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BEAR CREEK MINING COMPANY

SOUTHWEST DISTRICT

REPORT ON THE PETRO PROPERTY, TWIN BUTTES AREA, PIMA COUNTY, ARIZONA

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By

Richard R. Weaver

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GEOLOGICAL REPORT OF THE PETRO PROPERTY

Introduction

On July 28, 1960, Bear Creek Mining Company entered into agreement with Marion Chilson, et al, for the exploration of 29 unpatented mineral claims in the Pima Mining District, Arizona. The agreement was terminated Jan. 28, 1963.

The claims lie on the north flank of the Twin Buttes, approximately 30 miles southwest of Tucson, Arizona. They are located in Sections 19, 29, 30, and 32, T17S, R13E.

Work accomplished by Bear Creek Mining Company on this area consisted of geologic mapping, 5.2 miles of geophysical IP traverses, a gravity survey and 8,546.0 feet of diamond drilling.

Method of Attack

Geologic mapping was done on 1"≈500' aerial photos and transferred uncorrected to a 1"≈500' overlay (see Plate 1). The geology and claim outlines are slightly distorted, due to the normal distortion inherent in air photos. A corrected 1"=500' claim survey map accompanies this report.

Geology

Outcrops are sparse on the property except in the northeast corner where a hill of Pennsylvanian-Permiam limestone is exposed, and in the extreme southwest corner a small outcrop of Mississippian limestone is mappable.

These two units are metamorphosed to marble, hornfels and minor amounts of calc-silicate minerals. The average strike of the stratigraphic units are 40°-45° and dip 65°-vertical NE.

The rest of the area is covered by Recent alluvium tens of feet thick, which is underlain by Helmet fanglomerate of Miocene(?) age.

(a) A small amount of mineralization is exposed on the surface in the area. The limestone hill in the northeast corner of

the area has some disseminated digenite(?) and chalcopyrite plus minor copper carbonates. The extent of surface mineralization is very limited.

Drilling

Eleven holes were diamond drilled on the property during 1960, 1961 and 1962 for a total of 8,546.0 feet.

Summary of Drilling

Hole	RB	NX	BX	Total
T- 6	270.0	105.4	377.9	753.3
T-16	42.0	125.5	378.0	545.5
T-42	2.0	542.3	- - -	544.3
T-45	10.0	554.0	- - -	564.0
T-47	200.0	387.3	487.0	1074.3
T-48	240.0	770.8	- - -	1010.8
T-67	168.0	958.4	- - -	1126.4
T-68	197.9	779.1	- - -	977.0
T-69	200.0	964.1	- - -	1164.1
T-70	196.0	314.0	- - -	510.0
T-71	148.0	128.3	- - -	276.3
	1673.9	5629.2	1242.9	8546.0

Claims

A claim map given to Bear Creek Mining Company by Richard Chilson and the legal claim descriptions on file in the Pima County Court House display and describe, respectively, the Venus claims as a contiguous claim group.

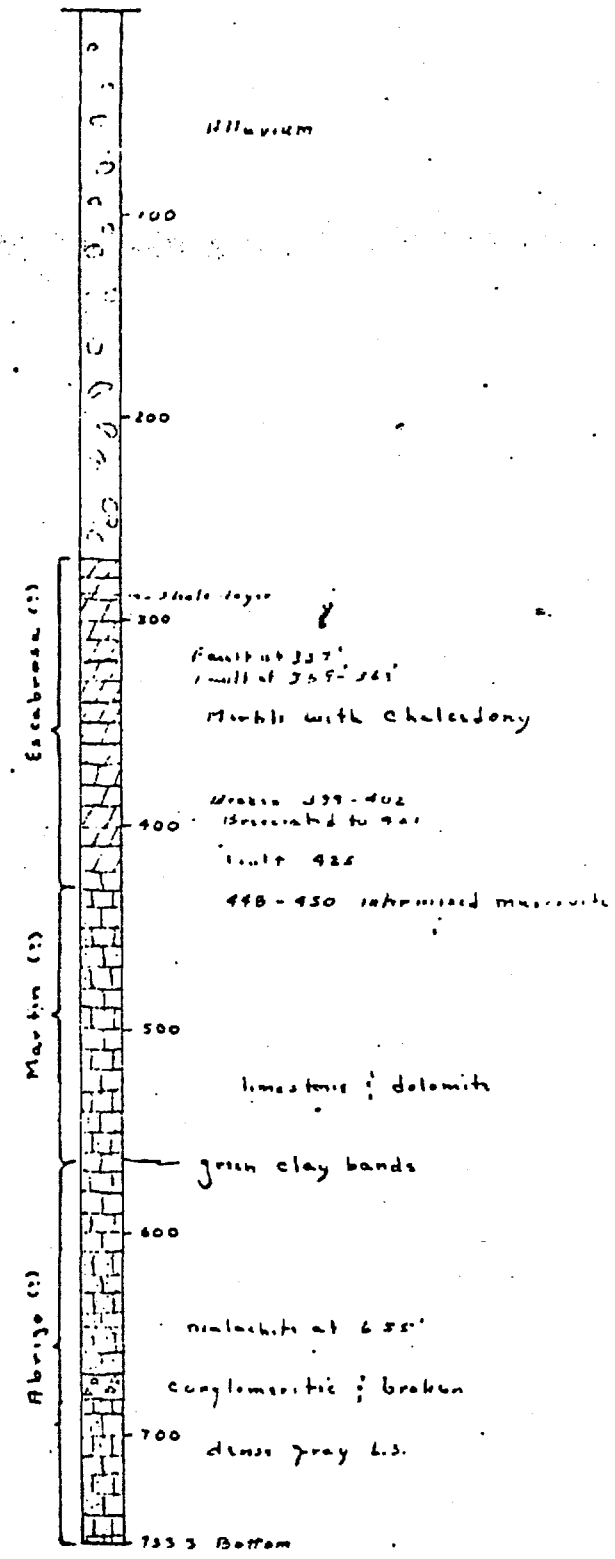
Upon surveying the Venus claim group, it was discovered that the claim notices for Venus 9 and 11 were positioned in the field as shown on Plate 2, thus creating a gap between the location of Venus 9 and 7. No claim notices were found for Venus 10 and 12, so their exact position is not known.

