold district field strongly suggesting a strong potential for precious metal mineralizaton (Figure 7).

Summary

The geochemical data reveals anomalous values of Ag, As, Au, Ba, Sb and Tl indicating a supra-ore body exists at the Paiute claim blocks. The fluid inclusion survey strongly suggests a boiling horizon at depth. Based on this data the current level of erosion is above the boiling horizon and just in the precious metal zone of Buchanan's 1981 , model (Figure 8). Comparing the trace element data to Berger and Eimon, 1982, this model indicates the Paiute prospect is approximately at the zone of acid leaching to stockwork veining zone (Figure 9, In Berger, 1985). Sample 86-011-F and 86-077-PR were collected from a small, 1-2 meter, brecciated zone, which further

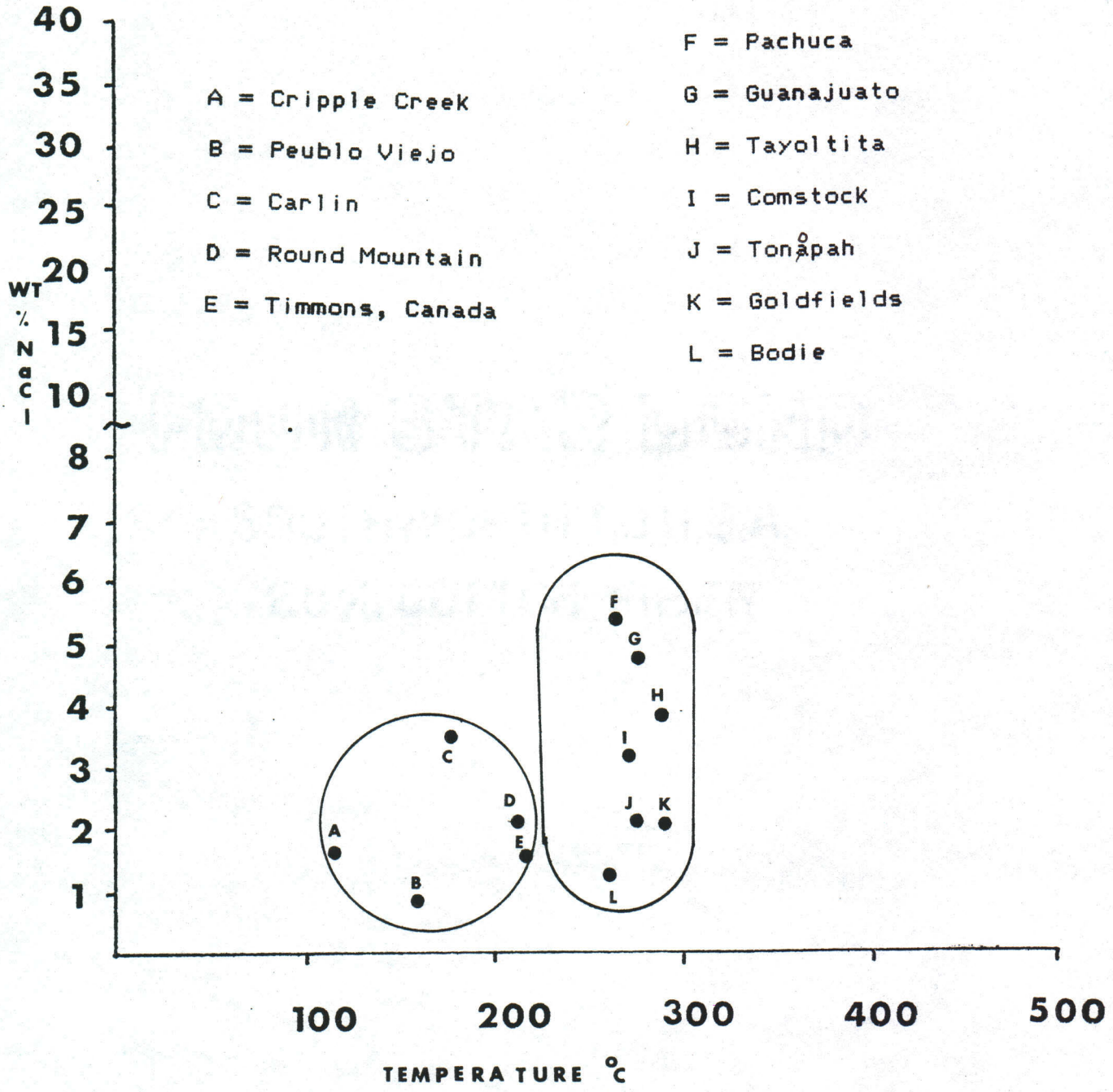


Figure 6. Temperature vs. salinity plot of supergiant and giant lode gold camps.

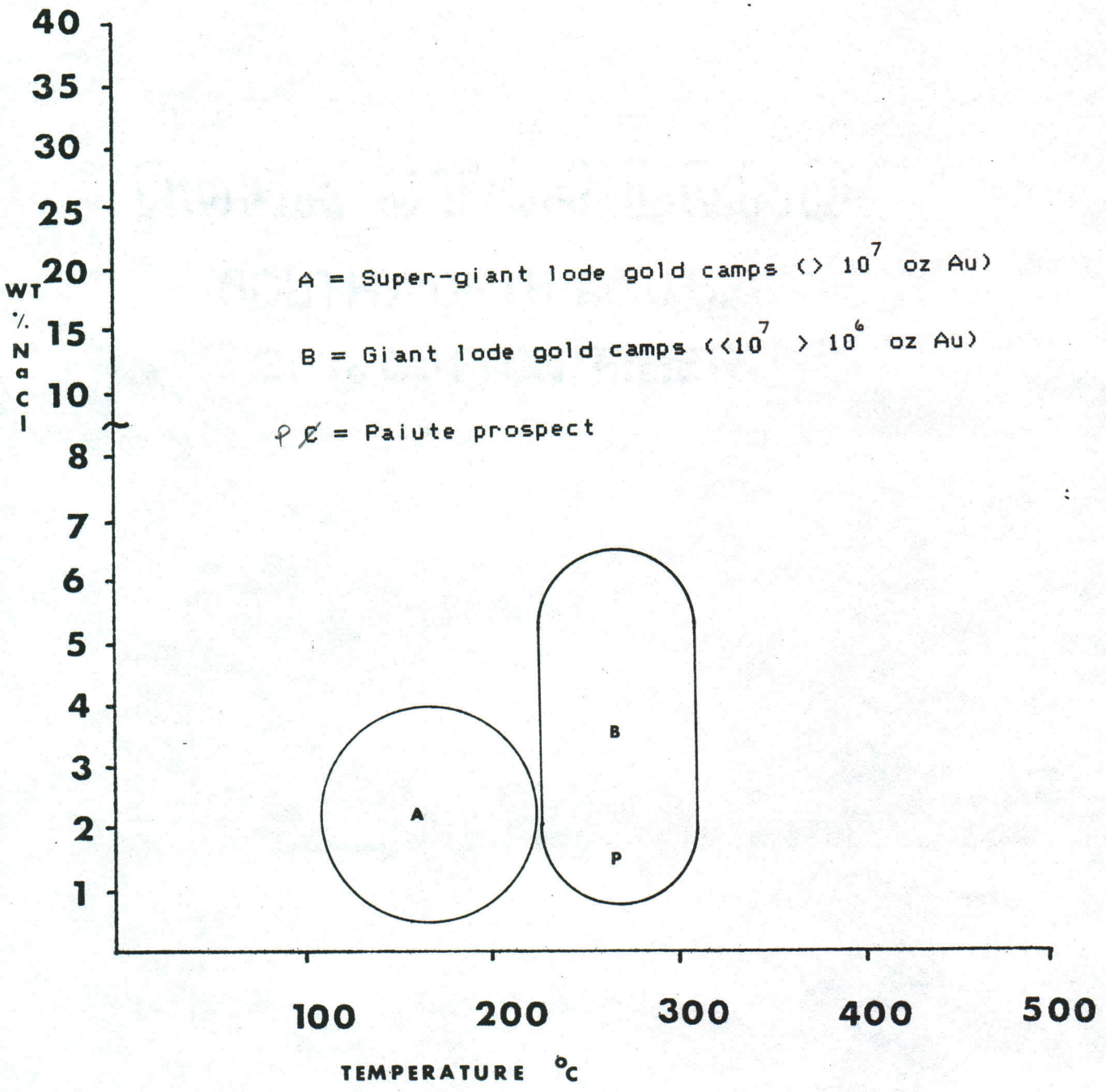


Figure 7. Temperature vs. salinity plot of supergiant, giant lode gold camps and the Paiute prospect

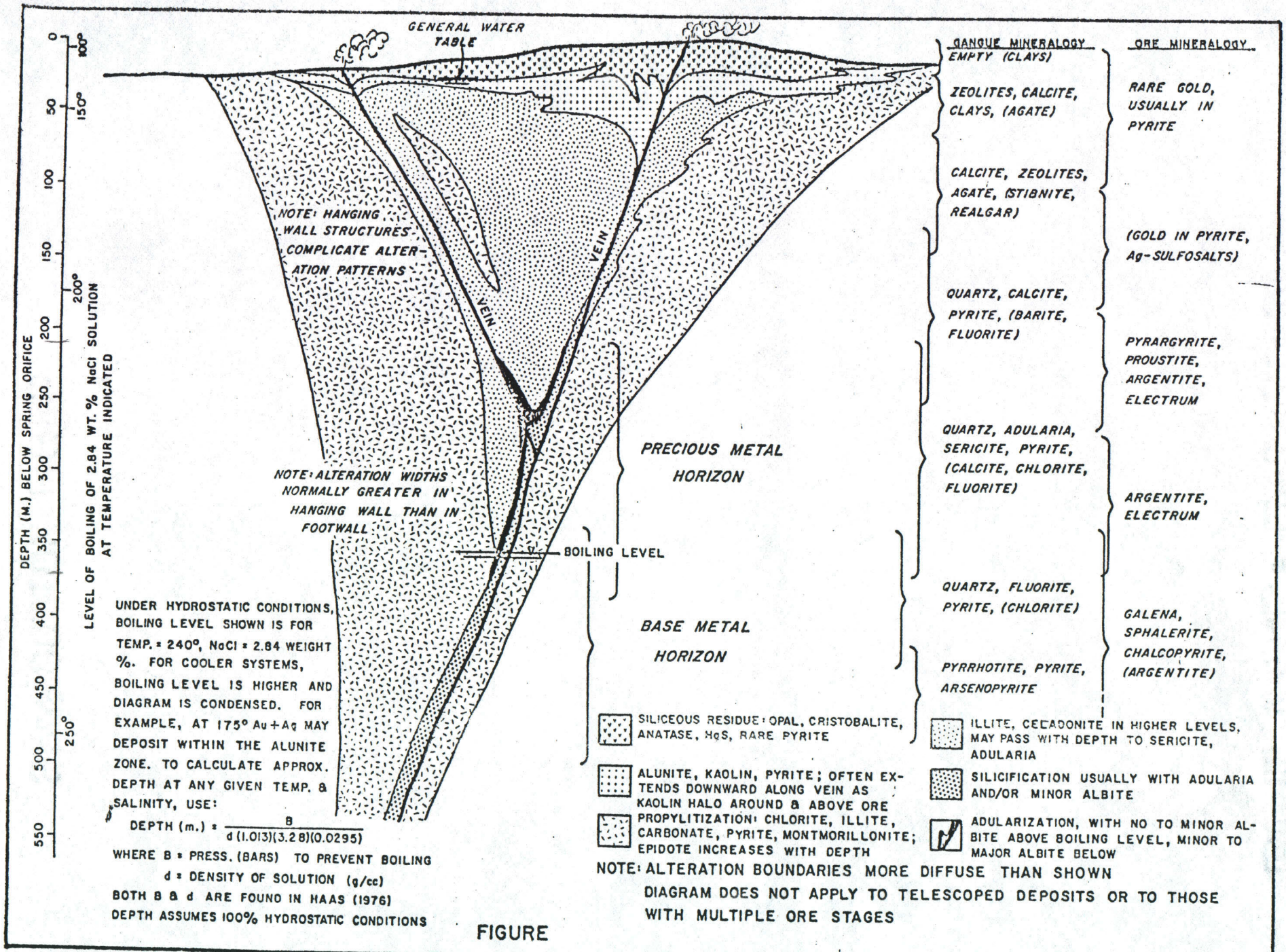


Figure 8. Buchanan epithermal precious metal model .
(Buchanan, 1981)

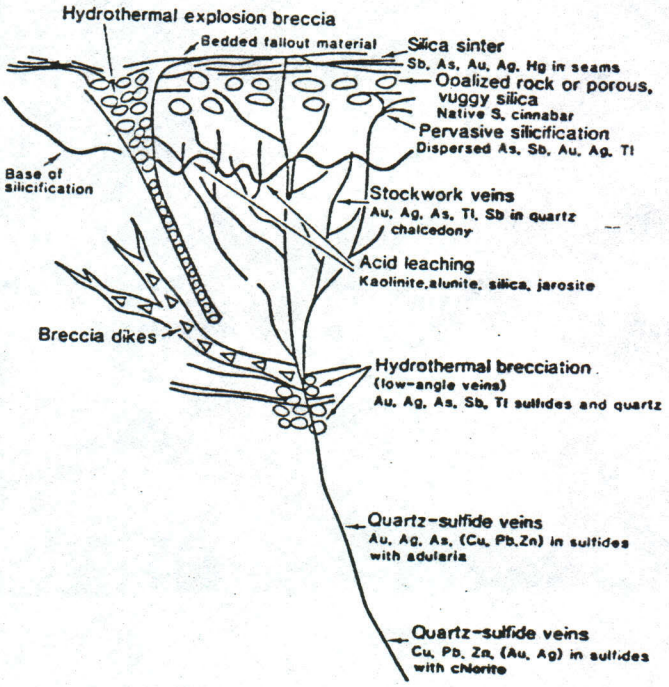


Figure 9. Berger and Eimon hot spring model (Berger and Eimon, 1982)

supports the prospect being in the upper levels.

The geochemical pathfinders delineate mineralization along the Paiute fault zone in 3 seperate areas and in section 8. As, Sb, K/Tl, Ba/Tl and Tl/Sr indicate potential mineralization in section 8.

