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AMERICAN SMELTING AND REFINING COMPANY Tucson January 29, 1963

Mr. C. P. Pollock, Exploration Manager American Smelting and Refining Company 120 Broadway New York 5, New York

SUMMARIZING REPORT - POSTON BUTTE PROJECT

Dear Sir:

This will transmit Mr. Kirkpatrick's final report on the subject exploration project.

This report gives a very lucid account of the history, geology, drilling procedures and performance, and an analysis of costs of the project. Drill hole logs and maps are included.

Yours very truly, Kenyon Richard

KENYON RICHARD

KR/kw Attachment (1) cc: DJPope, w/att.

POSTON BUTTE PROJECT Pinal County, Arizona

SUMMARY OF EXPLORATION BY DRILLING

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AMERICAN SMELTING AND REFINING COMPANY Tucson Arizona

January 7, 1963

MEMORANDUM FOR KENYON RICHARD

POSTON BUTTE PROJECT
Blackwater Mining District
Pinal County, Arizona

The following is my report summarizing the exploration by drilling in the Poston Butte area.

INTRODUCTION

An area in the vicinity of Poston Butte, about three miles northwest of Florence, was first recognized as a porphyry copper prospect in early 1960 by A. G. Blucher and J. E. Kinnison as the result of regional mapping and investigation. Subsequently, geophysical surveys were made by W. E. Saegart, and the prospect explored by drilling in two different periods, the first early in 1961 and the second in last half of 1962 after an option had been obtained on the McFarland farm.

Several reports containing abundant information about the area and the first period of drilling have been submitted to you in the past. Repetition of this information herein is not warranted; a reader seeking further data may find them in the following reports:

Blackwater and Poston Butte Prospects, A. G. Blucher, June, 1960 Poston Butte Drilling Project, A. G. Blucher, June, 1961 Preliminary Geophysical Report, W. E. Saegart, Dec., 1961 Final Geophysical Report, W. E. Saegart, March, 1961 Induced Polarization Surveys, W. E. Saegart, Sept., 1962

David P. Cadwell acted as my assistant during the 1962 drilling and has helped in compiling some of the data for this report.

SUMMARY

The Poston Butte area was explored by 22 holes, 7 drilled in 1961 and 15 drilled in a later program in 1962. A porphyry-copper type of alteration zone about a mile wide and two miles long was found to exist below 300 to 400 feet of overburden that blankets most of the area. Secondary enrichment is generally absent and no commercial copper ore was found. However, oxidized and primary mineralization with a grade of about 0.4 per cent copper was found in three holes, the largest intercept being 381° of 0.42 per cent copper.

Drilling data are summarized in a subsequent table. A total of 12,509 feet was drilled at a:

direct cost per foot of \$ 5.54 indirect cost per foot 1.72 \$ 7.26

The total cost of the project (to Dec. 1, 1962) was \$152,133, divided as follows:

Land	\$ 48,985	(32%)
Geophysical Work	12,264	(8%)
Direct Drilling	69,305	(46%)
Indirect Drilling	21.579	(14%)

GEOL OGY

Blucher's two reports contain a detailed description of the regional and local geology, including that revealed by the first seven drill holes, which will not be repeated.

Except for the small, basalt-capped Poston Butte, roughly 1000 feet in diameter, the topography of the area is gently rolling in the northern part and almost flat in the southern part where cotton and other crops are cultivated. The basement rocks outcrop as a narrow band on the west side of Poston Butte, but in the rest of the area they are covered with a thick layer of post-mineral material of comparatively recent age. The material penetrated by the drill holes may conveniently be divided into the basement rocks and the layered post-mineral cover.

Post-Mineral Cover

The cover overlying the basement rocks varies from 1360 feet thick in hole No. 10 to zero at hole No. 1. Over most of the area prospected it ranges from 300 to 400 feet, and consists of the material called "Gila River gravels" by Blucher.

Gila River Gravels

This is essentially poorly sorted, unconsolidated alluvium consisting of lenticular gravel, sand, silt, and clay. The bulk of the material is silt containing irregularly distributed pebbles and boulders. A troublesome feature of this formation is a bed of gravel and well-rounded cobbles --- usually 30 or 40 feet thick --- that lies within a few feet of the surface. This gravel was difficult to drill and hold open with the rotary drills and was a prime factor in increasing rotary drilling costs. Progress through the bed was always slow due to the necessity of repeated cementing. The alluvium below the major gravel bed was rotary drilled rapidly and without trouble. The Gila River alluvium was present in all of the holes drilled in 1962 and constituted the entire recognizable cover in most of the holes.

Conglomerate

An indurated, poorly sorted conglomerate is one of the covering formations in part of the Poston Butte area. We definitely identified conglomerate in only one of the holes drilled in 1962, No. 10, in which approximately 1000 feet was intersected. Possibly conglomerate was present in some of the other holes, particularly in hole No. 17 east of Poston Butte, but not identified due to the lack of core runs and general similarity of its rock bit cuttings to those of parts of the Gila gravels.

Basalt

Layers of hard, black basalt were cut within the cover material in holes

No. 17 and No. 20 east of Poston Butte. In No. 17 two beds of basalt, 120 feet and 80 feet thick, were separated by 330 feet of alluvium, and in hole No. 20 a bed 138 feet thick was intersected.

Basement Rocks

Three types of basement rocks were intersected in the holes drilled in 1962: granite, monzonite porphyry, and felsite. Diabase was identified by Blucher in two of the holes drilled in 1961. Possibly more than one granite and one monzonite porphyry are present in the Poston Butte area, but with the limited information available we have only classified the rocks into the general types.

Granite

Most of the pre-mineral basement rock in the drilled area is granite. Typically, it is a coarse-textured biotite-granite containing large, pink feldspar crystals, and is generally similar to granites of the region that have been classified as Precambrian in age.

Monzonite Porphyry

Dikes of monzonite porphyry were cut in holes 9 and 11 in the 1962 drilling. On the northwest side of the drilled area, holes 13 and 14 were stopped after penetrating a few feet of weakly altered monzonite. From the distribution of monzonite in the drill holes it appears that a small stock may be present in the vicinity of holes 2 and 3 with dikes penetrating the surrounding granite. The monzonite of holes 13 and 14 contains more mafic minerals than that of the other holes and may be a separate and different intrusive.

Felsite

A light-colored, dense, aphanitic rock containing small quartz and chlorite(?) phenocrysts, which we interpreted as probably a post-mineral dike, was penetrated for 160 feet in hole 16. As most post-mineral dikes of this type of rock are generally relatively narrow, an offset hole, No. 18, was drilled in an unsuccessful attempt to miss the felsite.

Structure

Three possible northerly trending faults are indicated by the abrupt change in the depth to bedrock in several of the drill holes. Generalized locations of the postulated faults are shown on Attachment C.

Alteration

The approximate outline of a zone of pervasive alteration of the porphyry-copper type, as I interpret it from the drill holes, is shown on the accompanying map (Attachment C). The known zone is about 4000 feet wide and 12,000 feet long; alteration varies from weak to locally strong, and overall might be considered of moderate intensity. An unfortunate circumstance is that pyrite without the hoped-for chalcopyrite is the dominant sulfide in most of the zone.

The southeast side of the alteration zone is not clearly defined by the drill holes and a remote possibility exists that the zone may continue to the southeast. The sludge from a well in the southeast corner of section 27 contains

pyritized, altered granite. Northeast of the well the nearest drill holes, which penetrated fresh or very weakly altered granite, are over a mile away. However, the low copper content of the east end of the alteration zone does not make a possible extension attractive for exploration.