According to claim descriptions describing Venus 10, it can be located southwest of Venus 8 or southeast of Venus 9. Venus 12, according to claim descriptions, may be located southeast of Venus 9 or southeast of Venus 11.

Because of the possible existing gap, Bear Creek Mining Company located Venus 13 and Venus 14, which will be quit-claimed to the optionors.

Richard R. Weaver

T-6 Collar Elevation _____

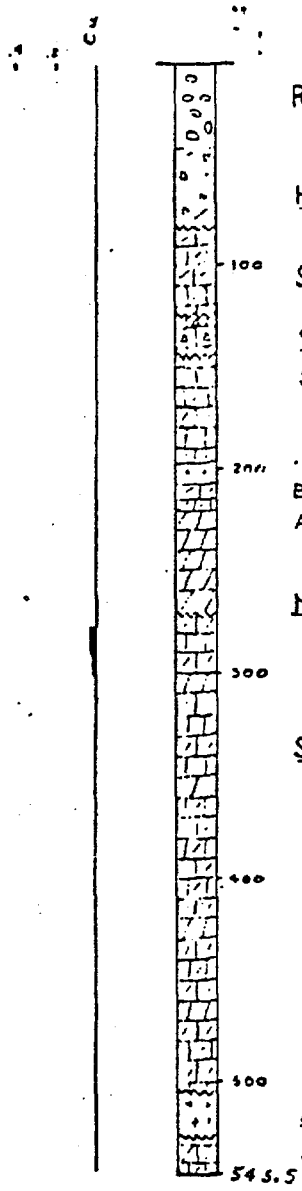


No assays

Scale 1" = 100'

T-16

Collar Elevation _____



Rockbit - Alluvium

Hornfels breccia - 60% qtz & 40% diopside

Silicated limestone. Some malachite & pyrite mottled & banded

Silicated limestone breccia 60°-70° dip

Silicated limestone - tremolite, diopside and wollastonite

181.0' - Garnet begins to appear 30°-40° fractures

Black to brown silty garnet phase

At 207.1' 80° fracture. Last 2.0 - Wollastonite & tremolite

Marble with zones of garnet & tremolite. Streaked along 70°-80° fractures
30° bedding
30° shears

50° Streaking.

Silicated limestone & marble

Cv-Cc(?) at 215'
Cv-Bn at 285'
Cv-Cp at 300'
Mo at 314.7
} weak

427' - 465' 2 hornfels zones, black horizontal contacts

483 - hornfels with 30° contact

494' 20°-30° breccia zone

Argillite hornfels

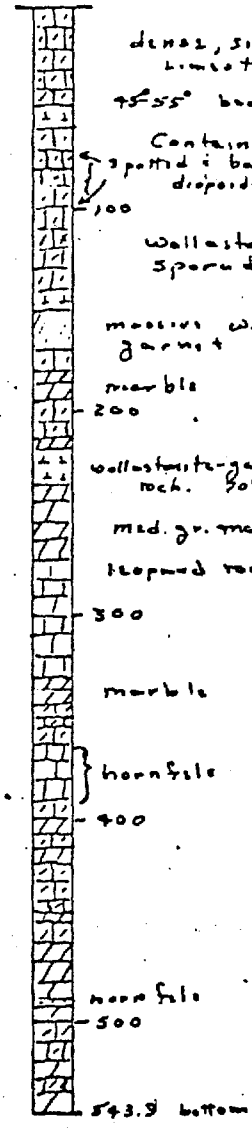
Silicated limestone

545.5 Bottom

Scale 1" = 100'

T-42

Collar Elev. _____



Assays very low

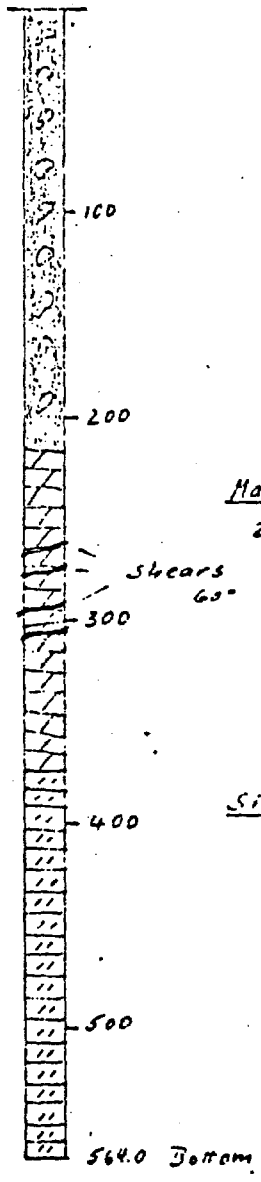
bornite & chalcopyrite scattered throughout - usually in favorable horizons.

Scale 1" = 100'

Collar Elevation _____

Scale: 1" = 100'

7-45.