APPENDIX TABLE A

BACKGROUND

SAMPLE #		AG OZ/TON	AS PPM	AU OZ/TON	BA PPM	K %	SB PPM	SR PPM	TL PPM	K/TL	BA/TL	TL/SR
86-025-PR	THL	<0.01	14	<0.002	1430	4.13	.8	260	*			
86-030-PR	THM	<0.01	10	<0.002	710	5.29	1.6	95	*			
86-037-PR	THM	<0.01	10	<0.002	925	3.67	.7	200	.6	6.12	15.4	30.0
86-042-PR	THL	<0.01	10	<0.002	1300	3.58	.8	555	.6	5.97	21.67	10.8
86-045-PR	THL	<0.01	11	<0.002	1320	4.51	.6	325	*			
86-054-PR	THL	<0.01	7	<0.002	1300	3.36	.7	670	.5	6.72	26.0	7.45
86-064-PR	THU	<0.01	3	<0.002	1530	3.87	.6	390	.5	7.74	30.6	12.8
86-065-PR	THU	<0.01	4	<0.002	880	5.07	.4	98	*			
86-072-PR	THL	<0.01	2	<0.002	1360	3.98	.4	330	*			
86-075-PR	THL	<0.01	3	<0.002	1400	4.03	1.0	530	.6	6.72	23.2	11.3
86-087-PR	THL	<0.01	4	<0.002	1650	5.77	1.4	400	*			
86-089-PR	THL	<0.01	2	<0.002	1390	4.70	.6	730	*			
86-091-PR	THL	<0.01	6	<0.002	1100	3.90	2.6	275	*			
86-093-PR	THL	<0.01	2	<0.002	1260	3.53	.5	495	*			
86-096-PR	THL	<0.01	5	<0.002	1630	4.61	.6	510	.6	7.68	27.2	11.8

MINERALIZED

86-023-PR	THL-B		38		410	4.38	2.8	47	.7	6.26	5.86	149
86-024-PR	THL-B		23		460	4.46	2.0	43	.8	5.53	5.75	186
86-026-PR	THL-B		120		325	4.65	4.8	33	.8	5.81	4.06	242
86-027-PR	THL-B		11		525	3.92	2.2	66	.7	5.60	9.38	106
86-028-PR	THM-B		23		570	4.62	1.4	66	.6	7.7	9.50	90.9
86-029-PR	THL-B		180		585	4.43	3.4	55	.7	6.33	8.36	127
86-031-PR	THU-P		10		965	3.45	.2	168	.6	5.75	16.1	35.7
86-032-PR	THM-B		22		495	4.59	2.0	56	.9	5.10	5.50	161
86-033-PR	THM-B		6		430	4.41	.4	48	.8	5.51	5.38	167
86-034-PR	THM-B		70		390	3.15	1.6	129	.6	5.25	6.50	46.5
86-035-PR	THM-B		100		660	4.59	1.8	83	.7	6.56	9.43	84.3
86-036-PR	THM-P		10		500	3.21	.7	144	.7	4.59	7.14	48.6
86-038-PR	THL-P		7		825	3.46	.5	148	.6	5.77	13.8	40.5
86-039-PR	THL-B		7		390	4.69	.9	36	.8	5.86	4.88	222
86-040-PR	THL-P		3		845	3.86	.6	138	.9	4.29	9.39	65.2
86-041-PR	THL-B		7		405	4.56	.8	40	.8	5.70	5.06	200
86-043-PR	THL-B		30		400	4.86	1.2	50	.7	6.94	5.71	140
86-044-PR	THL-B		10		615	4.38	3.2	81	.7	6.26	8.79	86.4
86-046-PR	THL-B		22		325	4.14	1.8	20	.6	6.90	5.42	300
86-047-PR	THM-B		11		390	4.78	.7	30	.7	6.83	5.57	233
86-048-PR	THM-B		7		565	4.59	.8	76	.7	6.56	8.07	92.1
86-049-PR	THM-B		19		835	5.30	1.0	92	1.0	5.30	8.35	109
86-050-PR	THL-P	.04	6	.01	760	3.30	2.2	37	.9	3.67	8.44	243
86-051-PR	THL-P		22	.002	455	1.54	.9	53	.5	3.08	9.10	94.3
86-052-PR	THL-P	.08	11		695	3.24	1.6	62	*			

86-053-PR	THM-B		27		430	4.77	1.8	65	.8	5.96	5.38	123
86-056-PR	THL-P		5		815	3.54	.4	160	.6	5.90	13.6	37.5
86-057-PR	THL-B		120	.002	445	4.61	3.6	78	.6	7.68	7.42	76.9
86-058-PR	THL-P		4		645	4.08	.5	124	.7	5.83	9.21	56.5
86-059-PR	THL-B		9	.002	790	4.43	1.6	75	.7	6.33	11.3	93.3
86-060-PR	THM-B		10	.002	385	5.00	.4	36	.7	7.14	5.50	194
86-061-PR	THM-B		2		390	4.65	.2	42	.8	5.81	4.88	190
86-062-PR	THM-P		29		650	4.96	2.4	84	.8	4.59	8.13	95.2
86-063-PR	THM-B		3		475	3.36	.8	64	.6	5.60	7.92	93.8
86-066-PR	THL-P		4		1100	4.45	.4	174	.8	5.56	13.8	46.0
86-067-PR	THM-B		6		600	4.92	1.2	41	.9	5.47	6.67	220
86-068-PR	THL-B	.02	29		155	2.61	6.8	20	.7	3.73	2.21	350
86-069-PR	THL-B	.01	10	.002	145	1.00	5.8	24	.8	1.25	1.81	333
86-070-PR	THL-B		5		690	4.17	1.2	45	.7	5.96	9.86	156
86-071-PR	THL-P		5		1580	4.18	.4	740	.7	5.97	22.6	9.46
86-073-PR	THL-P		10		1870	5.84	.6	101	1.6	3.65	11.7	158
86-074-PR	THL-P		2		1570	4.70	.8	300	1.1	4.27	14.3	36.6
86-076-PR	THL-P		3		1480	5.11	1.0	345	1.1	4.65	13.5	31.9
86-077-PR	THL-P	.05	4		1780	5.61	.5	57	1.5	3.74	11.9	263
86-078-PR	THL-B		5		865	3.73	1.4	64	1.1	3.39	7.86	172
86-079-PR	THL-B	.09	4	.002	1790	5.63	1.0	76	1.4	4.02	12.8	184
86-080-PR	THL-B	.01	11		930	3.65	2.0	57	1.0	3.65	9.30	175
86-081-PR	THL-P		4		1200	4.61	.7	42	1.2	3.84	10.0	286
86-082-PR	THL-P		6		1580	3.87	.8	435	.7	5.53	22.6	16.1
86-083-PR	THL-B		2		910	2.99	.4	485	*			
86-084-PR	THL-P		3		1090	4.52	1.0	131	1.0	4.52	10.9	76.3
86-085-PR	THL-B		46		535	5.09	1.8	38	1.0	5.09	5.35	263
86-086-PR	THL-B		100		435	5.06	1.1	57	.9	5.62	4.83	158
86-088-PR	THL-P		2		1580	4.86	.6	410	.8	6.08	19.8	19.6
86-090-PR	THL-P		4		1200	3.96	.5	245	.8	4.95	15.0	32.6
86-092-PR	THL-P		2		1200	4.16	.5	350	.8	5.20	15.0	22.9
86-094-PR	THL-B		5		1870	5.74	.8	128	1.1	5.23	17.0	85.9
86-095-PR	THL-B		3		1240	3.52	1.0	455	.7	5.03	17.7	15.4
86-097-PR	THL-P	.01	4		850	4.96	3.0	37	1.2	4.13	7.08	324
86-098-PR	THL-P		9		970	4.11	1.4	89	1.0	4.11	9.7	112

* = TL DATA BEING RE-ANALYZED AT TIME OF REPORT
THL = LOWER MEMBER
THM = MIDDLE MEMBER
THU = UPPER MEMBER
THM-B = UPPER MEMBER BLEACHED
THL-P = LOWER MEMBER PROPYLITIC ALT

APPENDIX TABLE B

SAMPLE NUMBER	T M ICE	EQUIV WT % NACL	T V H	VOL % VAPOR
86-001-F	-1.0	1.7	254.8	11
	-0.2	.35	214.7	33
	-0.2	.35	211.5	13
	-0.6	1.0	160.0	20
	-0.3	.53		13
	-0.1	.18		11
	-0.1	.18	262.2	17
	-0.2	.35	240.8	25
86-003-F	-0.6	1.0	226.3	17
	-0.5	.87	230.2	17
86-004-F	-0.4	.70		20
	-1.7	2.9		13
	-0.4	.70		20
				26
86-006-F			217.4	6
	-0.5	.87	263.3	13
86-007-F	-0.4	.70	270.5	17
	-0.5	.87	215.4	25
	-1.0	1.0	238.8	25
			261.6	16
			255.8	10
			288.7	20
86-008-F			252.2	40
			272.2	20
86-010-F	-1.2	2.1	229.6	14
	-1.2	2.1	173.1	11
	-1.0	1.7	176.4	25
	-1.2	2.1	172.6	20
	-0.8	1.4	205.6	20
	-0.7	1.2	200.8	33
	-0.7	1.2	204.9	20
	-1.4	2.4	213.6	11
	-1.0	1.7	205.3	13
	-1.5	2.6	209.3	17
86-011-F	-0.6	1.0	263.4	14
	-0.4	.70	244.9	20
	-0.9	1.6	272.5	20
	-0.3	.53	190.5	8
	-0.2	.35	259.8	17
			200.1	17
86-012-F	-0.8	1.6	220.0	27
	-0.7	1.2	188.0	25
	-0.6	1.0	230.7	17
	-0.6	1.0	223.4	25
86-014-F	-1.5	2.5	248.9	11
	-1.8	3.1	255.2	20

			249.6	33
			259.6	52
	-0.4	.70	262.2	40
	-0.7	1.2	241.6	20
	-1.0	1.7	237.5	11
	-1.0	1.7	230.4	20
	-0.8	1.6	265.3	17
	-0.8	1.6	183.3	40
	-0.7	1.2	221.8	
				17
86-015-F	-2.4	4.0	170.4	25
	-1.8	3.1	194.1	20
			205.4	
				20
86-016-F			196.8	
86-017-F	-1.2	2.1	248.6	10
	-1.1	1.9	239.3	17
			234.6	13
	-1.1	1.9	229.6	11
	-0.8	1.6	250.2	20
			194.3	8
			192.4	38
			214.4	20
			220.1	25
			225.6	40
			237.6	14
			224.8	15
			246.5	11
			245.8	
86-018-F			153.5	9
86-022-F			135.3	26
	-1.3	2.2	186.5	9
			232.2	33
86-055-F	-0.3	.53		21
	-0.4	.70	239.3	18
	-0.2	.35	242.0	5
	-0.5	.87	253.0	8
	-0.3	.53	288.4	5
	-0.4	.70	283.0	8
	-0.6	1.0	254.7	3
	-0.4	.70		8
	-0.4	.70	200.2	7

ALL TEMPERATURES IN CENTRIGRADE

ALL FLUID INCLUSIONS ARE TYPE 1

T_M ICE = LAST ICE MELT

T_H V = HOMOGENIZATION OF VAPOR TO LIQUID

VOL % VAPOR = OBSERVED VOL % VAPOR AT 25 °C

SAMPLES 86-002-F, 005, 009, 013, 019, 020, 021, AND 051AF
ALL FLUID INCLUSIONS TO SMALL TO OBSERVE PHASE CHANGES

REFERENCES CITED:

Berger, B., R., 1985, Geologic-Geochemical features of Hot-Spring precious metal deposits: In Tooker, E., W., Editor, Geologic Characteristics of sediment and volcanic hosted disseminated gold deposits. Search for an occurrence model: U. S. Geological Survey Bulletin 1646, 150 p.

Beus, A., A., and Grigorian, S., V., 1977, Geochemical exploration methods for mineral deposits: Wilmette, Illinois, Applied Publishing Ltd., 287 p.

Bodnar, R., J., 1981, Use of fluid inclusions in mineral exploration. Comparison of observed features with theoretical and experimental data on ore genesis: Geological Society of America, Abstract with Programs, v. 13, p. 412

Brobst, D., A., 1959, Barite resources of the United States: U. S. Geological Survey Bulletin 1072-B, p. 67-130.

Buchanan, L., J., 1981, Precious metal deposits associated with volcanic environments in the Southwest: In Dickinson, W., R., and Payne, W., D., Editors, Relations of tectonics to ore deposits in the Southern Cordillera, Arizona Geological Society Digest, v. 14, 288 p.

Cunningham, C., C., 1985, Characteristics of boiling-water-table and carbon dioxide models for epithermal gold deposition: In Tooker, E., W., Editor, Geologic characteristics of sediment and volcanic hosted disseminated gold deposits. Search for an occurrence model: U. S. Geological Survey Bulletin 1646, 150 p.

De Albuquerque, C., A., R., and Shaw, D., M., 1972, Thallium: In Wedepohl, K., H., Editor, Handbook of Geochemistry, Berlin, Springer-Verlag, p. 81-B-1-81-O-6.

Etienne, J., Gordon, T., and Mihalasky, M., 1985, Major lode gold camps in North America: Spokane, Washington, 91 st Northwest Mining Association Annual Convention.

Ewers, G., R., and Keays, R., R., 1977, Volatile and precious metal zoning in the Broadlands geothermal field, New Zealand: Economic geology, v. 72, p. 1337-1354.

Fischer, K., 1972, Barium: In Wedepohl, K., H., Editor, Handbook of Geochemistry, Berlin, Springer-Verlag, p. 56-A-1-56-A-6.

Hahn, R., 1986, Lithogeochemistry and fluid inclusions of the Acme mining claims, Stevens County, Washington: Cheney, Eastern Washington University, M.S. Thesis, 67 p.

Ikramuddin, M., 1982, The relation between Tl, Rb, and K in mineralized and non-mineralized rocks: Geological Society of America, Abstracts with Programs, v. 14, p. 520

Ikramuddin, M., 1983, The use of Ba/Tl Ratio as a guide to mineralization: Geological Society of America, Abstracts with Progams, v. 15, p. 601

Ikramuddin, M., Asmeron, Y., Nordstrom, P., M., Kinart, K., Martin., W., M., Digby, S., J., M., Elder, D., D., Nijak, W., F., and Afemari, A., A., 1983, Thallium: A potential guide to mineral deposits: Journal of Geochemical Exploration, v. 19, p. 465-490.

Ikramuddin, M., Besse, L., and Nordstrom, P., M., 1986, Thallium in the Carlin type gold deposits: Applied Geochemistry, In Press.

Levinson, A., A, 1980, Introduction to exploration geochemistry: Wilmette, Illinois, Applied Publishing Ltd., 924 p.

Massa, P., J., and Ikramuddin, M., 1986, Thallium in gold-bearing quartz veins and associated rocks from the COMO mining district, Nevada: Chemical Geology, v. 54, p. 27-34.

Nash, J., T., 1972, Fluid inclusion petrology--data from porphyry copper deposits and application to exploration: U. S. Geological Survey Professional Paper 907D, 16 p.

Payne, M., H., 1985, Paiute Project: Denison Mines (U. S.) Inc., In-house report, 26 p.

Potter, R., W., Clynne, M., A., and Brown, D., L., 1978, Freezing point depression of aqueous NaCl solutions: Economic Geology, v. 73, p. 284-285.

Puchelt, H., 1972, Barium: In Wedepohl, K., H., Editor, Handbook of Geochemistry, Berlin, Springer-Verlag, p. 56-B-0-56-0-22.

Roedder, E., 1984, Fluid Inclusions: Review in Mineralogy Volume 12, Chelsea, Michigan, Cook Crafters, Inc., 644 p.

Romberger, S., B., 1982, Transport and deposition of gold hydrothermal systems at temperatures up to 300 C: Geological Society of America, Abstracts with Programs, v. 14, p. 602.

Rose, A., W., Hawkes, H., E., And Webb, J., S., 1983, Geochemistry in mineral exploration: London, Academic Press, 657 p.

Steuber, A., M., 1978, Strontium, in Wedepohl, K., H., editor, Handbook of geochemistry, Berlin, Springer-Verlag, D-1-1-17.

Tooker, E., W., 1985, Geologic characteristics of sediment and volcanic hosted disseminated gold deposits. Search for an occurrence model: U. S. Geological Survey Bulletin 1646, 150 p.

Vlasov, K., A., 1966, Geochemistry and mineralogy of rare elements and genetic types of their deposits, Volume II: Jerusalem, Isreal, Isreal Programs for Scientific Translation, 688 p.

Werre, R., W., Bodnar, R., J., Bethke, P., M., and Barton, P., B., 1979, A novel gas-flow fluid inclusion heating/freezing stage: Geological Society of America, Abstracts with programs, v. 11, p. 539.

White, D., E., 1981, Active geothermal systems and hydrothermal ore deposits: Economic Geology, 75th Anniversary Volume, p. 392-423.

Table 1

	T_h °C		Wt. % NaCl	
	A	B	A	B
East	212	231	1.16	1.19
West	228	232	1.46	1.26
Far West	218	232	1.44	.828

A = Mean of each sample, then mean of samples.

B = Mean of individual meaurements of all samples.

East samples = 86-001-F, 003, 004, 014, 018.

West samples = 86-007-F, 008, 010, 011, 016, 017.

Far West = 86-022-F, 055.

References Cited

Haas, J., L., Jr., 1976, Physical properties of the coexisting phases and the thermochemical properties of the H2O component in boiling NaCl solutions: U.S. Geological Society Bulletin 1421-A, 73 p.

Potter, R., W., II, 1977, Pressure correction for fluid-inclusion homogenization temperatures based on the volumetric properties of the system NaCl-H2O. U.S. Geological Survey Journal Research, v. 5, p. 603-607.

Roedder, E., 1984, Fluid Inclusions: Review in Mineralogy Volume 12, Chelsea, Michigan, Cook Crafters, Inc., 644 p.

Figure 6 References

Buchanan, L., J., 1981, Precious metal deposits associated with volcanic environments in the southwest: In Dickson, W., R., and Payne, W., D., Editors, Relations of tectonics to ore deposits in the southern Cordillera: Arizona Geological Society Digest, v. 14, 288 p.