Copper Mineralization

Small amounts of copper are present throughout most of the alteration zone, but only in one area, outlined on the map (Attachment C), was appreciable, but sub-commercial, copper mineralization found.

A summary of the assays of the three best holes, all within the outlined area, follows:

Hole No.	Thickness 120° 20	% Cu 0.28 0.85 0.25	Type of Cu Mineralization Partly oxidized Enriched (Chalcocite) Primary (Chalcopyrite)
9	324° 57 381°	0.42 0.42	Oxidized Primary (Chalcopyrite)
11	257 ¹	0.43	0xidized

Hole No. 5 had a 20° zone of chalcocite, in hole 9 the chalcocite was negligible, and hole No. 11 was not drilled to sulfides. Some of the feldspars in holes 9 and 11 were stained blue-green and undoubtedly had absorbed enough copper to give the assays obtained. It seems probable that the copper of the sulfide minerals was reprecipitated as copper oxide or silicate (largely within the feldspars) without any appreciable downward movement. Small discrete spots of oxidized copper minerals may have originally been grains of chalcopyrite.

PROPERTY

Land controlled for the Poston Butte project, in approximate acreage, was:

State land, prospecting permits	1120	acres
Federal land, lode claims	3000	9 0
Private land, options	1570 5690	11
Total	5690	

The distribution of the land that was controlled is shown on Attachment B.

DRILLING & SAMPLING PROCEDURES

The method of drilling on the Poston Butte project is essentially the same as that used on the Sacaton project, which has been described in detail in a report under preparation by J. R. Wojcik.

In brief, a rotary drill using a $4\frac{1}{2}$ " rockbit was used to drill through the alluvium and covering formations to the basement rock and a wireline diamond drill with an NX size bit was used to core the mineralized bedrock. Cores were taken at times with the rotary drills, using standard core barrels, in the deeper holes where the type of rock being drilled with rotary drill was in question. After the rotary drill had penetrated bedrock a core was usually taken to determine whether the degree of mineralization warranted further drilling of the bedrock with a diamond drill using a wireline core barrel. Wireline coring was

used in only five of the fifteen holes drilled in the 1962 program.

Drilling mud consisting of bentonite (trade name: Wyo-Gel) mixed with water and conditioned with quebracho and caustic soda was circulated in all of the drilling. The mud appeared to assist materially in removing rockbit cuttings from the holes and maintaining the walls of uncased rotary holes.

Drilling on the 1962 program was started on July 11 and was terminated on November 20. Three drills used on this program were:

- (1) A Joy 22 hydraulic pulldown diamond drill. This rig was used for rockbit drilling, coring with a standard core-barrel and the rotary rods, and wireline diamond drilling. The rig was versatile and very satisfactory for rotary drilling to depths of 500 feet. It was not used on deeper rotary drilling.
- (2) A Joy 75 chain-pulldown rotary drill. This rig proved quite satisfactory for the shallower rotary holes (to 500 feet) and for obtaining short cores at the shallow depths. However, on hole No. 10 the drill reached its capacity at 1000 feet, and the Joy 250 drill was brought onto the project to finish the hole.
- (3) A Joy 250 drill. This drill, which is much larger than the 22 and 75 drills, was imported to finish the deep No. 10 hole. It was also used on shallower holes, but I believe that its most economical usage would be on rotary holes over 600 or 700 feet deep.

A trailer was used for a field office and moved with the drilling, usually to the hole being diamond drilled. Samples of the rockbit cuttings were taken for each 10' interval and stored in labelled plastic vials. In practice, the drillers usually took the samples of the rockbit cuttings. The drillers were quite willing to do this, and in my opinion their sampling results were fully as accurate as that of Company samplers. Most of the drillers carefully watched for changes in the cuttings. Near the anticipated depth of bedrock a Company sampler or geologist was usually on hand to watch for any change in the material being drilled.

Diamond drill core was placed in cardboard-paper core boxes at the drill by a sampler and then taken to the trailer-laboratory for weighing for the core recovery computation and splitting for assay. Samples were delivered daily to Jacobs Assay office in Tucson for assaying. Drill cores, rejects and pulp samples have now been stored temporarily at the Company's laboratory in Casa Grande.

CONTRACT DRILLING PRICES

Contract prices for the 1961 and 1962 drilling programs are tabulated below. The prices for 1962 are those in effect after August 1; rockbit drilling prices were changed after the first month. The information gained during 1961, showing the presence of the gravel difficult to drill, is one of the chief reasons for the increase in contract prices for rockbit drilling in 1962 over those of 1961.

1961 BOYLES BROTHERS

Rockbit drilling (all)	\$ 2.60 per foot
Core drilling, NX size 0 - 500' 500 - 1000'	6.00 11 11
Reaming	17.60 per hour
Cementing, casing, mixing mud, delays	11.60 " "
Drilling mud, cement, etc.	At Cost
1962 JOY MANUFACTURING CO.	•
Rockbit drilling: 0 - 150 150 - 350 350 - 500 500 - 650 650 - 800 800 - 950 950 - 1100 1100 - 1250 1250 - 1400 Core drilling: 0 - 500 500 - 1000 1000 - 1500 1500 - 2000	\$ 5.50 3.50 4.00 4.25 4.50 4.75 5.00 5.25 5.50 \$ 5.95 per foot 6.45 7.20 8.20
Reaming, NX	3.00 per foot
Cementing, casing, mixing mud, delays	10.00 per hour
Drilling mud, cement, etc.	At Cost
Cost of principal materials used	in 1962:
Drilling mud, per bag Cement, " " Quebracho, " "	\$ 2.75 1.50 27.00

The contractor furnished a water truck; Asarco purchased water from farmers at \$1.00 per 1000 gallons.

SUMMARY OF DRILLING PERFORMANCE AND COSTS

	1961	1962	Combined
Number of holes	7	15	22
Average depth	467°	615	5781
Range in depth	307 - 809	350 - 1438	
Footage:			
Rockbit drilling Core drilling Total drilling	2,080 (64%) 1,188 (36%) 3,268 (100%)	8,043 (87%) 1,198 (13%) 9,241 (100%)	10,123' (81%) 2,386' (19%) 12,509' (100%)
Total shifts worked		. 337	
Advance per shift: Rockbit drilling (1) Core drilling (1) All drilling (1)	•	33.8 12.1 27.2	
Average core recovery: Rotary diamond coring Wireline diamond coring		34 · 5% 72 · 5%	
Contract cost per foot:			
Rockbit drilling Core drilling All drilling	3.80 (2) 6.80 (2) 4.90 (2)	5.24 8.36 5.67 (3)	4.96 7.80 5.54
Indirect cost per foot: All drilling	\$ 1.70 (2)	\$ 1.72	\$ 1.72
Total cost per foot: Rockbit drilling Core drilling All drilling	\$ 5.50 \$ 8.50 \$ 6.60	\$ 6.69 \$10.08 \$ 7.39	\$ 6.68 \$ 9.52 \$ 7.26

⁽¹⁾ Estimated from total shifts worked, which includes moving and down time.

⁽²⁾ From A. G. Blucher's estimate.

⁽³⁾ Contract costs based on total payments to Joy Manufacturing. Cost of drilling mud and mixing same, estimated at \$0.57 per foot, is included.