Helmet fanglomerate

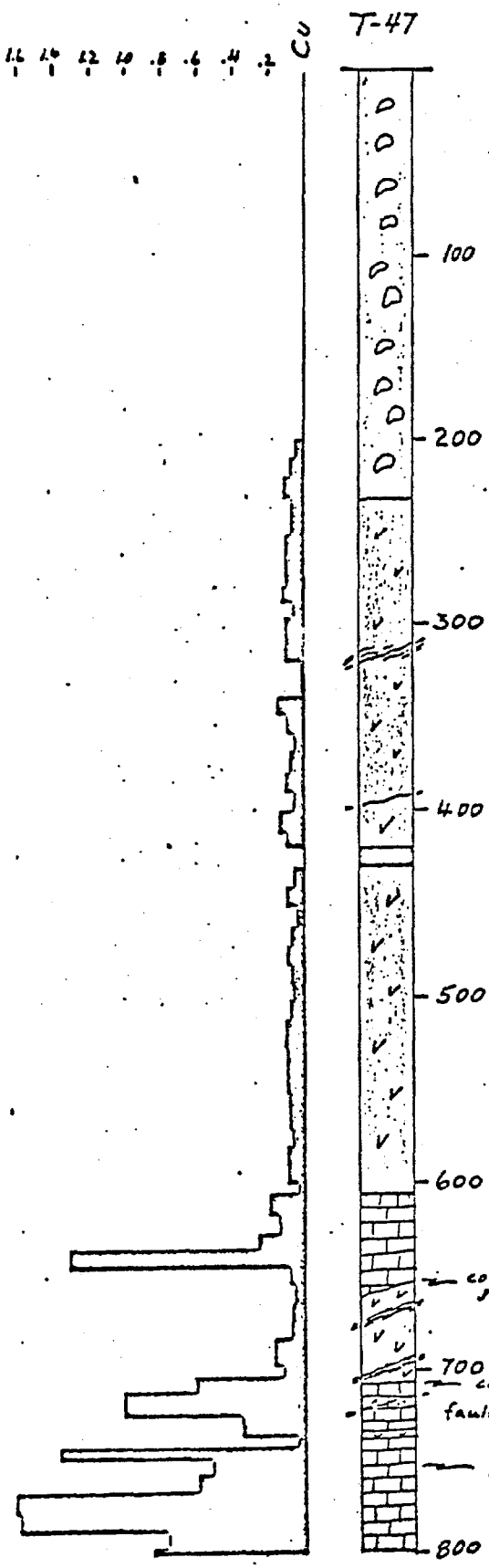
Marble - Escabrosa ls.

217.5 - 225.8 Talc, white to green, soft
coarse to medium grained
some diopside developed
rock is highly fractured

Silicified ls.

dense, microcrystalline,
exhibits l'green bands of diopside
no sulfides

Scale : 1" = 100'



Helmet fanglomerate

Quartz Monzonite - soft, crumbly, clayey, highly alt. to clay - sericite, original texture distroyed.

q' gouge zone, dips 60°

rock consists of quartz, feldspar and fine grained biotite.
pyr. is fine dissem. throughout the rock and occurs also smeared along fractures
Occasionally fine grains of MoS_2 and Cp are visible, usually associated with broken up quartz and feldspar veinlets.

Rock is still highly sheared and alt. to sericite, clay, chlorite

There seems to be an increase in MoS_2 + Cp mineralization.

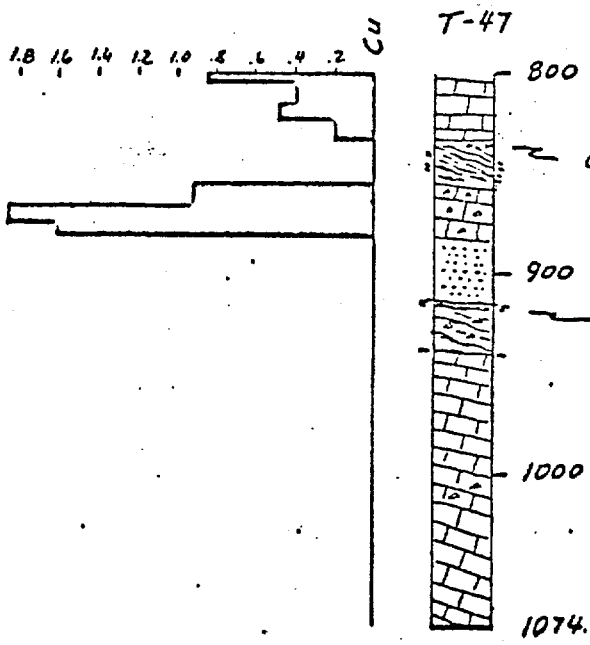
Hornfels - d'green /gray, highly sheared w/ calcite stringers, occasional pieces of garnet rock are present.

very good fine dissem. Cp.

Quartz Monzonite - dike, highly alt. to clay - sericite, good pyr., trace Cp.

Hornfels - d'green, highly sheared + brecciated very good Cp mineral, fine dissem. and as breccia filling material.

Scale: 1" - 100'



Hornfels - green. gray, fractured and brecciated. Cp occurs dissem. and in small veinlets.

Quartz Monzonite and Gouge zone, dips 30 - no sulfide mineralization

Concha lr. ? - brecciated, d'gray. Cp is disse and in veinlets

Tuff ? - l'gray, porous, well sorted, not minerali.

gouge zone

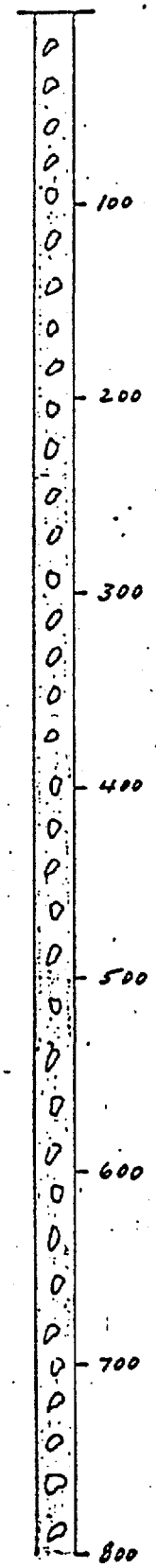
Qtzite breccia & gouge w/ hemat. staining at 937.5 - 938.9 Turkey Track porph.