Drier, J., F., 1976, The geochemical environment of ore deposition in the Pachuca-Real Del Norte District, Hidalgo, Mexico: Tuscon Arizona, Univeristy of Arizona, PhD, 115 p.

Fahley, M., P., and Leanderson, P., J., 1982, Genesis of silver mineralization at Tonopah, Nevada: Geological Society of America, Abstracts with Programs, v. 14, p. 486.

Goss, W., H., 1975, New ore discovery and source of silver-gold veins Guanajuato, Mexico: Economic Geology, v. 70, p. 1175-1189.

Hayba, D., O., 1983, A compilation of fluid inclusion and stable isotope data on selected precious and base metal epithermal deposits: U. S. Geological Survey Open File Report OF 83-450, 24p.

Kesler, S., E., Russell, N., Seaward, M., Rivera, J., McCurdy, K., Cumming, G., L., and Sutter, J., F., 1981, Geology and geochemistry of sulfide mineralization underlying the Pueblo Viejo gold-silver oxide deposit, Dominican Republic: Economic Geology, v. 76, p. 1096-1117.

O'Neil, J., R., Silberman, M., L., Fabbi, B., P., and Chesterman, C., W., 1968, Stable isotope and chemical relations during mineralization in the Bodie Mining District, Mino County, California: Economic Geology, v. 68, p. 765-784.

Radtke, A., S., Rye, R., O., and Dickson, F., W., 1980, Geology and stable isotope studies of the Carlin gold deposit, Nevada: Economic Geology, v. 75, p. 641-672.

Smith, D., M., Jr., Albinson, T., and Sawkins, F., J., 1982, Geologic and fluid inclusion studies of the Tayoltita silver-gold vein deposit, Durango, Mexico: Economic Geology, v. 77, p. 1120-1145.

Smith, T., J., Cloke, P., L., and Kesler, S., 1984, Geochemistry of fluid inclusions from the McIntyre-Hollinger gold deposit, Timmons, Ontario, Canada: Economic Geology, v. 79, p. 1265-1285.

Thompson, T., B., Trippel, A., D., and Dwelley, P., C., 1985, Mineralized veins and breccias of the Cripple Creek district, Colorado: Economic Geology, v. 80, p. 1669-1688.

Tooker, E. ,W., editor, 1985, Geologic characteristics of sediment

and volcanic hosted disseminated gold deposits-Search for an occurrence model: U. S. Geological Survey Bulletin 1646, 150 p.

FLUID INCLUSION SURVEY:

86-001-F

Quartz vein, clear-gray, 1-10 mm in width, cutting a propylitic altered tuff.

86-002-F

White-gray sugary quartz coated with Fe stain.

86-003-F

Silicified propylitic altered tuff. Silicification is gray, with a small 5 mm gray quartz vein cutting it.

86-004-F

Quartz vein feeding off a larger silicified zone. Vein cuttin a bleached (argillic) zone with prominant Fe staining. Located at the portal of a collapsed adit.

86-005-F

White quartz vein, 3-4 cm in width. Outcrop bleached white, Fe stained, and veined.

86-006-F

White quartz vein with numerous open spaces lined with well developed quartz crystals.

86-007-F

Small quartz veins with open spaces lined with small quartz crystals. Outcrop is propylitic altered tuff with abundant Fe staining.

86-008-F

Milky quartz vein, 2-6 cm in width, with open spaces lined with quartz crystals. Outcrop slightly Fe stained.

86-009-F

Small white quartz vein taken from prospectors pit that is Fe stained.

86-010-F

7 cm vein that is lined with milky quartz and centered is a clear-gray quartz containing small brecciated fragments, 1 mm of the milky quartz.

86-011-F

2 foot wide brecciated, milky quartz vein conating angular matrix of wallrock. Vein has numerous open space lined with well developed quartz crystals and adularia?

86-012-F

Clear-gray quartz vein with open spaces lined with quartz crystals, taken from tailings of old adit in sec 18.

86-013-F

White calcite from same tailings as 86-012-F.

86-014-F

Gray-white quartz vein, 10 cm, cut by small <1 cm vein. Small vein has open spaces lined with quartz crystals.

86-015-F

4 cm milky quartz vein containing open spaces and slightly Fe stained.

86-016-F

Milky quartz vein, 5-10 cm width, containing open spaces with well developed quartz crystals.

86-017-F

As 86-016-F

86-018-F

White quartz vein, 0.5-1 cm, with smaller veins cutting it, slightly Fe stained.

86-019-F

As 86-018-F, taken from float 1 meter below outcrop.

86-020-F

Silicified sample, white, sugary texture, with open spaces and some minor Fe stain. Sample excaveted (insitu?).

86-021-F

Quartz vein from tailings of small adit.

86-022-F

Tailings sample from portal of adit, white bull quartz.

86-055-PF

3 cm white quartz vein with open spaces line with well developed quartz crystals, cutting propylitic altered tuff.

86-051-AF

2 cm white quartz vein, cutting propylitic altered tuff.

LITHOGEOCHEMICAL SURVEY:

86-023-PR

Gray-white, silicified tuff with slight Fe stain.

86-024-PR

As 86-023-PR, except greater degree of Fe stain

86-025-PR

Purple crystalline tuff (Thl)

86-026-PR

Bleach white, Fe stained, slight silicification with light green matrix, tuff

86-027-PR

Bleached white, minor Fe stain, slightly silicified tuff

86-028-PR

White, silicified, minor Fe stain, tuff.

86-029-PR

As 86-028-PR

86-030-PR

Gray lithic tuff (Thm)

86-031-PR

Green, propylitic altered, tuff

86-032-PR

Bleached white, red and brown Fe stain, tuff.

86-033-PR

Gray-white silicified tuff, with minor Fe stain and small <1 cm quartz veining.

86-034-PR

Gray silicified tuff with 1-2 cm gray quartz veining.

86-035-PR

Bleached white, red and brown staining some slicification, small 1 cm quartz veining.

86-036-PR

Green, propylitic altered, tuff.

86-037-PR

Red to purple lapilli tuff, with green lapilli (Thm).

86-038-PR

Green, propylitic altered, tuff

86-039-PR

Bleached white, with slight green tint matrix, tuff

86-040-PR

As 86-038-PR

86-041-PR

As 86-039-PR

86-042-PR

Green lapilli tuff, slightly altered? (Thl).

86-043-PR

Bleached white, minor Fe stain, tuff

86-044-PR

Bleached white-gray, dark brown Fe stain, slightly

silicified tuff.

86-045-PR

Purple lapilli tuff, with green lapilli (Thl).

86-046-PR

Gray silicified, red and brown Fe stain, tuff, with minor sulfur stain.

86-047-PR

Bleached white, silicified, tuff, with red and brown Fe staining.

86-048-PR

As 86-047-PR

86-049-PR

Bleached white, slightly silicified tuff. Small veining as indicated by residual Fe staining.

86-050-PR

Green, propylitic altered, tuff, with small 2 cm quartz veining and slight Fe staining.

86-051-PR

As 86-050-Pr

86-052-PR

As 86-051-PR, except much grater quartz veining with open spaces.

86-053-PR

As 86-034-PR

86-054-PR

Green red lapilli tuff, strong effervescing (Thl).

86-056-PR

Green, propylitic altered, tuff, with some bleaching.

86-057-PR

Bleached white, silicified tuff, with small quartz veining.

86-058-PR

Green and red lapilli tuff, strong effervesing and minor bleaching.

86-059-PR

Bleached white-gray, silicified tuff, with small quartz veining that contains well developed quartz crystals.

86-060-PR

As 86-059-PR

86-061-PR

As 86-060-PR

86-062-PR

Gray silicified tuff with minor Fe staining.

86-063-PR

Bleached gray, silicified tuff with small Fe stained cavities.

86-064-PR

Purple crystalline tuff (Thu).

86-065-PR

Purple crystalline tuff, effervesces slightly (Thu).

86-066-PR

Light green matrix, crystalline, tuff.

86-067-PR

Bleached gray, silicified tuff, with slight Fe stain.

86-068-PR

As 86-067-PR

86-069-PR

Gray tint color, completely silicified. Outcrop heavily Fe stained.

86-070-PR

Light gray, slightly silicified, light Fe stained, tuff.

86-071-PR

Green, propylitic altered tuff, with minor silicification and effervescing.

86-072-PR

Green-purple crystaline tuff, slight effervescing (Thl).

86-073-PR

Green, propylitic altered, tuff, with small <1 cm veining.

86-074-PR

Brown weathered color, fresh gray color, tuff. Some areas bleached gray by veining that has minor effervescing.

86-075-PR

Purple lapilli tuff, with green lapilli and minor effervescing (Thl).

86-076-PR

Green, propylitic altered, tuff. Weathered surface brown, fresh green matrix with slight silicification.

86-077-PR

Green, propylitic altered, tuff.

86-078-PR

Bleached white tuff, slightly silicified, Fe stain and minor quartz veining.

86-079-PR

Bleached white and silicified tuff. Minor Fe staining and small quartz veining.

86-080-PR

As 86-079-PR, except more open spaces in quartz veining.

86-081-PR

DarK green matrix, propylitic altered, tuff. Small quartz veining with Fe staining.

86-082-PR

Green, propylitic altered, tuff, effervesces.

86-083-PR

Matrix silicified, feldspars bleached white tuff, containing small quartz veining and Fe staining.

86-084-PR

Green lapilli tuff with green matrix and Fe staining indicating veining.

86-085-PR

Bleached white, slight silicification, minor Fe stain and quartz veining.

86-086-PR

As 86-085-PR

86-087-PR

Purple crystalline tuff with minor bleaching of feldspar and effervesces (Thl).

86-088-PR

Slightly silicified, propylitic tuff with minor veining.

86-089-PR

Purple lapilli tuff with purple-gray matrix and green lapilli, effervesces (Thl).

86-090-PR

Green, propylitic altered tuff, with small veining and effervesces.

86-091-PR

Green lithic tuff, effervesces (Thl).

86-092-PR

Green lithic tuff, with minor quartz veining, Fe stain and effervescing.

86-093-PR

Purple crystalline tuff cut by small < 1 cm veins, that effervesces (Thl).

86-094-PR

Bleached gray, minor silicification as evident by veining, tuff

86-095-PR

Light green-gray lapilli tuff, effervesces slightly.

86-096-PR

Green lapilli tuff, effervesces.

96-097-PR

Green, propylitic altered and bleached, tuff, with small quartz veining and Fe staining.

86-098-PR

Green, propylitic altered, tuff, with small quartz veins cutting sample and Fe staining in outcrop.

the tonto group of companies

BRISTLECONE MINING COMPNAY

CORE DRILLING PROJECT
Nixon, Nevada

Q88-133C

Diamond Drilling

Anderson - Fred Winnemucca 623 4203
~~Billings C. City 358 0188~~ 885 7365
Boyles Bros. Sparks 358 5188
Christiansen Ely 289 3145
Cooper & Sons Ely 289 2669
Longyear C City 246 0296

Guy Richardson 788 6200

Brian Susy

Skid mounted or track, angle hole 850
40-45°

Call Cooper: Sons Ely 289 2669
Drilling Services Co. AZ Jim Witt 602 895 9336
Gustin Corp. - Elko
Harris - Pat tied up rest of year
Humboldt 623 5259 Brad -
Ishya Kyle - Winnemucca 623 5988
Track mounted per Brad @ Humboldt
no answer

Layne Sparks 358 0607

B-53 4

5/18/88

Ralph Albright Drilling 322-6584

Energy Exploration Drilling 782-4921 call after 6:30

T & H Drilling 331 9250 Discon.

Woytek 673 6906 - No Core

Wayne 329-8062 STRAIGHT ROTARY

T-4 (Hawthorn) 945-5600 No Answer

Christiansen 289 ~~2693~~ 3145 Busy Rot Conv only

Marvin & Sons 882 2387 No Core

McKay 825-8692 Answer Machine

Parrish 209-466-3831 min 9" & 12

PCE Exploration 916-783-9733 BAKER
800-638-4429 Larry Fleming

Yellowstone Leroy Kay

~~Western Geo~~
Gary Schubert ~~623-3948~~
Custom 727 5371 Conv Rotary
Potter 423 7745 Water Wells
Venturean 602 623 2211

tonto drilling services
DIAMOND AND ROTARY DRILLING

March 3, 1988

Dennis LaPrairie
Bristlecone Mining
2525 Sharon Way
Reno, Nevada 89509

Dear Dennis,

Sorry it took me so long to get this bid out. As we discussed on the phone earlier, we anticpate pumping water to the site.

If you have any questions give me a call at 800-453-8290. We look forward to working with you on this program.

Sincerely,

TONTO DRILLING SERVICES

Larry M. Pisto

2701 WEST 900 SOUTH • SALT LAKE CITY, UTAH, USA 84104
TELEPHONE (801) 974-0645 • TELECOPIER (801) 973-2994

tonto drilling services
DIAMOND AND ROTARY DRILLING

Date March 3, 1988

Bristlecone Mining Company
2525 Sharon Way
Reno, Nevada 89509

ATTENTION: Mr. Dennis S. LaPrairie

Q88-133C
CORE DRILLING PROJECT
Nixon, Nevada

We are pleased to submit our proposal number Q88-133C for your core drilling project near Nixon, Nevada.

1. SCOPE OF THE PROGRAM.

   A. The work entails the drilling of 1 or 2 holes (angled) to a maximum depth of 1,000 feet.

   B. The approximate footage of the project is 1,000 of HQ wireline drilling.

   C. The work would commence approximately June 1, 1988.

   D. The work would be carried out with one truck mounted drill operating two 10-hour shifts per day, seven days per week.

2701 WEST 900 SOUTH • SALT LAKE CITY, UTAH, USA 84104
TELEPHONE (801) 974-0645 • TELECOPIER (801) 973-2994

2. CLIENT'S RESPONSIBILITIES.

A. Drill roads, drill sites, and supply pump sites are to be constructed and maintained accessible to a truck mounted drill rig free of cost to Tonto. Any environmental responsibility relating to the construction, use, or reclamation of same shall be the responsibility of the client. Tonto will, however, remove all trash and loose materials, leaving drill sites in a clean and orderly condition.

B. All licenses, land and water use permits, environmental reports, reports relating to hole plugging, etc. shall be the responsibility of the client. Tonto shall cooperate with and give technical assistance if requested for compliance with these regulations.

C. The client will hold Tonto harmless for any liability claims which may arise from normal activity related to this contract, including pollution of ground water or surrounding land from discharge of drill water and wastes, save if Tonto's employees act in an irresponsible manner.

D. The client will provide suitable equipment at no cost to the contractor for the purposes of:

1. Moving the drilling equipment from the staging area, including loading and off-loading.
2. Moving the drilling equipment from site to site.

Note: This section applies only if access proves too difficult for contractor's wheeled equipment.

E. The client will provide or be responsible for the following items; alternatively, the contractor will provide and charge back to client at Tonto's list price plus ten percent (10%). Any items not covered by Tonto's list price will be charged at supplier's list price plus ten percent (10%).

1. Drilling mud and additives.
2. Cement.
3. Soluble oils (Kutwell).
4. Core boxes and lids, sample bags, and marker blocks.
5. Rod grease or other hole stabilization materials.
6. Special tools or drilling accessories required for testing purposes or which may be left in the hole upon client request.
7. Casing shoes.
8. Casing left in holes or unrecovered casing.
9. Diamond bit costs in excess of $ 3.00 /Ft.

Note: Costs for above items will be F.O.B. site basis.

3. CONTRACTOR'S RESPONSIBILITIES.

A. Equipment and Supplies.

Contractor will provide the following equipment to carry out the work.

1. One (1) unitized truck mounted drill rig (or equivalent) with 20 ft. pull mast, to include hydraulic chuck and rod handling tools.
2. One (1) 4 x 4 pickup.
3. One (1) mud circulation unit.
4. One (1) mud mixing unit and tank.
5. One (1) mud pump.
6. Water supply pump and 2,000 feet of waterline.
7. Sufficient spares for the job.

B. Crew Transportation and Travel Time.

Contractor will provide means of crew transportation from accommodation to sites and return. (See Bid Prices for any applicable travel time costs.)

C. Water Supply.

Water that must be purchased will be the responsibility of the client.

D. Personnel.

Contractor will provide crew consisting of 1 driller and 1 helper per shift. All drill operators will have a minimum of three years drilling experience.