ANALYSIS OF COST OF PROJECT

	Cost	% Total
Land Acquisition: Option payments Other expenses pertaining to land	\$ 19,000	12.5
<pre>(legal, salaries, permits, digging location pits, surveying) Total Cost of Land</pre>	29,985 \$ 48,985	19.7 32.2
Geophysical Surveys:	\$ 12,264	8.0
Direct Drilling Cost:	\$ 69,305	45.6
<pre>Indirect Drilling Cost: (Includes all charges not listed above)</pre>	\$ 21,579	14.2
Total Expenditures (1)	\$152,133	100 %

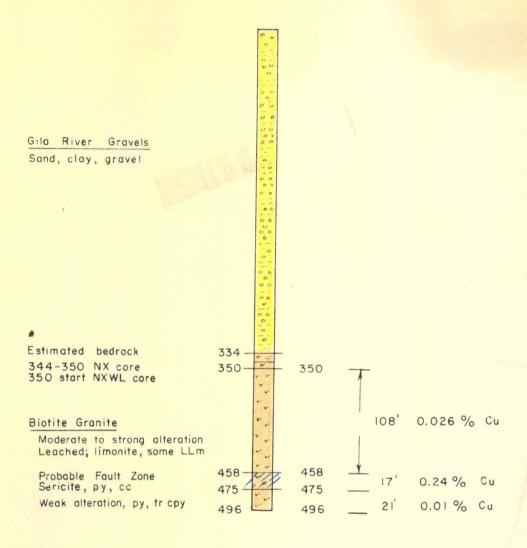
⁽¹⁾ To December 1, 1962; small additional charges will be made to appropriations involved.