Hornfels - l' green. gray to white, dense, microcrystalline. locally brecciated. Some interbedded bands of argillite occur toward the bottom no sulfide mineralization

Collar elevation _____

Scale: 1" = 100'

T-48



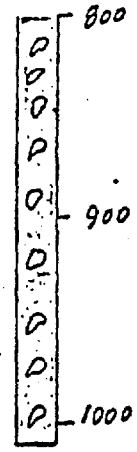
Helmet fanglomerate

containing very angular fragments of arkose, volcanics, limestone and granite.
Size of fragments varies from <1" to few feet.
Matrix is usually brown to red

no assays

Scale: 1" = 100'

T-48



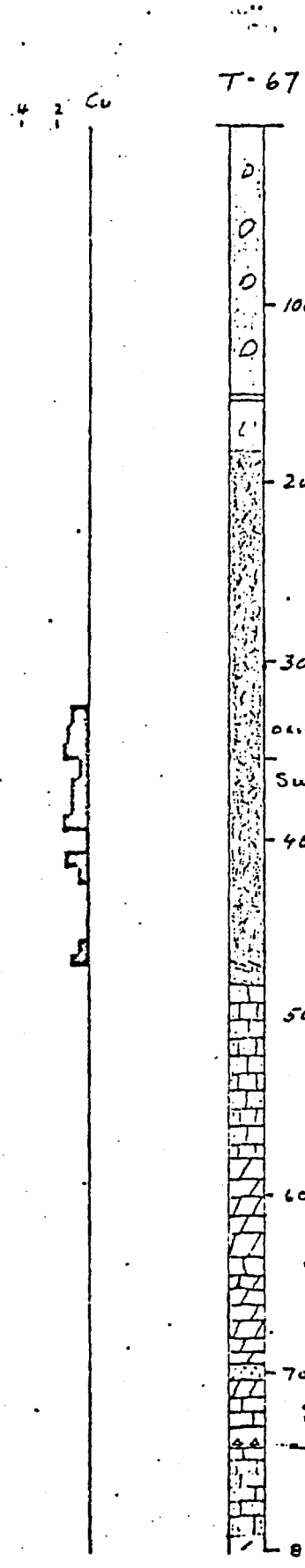
Helmet fonglomerate

no assays

1010.8 bottom

Collar Elevation _____

Scale: 1" = 100'



Rock bit -

Helmet fanglomerate

Qtz. Monzonite

Altered to clay and sericite

White hornfels & limestone

Mn dendrites throughout

Core vuggy & vugs lined with calcite xls

Marble - med grain - white to gray

white hornfels

marble - med to coarse grain - white - gray
Serpentine inclusions

quartzite

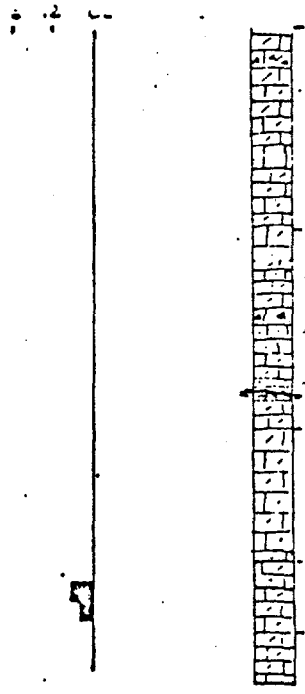
green spotted (mottled) hornfels

breccia w/ clay + $CaCO_3$ matrix

pale green LFL w/ patches + irregular banding
bedding dips 50-60°

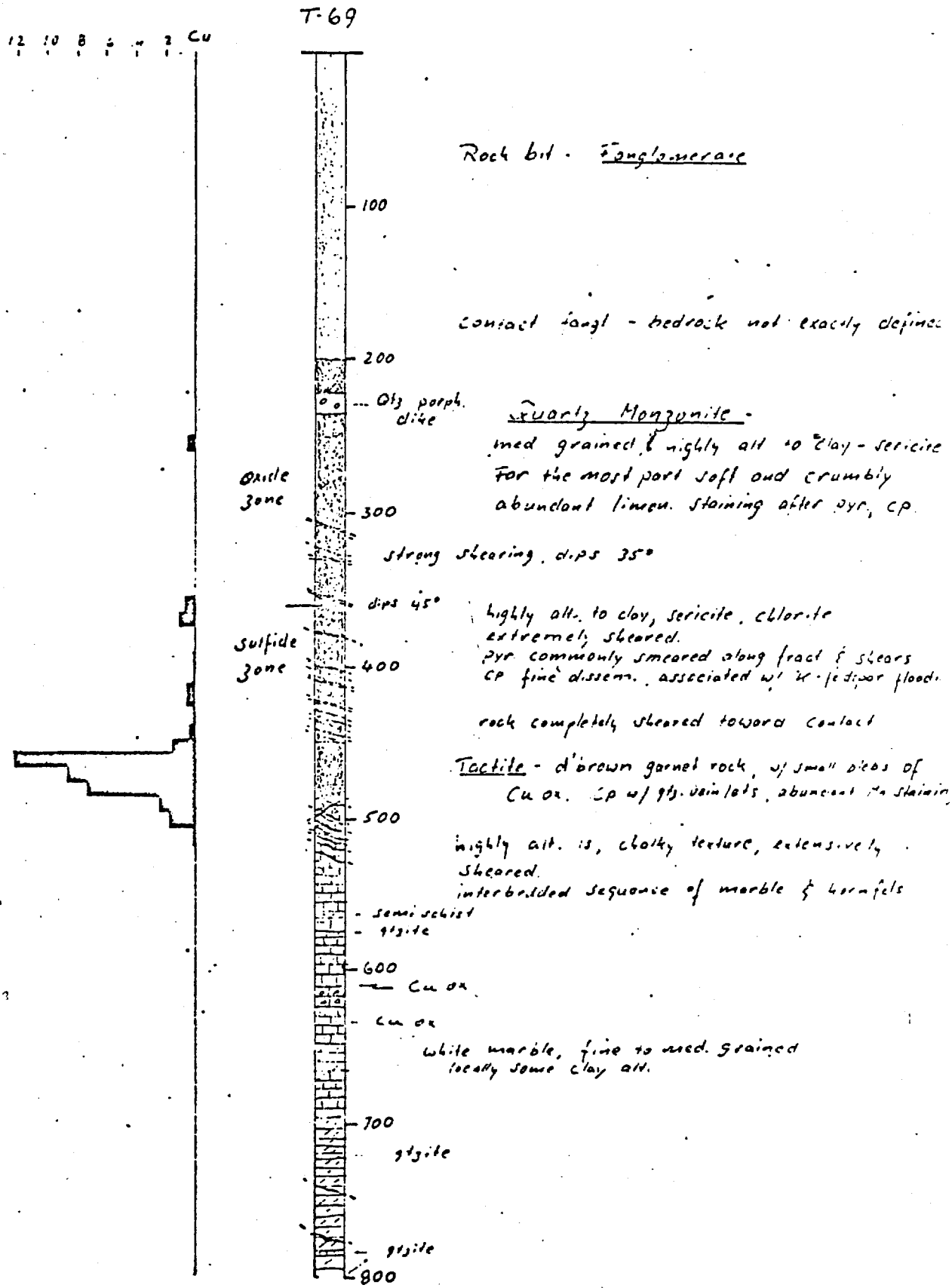
Scale : 1" = 100'