One of the crew shall be designated as runner foreman to supervise and coordinate the work and to prepare daily reports of the drilling activity. If a non-drilling foreman is supplied, he will have a minimum of five years experience in running and being responsible for drill jobs.

E. Accommodation.

Contractor shall provide room and board for the crews at no cost to the client.

F. Equipment Down Time.

Standby due to equipment repair is to the contractor's account except as otherwise noted.

4. GENERAL PROVISIONS.

A. Lost Materials.

In the event that drill rods, casing, or other equipment become lost, broken or stuck in the hole while drilling at the footage rates, the client agrees to reimburse the contractor at field cost rates, for time and materials expended in recovery attempts. If materials are unrecoverable, the contractor shall be reimbursed for same at replacement cost.

B. Unsatisfactory Progress In Hole and Hole Abandonment.

In the event that excessive water flows, cavities, loose, swelling, or caving materials or hole stability problems are encountered of a nature as to prevent the completion or satisfactory progress of a hole, then the contractor does not guarantee to drill to a predetermined depth. If it becomes necessary to abandon said hole, the contractor shall charge the client for those holes abandoned, at the depth of abandonment, and at the rates specified. If the client wishes the contractor to proceed in the hole, the contractor has the option to revert to the operating field cost rate, plus all materials, supplies, and equipment required at replacement cost plus ten percent (10%), subject to client's approval.

C. Field Cost Definitions.

1. Operating.

It is agreed that the operating rates shall include the labor of the regular two man crew per shift, and shall include drill and support equipment rental. The cost of rods, casing, below-the-chuck consumables and other materials and supplies consumed in the work shall be charged to the client at cost plus ten percent (10%).

In the event that extra labor over and above the regular two man crew per shift is utilized, the contractor agrees to supply such additional labor at the rates specified in Bid Prices, Section 5.

2. Non-Operating (Standby).

It is agreed that the non-operating rates shall prevail when work is interrupted due to delays not caused by the contractor, or delays beyond his control.

5. BID PRICES.

A. Mobilization.

Move in charge for all equipment and personnel to the staging area.	$ 2,180.00

B. Demobilization.

Move out charge for all equipment and personnel from the staging area.	$ 2,180.00

C. Moving.

Moving charge from staging area to the first drill site and from the last drill site back to the staging area.	$ 80.00 /Rig Hour
Moving from site to site, setting up and tearing down.	$ 80.00 /Rig Hour

Note: Staging area is defined as the highway transport off loading area.

D. Coring.

	PRICE PER FOOT (HQ) Angle
0 - 1,000 Feet	$ 30.75

E. Non-Core Drilling For Surface Casing.

	PRICE PER FOOT
0 - 50 Feet	$ 28.00

F. Field Cost - Operating.

Includes hourly functions such as, but not limited to:

1. Testing, hole surveying.
2. Regaining circulation.
3. Hole stabilization/conditioning.
4. Down-hole equipment recovery.
5. Hole reduction.
6. Drilling sand or cave.
7. Cementing.
8. Setting or pulling casing.
9. Mud mixing when drilling unduly interrupted.
10. Wedging operations.

OPERATING RATE:	$ 90.00 /Rig Hour

G. Field Cost - Non-Operating.

Includes times when rig is not operating, such as, but not limited to:

1. Awaiting instructions.
2. Cement setting time.
3. Waiting for dozer.
4. Hole logging by others.
5. Site or access delays.
6. Waterline installation/ removal and maintenance.
7. Water delays if haulage cycle time is excessive or not arising from contractor's equipment.
8. Weather delays.

NON-OPERATING RATE:	$ 80.00 /Rig Hour
H. Extra Labor Rate.	$ 25.00 /Man Hour
I. Travel Time after first hour per man per shift.	$ 25.00 /Man Hour
J. Rental of Sperry Sun or other hole orientation devices.	3rd Party Rental Plus 10%, or Client May Supply.
K. Accommodation - Per Diem Room and Board	Included in footage rate.

We wish to thank you for considering this proposal, and we look forward to working with you on this project.

Sincerely,

TONTO DRILLING SERVICES

Larry M. Pisto

PROSPECT DRILLING INC.

SPECIALIZING IN DUAL WALL REVERSE CIRCULATION
VERTICAL AND ANGLE DRILLING

VIRTUALLY CONTAMINATION FREE GEOLOGICAL SAMPLES.

#EQUIPMENT MAINTAINED IN TOP CONDITION TO INSURE MINIMUM OF DOWN TIME.

#OUR TRAINING AND EXPERIENCE INSURES YOUR PROJECT WILL RECEIVE THE ATTENTION IT DESERVES

#FAMILY OWNED

PROSPECT DRILLING & EXPLORATION
Tye West or Dru West
1702 West Camelback Road,
Suite 13298
Phoenix, Arizona 85015
(602) 890-2865

FEDERAL EXPRESS
CANSICA INC. LICENSEE

O YYC
D RNO

ENTRY/ACQUITAL NO.

AIRPORT OF DEPARTURE

AIRPORT OF DESTINATION

COMPANY ENTREPRISE: LaPrairie Mining Limited

CONSIGNEE ACCOUNT NO.

CARRIER CODE: 400 AIR WAYBILL NO.: 78160235

TO (CONSIGNEE/RECIPIENT) DESTINATAIRE: Dennis LaPrairie

CONSIGNEE PHONE NO. (AREA)

STREET ADDRESS ADRESSE RUE: 2525 Sharon Way

CITY VILLE: RENO | PROV./STATE PROV./ETAT: NV | COUNTRY: U.S.A. | POSTAL CODE: 89509 | CODE POSTAL

REPORTING CARRIER: 900105

COMPANY ENTREPRISE: VenTech Healthcare Corp. 1280-2326-7

SHIPPER ACCOUNT NO.

FROM (SHIPPER'S NAME) EXPEDITEUR: Gerald Kendall

SHIPPER PHONE NO. (AREA) 403 265-3035

STREET ADDRESS ADRESSE RUE: #1500, 736 - 6th Ave. S.W.

CITY VILLE: Calgary | PROV./STATE PROV./ETAT: Alberta | COUNTRY: Canada | POSTAL CODE: T2P 3T7 | CODE POSTAL

DISPOSITION
☒ DELIVER ☐ HOLD FOR PICK-UP TEL. NO. _____
IF SHIPMENT IS REFUSED BY CONSIGNEE OR CONSIDERED UNDELIVERABLE
BY CARRIER: ☐ RETURN ☐ DISPOSE ☐ ABANDON

RECEIVED ABOVE SHIPMENT IN GOOD ORDER AND CONDITION WE AGREE TO PAY ALL CHARGES INCLUDING CUSTOMS DUTIES AND TAXES AS APPLICABLE AND TO THE CONDITIONS OF CONTRACT AS STATED ON THE REVERSE OF THE CONSIGNEE COPY.

EXPEDITION REÇUE EN BON ÉTAT NOUS CONSENTIONS À PAYER TOUS LES FRAIS Y COMPRIS LES DROITS DE DOUANE ET LES TAXES SELON LES CONDITIONS DU CONTRAT SONT SPÉCIFIÉS À L'ARRIÈRE DE LA COPIE DE RECEVER.

X
CONSIGNEE SIGNATURE *SIGNATURE* DATE/TIME *DATE/HEURE*

NO OF. PKGS.: 1

COMMERCIAL INVOICE FOR CUSTOMS: Business Documents

SPECIFY CURRENCY CDN$ VALUE FOR CARRIAGE $5.00 VALUE FOR CUSTOMS $5.00

WEIGHT ☐ LB ☐ KG SPECIFY

PLACE AND DATE OF DIRECT SHIPMENT: Calgary Alberta, March 22, 1988

IMPORTER NAME (IF OTHER THAN CONSIGNEE)

VENDOR NAME (IF OTHER THAN SHIPPER)

COUNTRY OF ORIGIN: Canada

COUNTRY OF EXPORT: Canada

TOTAL CHARGES BLOCK

	PREPAID USD	PREPAID CDN	COLLECT USD	COLLECT CDN
FREIGHT				
VALUATION				
ADVANCE ORIGIN				
DUTY				
TAX				
OTHER CHARGES				
TOTAL				
CURRENCY CONVERSION RATE				
TOTAL CHARGES DUE				

SERVICES—CHECK ONLY ONE BOX

PRIORITY ONE
1 ☐ OVERNIGHT PACKAGE

COURIER PAK
2 ☐ OVERNIGHT ENVELOPE

THESE SERVICES NOT AVAILABLE TO CANADA

COURIER PAK
3 ☐ OVERNIGHT BOX
4 ☐ OVERNIGHT TUBE
5 ☐ STANDARD AIR
6 ☐ OVERNIGHT LETTER
7 ☐
8 ☐
9 ☐

SATURDAY SERVICE REQUIRED
☐ (Extra Charge Applies)

PAYMENT
☐ BILL SHIPPER ☐ PAYMENT IN ADVANCE
☐ BILL CONSIGNEE FEC. ACCT.# _____
☐ BILL 3RD PARTY FEC. ACCT.# _____
CREDIT CARD VISA AMEX MC #

THE SHIPPER AGREES TO THE TERMS AND CONDITIONS OF CONTRACT AS SET FORTH ON THE REVERSE SIDE OF THE SHIPPER COPY OF THIS NON-NEGOTIABLE AIR WAYBILL AND VERIFIES THAT INFORMATION CONTAINED ON THIS AIR WAYBILL TO BE TRUE AND CORRECT. THE WARSAW CONVENTION MAY ALSO BE APPLICABLE TO THE CARRIAGE OF THESE GOODS.

X _____ Signature _____ Date

RECEIVED BY | F.E.C. NO. | I.F.S. NO. | DATE/TIME

CUSTOMS ENTRY

TARIFF ITEM | VALUE FOR DUTY

RATE OF DUTY | S/E TAX STATUS | S.T. RATE | E.T. RATE

DUTY
SALES TAX
EXCISE TAX
TOTAL

I, _____ (PLEASE PRINT NAME)

OF _____ IMPORTER/AGENT

DECLARE THE PARTICULARS OF THIS ENTRY TO BE TRUE AND CORRECT.

_____ SIGNATURE

DATE P.A. NO. ACCT. SEC. NO.

R.C. APPROVED 54/2/83 **CONSIGNEE COPY**

78160235

1. In tendering the shipment for carriage, the shipper agrees to these TERMS AND CONDITIONS OF CONTRACT which no agent or employee of the parties may alter and that this Federal Express Air Waybill is NON-NEGOTIABLE and has been prepared by the shipper or on his behalf by Federal Express.
2. Carriage hereunder is subject to the rules relating to liability established by the Convention of the Unification of Certain Rules Relating to International Carriage by Air signed at Warsaw, Poland on October 12, 1929, as amended, and so far as the same is governed thereby, unless such carriage is not International as defined by the Convention.
3. The shipper agrees that carriage is subject to the terms and conditions of contract stated herein, and those terms and conditions which are also stated in the most recent Federal Express Service Guide which is available for inspection and incorporated into this contract by reference and applicable tariffs filed with the Canada Transport Commission.
4. In tendering the shipment for carriage the shipper warrants that the shipment is packed adequately to protect the enclosed goods and to ensure safe transportation with ordinary care and handling, and that each package is appropriately labeled and is in good order (except as noted) for carriage as specified.
5. DECLARED VALUE AND LIMITATION OF LIABILITY. The liability of Federal Express is limited to the sum of CDN $120.00 unless a higher value is declared for carriage herein and a greater charge paid at the rate of CDN $.35 per CDN $120.00 value. The maximum declared value is CDN $600.00. The liability of Federal Express is limited to the declared value of the shipment or the amount of loss or damage actually sustained, whichever is lower.

   Federal Express is not liable for loss, damage, delay, mis-delivery or non-delivery not caused by its own negligence or any loss, damage, delay, mis-delivery or non-delivery caused by the act, default or omission of the shipper, consignee, or any other party who claims interest in the shipment, the nature of the shipment or any defect, characteristic of inherent vice thereof, violation by the shipper or consignee of any of the conditions of contract contained in this air waybill or applicable tariffs including but not limited to improper or insufficient packing, securing, marking, addressing or failure to observe any of the rules relating to shipments not acceptable for transportation or shipments acceptable only under certain conditions, acts of God, perils of the air, public enemies, public authorities acting with actual or apparent authority, authority of law acts, or omissions of Customs or quarantine officials, riots, strikes or other local disputes, Civil commotions, hazards incident to a state of war, weather conditions or mechanical delay of the aircraft or acts of omissions of any person other than Federal Express, including compliance with delivery instructions from the shipper or consignee. Federal Express shall not be liable for the loss of articles loaded and sealed in packages by the shipper provided the seal is unbroken at the time of delivery and the package retains its basic integrity. Federal Express shall not be liable in any event for any special or consequential damages including but not limited to the loss of profits or income whether or not Federal Express had knowledge that such damages might be incurred.
6. CLAIMS Written notice of loss due to damage or delay must be reported by the shipper within 15 days after the delivery of the shipment. Written notice of loss due to non-delivery must be reported by the shipper within 180 days after acceptance of the shipment for carriage. Written notification will be considered to have been made if the shipper calls and notifies his local Federal Express City Station and as soon as practicable thereafter files a written notification. Documentation of all claims other than overcharge claims must be submitted in writing to Federal Express within ninety (90) days after receipt of written notification. NO claims for damage will be entertained until all transportation charges have been paid. The amount of a Claim may not be deducted from the transportation charges. Receipt of the shipment by the consignee without written notification of damage on the delivery receipt shall be prima facia evidence that the shipment was delivered in good condition, except that in the case of claims for concealed damage which is not discovered at the time of delivery, the shipper shall notify Federal Express in writing as promptly as possible after the discovery. If more than 15 days shall elapse between the date of delivery of the shipment and notice of damage by the shipper, the shipper shall show good cause why the damage was not discovered earlier and timely notification not given. The shipper must make the original shipping cartons and packing available for inspection by Federal Express. Claims for overcharges and refunds must be made in writing to Federal Express within twelve (12) months of the billing date.
   All claims must be filed by the shipper.
7. In order to ensure safe transportation all shipments are subject to inspection by Federal Express including, but not limited to opening the shipment. However, Federal Express is not obligated to perform such inspection.
8. C O D services are not available and a C O D shipment sent in error will be delivered as a normal pre-paid or collect shipment.
9. Federal Express carries no cargo liability insurance, but maintains a separate fund for the satisfaction of cargo claims which may arise out of the carriage of cargo pursuant to the conditions of contract contained herein and in the most recent Federal Express Service Guide.
10. The shipper and consignee agree that the act of Customs clearance will be performed by the carrier's designated broker.
11. Notwithstanding any agreement to the contrary, the shipper shall be primarily responsible for all freight charges incident to shipment to the consignee. In the event the shipment is undeliverable, the shipper shall be responsible for all reasonable costs of returning the shipment to the shipper or of otherwise disposing of the shipment per the shipper's instructions marked on the face hereof.

Federal Express
P.O. Box 727 Dept. C
Memphis, TN. 38194

CITY GOLD CORPORATION

AND

COATES DRILLING INC.

THIS AGREEMENT made the _____ day of _____, 19____.

BETWEEN:

CITY GOLD CORPORATION
Suite 1500, Canada Life Tower
736 - 6th Avenue S.W.
Calgary, Alberta
T2P 3T7

Hereinafter referred to as
"The Company"

OF THE FIRST PART

AND

COATES DRILLING, INC.
7583 Vantage Place
Delta, British Columbia
V4G 1A5

Hereinafter referred to as
"The Contractor"

OF THE SECOND PART

WHEREAS the Company has requested the Contractor to complete a minimum of 800 feet of drilling and other services as set forth, on the property of the Company in the Fernley area in the State of Nevada.

AND WHEREAS the Contractor has agreed to do the said diamond drilling and to perform the other services requested upon the terms, conditions and provisos herein contained.

NOW THEREFORE this Agreement witnesseth that in consideration of the payment of the amounts herein stipulated and of the mutual covenants hereinafter contained, the parties hereto agree as follows:

SCHEDULE OF RATES - CORING:

THAT the Company hereby employs the Contractor to drill on the said property, a series of bore holes using NQ core barrels producing a core of approximately 1 15/16 inches in diameter. The Company agrees to pay the Contractor on a footage basis for all drilling according to the following Schedule of Rates:

From		To	Price/Foot
0'	-	500 ' in depth	$ 18.35
500'	-	1000 ' in depth	$ 19.80

All prices are quoted in U.S. dollars.