R. K. KIRKPATRICK

R.K. Kirkpatrick

RKK/kw Attachments

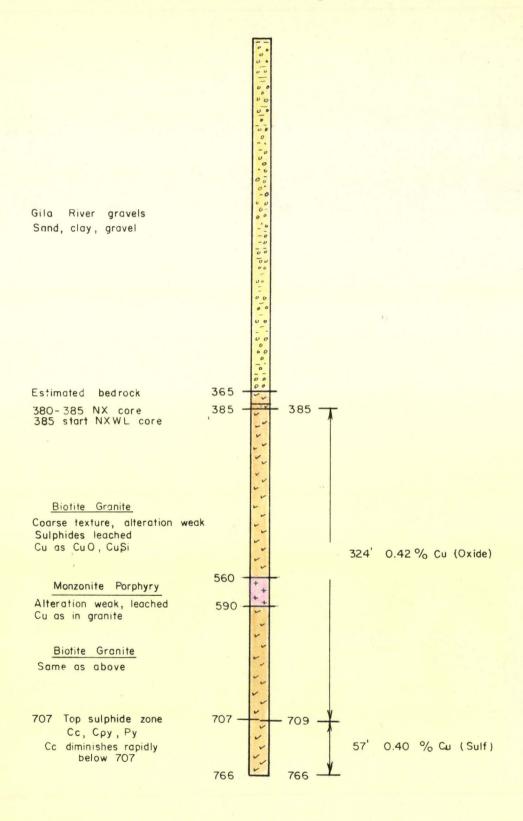
Hole No. 8 Generalized Log



Scale I" = 100' Completed: Aug. 18, 1962

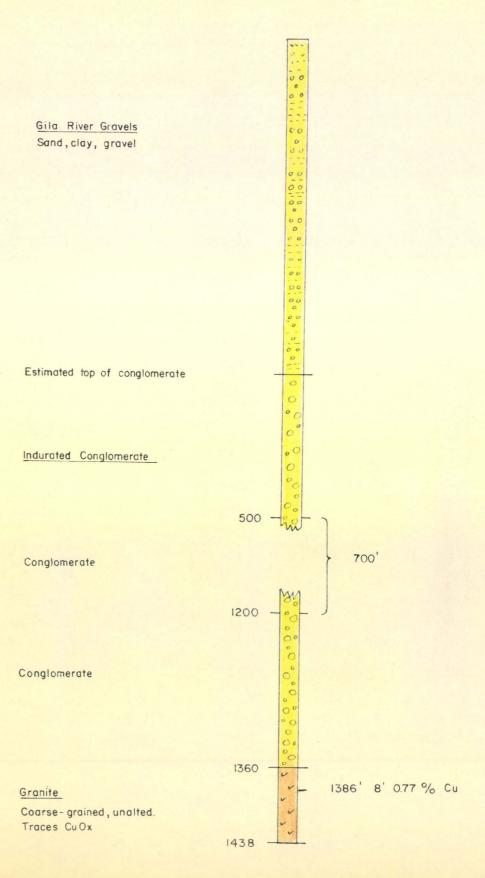
Hole No. 9

Generalized Log

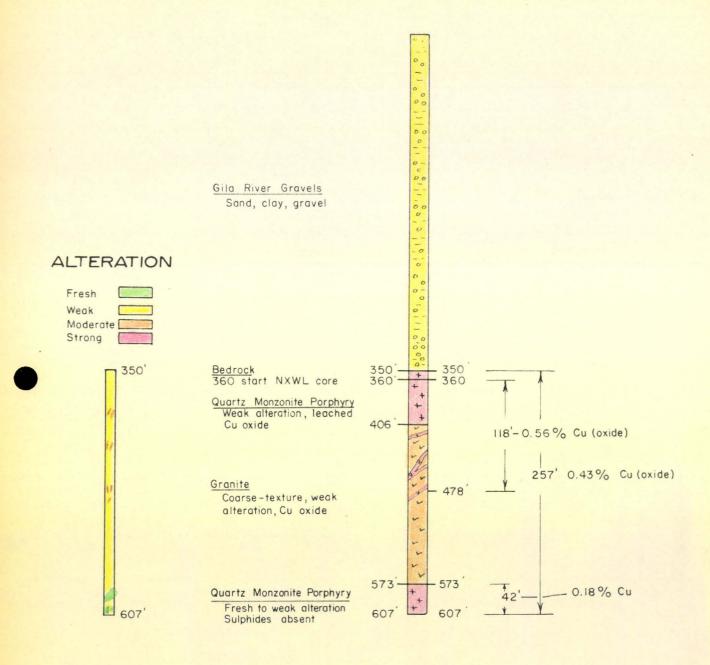


POSTEN BUTTE AREA Hole No. 10

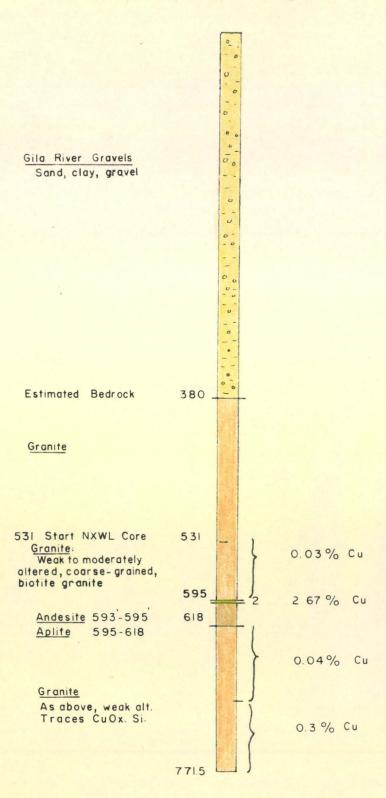
Generalized Log



Hole No. 11 Generalized Log

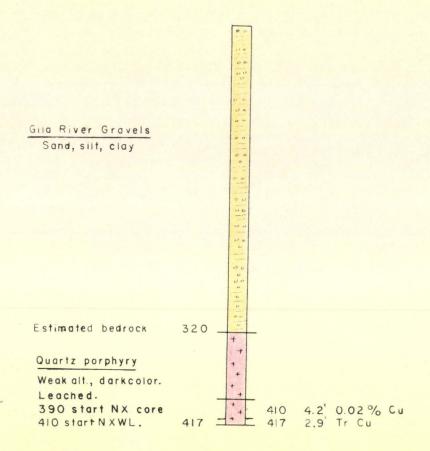


Hole No. 12 Generalized Log



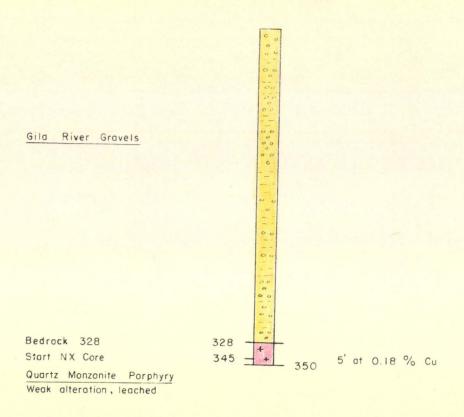
Scale: 1" = 100 Completed: Sept. 12, 1962

Hole No. 13 Generalized Log



Hole No. 14

Generalized Log



Hole No. 15

Generalized Log

Gila River Gravels
Sand, silt, clay, and gravel

Bedrock

398

459

- 400 10' NX Core

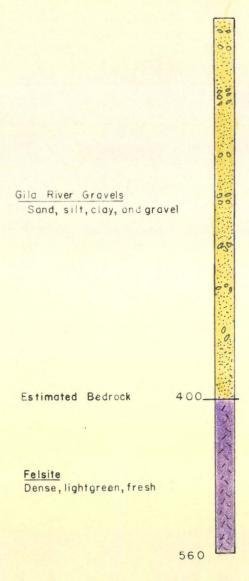
Granite,

Weak to moderate alt. Sparse leached, sulf.

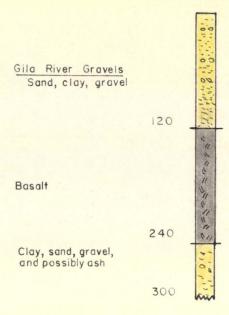
1

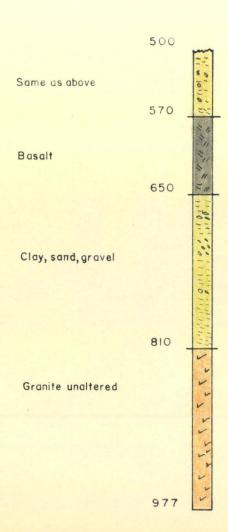
- 451 8' NX Core

Hole No. 16 Generalized Log

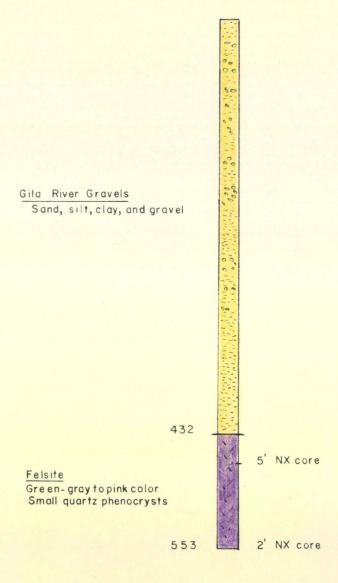


Hole No. 17 Generalied Log

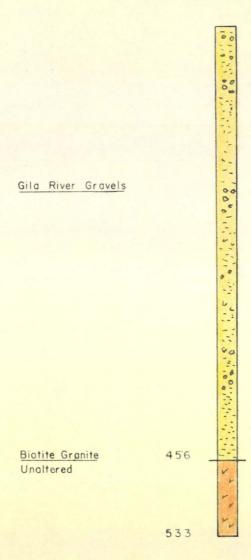




Hole No.18 Generalized Log



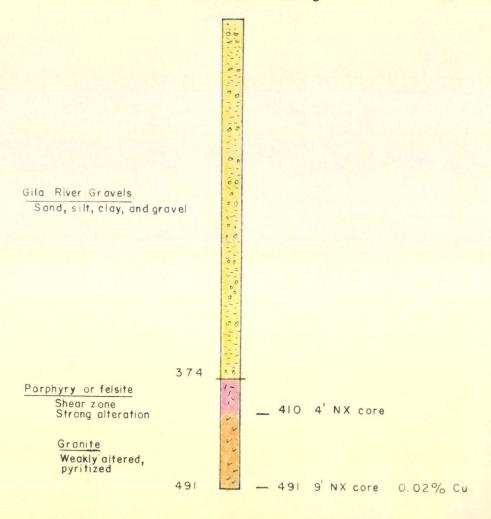
Hole No. 19 Generalized Log



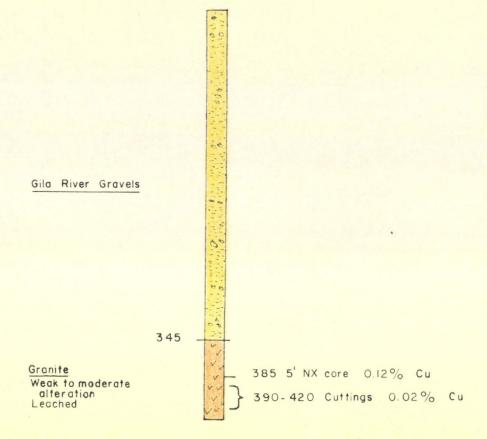
Hole No. 20 Generalized Log



Hole No. 21 Generalized Log



Hole No. 22 Generalized Log



Final Depth 4961
Collar Elevation
Coordinates
Inclination

ASARCO GEOLOGIC - ASSAY

Sheet No. 1 of 2

Date Completed 8-18-62

Logged By RKK

Property Poston Butte

	3						(7	6117					
		-			Core	Assay - % Cu	Min	Mineralization	9		Alteration	Rock	Remarks
Depth In	Interval	Size	Grav	Rec %	Total	Non-S Average	Oxides Pyrite	Сру	Cc	Other		Туре	
												>	Cila gravels: sand, clay gravels
	344	41/2	Rock	bit									nated top
350	6	×									Strong	Gran	Granite, as below
				201	0 00					3	Strong	Gran	granite.
1	:	2 2 2								3	Ser Arg		reached. Lm and LLm after sulf. and transported very irregular in
													lt. also va
360.0	5.9	NXWL		75	0.06					222	St - Mod Ser Arg		Same.
366.0 6	6.0	=		80	0.04	*				+	-		Same. Wk. LLm.
375.0	9.0	=		33	0.02	2							Same. Wk. LLm. Lm. mod.
384.7	9.7	=		89	0.03	w	++			~	4		Same. Abundant Lm., some dark maroon that may be LLm.
394.6	9	=		97	0.02	2				<u>.</u>	Mod.		Same. Lm largely trans. & on fractues.
	5.0	=		100	0.02	2				_ [Mod. "		Same. Lm. transported on frac. No biot.
	6.4	=		100	0.02	2					St- Mod		Same. Abundant slaggy im
414.0	8.0	=		70	0.03	ω							Same. Sulf. casts sparse
419.7	5.7	:		95	0.03	W							Same. Streak ser. Lm. in specks & Strea
425.0	5.3	=		99	0.02	2							Same. Lm sparse; some jarosite.
		=		100	0.02	2		-			-		Same. Lm-LLm abundant in last part of interval.
434.8	5.6	=		95	0.03	3				-	Mod-St.	4	Same. Some hm. flooding.