T-67



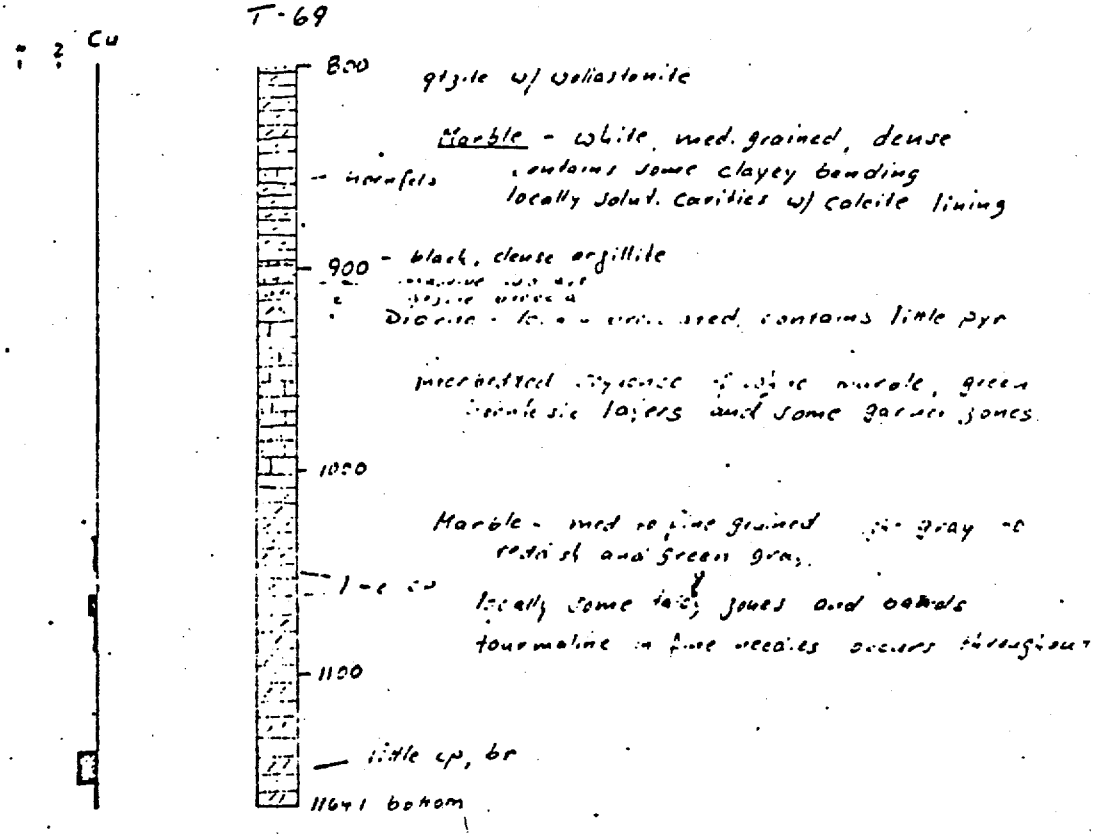
Collar Elevation _____

Scale: 1" = 100'



Scale : 1" = 100'

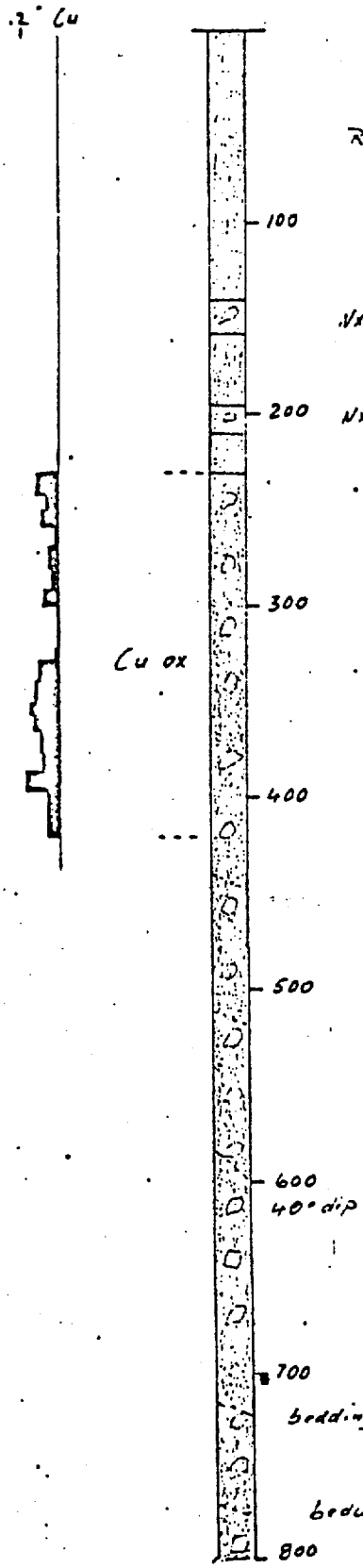
T-69



Collar Elevation _____

Scale: 1" = 100'

T-68



Rock bit - Fanglomerate

Nx core

Fanglomerate

Nx core

Fanglomerate

equal sized fragments of marble, hfl, arkose in sandy calcareous matrix
Abundant Cu ox (Chrysocolla) staining around and within fragm. & limon. staining.

no Cu ox observed below 420'.

Helmet fanglomerate

fragments attain boulder size. Locally a beaded sandy matrix becomes very distinct. dips 20-30°
Fragm. are mainly l'gray to reddish arkose latite and limestone.