It is understood that measurements of all bore holes shall be from the top of the casing or stand pipe as the case may be.

OVERBURDEN:

THAT the Company agrees to pay for casing or stand pipe for the first 25 feet in any hole according to the following Schedule of Rates:

From		To	Price/Foot
0'	-	25 feet in depth	$ 18.50
25	-	plus	Field Cost

The Company further agrees that in the event that casing or stand pipe on any hole exceeds 25 feet , then charges for casing or stand piping on that hole shall be charged on a Field Cost Basis from the 25 foot depth to bedrock.

Whenever pipe or casing is lost, or left in a hole on the instructions of the Company's representative, then the Company agrees to pay for said casing or pipe at prices F.O.B. drill site plus twelve percent.

The Company further agrees to compensate the Contractor at the rate of $ 1.85 per foot of casing employed for that portion of the hole completed on a field cost basis. Said amount per foot to compensate for the wear and tear on the casing.

MOBILIZATION/DEMOBILIZATION:

THAT the Contractor agrees to move his drill crew, drill equipment and supplies from his base to truck unload point (as close as practicable to the drill sites) and return from truck load point to his base for the lump sum of $1000.00.

The movement of the drill crew, drill equipment and supplies from the truck unload point to the first drill site and from the last drill site to the truck load point, including unloading and loading, will be performed on a Field Cost Basis charged to the Company at Operating Field Cost Rates.

The Company will open the road to the property between drill sites prior to the Contractor mobilizing the drill and equipment.

The Company agrees to supply a tractor to aid in mobbing and demobbing the drill equipment and supplies.

WATER SUPPLY:

THAT the Company agrees that the above Schedule of Rates are deemed to include maintaining waterlines up to a distance of ~~2000~~ 2500 feet and /or a vertical lift of 200 feet 400.

Should the distance be greater than 2000 feet and /or the lift greater than 200 feet as measured along the waterline, maintaining the waterlines will be charged on a pro-rata basis; the above distance to the Contractor's account and the "over" charged to the Company's account at Operating Field Cost Rates.

Should the required supply of water ever exceed the limits of single stage pumping, then the Company agrees to supply the necessary water by hauling to the drill sites by tanker truck. Hauling water will be performed by a sub-contractor to be arranged by the Company. All water hauling charges will be for the Company's account.

MOVING BETWEEN HOLES/SETTING UP/TEARING DOWN/LAYING AND REMOVING WATERLINES:

THAT the Contractor agrees that the Schedule of Rates includes the first 10 man hours employed tearing down, moving between holes, laying and

removing waterlines and setting up the drill. Hours employed in excess of 10 man hours will be charged to the Company at Operating Field Cost Rates.

The Contractor agrees to suppy a suitable tractor to facilitate moving between drill sites.

MUD, ADDITIVES, CUTTING OILS, AND GREASES

THAT it is mutually agreed that the mud and additives, cutting oils and greases consumed penetrating the overburden and/or aiding in core recovery while core drilling, will be charged on the basis of cost on job site plus 12 percent.

Time and materials spent recovering lost circulation and/or stabilizing the drill hole due to cave, artesian flow, etc. will be charged to the Company at Operating Field Cost Rates for all labour, equipment time and materials consumed.

HOLE STABILIZATION:

THAT the Company agrees that hole stabilization hours are those chargeable hours during which unanticipated events such as lost circulation, rock cave-in, flowing sand or artesian inflow are being dealt with and during which hole depth is not being gainfully advanced but the rig is being operated at anything greater than an idle. Such time will be charged to the Company at Operating Field Cost Rates for all labour, equipment and materials consumed.

REAMING AND CASING:

THAT the Company agrees that all reaming and casing that is necessary to stop cave-ins or maintain the return flow of water will be completed by the Contractor as required and that the costs incurred by the Contractor performing such reaming and placing of such casing will be charged to the Company at Operating Field Cost Rates.

Casing usage will be charged at the rate of $ 1.85 per foot reamed to compensate for wear and tear on the casing.

CEMENTING:

THAT the Company agrees that all cementing that is necessary to stop cave-ins or maintain the return flow of water will be completed by the Contractor as required and that the costs incurred by the Contractor performing such cementing will be charged to the Company at Operating Field Cost Rates for all labor, equipment and materials consumed.

The Contractor will supply the cement materials at cost F.O.B job site plus 12 percent.

Waiting for cement to set will be charged to the Company at Non Operating Field Cost Rates for all labor, and equipment time.

Drilling cement will be performed on a Field Cost Basis and charged to the Company at Operating Field Cost Rates.

TRAVELLING TIME

THAT the Company agrees that should the time required to walk / travel / or ride from the Contractor's lodging site / camp to the drill site and return per man per shift be greater than 1 hour, then that time "over" will be paid to the Contractor at Operating Field Cost Rates for labor, and vehicle.

DIRECTIONAL AND CONTROLLED DRILLING:

THAT it is mutually agreed that directional drilling to change the direction of a bore hole and controlled drilling to maintain the angle of a bore hole shall not be part of this agreement.

CAVED OR BROKEN GROUND

THAT in the event cavities or loose and caving materials are encountered of a nature as to prevent the successful completion of any hole, the Contractor does not, under such conditions, guarantee to drill to a predetermined depth and in the event that it becomes necessary to abandon the hole, the Company agrees to pay for such incompleted holes at the rates herein specified for all footage completed.

In the event it becomes necessary to resort to cementing, reaming or casing, the Company agrees to reimburse the Contractor to the extent of field cost.

ACID TESTS:

THAT the Contractor agrees to take acid dip tests at the depths as instructed by the Company's representative. Such tests will be charged to the Company at the rate of three feet of drilling at the depth the tests are taken.

CORE BOXES:

THAT the Contractor agrees that, if requested by the Company, core boxes with lids will be supplied at actual cost F.O.B. job site plus 10 percent.

FUEL:

THAT the Contractor agrees that the fuel required for operation of the Contractor's drill equipment is included in the Schedule of Rates.

BOARD AND LODGINGS:

THAT the Company agrees to supply suitable board and lodgings for the Contractor's personnel at no cost to the Contractor.

DRILLING SITES:

THAT the Contractor agrees to case and drill a series of bore holes on the sites and at inclinations and azimuths as selected by the Company representative and to follow the instructions of the said representative relating to place and time of drilling.

THAT the Company agrees that the cost of building and maintaining access roads, preparation of suitable drill sites and reclamation of drill sites if required, will be for the Company's account.

OPERATING FIELD COSTS

THAT the Company agrees that the following rates will apply when certain work, as defined in this contract, is performed on a Field Cost Basis. " Field Cost" items are defined as all direct labour, supervision, drill and support equipment, diamond tools, down the hole materials and other supplies consumed in this work.

Labor	$ 23.50 per man hour
Drill with equipment	$ 27.25 per hour
Materials consumed	at cost on job site plus 12 percent
Reaming casing	$ 1.85 per foot reamed to cover wear and tear on casing.

NOTE: The above equipment is only charged when applicable.
No charge is made for drill equipment when moving between holes, mobilizing or demobilizing to and from the job site unless there are delays beyond the Contractor's control.

NON OPERATING FIELD COST:

THAT the Company agrees that the following rates will apply when certain work, as defined in this contract, is performed on a Non Operating Field Cost Basis. Non Operating Field Cost items are defined as delay time while waiting for instructions from the Company's representative, waiting for cement to set, standby while logging the drill hole and any other delay caused by the Company and / or delays beyond the Contractor's control.

Labor (maximum 8 hours/man/shift)	$ 21.50 per man hour
Drill with equipment (max. 10 hours/day)	$ 22.25 per hour

SECURITY:

THAT the Contractor will not give out any information regarding drill results or access to core to any person other than to the Company's representative.

DISCIPLINE:

THAT the Contractor will, at all times, enforce discipline and maintain good order among its employees and will not retain , on the job, any person not skilled in the work assigned him.

INSURANCE:

THAT the Contractor, during the entire term of this agreement, will keep in full force and effect a policy of public liability and property damage insurance with respect to the work undertaken in this agreement, in the amount of $2,000,000 for any one accident.

The insurance will be with an insurance company duly licensed to do business in the State of Nevada.

ENVIRONMENT:

THAT during the course of the work, the Contractor shall at all times keep the clients premises free from accumulation of waste material or rubbish

and upon completion of the work shall remove all tools, scaffolding and surplus material and leave the premises in a clean condition. The Contractor will observe and comply with all applicable Federal and State laws.

RIGHTS OF WAY:

THAT the Company agrees, at its own expense, to provide all rights-of-way, all rights of ingress and egress and all real property that may be required in connection with said work, including real property upon which all necessary temporary buildings may be erected, and other facilities required, and shall also warrant the quiet and peaceful possession of all such real property and shall save the Contractor harmless from any and all damages, claims, demands, costs or charges of whatever kind or character incident to the occupation of said real property.

WORKERS COMPENSATION:

THAT the Contractor agrees that the personnel employed by him in the performance of this contract shall be fully covered under the Worker's Compensation laws according to the State of Nevada and will keep such personnel covered , pay the assessments required and will protect the Company from any action arising therefrom, excluding however, claims arising out of any negligent act or omission of the Company, its servants or agents.

PAYMENTS:

THAT the Company agrees to make payments at the rates hereinbefore specified in accordance with the terms hereinafter set out, that is: For all

work done hereunder between the first and fifteenth day and the sixteenth and last day of the month, invoices will be due and payable when rendered. Interest at a rate of bank prime plus four percent per annum will be added to all accounts more than thirty days overdue from date of invoice. These payments shall be made as the work progresses in conformity with the Contractor's semi-monthly invoices.

RIGHT OF CANCELLATION:

THAT the Contractor reserves the right to cancel this contract should its fulfillment be rendered impossible by:

(a) War, invasion, insurrection, riot, the order or regulations of any civil or military authority, or by strikes, lockouts, or labour disputes, whether in or in the neighborhood of the Contractor's plant or of that of any supplier of materials necessary for the completion of the contract.

(b) The inability to obtain essential materials and supplies due to priority restriction.

(c) The inability to secure labour due to restrictions or causes beyond the Contractor's control, and the Contractor shall not be liable for any loss or damage directly or indirectly suffered by the Company by reason of exercise of such right of cancellation.

THAT it is mutually agreed that this agreement shall be binding upon and enure to the benefit of the parties hereto, their respective successors and permitted assigns, but shall not be assignable by either party without the consent in writing of the other party first had and obtained.

THAT it is further agreed that this agreement and any dispute arising hereunder shall be interpreted and determined in accordance with the laws of the State of Nevada.

THAT any notice required to be given hereunder shall be properly given if mailed by registered letter addressed the the Company as follows:

CITY GOLD CORPORATION
Suite 1500, Canada Life Tower
736 - 6th Avenue S.W.
Calgary, Alberta
T2P 3T7

OR to the Contractor by registered letter addressed as follows:

COATES DRILLING, INC.
7583 Vantage Place
Delta, B. C.
V4G 1A5

IN WITNESS WHEREOF these presents have been executed by the parties hereto the day and year first above written:

SIGNED AND DELIVERED

In the presence of

CITY GOLD CORPORATION

per_____

per_____

COATES DRILLING, INC.

per_____

per_____

LaPrairie Mining Limited
2525 SHARON WAY; RENO, NV 89509; (702) 826-2838 OFFICE, 826-3049 HOME

February 12, 1988

&company&
&gen/o& &first/o& &last/o&
&street/o&
&box/o&
&city&, &state& &zip&

Dear Sirs:

We wish to take this opportunity to invite you to bid on a preliminary drill program for our Paiute Project in Washoe County, Nevada.

The scope of work would entail drilling of one hole, minimum length of 800' at an angle of 60 degrees from horizontal. This hole will be either reverse circulation rotary, 5" or larger, or core, minimum size, NQ.

The drill rig should be skid or track mounted as the final grade to the drill site is too steep for a truck mounted rig.

Would you please inform us as to footage rates, mobilization costs, standby and hourly rates and drill availability.

Please find a composit map showing the location at three different scales. The project is located approximately six miles southwest from Nixon, Nevada and is 50 miles east of Reno.

We wish to complete this project by June 30, 1988.

If there are any questions or you wish to arrange a site visit, please feel free to call.

Yours truly,

Dennis S. LaPrairie

encl.

COATES DRILLING, INC.

DAILY TIME REPORT

We are number ONE 1

CONTRACT NAME Bristlecone Mining JOB NO. 836

DATE June 1 DAY ☐

HOLE NO. P-88-1 AFTERNOON ☐

SIZE NQ 40' NIGHT ☐

	FROM	TO	FEET
CORING			
OVERBURDEN			
DRILL CEMENT			
REAM CASING			

WATER LINES: DISTANCE 1200 FT. LIFT 300 FT.

MOVING: UNDER EQUIPMENT SHOW TRACTOR & TRUCK HOURS

MOBILIZATION: FROM BASE TO TRUCK UNLOAD POINT

DEMOBILIZATION: FROM TRUCK LOAD POINT TO BASE

MOBILIZATION: FROM TRUCK UNLOAD PT. TO 1st HOLE

DEMOBILIZATION: FROM LAST HOLE TO TRUCK LOAD POINT

EQUIPMENT DATA

UNIT	HOURS	REMARKS
TRACTOR		
6 x 6 TRUCK		
4 x 4 TRUCK		
PICKUP TRUCK		
MUD MIXER	~~E~~	
COIL STOVE		

OPERATION	DRILL HRS	NAME N6 HOURS	NAME D. KIRKNESS HOURS	NAME B. DuCharme HOURS	NAME HOURS	NAME HOURS
CORING						
OVERBURDEN		4				
CEMENTING						
REAMING CASING						
TESTING						
WATER LINES		1	1			
MOVING						
SETTINGUP/TEAR DOWN		1	1			
SUPERVISION						
		2	2			
		6	6			
HOLE STABILIZING						
T. DRIVING						
CAMP						
REPAIRS & MAINT.						
WALKING		2	2			
OTHER						
TOTAL HOURS		12	12			

TEST DEPTHS

GENERAL COMMENTS: had to wait to get site made, right on up hill road.

MATERIALS USED OR LOST

QUANTITY	ITEM & REMARKS	APPROVAL
1	Rod Guard	

CUSTOMER [signature] COMPANY Don Kirkness

COATES DRILLING, INC.

DAILY TIME REPORT

We are number ONE 1

CONTRACT NAME Bristlecone Mining JOB NO. 836

DATE June 2 DAY ☑

HOLE NO. P-88-1 AFTERNOON ☐

SIZE NQ - 40° NIGHT ☐

	FROM	TO	FEET
CORING	10	54	44
OVERBURDEN	0	10	10
DRILL CEMENT			
REAM CASING			

WATER LINES: DISTANCE 1200 FT. LIFT 300 FT.

MOVING: UNDER EQUIPMENT SHOW TRACTOR & TRUCK HOURS

MOBILIZATION: FROM BASE TO TRUCK UNLOAD POINT

DEMOBILIZATION: FROM TRUCK LOAD POINT TO BASE

MOBILIZATION: FROM TRUCK UNLOAD PT. TO 1st HOLE

DEMOBILIZATION: FROM LAST HOLE TO TRUCK LOAD POINT

EQUIPMENT DATA

UNIT	HOURS	REMARKS
TRACTOR		
6 x 6 TRUCK		
4 x 4 TRUCK		
PICKUP TRUCK		
MUD MIXER	1	
COIL STOVE		

OPERATION	DRILL HRS	DRILL NO. N6 HOURS	NAME C Wood HOURS	NAME B. DuCharme HOURS	NAME HOURS	NAME HOURS
CORING		4	4			
OVERBURDEN		1	1			
CEMENTING						
REAMING CASING						
TESTING						
WATER LINES		1	1			
MOVING						
SETTINGUP/~~TEAR DOWN~~		3	3			
SUPERVISION						
HOLE STABILIZING						
T. DRIVING						
CAMP		~~—~~				
REPAIRS & MAINT.						
WALKING		1	1			
OTHER		~~1~~	~~1~~	~~—~~		
TOTAL HOURS		11	11			

TEST DEPTHS

GENERAL COMMENTS: 1hr Burn in anchor

MATERIALS USED OR LOST

QUANTITY	ITEM & REMARKS	APPROVAL
1	alcomer 120 L	
1	3 7/8 tri-cone	

CUSTOMER [signature] COMPANY Don Kuhnen

COATES DRILLING, INC.