WALLEN LOGS

Final Depth 4961 Collar Elevation Coordinates

GEOLOGIC - ASSAY LOG

Sheet No. 2 of 2
Date Completed 8-18-62
Logged By RKK

	Remarks		Same as above. Locally abun.	LLm.	Same, Some Jaros Le	Same, Sil. last part run. Last		458.5-462. Lt. gr. soft gougy granite. St. ser; py. coated w. cc Some streaks py. cc. coated.	Same as above but more crushed granite, less gouge	No recovery from 5 runs. 458-475(17') is probably a fault one	of substantial displacement.	out	very weakly alt. Feld. SI. Arg.	Same	Same				
	Rock	Туре	Gran			-	Gouge		Gran	1		Gran	+		->				-
1	ation		Str	Ser			Ser		Ser										
	Alteration		Mod	Arg-			St.		St.			Weak	Arg		→				-
		Other	Lm		Lm	E													
	ation	CC					Sp.		Sp.			7	++						
Property.	Mineralization	e Cpy				ъ	P		ō			Mod R.							
Pro	Σ	10				Mod	Mod		Mod			M							
	-	oe Oxides	-																
	dv - % Cu	Ave																	
	ASSOV	-	-		02	02	0.27		0.18			00	20.						
	Core			-	95 0.02	76 0.02			33 0.	0		03)	100 Tr	100 Tr				
	1	Core		2	6	7	9							=	-				
	-	re Sp		,															
	F	Val Core	-	NVM	7	=	=		= = =	- 6		1	2	-	.5				
Inclination		Interval	0		0 8.7		+-+-+		1 2.1	10.			2 0.	5 8.0	9				
Inclin		Depth	0 0.1.1	0.744	451.0	458 0	462.0		464.1	475.0			481.	489.5	0.964				

Final Depth 766' Collar Elevation Coordinates

GEOLOGIC - ASSAY ASARCO

Date Completed 8-13-62 Logged By RKK HOLE NO P.B. 9 Sheet No 1 of 4

POSTEN BUTTE

Inclination	Con			-				Property_	11	POSTEN BUTTE	31		Logged By RKK
Deoth in	Interval			-	Core	Assay - % Cu	2	Minera	alization		Alteration	Rock	O. C.
		Size	Grav R	Rec %	Total	Non-S Average	Oxides	Pyrite Cpy	oy Cc	Other		Туре	n c
3651 3	3651	7/1 7/5		R. B.									Bedrock estimated at 365' + 0-365'. Gila River gravels. Relatively unconsolidated sand, gravel and clay. Gravel boulders in first 40' gave trouble in drilling.
380-85	5.	NX									Weak	Gran.	Cored with rotary. Same as below.
389	*	NXW		95	0.24		+			Lim. W.LLm CuSi.	Lim. Weak W.LLm Arg.Chl.	Gran.	nk, bic lm; sm gular q arg., b kes. Ch
397.5 8	8.5	NXML		22 (0.36								(rrom adsorbed tu!) Steep snears.
403 5	5.5	NXML		93	0.51								Same Some CuSi.
9 604	0.9	NXML		06	0.51								Same More CuSi,
412 3	3.0	NXM		99	0.39								Same
421 9	9.0	NXML		100	0.45								Same Vert. fractures
431 10	0.01	NXM		98	0.28								Same Vert. Frac. Tex. Variable, some
435 4	4.0	NXM	3	80	0.25								Same
439 4	0.4	NXM		100	0.21								Same More abundant CuSi., Steep Frac.
1 94/1	7.0	NXM		100	0.51								Same
449 3	3.0	NXM		92	09.0								Same
455 6	0.9	NXML		13	0.61								Same Cu 0x.
457 2	2.0	NXM		15	0.28		>			->	->	>	Same