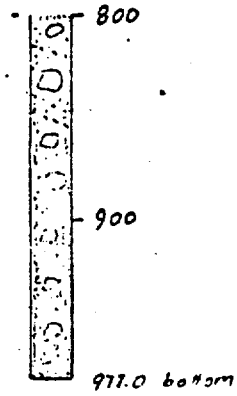
matrix is reddish brown, fine sandy to clayey.

bedding dips 30°

bedding dips 30°

Scale: 1" = 100'

T-68

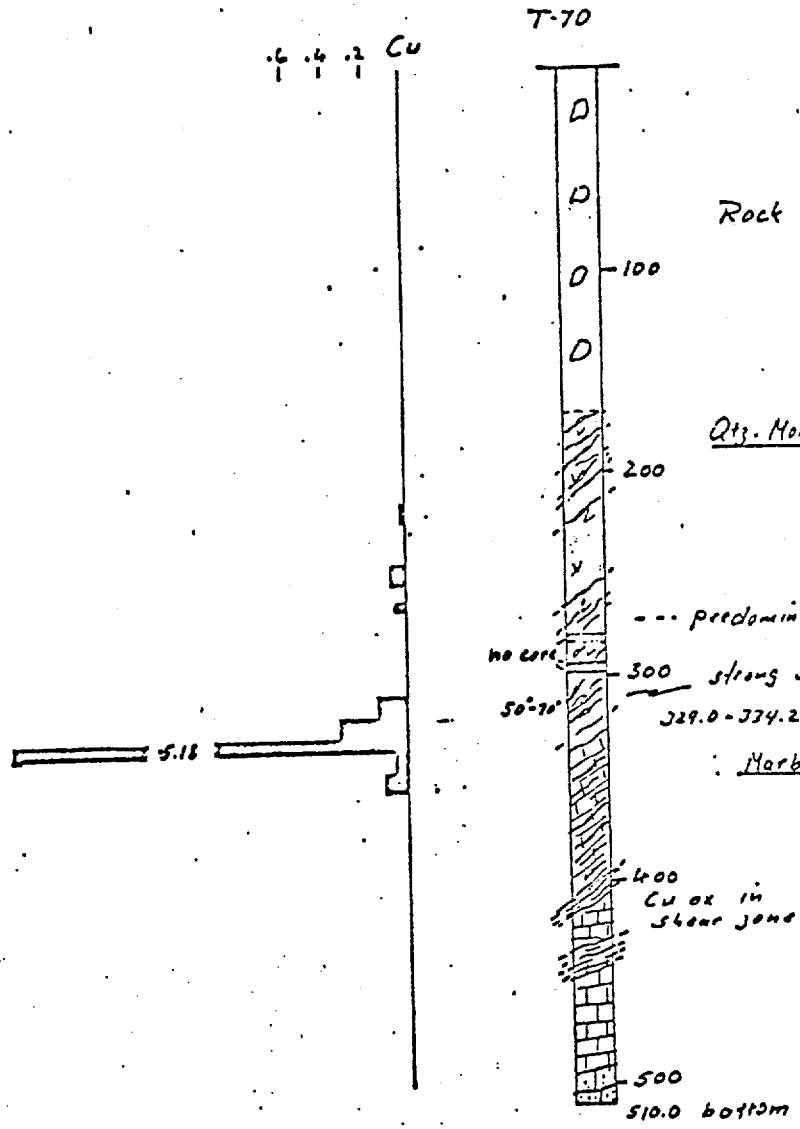


Helmet fanglomerate

ill-sorted, reddish sandy matrix
some bedding present, dips 30°

Collar Elevation _____

Scale : 1" = 100'



Rock bit - Fanglomerate

Qtz. Monzonite - highly alt. to clay-sericite
rock is very sheared & fractured
strong Fe staining along fractures and in zones of orthoclasation w/ sericite
locally strong Mn oxide + tenorite? staining
--- predominant green clay alteration
strong shearing + alteration w/ Mn oxide + tenorite?
329.0 - 334.2 strong Cu oxide

Marble - fine grained, strongly alt. to talc and serpentine locally, especially along shears.
little Cu ox visible
locally strong shear zones
400.0 - 410.0
430.7 - 442.0
rock becomes highly bleached toward bottom of hole, grading into white clay stone locally

Collar Elevation _____

Scale: 1" = 100'

T-71

Rock bit

Fanglomerate

limest. breccia

Silicif. ls. fragments imbedded in caliche limit Cu oxides

Silicified limestone - dense; microcrystalline, green. gray w/ typical "leopard pattern" of diopside

no sulfides present

SHEET NO. ___

DATE STARTED 8/22/60

DIAMOND DRILL ASSAY LOG

DATE COMPLETED 9/10/60

HOLE NO. T-6

COORDINATES 5,400 S 14,800 E

COLLAR ELEVATION _____ BEDROCK ELEVATION _____

Footage From	Footage To	Interval	Measured Core Recovery	% Recovery	Hole Size	S.G.	Sample No.
					NO ASSAY		

SHEET NO. 1

DATE STARTED [illegible]/61

DATE COMPLETED 6/14/61

DIAMOND DRILL ASSAY LOG

HOLE NO. T-16

COORDINATES 5,000 S 17,500 W COLLAR ELEVATION _____ BEDROCK ELEVATION _____

Footage From	Footage To	Interval	Measured Core Recovery	% Recovery	Hole Size	S.G.	Sample No.		Cu.						
279.0	293.3	14.3	13.2		BX		1509-[illegible]		0.0[illegible]						
293.3	302.1	8.8	9.9		"		1510-[illegible]		0.0[illegible]						