DAILY TIME REPORT

We are number ONE 1

CONTRACT NAME Bristlecone Mining JOB NO. 876

DATE June 3 DAY ☑

HOLE NO. P-88-1 AFTERNOON ☐

SIZE NQ - 400' NIGHT ☐

	FROM	TO	FEET
CORING	54	144	90
OVERBURDEN			
DRILL CEMENT			
REAM CASING			

WATER LINES: DISTANCE 1200 FT. LIFT 300 FT.

MOVING: UNDER EQUIPMENT SHOW TRACTOR & TRUCK HOURS

MOBILIZATION: FROM BASE TO TRUCK UNLOAD POINT

DEMOBILIZATION: FROM TRUCK LOAD POINT TO BASE

MOBILIZATION: FROM TRUCK UNLOAD PT. TO 1st HOLE

DEMOBILIZATION: FROM LAST HOLE TO TRUCK LOAD POINT

EQUIPMENT DATA

UNIT	HOURS	REMARKS
TRACTOR		
6 x 6 TRUCK		
4 x 4 TRUCK		
PICKUP TRUCK		
MUD MIXER	1	
COIL STOVE		

OPERATION	DRILL HRS	NAME N6 HOURS	NAME C. Wood HOURS	NAME B. DuCharme HOURS	NAME HOURS	NAME HOURS
CORING		8	8			
OVERBURDEN						
CEMENTING						
REAMING CASING						
TESTING						
WATER LINES						
MOVING						
SETTINGUP/TEAR DOWN						
SUPERVISION						
HOLE STABILIZING		2	2			
T. DRIVING						
CAMP						
REPAIRS & MAINT.						
WALKING		1	1			
OTHER						
TOTAL HOURS		11	11			

TEST DEPTHS

GENERAL COMMENTS: 2 hrs pumping down cotton seed

MATERIALS USED OR LOST

QUANTITY	ITEM & REMARKS	APPROVAL
1	alcomer 120 L	
1	bag of cotton seed	
1	used Diamond step bit #1P6088	
	footage 10 - 124 = 114 ft	

CUSTOMER [signature] COMPANY Don [signature]

COATES DRILLING, INC.

DAILY TIME REPORT

We are number ONE 1

CONTRACT NAME Bristolcone Mining JOB NO. 836

DATE June 4 DAY ☑

HOLE NO. P-88-1 AFTERNOON ☐

SIZE NQ -40° NIGHT ☐

	FROM	TO	FEET
CORING	144	236	92
OVERBURDEN			
DRILL CEMENT			
REAM CASING			

WATER LINES: DISTANCE 1200 FT. LIFT 300 FT.

MOVING: UNDER EQUIPMENT SHOW TRACTOR & TRUCK HOURS

MOBILIZATION: FROM BASE TO TRUCK UNLOAD POINT

DEMOBILIZATION: FROM TRUCK LOAD POINT TO BASE

MOBILIZATION: FROM TRUCK UNLOAD PT. TO 1st HOLE

DEMOBILIZATION: FROM LAST HOLE TO TRUCK LOAD POINT

EQUIPMENT DATA

UNIT	HOURS	REMARKS
TRACTOR		
6 x 6 TRUCK		
4 x 4 TRUCK		
PICKUP TRUCK		
MUD MIXER	1	
COIL STOVE		

OPERATION	DRILL HRS	DRILL NO. N-6 HOURS	NAME C. Wood HOURS	NAME B. DuChanne HOURS	NAME HOURS	NAME HOURS
CORING		8	8			
OVERBURDEN						
CEMENTING						
REAMING CASING						
TESTING						
WATER LINES						
MOVING						
SETTINGUP/TEAR DOWN						
SUPERVISION						
HOLE STABILIZING		2	2			
T. DRIVING						
CAMP						
REPAIRS & MAINT.						
WALKING		1	1			
OTHER						
TOTAL HOURS		11	11			

TEST DEPTHS

GENERAL COMMENTS: Trip for mislatch
2hrs. pumping down lost circulation Material

MATERIALS USED OR LOST

QUANTITY	ITEM & REMARKS	APPROVAL
1	alcomer 120L	

CUSTOMER [signature] COMPANY Don Kirkman

COATES DRILLING, INC.

DAILY TIME REPORT

We are number ONE 1

CONTRACT NAME Bristlecone Mining JOB NO. 836

DATE June 05 DAY ☒

HOLE NO. P-88-1 AFTERNOON ☐

SIZE NQ-45° NIGHT ☐

DRILL NO. N/C NAME A. Wood NAME B. Duchaca NAME NAME NAME

	FROM	TO	FEET
CORING	236	324	88
OVERBURDEN			
DRILL CEMENT			
REAM CASING			

OPERATION	DRILL HRS	HOURS	HOURS	HOURS	HOURS
CORING		9	9		
OVERBURDEN					
CEMENTING					
REAMING CASING					
TESTING					
WATER LINES					
MOVING					
SETTINGUP/TEAR DOWN					
SUPERVISION					
HOLE STABILIZING		1	1		
T. DRIVING					
CAMP					
REPAIRS & MAINT.					
WALKING		½	½		
OTHER		½	½		
TOTAL HOURS		12	12		

TEST DEPTHS

WATER LINES: DISTANCE 1200 FT. LIFT 300 FT.

MOVING: UNDER EQUIPMENT SHOW TRACTOR & TRUCK HOURS

MOBILIZATION: FROM BASE TO TRUCK UNLOAD POINT

DEMOBILIZATION: FROM TRUCK LOAD POINT TO BASE

MOBILIZATION: FROM TRUCK UNLOAD PT. TO 1st HOLE

DEMOBILIZATION: FROM LAST HOLE TO TRUCK LOAD POINT

EQUIPMENT DATA

UNIT	HOURS	REMARKS
TRACTOR		
6 x 6 TRUCK		
4 x 4 TRUCK		
PICKUP TRUCK		
MUD MIXER	1	
COIL STOVE		

GENERAL COMMENTS: Slugging hole to Regain Circulation

MATERIALS USED OR LOST

QUANTITY	ITEM & REMARKS	APPROVAL

CUSTOMER [signature] COMPANY Don Hutchinson

COATES DRILLING, INC.

DAILY TIME REPORT

We are number ONE 1

CONTRACT NAME Bristol Coal Mining JOB NO. 836

DATE June 6 DAY ☑

HOLE NO. P-88-1 AFTERNOON ☐

SIZE NQ - 400 NIGHT ☐

	FROM	TO	FEET
CORING	324	400	76
OVERBURDEN			
DRILL CEMENT			
REAM CASING			

WATER LINES: DISTANCE 1200 FT. LIFT 300 FT.

MOVING: UNDER EQUIPMENT SHOW TRACTOR & TRUCK HOURS

MOBILIZATION: FROM BASE TO TRUCK UNLOAD POINT

DEMOBILIZATION: FROM TRUCK LOAD POINT TO BASE

MOBILIZATION: FROM TRUCK UNLOAD PT. TO 1st HOLE

DEMOBILIZATION: FROM LAST HOLE TO TRUCK LOAD POINT

EQUIPMENT DATA

UNIT	HOURS	REMARKS
TRACTOR		
6 x 6 TRUCK		
4 x 4 TRUCK		
PICKUP TRUCK		
MUD MIXER	1	
COIL STOVE		

OPERATION	DRILL HRS	DRILL NO. N-6 HOURS	NAME C. Wood HOURS	NAME B. DuCharme HOURS	NAME HOURS	NAME HOURS
CORING		8	8			
OVERBURDEN						
CEMENTING						
REAMING CASING						
TESTING						
WATER LINES						
MOVING						
SETTINGUP/TEAR DOWN						
SUPERVISION						
HOLE STABILIZING		2	2			
T. DRIVING						
CAMP						
REPAIRS & MAINT.						
WALKING		1	1			
OTHER						
TOTAL HOURS		11	11			

TEST DEPTHS

GENERAL COMMENTS: 2hrs pump Lost circulation down three times → Material

MATERIALS USED OR LOST

QUANTITY	ITEM & REMARKS	APPROVAL
1	alcomer 120 L.	
	Huddy BReen #9359/38 footage 124-400 = 276 ft.	

CUSTOMER [signature] COMPANY Don Kinkner

COATES DRILLING, INC.

DAILY TIME REPORT

We are number ONE 1

CONTRACT NAME Bristlecone Mining JOB NO. 836

DATE June 7 DAY ☑

HOLE NO. P-88-1 AFTERNOON ☐

SIZE NQ -40° NIGHT ☐

	FROM	TO	FEET
CORING	400	462	62
OVERBURDEN			
DRILL CEMENT			
REAM CASING			

WATER LINES: DISTANCE 120 FT. LIFT 700 FT.

MOVING: UNDER EQUIPMENT SHOW TRACTOR & TRUCK HOURS

MOBILIZATION: FROM BASE TO TRUCK UNLOAD POINT

DEMOBILIZATION: FROM TRUCK LOAD POINT TO BASE

MOBILIZATION: FROM TRUCK UNLOAD PT. TO 1st HOLE

DEMOBILIZATION: FROM LAST HOLE TO TRUCK LOAD POINT

EQUIPMENT DATA

UNIT	HOURS	REMARKS
TRACTOR		
6 x 6 TRUCK		
4 x 4 TRUCK		
PICKUP TRUCK		
MUD MIXER		
COIL STOVE		

	DRILL HRS	DRILL NO. N-6	NAME C. Wood	NAME B. Duchaine	NAME	NAME
CORING		7	7			
OVERBURDEN						
CEMENTING						
REAMING CASING						
TESTING						
WATER LINES						
MOVING						
SETTINGUP/TEAR DOWN						
SUPERVISION						
HOLE STABILIZING		3	3			
T. DRIVING						
CAMP						
REPAIRS & MAINT.						
WALKING		1	1			
OTHER						
TOTAL HOURS		11	11			

TEST DEPTHS

GENERAL COMMENTS: 3hrs pump Lost circulation material also pulled to grease rods.

MATERIALS USED OR LOST

QUANTITY	ITEM & REMARKS	APPROVAL
1	Lub Tub	
1	alcomer 120L.	
1	bag of cottom seed.	
1	Rod grease.	

CUSTOMER [signature] COMPANY Don Kirkman

COATES DRILLING, INC.

DAILY TIME REPORT

We are number ONE 1

CONTRACT NAME Bristlecone Mining JOB NO. 836

DATE June 8 DAY ☑

HOLE NO. P-88-1 AFTERNOON ☐

SIZE NQ -40° NIGHT ☐

	DRILL NO.	NAME	NAME	NAME	NAME
	N-6	C. Wood	B. Duchesne		

	FROM	TO	FEET	OPERATION	DRILL HRS	HOURS	HOURS	HOURS	HOURS
CORING	462	584	122	CORING		9	9		
OVERBURDEN				OVERBURDEN					
DRILL CEMENT				CEMENTING					
REAM CASING				REAMING CASING					
				TESTING					
WATER LINES: DISTANCE 1200 FT. LIFT 300 FT.				WATER LINES					
MOVING: UNDER EQUIPMENT SHOW TRACTOR & TRUCK HOURS				MOVING					
				SETTINGUP/TEAR DOWN					
				SUPERVISION					
MOBILIZATION: FROM BASE TO TRUCK UNLOAD POINT									
DEMOBILIZATION: FROM TRUCK LOAD POINT TO BASE									
MOBILIZATION: FROM TRUCK UNLOAD PT. TO 1st HOLE									
DEMOBILIZATION: FROM LAST HOLE TO TRUCK LOAD POINT									
				HOLE STABILIZING		1	1		
				T. DRIVING					
				CAMP					
				REPAIRS & MAINT.					
				WALKING		1	1		
				OTHER					
				TOTAL HOURS		11	11		

TEST DEPTHS

EQUIPMENT DATA

UNIT	HOURS	REMARKS
TRACTOR		
6 x 6 TRUCK		
4 x 4 TRUCK		
PICKUP TRUCK		
MUD MIXER	1	
COIL STOVE		

GENERAL COMMENTS: 1hr pumped cotton seed down to regain circulation

MATERIALS USED OR LOST

QUANTITY	ITEM & REMARKS	APPROVAL
1	alcomer 120L	

CUSTOMER [signature] COMPANY Don Kuhnie

COATES DRILLING, INC.

DAILY TIME REPORT

We are number ONE 1

CONTRACT NAME Bristlecone Mining JOB NO. 836

DATE June 9 DAY ☑

HOLE NO. P-88-1 AFTERNOON ☐

SIZE NQ -400' NIGHT ☐

	FROM	TO	FEET
CORING	584		
OVERBURDEN			
DRILL CEMENT			
REAM CASING			

WATER LINES: DISTANCE 1200 FT. LIFT 300 FT.

MOVING: UNDER EQUIPMENT SHOW TRACTOR & TRUCK HOURS

MOBILIZATION: FROM BASE TO TRUCK UNLOAD POINT

DEMOBILIZATION: FROM TRUCK LOAD POINT TO BASE

MOBILIZATION: FROM TRUCK UNLOAD PT. TO 1st HOLE

DEMOBILIZATION: FROM LAST HOLE TO TRUCK LOAD POINT

EQUIPMENT DATA

UNIT	HOURS	REMARKS
TRACTOR		
6 x 6 TRUCK		
4 x 4 TRUCK		
PICKUP TRUCK		
MUD MIXER		
COIL STOVE		

OPERATION	DRILL NO.	NAME N-6	NAME C. Wood	NAME B. DuCharme	NAME	NAME	TEST DEPTHS
	DRILL HRS	HOURS	HOURS	HOURS	HOURS	HOURS	
CORING							
OVERBURDEN							
CEMENTING							
REAMING CASING							
TESTING							
WATER LINES							
MOVING							
SETTINGUP/TEAR DOWN							
SUPERVISION							
HOLE STABILIZING							
T. DRIVING							
CAMP							
REPAIRS & MAINT.							
WALKING							
OTHER			6				
TOTAL HOURS			6				

GENERAL COMMENTS: C. Wood had doctor's appointment something in his right eye.

B. Ducharme trip to Carson City for supplys and service 4 by 4

MATERIALS USED OR LOST

QUANTITY	ITEM & REMARKS	APPROVAL

CUSTOMER [signature] COMPANY Don Kirkman

COATES DRILLING, INC.

DAILY TIME REPORT

We are number ONE 1

CONTRACT NAME Bristlecone Mining JOB NO. 836

DATE June 10 DAY ☑

HOLE NO. P-88-1 AFTERNOON ☐

SIZE NQ - 40° NIGHT ☐

	FROM	TO	FEET
CORING	584	674	90
OVERBURDEN			
DRILL CEMENT			
REAM CASING			

WATER LINES: DISTANCE 200 FT. LIFT 300 FT.

MOVING: UNDER EQUIPMENT SHOW TRACTOR & TRUCK HOURS

MOBILIZATION: FROM BASE TO TRUCK UNLOAD POINT

DEMOBILIZATION: FROM TRUCK LOAD POINT TO BASE

MOBILIZATION: FROM TRUCK UNLOAD PT. TO 1st HOLE

DEMOBILIZATION: FROM LAST HOLE TO TRUCK LOAD POINT

EQUIPMENT DATA

UNIT	HOURS	REMARKS
TRACTOR		
6 x 6 TRUCK		
4 x 4 TRUCK		
PICKUP TRUCK		
MUD MIXER	1	
COIL STOVE		

OPERATION	DRILL HRS	DRILL NO. N-6 HOURS	NAME C. Wood HOURS	NAME B. KIRKNESS HOURS	NAME B. DuChaume HOURS	NAME HOURS
CORING		3	3	6		
OVERBURDEN						
CEMENTING						
REAMING CASING						
TESTING						
WATER LINES						
MOVING						
SETTINGUP/TEAR DOWN						
SUPERVISION						
HOLE STABILIZING						
T. DRIVING						
CAMP						
REPAIRS & MAINT.			4	4		
WALKING		1		1		
OTHER						
TOTAL HOURS		4		11		

TEST DEPTHS

GENERAL COMMENTS: 4hrs repair, trip to Carson City for new fuel Line and injector

C. Wood doctor appointment in the morning get eye check again.

MATERIALS USED OR LOST

QUANTITY	ITEM & REMARKS	APPROVAL
1	Foamer 120 L.	
1	Lub Tub. (DK - 47', CW - 43')	

CUSTOMER Allen Wood COMPANY Don Kirkness

COATES DRILLING, INC.