Final Depth 766 Collar Elevation Coordinates

GEOLOGIC - ASSAY LOG ASARCO

Date Completed 8-13-62 Sheet No. 2 of 4

Secondary Part Cook Pa	Inclination	tion						Prope	Serty POSTEN	STEN BUTTE	E .		Logged By RKK
1.5 NXM 100 0.25 1.4		nterval	Core		- 1		- %	Σ	eralizatio	c	Alteration	Rock	
1.5 NXVI. 100 0.25 + Lim Well Title Same sa above. Some jarosite, Chief Ital Same. Cutsi on vert. fracture. 3.0 NXVI. 37 0.85 Same. Cutsi a cutsi a cuts. 3.8 NXVI. 100 0.49 Same. Cutsi a cutsi a cuts. 5.0 NXVI. 100 0.58 Same. Cutsi a cutsi a cuts. 5.1 NXVI. 100 0.58 Same. Cutsi a cutsi a cuts. 6.2 NXVI. 100 0.58 Same. Cutsi a cutsi a cuts. 7.5 NXVI. 100 0.58 Same. Cutsi a cutsi a cuts. 8.1 NXVI. 100 0.58 Same. Cutsi a cutsi a cutsi. 8.2 NXVI. 100 0.58 Same. Cutsi a cutsi. 8.3 NXVI. 100 0.58 Same.			Size				Average	Oxides Pyrite	Сру			Туре	
3.7 MXML 100 0.60 3.8 MXML 37 0.85 3.8 MXML 100 0.48 3.8 MXML 100 0.48 3.8 MXML 100 0.48 3.9 MXML 100 0.58 3.1 MXML 100 0.58 3.2 MXML 100 0.58 3.3 MXML 100 0.58 3.4 MXML 100 0.59 3.5 MXML 100 0.59 3.6 MXML 100 0.59 3.7 MXML 100 0.59 3.8 MXML 100 0.59 3.7 MXML 100 0.59 3.8 MXML 100 0.59 3.9 MXML 100 0.59 3.0 MXML 100	458.5		NXML	10		.25		+		L im.	Weak Arg. Chioritic	Gran.	as above. Some
3.0 MXML 87 0.23 Same. Cusi a Cu0x. 3.8 MXML 88 0.23 Same. Run contains 1-2' aplite. 5.0 MXML 100 0.48 Same Lu0x on fracture. 9.2 MXML 100 0.58 WAR Mod. Same. Jarosite on 70° dip. frac. 9.3 MXML 52 0.56 Same. Lin. on frac. Vert. frac. £ 10.0 MXML 52 0.56 Same. Lin. on vert. £ 45° fracture. 9.4 MXML 100 0.58 Same. Lin. on vert. £ 45° fracture. 9.5 MXML 99 0.63 Same. Vert. shearing continues. 9.6 MXML 100 0.58 Same. Vert. shearing continues. 9.7 MXML 100 0.65 Same. Lin. on vert. £ 45° fracture. 9.8 MXML 100 0.65 Same. Univ. Or Clay-coated frac. 9.9 MXML 96 0.69 Y Y Same. 9.6 MXML 96 0.69 Y Same. Cu0x. 9.6 MXML 96 0.69 Y Same. Cu0x. 9.7 MXML 96 0.69 Y Same. Cu0x. 9.8 MXML 96 0.69 Y Same. Cu0x. 9.9 MXML 96 0.69 Y Same. Cu0x. 9.0 MXML 96 0.69 Y Same. Cu0x. 9.0 MXML 96 0.69 Same. Same. Cu0x. 9.1 MXML 96 0.69 Y Same. Cu0x. 9.2 MXML 96 0.69 Y Same. Cu0x.	462.2		NXM	10		.60							CuSi on vert.
3.8 NXML 87 0.23 . Same. Run contains 1-2' aplite. 6.0 NXML 100 0.44 Same. Run contains 1-2' aplite. 5.0 NXML 100 0.63 Same. Cu0x on fracture. 9.2 NXML 100 0.63 Same. Jim. on fracture. 7.5 NXML 95 0.60 Same. Lim. on fracture. 5.0 NXML 95 0.60 Same. Lim. on fracture. 8.0 NXML 95 0.60 Same. Lim. on fracture. 8.0 NXML 96 0.58 Same. Lim. on yert. Step fracture. 9.9 NXML 96 0.58 Same. Lim. on yert. Step fracture. 9.0 NXML 96 0.58 Same. Yert. Frac. with Cu0x. 9.9 NXML 100 0.65 Same. Vert. Frac. with Lim. Cu3i. 9.5 NXML 96 0.69 Y Y Y 9.0 NXML 87 0.51 Y Y Y 9.0 NXML 87 0.50.0 Breccia and gouge at 0.00 fr 30.00 fr. 30.0	1,65.7	3.0	NXM	3		.85							CuSia
6.0 NXML 100 0.44 Same. Run contains 1-2' aplite. 5.0 NXML 100 0.48 Same. Cu0x on fracture. 8.3 NXML 100 0.58 WAR NGO. Same. Lim. on fracture. 7.5 NXML 95 0.60 Arg. Chl. Same. Lim. on fracture. 8.0 NXML 89 0.63 Same. Lim. on vert. £ 450 fracture in last 3'. 8.1 NXML 89 0.58 Same. Lim. on vert. £ 450 fracture same. NXML 100 0.58 Same. Lim. on vert. £ 450 fracture same. Vert. Frac. With Cu0x. 9.9 NXML 100 0.65 Same. Vert. Frac. With Cu0x. 9.5 NXML 87 0.51 + Lim. Weak Same. Cu0x. 5.0 NXML 87 0.51 + Lim. Weak Same. Cu0x. 5.0 NXML 87 0.51 Same. Cu0x.	0.694	3.00	NXM	80		.23							Same.
Same CLUOX on fracture.	475.0		NXML	10		44.							Run contains 1-2'
9.2 NXWL 100 0.58 Wk- Mod. Same. Jarosite on 70° dip. frac. 6 7.5 NXWL 95 0.60 Arg. Chl. Same. Lim. on frac. Vert. frac. 6 8.0 NXWL 52 0.56 Same. Lim. on frac. Vert. frac. 6 8.0 NXWL 100 0.80 Same. Lim. on vert. 6 450 fracture 8.0 NXWL 100 0.65 Same. Lim. on vert. 6 450 fracture 9.2 NXWL 100 0.65 Same. Vert. frac. with Lim., Cusi. 9.3 NXWL 100 0.65 Same. Vert. frac. with Lim., Cusi. 9.4 NXWL 100 0.65 Same. Vert. frac. with Lim., Cusi. 9.5 NXWL 100 0.65 Same. Vert. frac. with Lim., Cusi. 9.6 NXWL 100 0.65 Same. Vert. frac. with Lim., Cusi. 9.7 NXWL 100 0.65 Same. Vert. frac. With Lim., Cusi. 9.8 NXWL 100 0.65 Same. Vert. frac. With Lim., Cusi. 9.9 NXWL 100 0.65 Same. Vert. frac. With Lim., Cusi.	0-08+		NXM	100		84.							
8.3 NXVI 100 0.58 Arg. Chl. Same. Lim. on frac. Vert. frac. & 5.0 NXVI 52 0.56 Same. Lim. on vert. & 450 fracture 10.0 0.80 Same. Lim. on vert. & 450 fracture 10.0 0.58 Same. Vert. Frac. with Lim. Cusi. 10.0 0.65 Same. Vert. Frac. with Lim. Cusi. 10.0 0.68 Same. Culox. 10.0 0.68	489.2		NXM	100		.63							Jarosite on 70° dip.
2.5 NXWL 95 0.60	497.5		NXM	100		.58							Same.
3.0 NXML 95 0.60 Same. Lim. on frac. Vert. frac. & in last 3'.													
5.0 NXML 52 0.56 Same. Vert. Shearing continues. 4.0 NXML 89 0.63 Same. Lim. on vert. £ 450 fracture 8.0 NXML 100 0.80 Same. Lim. on vert. £ 450 fracture 3.7 NXML 96 0.58 Same. Vert. clay-coated frac. 10.0 NXML 100 0.65 Same. Vert. clay-coated frac. 9.9 NXML 100 0.65 Same. Vert. Frac. with Limgusi. 3.4 NXML 100 0.68 Y Y 9.5 NXML 96 0.69 Y Y Y 5.0 NXML 87 0.51 Him. Weak Souge 558.5-560.0 Breccia and gouge at 0.7 mon.pol. 5.0 NXML 87 0.51 Him. Weak 560.5 Monzonite por. as below.	205.0	7.5	NXM	6		.60							Lim. on frac. Vert. frac. &
4.0 NXML 89 0.63 Same, Lim, on vert, & 450 fracture 8.0 NXML 100 0.80 Same, "" "" "" "" "" 3.7 NXML 96 0.58 Same, Vert, clay-coated frac. 10.0 NXML 100 0.65 Same, Vert, clay-coated frac. 9.9 NXML 100 0.65 Same, Vert, Frac. with Lim., Cusi, 3.4 NXML 96 0.69 Y Y 9.5 NXML 96 0.69 Y Y Y 5.0 NXML 87 0.51 Y Y Y 6.0 Sp. 550.5 Monzonite por, as below.	0.013		NXM	5		.56							Vert.
8.0 NXWL 100 0.80	0.419	4.0	NXM	8		.63							on vert. £ 450
3.7 NXWL 100 0.58 Same. Steep Frac. with CuOx. 10.0 0.65 Same. Vert. clay-coated frac. 9.9 NXWL 100 0.65 Same. Vert. Frac. with Lim., CuSi, 3.4 NXWL 100 0.68 Same. CuOx, Same. Same. CuOx, Same. Same. Same. CuOx, Same. Same	522.0	8.0	NXM	100		.80							=
10.0 NXWL 100 0.51 Same. Vert. clay-coated frac. 3.4 NXWL 100 0.65 Same. Vert. Frac. with Lim., CuSi, 3.4 NXWL 100 0.68 Same. CuOx, Same	525.7		NXM	6		.58							Steep
9.9 NXWL 100 0.65 Same. Vert. Frac. with Lim., CuSi, 3.4 NXWL 100 0.68 Same. Cu0x. 9.5 NXWL 96 0.69 Y Y 5.0 NXWL 87 0.51 + Lim. Weak Souge 558.5-560.0 Breccia and gouge at of the control o			NXM	100		.51							Vert.
3.4 NXWL 100 0.68	9.545		NXM	100		.65							Vert. Frac. with Lim., CuSi,
.5 9.5 NXWL 96 0.69	0.645		NXM	100		.68							
5.0 NXWL 87 0.51 + Lim. Weak Gouge 558.5-560.0 Breccia and gouge at Mon.Por. of ± 30 to 50	558.5		NXW	6		69.					-	-	Same.
Horizoni te poi as		5.0	NXM	80		15.		+		L im.		Souge Mon . Por	at
													MONIZON LE POI . de