DATE STARTED 11/2/61

DIAMOND DRILL ASSAY LOG

DATE COMPLETED

HOLE NO. T-42

COORDINATES 16,500 E 5000 S

COLLAR ELEVATION

BEDROCK ELEVATION

Footage From	To	Interval	Measured Core Recovery	% Recovery	Hole Size	S.G.	Sample	Cu
2.0	10.8	8.8			NX		2859	.07
10.8	18.8	8.0			"		2860	.03
18.8	24.6	5.8			"		2863	Tr
24.6	32.3	7.7			"		2866	.03
32.3	40.9	8.6			"		2869	.18
40.9	49.1	8.2			"		2870	.03
49.1	58.7	9.6			"		2874	.09
58.7	68.7	10.0			"		2875	Tr
68.7	78.9	10.2			"		2876	.02
78.9	90.3	11.4			"		2877	.02
90.3	100.0	9.7			"		2891	.02
100.0	112.8	12.8			"		2892	Tr
112.8	120.4	7.6			"		2893	Tr
120.4	130.4	10.0			"		2894	Tr
130.4	140.6	10.2			"		2897	Tr
140.6	150.9	10.3			"		2898	.02
150.9	158.9	8.0			"		2903	.02
[illegible]9	168.2	9.3			"		2904	.02
[illegible].2	173.3	5.1			"			
173.3	183.5	10.2			"			
183.5	191.0	7.5			"			
191.0	193.7	2.7			"		2905	Tr
193.7	203.9	10.2			"		2906	.02
203.9	214.0	10.1			"			
214.0	223.4	7.4			"		2910	Tr
330.5	342.3	11.8			"		2921	Tr
342.3	352.4	10.1			"		2922	Tr
372.7	380.3	7.6			"		2923	.02
443.8	451.9	8.2			"		2924	Tr
451.9	462.1	10.2			"		2925	Tr

SHEET NO. 1

DATE STARTED 1-21-62

DIAMOND DRILL ASSAY LOG

DATE COMPLETED 2-10-62

HOLE NO. T-45

COORDINATES 14,022R 5,020S

COLLAR ELEVATION

BEDROCK ELEVATION

Footage From	Footage To	Interval	Measured Core Recovery	% Recovery	Hole Size	S.G.	Sample No.	Cu
365.3	369.1	3.8					3256	.79
	370.5					2.55		

SHEET NO. ___

DIAMOND DRILL ASSAY LOG

DATE STARTED 1-30-62

DATE COMPLETED 4-12-62

HOLE NO. T-47

COORDINATES 12,000E — 4,000S

COLLAR ELEVATION _____ BEDROCK ELEVATION _____

Footage From	Footage To	Interval	Measured Core Recovery	% Recovery	Hole Size	S.G.	Sample No.	Cu	Mo
-0-	200.0				BB			No Core	
200.0	210.0	10.0			NX		3366	0.06	Tr
210.0	221.0	11.0			"		3367	0.02	.002
221.0	231.8	10.8			"		3368	0.11	Tr
231.8	241.3	9.5			"		3369	0.03	.002
241.3	252.8	11.5			"		3370	0.03	.002
252.8	263.4	11.4			"		3371	0.10	.002
263.4	275.3	11.8			"		3394	0.10	Tr
275.3	287.8	12.5			"		3395	0.11	Tr
287.8	297.5	9.7			"		3396	0.07	.002
297.5	310.0	12.5			"		3397	0.10	Tr
310.0	319.4	9.4			"		3398	0.11	Tr
319.4	328.3	8.9	2.0-		"		3399	0.02	.003
328.3	339.5	11.2	8.5-		"		3400	0.02	Tr
339.5	348.9	9.4	3.5-		"		3401	0.14	.002
348.9	358.8	9.9	4.0-		"		3402	0.10	.004
358.8	368.9	10.1	6.0-		"		3403	0.06	.006
368.9	379.2	10.3	8.0-		"		3404	0.08	.002
379.2	389.5	10.3	8.0-		"	2,55	3413	0.10	.004
389.5	400.6	11.1	9.0-		"		3414	0.06	.002
400.6	410.7	10.1			"		3417	0.13	Tr
410.7	419.7	9.0			"		3418	0.10	Tr
No Core									
430.0	439.8	9.8	9.0-		NX		3432	0.06	.008
439.8	449.3	9.5	8.0-		"		3433	0.09	.012
449.3	461.8	12.5	9.0-		"		3434	0.04	.005
461.8	472.0	10.0	9.0-		"		3435	0.07	.011
472.0	481.1	9.1	6.0-		"		3436	0.10	.015
481.1	491.8	10.7			"		3449	0.08	.008
491.8	502.2	10.4			"		3450	0.06	.010
502.2	513.3	11.1			"		3488	0.07	.008
513.3	524.1	10.8			"		3489	0.11	.013
524.1	530.8	6.7			"		3490	0.09	.012
530.8	539.4	8.6			"		3491	0.09	.031
539.4	549.4	10.0			"		3514	0.10	.020
549.4	559.8	10.4			"		3515	0.08	.021
559.8	570.5	10.7	6.0		"		3551	0.09	.016
570.5	580.5	10.0	6.0		"		52	0.07	.020
580.5	587.3	6.8			"		53	0.09	.007
587.3	597.8	10.5	6.0		RX		70	0.09	.023
597.8	604.9	7.1	6.0		"		71	0.06	.016
604.9	615.8	10.9	9.0		"		3572	0.20	.010
615.8	626.0	10.2	7.0		"		3573	0.15	.035
626.0	635.5	9.5	5.0		"		3574	0.27	.054
635.5	644.0	8.5	1.0		"		3575	1.31	.016