DAILY TIME REPORT

We are number ONE 1

CONTRACT NAME Bristlecone Mining JOB NO. 836

DATE 06/11/88 DAY ☑

HOLE NO. P-88-1 AFTERNOON ☐

SIZE NQ-40° NIGHT ☐

	FROM	TO T.D.	FEET
CORING	674	794	120'
OVERBURDEN			
DRILL CEMENT			
REAM CASING			

WATER LINES: DISTANCE 1200 FT. LIFT 300 FT.

MOVING: UNDER EQUIPMENT SHOW TRACTOR & TRUCK HOURS

MOBILIZATION: FROM BASE TO TRUCK UNLOAD POINT

DEMOBILIZATION: FROM TRUCK LOAD POINT TO BASE

MOBILIZATION: FROM TRUCK UNLOAD PT. TO 1st HOLE

DEMOBILIZATION: FROM LAST HOLE TO TRUCK LOAD POINT

EQUIPMENT DATA

UNIT	HOURS	REMARKS
TRACTOR		
6 x 6 TRUCK		
4 x 4 TRUCK		
PICKUP TRUCK		
MUD MIXER		
COIL STOVE		

OPERATION	DRILL HRS	DRILL NO. N-6	NAME C. Wood	NAME B. DuCharme	NAME	NAME
		HOURS	HOURS	HOURS	HOURS	
CORING		10½	10½			
OVERBURDEN						
CEMENTING						
REAMING CASING						
TESTING						
WATER LINES						
MOVING						
SETTINGUP/TEAR DOWN						
SUPERVISION						
HOLE STABILIZING						
T. DRIVING						
CAMP						
REPAIRS & MAINT.		½	½			
WALKING		1	1			
OTHER						
TOTAL HOURS		11	11			

TEST DEPTHS

GENERAL COMMENTS: Rebuild Pop off valve, short runs Broken Rock last 25' of hole. Mismatched at 794', end of shift

MATERIALS USED OR LOST

QUANTITY	ITEM & REMARKS	APPROVAL
1	AIRCOMER	

CUSTOMER [signature] COMPANY Don Kuhnau

COATES DRILLING, INC.

DAILY TIME REPORT

We are number ONE 1

CONTRACT NAME Beistle Cone Mining JOB NO. 836

DATE 06/12/88 DAY ☒

HOLE NO. P-88-1 AFTERNOON ☐

SIZE NQ-40° NIGHT ☐

	FROM	TO	FEET
CORING			
OVERBURDEN			
DRILL CEMENT			
REAM CASING			

WATER LINES: DISTANCE 1200 FT. LIFT 300 FT.

MOVING: UNDER EQUIPMENT SHOW TRACTOR & TRUCK HOURS

MOBILIZATION: FROM BASE TO TRUCK UNLOAD POINT

DEMOBILIZATION: FROM TRUCK LOAD POINT TO BASE

MOBILIZATION: FROM TRUCK UNLOAD PT. TO 1st HOLE

DEMOBILIZATION: FROM LAST HOLE TO TRUCK LOAD POINT

EQUIPMENT DATA

UNIT	HOURS	REMARKS
TRACTOR		
6 x 6 TRUCK		
4 x 4 TRUCK		
PICKUP TRUCK		
MUD MIXER		
COIL STOVE		

OPERATION	DRILL HRS	NAME DRILL NO. N-6 HOURS	NAME C. Wood HOURS	NAME B. DuCharme HOURS	NAME HOURS	NAME HOURS
CORING						
OVERBURDEN						
CEMENTING						
REAMING CASING						
TESTING						
WATER LINES						
MOVING						
SETTINGUP/TEAR DOWN						
SUPERVISION						
HOLE STABILIZING						
T. DRIVING						
CAMP						
REPAIRS & MAINT.						
WALKING		1	1			
OTHER		10	10			
TOTAL HOURS		11	11			

TEST DEPTHS

GENERAL COMMENTS: Trip out for mislatch, Trip back in to Survey hole, Camera Problems, not working.

MATERIALS USED OR LOST

QUANTITY	ITEM & REMARKS	APPROVAL

CUSTOMER [signature] COMPANY Don Kuhlmann

COATES DRILLING, INC.

DAILY TIME REPORT

We are number ONE 1

CONTRACT NAME Bristol Reconnaissance Mining JOB NO. 836

DATE June 13 DAY ☑

HOLE NO. P-88-1 AFTERNOON ☐

SIZE NQ - 400 NIGHT ☐

	FROM	TO	FEET
CORING	794		
OVERBURDEN			
DRILL CEMENT			
REAM CASING			

WATER LINES: DISTANCE 1200 FT. LIFT 300 FT.

MOVING: UNDER EQUIPMENT SHOW TRACTOR & TRUCK HOURS

MOBILIZATION: FROM BASE TO TRUCK UNLOAD POINT

DEMOBILIZATION: FROM TRUCK LOAD POINT TO BASE

MOBILIZATION: FROM TRUCK UNLOAD PT. TO 1st HOLE

DEMOBILIZATION: FROM LAST HOLE TO TRUCK LOAD POINT

EQUIPMENT DATA

UNIT	HOURS	REMARKS
TRACTOR		
6 x 6 TRUCK		
4 x 4 TRUCK		
PICKUP TRUCK		
MUD MIXER		
COIL STOVE		

OPERATION	DRILL HRS	DRILL NO. N6	NAME C. Wood	NAME B. DuCharme	NAME	NAME
CORING						
OVERBURDEN						
CEMENTING						
REAMING CASING						
TESTING		3	3			
WATER LINES						
MOVING						
~~SETTINGUP/TEAR DOWN~~		7	7			
SUPERVISION						
HOLE STABILIZING						
T. DRIVING						
CAMP						
REPAIRS & MAINT.						
WALKING		1	1			
OTHER						
TOTAL HOURS		11	11			

TEST DEPTHS: 790 | 490

GENERAL COMMENTS: Sperry Sun test at 790 and 490 Not working good. Break rods out. and tear down.

MATERIALS USED OR LOST

QUANTITY	ITEM & REMARKS	APPROVAL
	R/S #86145 Huddy footage 10 to 794 - 784 Ft.	
	NQ Huddy Blue 94937/40 footage 400 to 794 = 394 Ft.	

CUSTOMER [signature] COMPANY Don Kuhnen

COATES DRILLING, INC.

DAILY TIME REPORT

We are number ONE 1

CONTRACT NAME Bristlecone Mining JOB NO. 836

DATE June 14 DAY ☑

HOLE NO. P-88-1 AFTERNOON ☐

SIZE NQ -45° NIGHT ☐

	FROM	TO	FEET
CORING			
OVERBURDEN			
DRILL CEMENT			
REAM CASING			

WATER LINES: DISTANCE _____ FT. LIFT _____ FT.

MOVING: UNDER EQUIPMENT SHOW TRACTOR & TRUCK HOURS

MOBILIZATION: FROM BASE TO TRUCK UNLOAD POINT

DEMOBILIZATION: FROM TRUCK LOAD POINT TO BASE

MOBILIZATION: FROM TRUCK UNLOAD PT. TO 1st HOLE

DEMOBILIZATION: FROM LAST HOLE TO TRUCK LOAD POINT

EQUIPMENT DATA

UNIT	HOURS	REMARKS
TRACTOR		
6 x 6 TRUCK		
4 x 4 TRUCK		
PICKUP TRUCK		
MUD MIXER		
COIL STOVE		

OPERATION	DRILL HRS	NAME DRILL NO. N6	NAME C. Wood	NAME D. KIRKVESS	NAME	NAME
CORING						
OVERBURDEN						
CEMENTING						
REAMING CASING						
TESTING						
WATER LINES						
MOVING						
SETTINGUP/TEAR DOWN						
SUPERVISION						
		5	5			
HOLE STABILIZING						
T. DRIVING						
CAMP						
REPAIRS & MAINT.						
WALKING		1	1			
OTHER		2	2			
	—					
TOTAL HOURS		8	8			