Final Depth 766' Collar Elevation Coordinates Inclination

GEOLOGIC - ASSAY LOC

POSTEN BUTTE

Sheet No. 3 of 4
Date Completed 8-13-62
Logged By RKK

Inclination	noite						۵	Property_		POSTEN BUTTE	TTE		Logged By RKK
Deoth	Interval	Core			Core Assay	- % Cu		Mineralization	zation		Alteration	Book	
		Size	Grav Rec	Rec % To	Total Non-S	Average	Oxides Py	Pyrite Cpy	y Cc	Other		Туре	Kendrks
570.0	6.5	NXM	~	87 0	0.26		+			Lim.	Weak Arg.	Mon. Por	Arg.Mon. Monzonite porphyry. Gray-green color,
													lim. casts. Some fine lim. on frac.
5.925	6.5	NXM	3	80 0.	0.17		+			Lim.			Same.
589.5	13.0	NXM	31	59 0.	0.30				-	+	→	-	Same. Some granite in por. 577-589.
599.0	9.5	NXML	7	79 0.	0.58		+			Lim.		Gran.	Granite is same as above mon. por. dike.
									Sp	Sp.LLm.	Weak Arg. Chl.		CuOx and green-blue stained feld. continue.
0.109	2.0	NXM	10	100 0.	0.25		->			->			Same.
0.909	5.0	NXM	10	100 0.	0.82		+	+	+				Same. Some sulf. including cc. in run.
													Sulf, partly leached, Leaching increases.
0.609	3.0	NXML	100		0.39		+			Lim.	Weak		
				2	x				Sp	Sp.LLm.	Arg. Chl.		Same granite, Practically no sulf, Leached, Blue-green feld, Light color
618.5	9.5	NXM	7	74 0.	0.18								With lim. on steep shear zone. Same. Cont. of bleaching. Abundant lim.
621.3	2.8	NXM	7	43 0.	0.44								Same. More normal gran, Cu. stained.
628.0	6.7	NXM	8	81 0.	0.18								Same.
633.5	5.5	NXM	9	60 09	0.32			+	+				Same. A few sulf., but largely leached.
641.5	8.0	NXML	80	80 0.	74.0								Same. Leached
646.2	4.7	NXM	51	90 0.	14.0								Same.
651.0	4.8	NXM	01	100 0	0.45						<u> </u>		Same. 649-651 Cr. tex. aplite.
				+						-	-		