SHEET No

DATE STARTED 1-31-62

DATE COMPLETED 4-12-62

DIAMOND DRILL ASSAY LOG

HOLE NO. T-47

COORDINATES 12,000' E 4,000' S COLLAR ELEVATION _____ BEDROCK ELEVATION _____

Footage From	Footage To	Interval	Measured Core Recovery	% Recovery	Hole Size	S.G.	Sample No.		Cu	Cu B'dg	Mo	Mo B'dg	Ag	Au
664.6	675.7	11.1			BX		3778		0.07	0.08	.012	.018		
675.7	685.8	10.1			"		3779		0.07		.005			
685.8	695.5	9.7			"		3780		0.18		.020			
695.5	702.4	6.9			"		3781		0.12		.022			
702.4	711.6	9.2			"	2.80	3782		0.59		.010			
711.6	722.6	11.0			"	2.95	3783		1.00		.010		0.20	0.00
722.6	733.8	11.2			"	2.96	3784		0.34		.006			
733.8	742.2	8.4			"	2.34	3785		0.04		.003			
742.2	747.6	5.4			"	2.41	3790		1.35		.004		0.35	0.00
747.6	755.7	8.1			"	2.45	3791		0.51		.005			
755.7	765.7	10.0			"	3.21	3792		0.58		.009			
765.7	775.8	10.1			"		3793		1.60		Tr		0.45	Tr
775.8	785.8	10.0			"		3794		1.58		.009			
785.8	795.8	10.0			"	3.01	3795		0.76		.013			
795.8	805.5	9.7			"		3807		0.36		.013		0.40	Tr
805.5	813.0	7.5			"	3.24	3808		0.40		.010			
813.0	823.0	10.0			"		3809		0.49		.004			
823.0	833.7	10.7			"		3810		0.20		.006		0.10	0.00
855.8	865.8	10.0			BX	2.71	3822		0.92		.013		0.35	Tr
865.8	875.8	10.0			"	2.67	3823		1.86		.012		0.95	0.00
875.8	880.8	5.0			"	2.79	3824		1.61		.004		0.50	Tr

SHEET NO.

DIAMOND DRILL ASSAY LOG

DATE COMPLETED

HOLE NO. T-42

COORDINATES 13,000 E 4,000 S

COLLAR ELEVATION

BEDROCK ELEVATION

Footage From	Footage To	Interval	Measured Core Recovery	% Recovery	Hole Size	S.G.	Sample No.
NO ASSAYS							

SHEET NO. 1

DATE STARTED 8-6-62

DATE COMPLETED 9-15-62

DIAMOND DRILL ASSAY LOG

HOLE NO. T-67

COORDINATES 12,000 E 4,900 S COLLAR ELEVATION _____ BEDROCK ELEVATION _____

Depth From	Depth To	Interval	Measured Core Recovery	% Recovery	Hole Size	S. G.	Sample No.	Cu	Mo
180.8	190.2	10.6			NX		4726	0.04	
190.2	298.3	8.1			"		4727	.07	
239.1	249.2	10.1			"		4756	.07	
326.6	335.7	9.1			"		4823	.10	
335.7	345.6	9.9			"		4824	.12	
345.6	355.9	10.3			"		4825	.14	.002
355.9	366.3	10.4			"		4826	.06	Tr
366.3	375.2	8.9			"		4827	.10	Tr
375.2	386.5	11.3			"		4828	.10	Tr
386.5	395.5	9.0			"		4829	.14	.009
395.5	406.1	10.6			"		4830	.02	.002
406.1	415.1	9.0			"		4831	.13	.004
415.1	425.6	10.5			"		4832	.07	.004
425.6	434.8	9.2			"		4833	.02	.010
434.8	444.9	10.1			"		4834	.03	.002
444.9	455.4	10.5			"		4835	.02	.004
455.4	464.3	8.9			"		4898	.07	.004
464.3	470.4	6.1			"		4899	.10	.007
1073.0	1083.2	10.2			"		5134	.11	.002
1083.2	1093.3	10.1			"		5135	.07	.003

SHEET NO.

DATE STARTED [illegible]

DIAMOND DRILL ASSAY LOG

DATE COMPLETED [illegible]

HOLE NO. T-63

COORDINATES [illegible] E [illegible] S

COLLAR ELEVATION

BEDROCK ELEVATION

Footage From	Footage To	Interval	Measured Core Recovery	% Recovery	Hole Size	S.G.	Sample No.		Cu
230.9	241.9				NX		5251		.12
241.9	249.2				"		5252		.08
249.2	258.0				"		5253		.10
258.0	268.1				"		5254		.02
268.1	278.9				"		5255		.06
278.9	290.2				"		5256		.04
290.2	298.2				"		5257		.09
298.2	306.5				"		5258		.02
306.5	315.5				"		5259		.02
315.0	327.3				"		5260		.03
327.3	338.6				"		5261		.11
338.6	349.6				"		5262		.12
349.6	356.2				"		5263		.15
356.2	367.6				"		5264		.13
367.6	376.0				"		5265		.11
376.0	385.2				"		5266		.10
385.2	394.0				"		5267		.18
394.0	407.7				"		5268		.07
407.7	420.4				"		5269		.07

DIAMOND DRILL ASSAY LOG

T-69

COLLAR ELEVATION

REDROCK ELEVATION

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Hole Size	[illegible]	Sample No.	Cu	Mo	Zn
249.2	260.3	11.1	8.5		NX		5237	.06	.012	
353.5	364.5	11.0			"		5270	.08	.006	
365.5	373.7	9.2			"		5271	.10	.004	
390.5	401.9	11.4			"		5272	.03	.006	
401.9	410.3	8.4			"		5273	.02	.005	
410.3	420.0	9.7			"		5274	.06	.005	
420.0	427.3	7.3			"		5275	.06	.012	
427.3	438.5	11.2			"		5327	.02	.002	
438.5	448.3	9.8			"		5328	.04	.002	
448.3	455.0	6.7			"		5329	.14	.003	.1
455.0	465.4	10.4			"		5371	1.22	.009	.2
465.4	476.0	10.6			"		5372	.85	.010	.1
476.0	484.3	8.3			"		5373	.73	.002	Tr
484.3	496.3	12.0			"		5374	.24	Tr	Tr
496.3	507.7	11.4			"		5375	.18	.002	Tr
507.7	518.1	10.4			"		5376	.02	Tr	Tr
634.2	642.2	8.0			"		5443	Tr	.002	-
1032.4	1041.8	9.4			"		5545	.02	Tr	Tr
1041.8	1049.6	7.8			"		5546	.03	.002	Tr
1060.4	1070.5	10.1			"		5643	.04	Tr	
1070.5	1080.7	10.2			"		5644	.02	Tr	
1080.5	1088.2	7.7			"		5645	.02	.002	
1139.1	1154.0	14.9			"		5646	.10	Tr	
1154.0	1164.1	10.1			"		5647	.02	Tr	