TEST DEPTHS

GENERAL COMMENTS: 2hrs Loading. poor cat operator

MATERIALS USED OR LOST

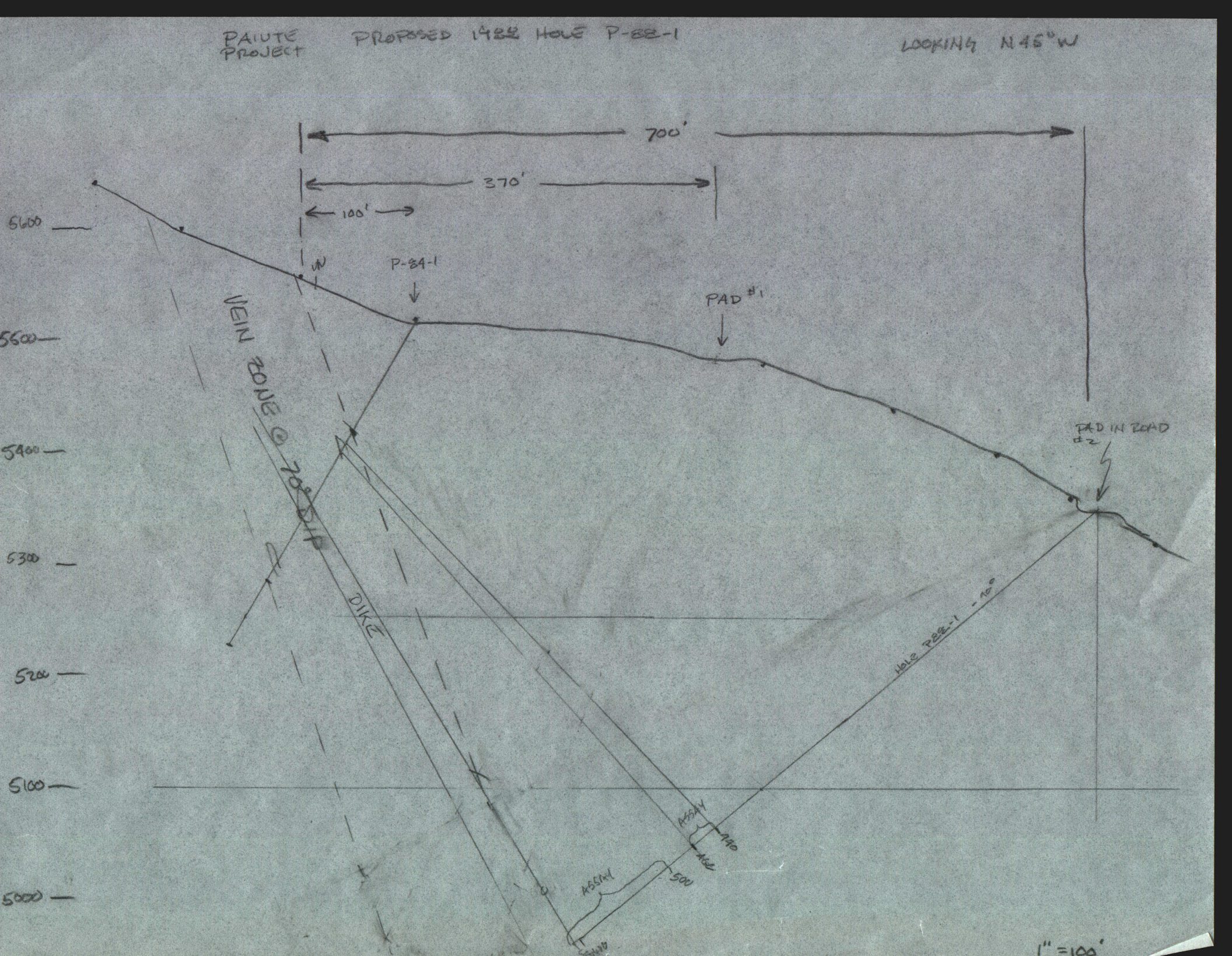
QUANTITY	ITEM & REMARKS	APPROVAL

CUSTOMER [signature] COMPANY Don Kirkevess

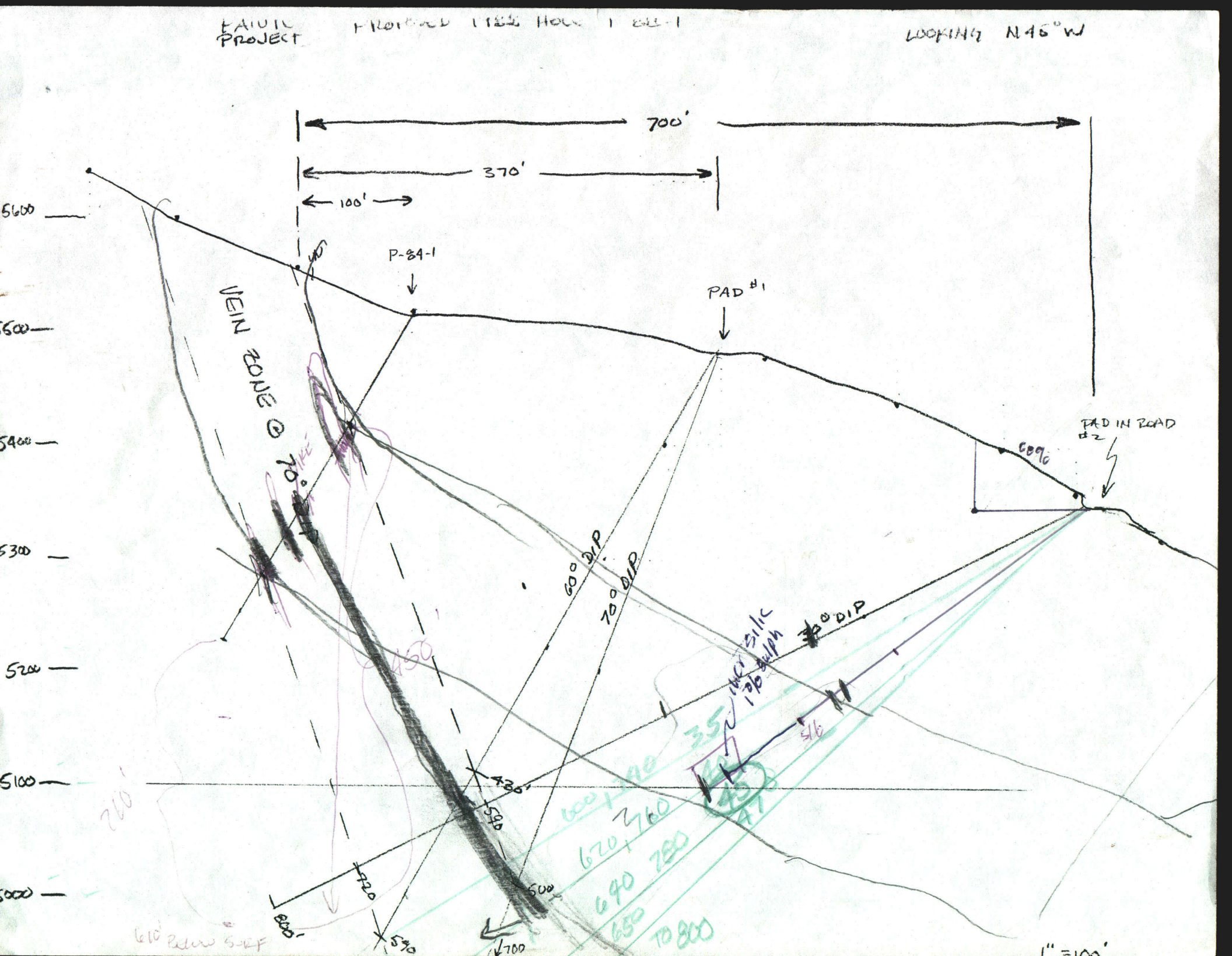
PAIUTE PROJECT

PROPOSED 1488 HOLE P-88-1

LOOKING N45°W



KAIUIK PROJECT — PROPOSED 1982 HOLE P-84-1 — LOOKING N 46° W



1984 PAIUTE DRILLING

Hole 1 225° -60°
August 29th 146'
203
335 } 3 shifts

Hole 1B 160° -60°
August 30 316'
August 31 380

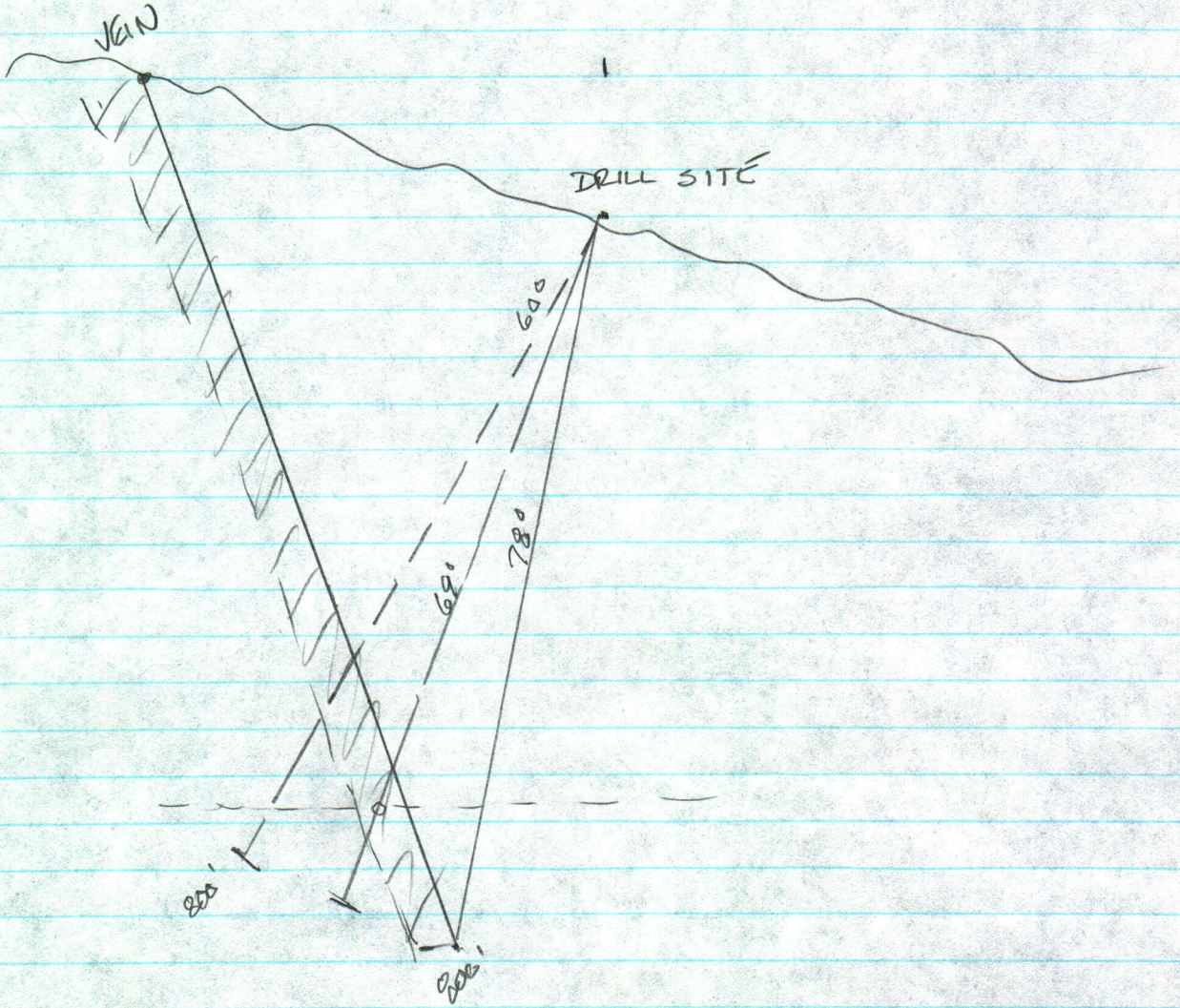
≈ 50' per shift on 225° Holes
≈ 100' per shift on 60° Holes

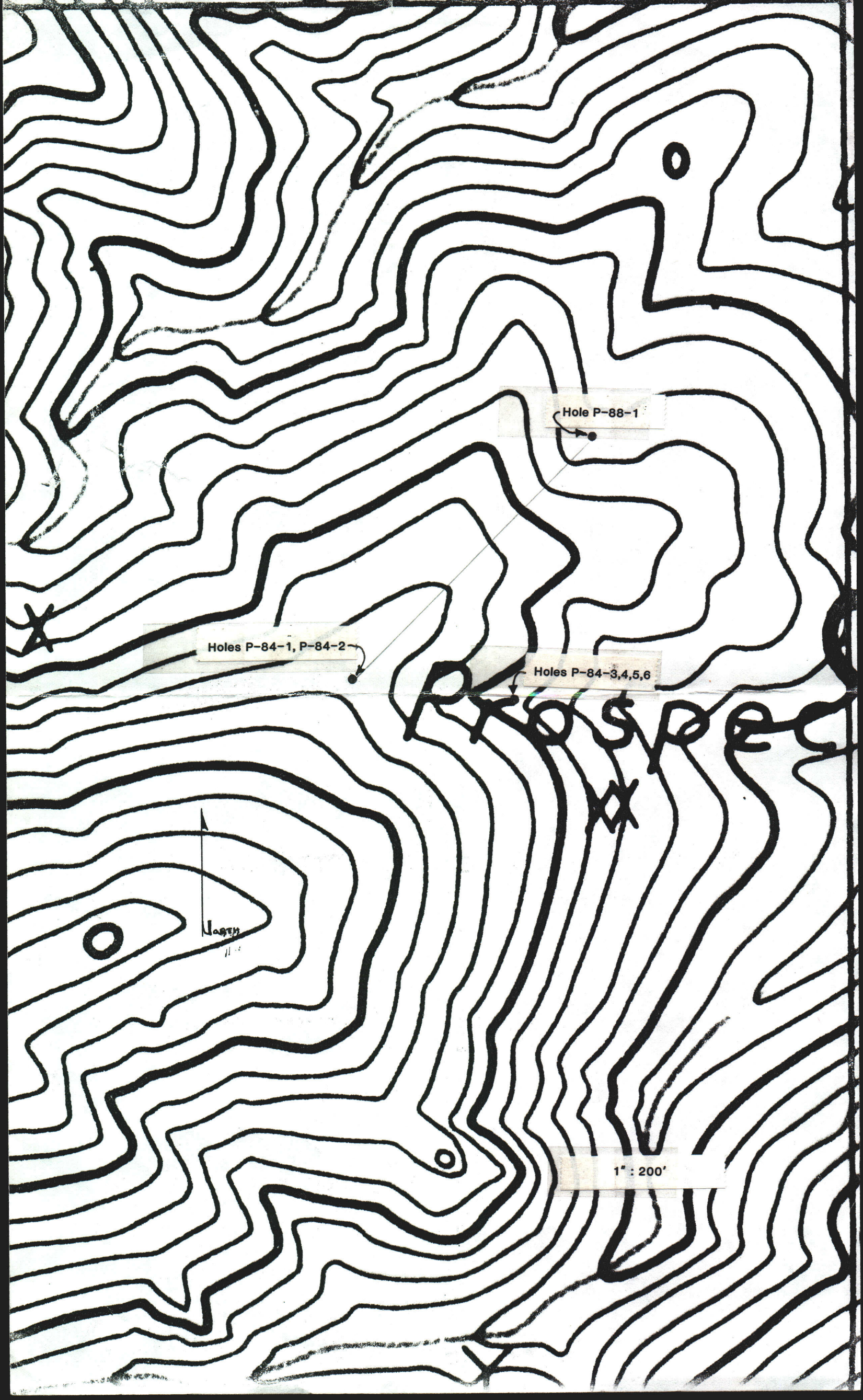
CAT SKINNER GEORGE OR BRUCE MULL 575-2278
GEORGE MULL CONSTRUCTION
BIG MOUTH CREEK 75^{00}/hr

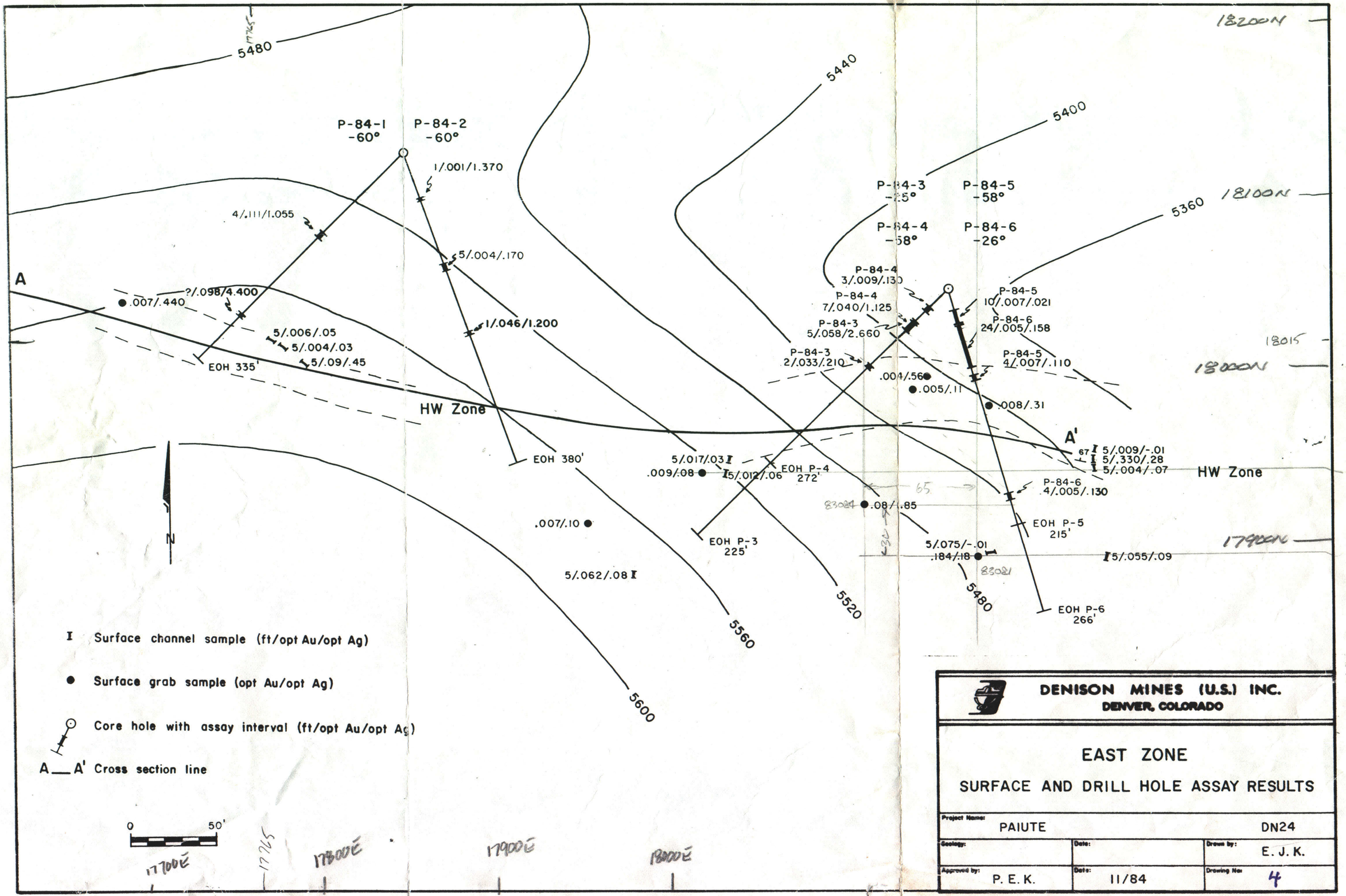
1,000 HORIZ 320' VERT TO H_2O 32% GRADE

1049' TOTAL LENGTH

70° DIP




Hole P-88-1
Holes P-84-1, P-84-2
Holes P-84-3,4,5,6
Prospect
North
1" : 200'



DENISON MINES (U.S.) INC.
DENVER, COLORADO

EAST ZONE

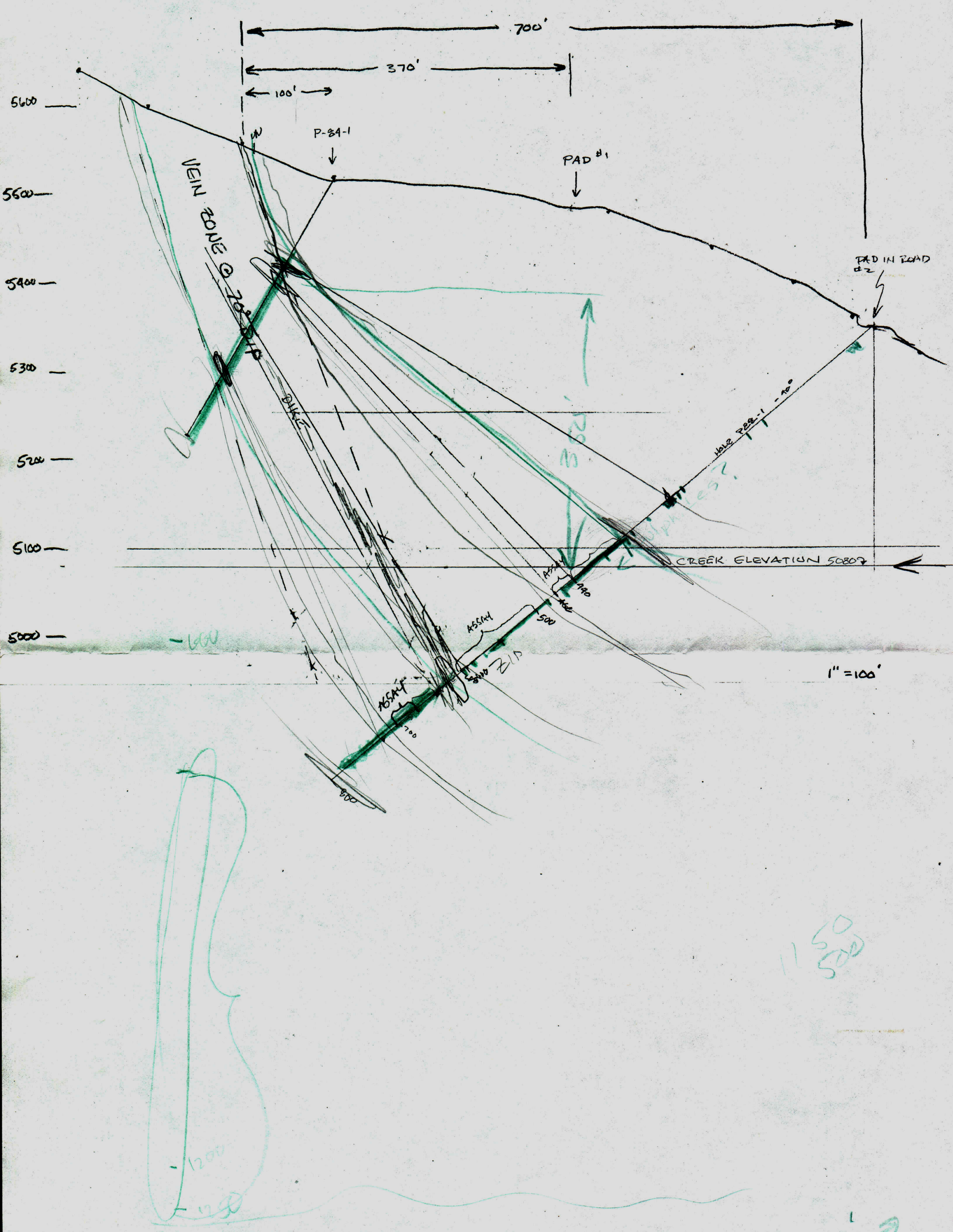
SURFACE AND DRILL HOLE ASSAY RESULTS

Project Name: PAIUTE		DN24
Geology:	Date:	Drawn by: E. J. K.
Approved by: P. E. K.	Date: 11/84	Drawing No: 4

PAIUTE PROJECT

PROPOSED 1982 HOLE P-82-1

LOOKING N 45° W



PAIUTE PROJECT

LOCATION MAP 1" = 1 MILE

1" = 2,000'

↗ PREVIOUS DRILL HOLES

1" = 500'

○ EXISTING DRILL PADS

○ PROPOSED DRILL PAD

40' CONT

PAIUTE PROJECT

1988 HOLE P-88-1

LOOKING NW