Final Depth 766¹
Collar Elevation
Coordinates
Inclination

GEOLOGIC - ASSAY LOG

Sheet No.
Date Com

Sheet No. 4 of 4 Date Completed 8-13-62

Section State Core Asson-16, Cor	Inclination	noite					Prop	perty	erty POSTEN BUTTE	ITTE		Logged By RKK
Size NXM, 100 0.19 The color Name of the color Ny Sp. Ltn Neak Gran. Same granite as above. 651-5¢ Sp. Ltn NXM, 84 0.30 Sp. Ltn Sp. Ltn NXM, 84 0.30 Sp. Ltn Sp. L		Interval	Core			- %	Σ	ineraliza	ation	Alteration	Book	(
5.3 MXML 100 0.19 + Lim. Weak Sp.Lth., Arg. chl. Gran. Same granite as above. 651-54 and continuous shows. 3.5 MXML 61 0.14 Aplite. Same granite as above. 3.6 MXML 100 0.30 Same granite as above. 3.2 MXML 100 0.20 Same granite as above. 3.2 MXML 100 0.20 Same granite as above. 3.2 MXML 100 0.26 Same granite as above. 3.2 MXML 86 0.26 Same yerical shearing. 3.2 MXML 95 0.34 Wk. Wk. Wk. Mc Same Aplite 693-695 3.4 MXML 95 0.34 Wk. Wk. Wk. Mc Same Aplite 693-695 3.4 MXML 95 0.34 Wk. Wk. Wk. Kr. Same Aplite 693-695 3.4 MXML 95 0.34 Wk. Wk. Wk. Kr. Same Appearance. 5.9 MXML 95 0.34 Wk. Wk. Wk. Kr. Same All unishing a crushing according and crushing could appearance. 5.4 MXML 92 0.43 Wk. Wk. Wk. Kr. Same Strong shearing accushing could appearance.			Size			Non-S Average				L	Type	Remarks
8.2 NXML 84 0.30 Same 3.5 NXML 61 0.14 Aplite. 4.0 NXML 100 0.30 Same Yertical shearing. 4.0 NXML 100 0.25 Same. Yertical shearing. 3.2 NXML 86 0.26 Same. Yertical shearing. 8.7 NXML 88 0.29 Yer. Same. Yertical shearing. 8.7 NXML 88 0.29 Yer. Same. Yertical shearing. 5.9 NXML 95 0.34 Wk. Wk. Wk. Wk. Wk. Same. Same. GCT.ins cyp. Diminishing cannot be an expension. 5.9 NXML 95 0.34 Wk. Wk. Wk. Wk. Same. Strong shearing at 60° (diminishing cannot be an expension. 6.9 NXML 82 0.60 Wk. Wk. Wk. Same. Strong shearing at cushing canting at 60° (diminishing cannot be an expension. 6.9 Wk.	656.3	5.3	NXML	100	0.19		+ -		Lim.	Weak	Gran.	as above.
3.5 NXWL 61 0.14 Aplite. 3.6 NXWL 100 0.30 4.0 NXWL 100 0.22 3.7 NXWL 88 0.29 7.7 NXWL 88 0.29 7.7 NXWL 95 0.34 7.7 NXWL 95 0.34 7.7 NXWL 95 0.43 7.8 NXWL 95 0.43 7.8 NXWL 95 0.43 7.9 NXWL 92 0.43 7.1 NXWL 92 0.43 7.4 NXWL 92 0.43 7.5 NXWL 92 0.43 7.6 NXWL 92 0.43 7.7 NXWL 92 0.43 7.8 NXWL 92 0.43 7.9 NXWL 92 0.43 7.1 NXWL 92 0.43 7.1 NXWL 92 0.43 7.2 NXWL 92 0.43 7.3 NXWL 92 0.43 7.4 NXWL 92 0.43 7.5 NXWL 92 0.43 7.6 NXWL 92 0.44 7.7 NXWL 92 0.44 7.8 NXWL 92 0.44 7.9 NXWL 93 0.24 7.9 NXWL 94 0.25 7.9 NXWL 95 0.24 7.9 NXWL 95 0.24 7.9 NXWL 95 0.24 7.9 NXWL 95 0.24 7.9 NXWL 92 0.44 7.9 NXWL 92 0.44 7.9 NXWL 93 0.24 7.9 NXWL 94 0.25 7.9 NXWL 95 0.24 7.9 NXWL 95 0.25 7.	664.5	8.2	NXML	84	0.30				Sp.LLn	Arg.		Same.
7.6 NXML 100 0.30 Same granite as above. 4.0 NXML 100 0.21 Same. Vertical shearing. 3.2 NXML 86 0.26 Same. Aplite 693-695! 7.7 NXML 95 0.34 wk. wk. wk. wk. wk. Same. Sulfides start to appear and diminishing c. u.with dept and diminishing c. u.with diminishing c. u.with dept and diminishing c. u	668.0	3.5	NXM	19	0.14							Aplite.
4.0 NXWL 100 0.21 Same. Same. Vertical shearing. 3.2 NXWL 100 0.26 Same. Vertical shearing. 10.2 NXWL 86 0.26 Same. Aplite 693-695! 8.7 NXWL 95 0.34 Wk.	675.6		NXM	100	0.30							ranite as
3.2 NXML 100 0.26 Same. Vertical shearing. 10.2 NXML 86 0.26 Same. Same. Vertical shearing. 8.7 NXML 86 0.29 Wk. W	9.619	0.4	NXML	100	0.21							Same.
10.2 NXWL 86 0.26 Wk. Wk	682.8	3.2	NXML	100	0.26							Vertical
8.7 NXWL 88 0.29 Wk. wk. wk. wk. Same. Sulfides start to appear 7.7 NXWL 95 0.34 wk. wk. wk. kw. same. Sulfides start to appear 5.9 NXWL 95 0.58 wk. wk. wk. kw. same. CC.rims cpy. Diminishing ca. with dept same and diminishing cc. with dept same. All. very weak and granting and granting and granting and granting same. 9.3 NXWL 89 0.31 wk. wk. kr. kr. Same. 7.4 NXML 82 0.60 wk. wk. kr. kr. Same. Strong shearing at 60°(dimination) 4.1 NXML 92 0.43 wk. wk. wr. same. Strong shearing at crushing contil 5.8 NXML 92 0.44 wk. wk. wr. same. Strong shearing & crushing contil 4.1 NXML 52 0.34 wk. wk same. Less crushing contil 5.3 NXML 36 0.23 wk. wk same. Less crushing contil 5.3 NXML 36 0.23 wk. wk same. Less crushing contil	693.0	10.2	NXML	98	0.26		++					Same.
7.7 NXWL 95 0.34 wk. wk. wk. wk. wk. Same. Sulfides start to appear Same leaching. 5.9 NXWL 95 0.58 wk. wk. wk. wk. Same. CC.rims cpy. Diminishing and cc. with dept and diminishing cc. with dept all cc. with dept and diminishing cc. with dept all cc. with dept and diminishing cc. with dept and dimini	+ +	8.7	NXML	88	0.29		-					Same, Aplite 693-695'
5.9 NXWL 95 0.58 wk. wk. wk. wk. wk. Mod. Same. CC.rims cpy. Diminishing and diminishing cc. with dept and de	4.607	7.7	NXML	95	0.34		wk.	-	wk.			Sulfides
7.7 NXWL 52 0.36 + wk. wk. wk. wk. wk. wk. wk. wk. wk. wk. wk. kr. same. Same. Alt. very weak and granite hall almost fresh appearance. 6.9 NXWL 87 0.38 wk. wk. tr. Same. Strong shearing at 60°(dip) 7.4 NXWL 92 0.43 wk. wk. - Same. Strong shearing and crushing continue 4.1 NXWL 92 0.44 wk. wk. - Same. Strong shearing and crushing continue 4.1 NXWL 52 0.34 wk. wk Same. Strong shearing continue 5.3 NXWL 36 0.23 wk. wk Same. Less crushing & shearing. 5.3 NXWL 36 0.23 wk. wk y Note: Zone 746-760 may be a fault	715.3	5.9	NXML	95	0.58		wk.	+ +				Same leaching. CC.rims cpy. Diminishing
9.3 NXWL 59 0.31 wk. wk. tr. Same. 6.9 NXWL 87 0.38 wk. wk. tr. Same. 7.4 NXWL 82 0.60 wk. wk. wk Same. Strong shearing at 60°(dip) 4.1 NXWL 92 0.43 wk. wk. wk Same. Strong shearing and crushing continue 5.8 NXWL 100 0.44 wk. wk. wk Same. Shearing continue 4.2 NXWL 52 0.34 wk. wk. wk Same. Less crushing & shearing. 5.3 NXML 36 0.23 wk. wk Note: Zone 746-760 may be a fault of minor movem.	723.0	7.7	NXM	52	0.36			+ +	wk.			Same, Alt, very weak and granite has
6.9 NXWL 87 0.38 wk, wk, tr. Same. Strong shearing at 60°(dip) 7.4 NXWL 82 0.60 wk, wk, r. Same. Strong shearing at 60°(dip) 4.1 NXWL 92 0.43 wk, wk, - Same. Shearing & crushing continue 5.8 NXWL 52 0.34 wk, wk, - Same. Less crushing & shearing. 5.3 NXWL 36 0.23 wk, wk, - Same. Less crushing & shearing. 6.9 NOTE: Zone 746-760 may be a fault of minor movem.	732.3	9.3	NXML	. 59	0.31		wk.	+ +	tr.			ost
7.4 NXML 82 0.60 wk. wk. kr. tr. Same. Strong shearing at 60°(dip) 4.1 NXML 92 0.43 wk. wk Same. Strong shearing and crushing and crushing and crushing sontinue 5.8 NXML 100 0.44 wk. wk Same. Shearing & crushing continue 4.2 NXML 52 0.34 wk. wk Same. Less crushing & shearing. 5.3 NXML 36 0.23 wk. wk y Note: Zone 746-760 may be a fault of minor movem.	+ +	6.9	NXM	87	0.38		wk.	1	tr.			Same,
4.1 NXWL 92 0.43 wk. wk Same. Strong shearing and crushing continue 90 to 600 dip. 5.8 NXWL 100 0.44 wk. wk Same. Shearing & crushing continue 64.2 4.2 NXWL 52 0.34 wk. wk Same. Less crushing & shearing. 5.3 NXWL 36 0.23 wk. wk V Note: Zone 746-760 may be a fault of minor movem.	9.942	7.4	NXM	82	09.0		wk.	+	tr.			
5.8 NXWL 100 0.44 wk. wk Same. Shearing & crushing continue 4.2 NXWL 52 0.34 wk Same. Less crushing & shearing. 5.3 NXWL 36 0.23 wk Note: Zone 746-760 may be a fault of minor movem.	+ + -	4.1	NXM	92	0.43		wk.	-	1			Strong shearing and
4.2 NXWL 52 0.34 wk. wk </td <td>+ +</td> <td>5.8</td> <td>NXML</td> <td>100</td> <td>44.0</td> <td></td> <td>wk.</td> <td></td> <td>1</td> <td></td> <td></td> <td>Shearing & crushing</td>	+ +	5.8	NXML	100	44.0		wk.		1			Shearing & crushing
5.3 NXWL 36 0.23	+ +	4.2	NXML	52	0.34		wk.	-	1			=
Zone 746-760 may be a fault of minor movem.	0.992	5.3	NXM	36	0.23		ink.	55	1			Less crushing &
												Zone 746-760 may be a fault of minor movem.

Final Depth 1438*
Collar Elevation
Coordinates
Inclination

GEOLOGIC - ASSAY

Sheet No. 1 of 1 Date Completed 9*26-62 Logged By RKK

LOG

Sparse Cu stain, principally on frac. Indurated conglomerate, Most boulders are granite, but volcanic sand, clay, and gravel Very weak argillic alt. Conglomerate, indurated, Granite Top and bottom of cgl. estimated Traces of Cu oxide and silicate. and volcanic pebbles & boulders. Gravel(?) Mixed rock pieces, no matrix, Coarse-grained, pink, biotite Coarse-gr. biotite granite. and other types present. from rock bit cuttings. Only granite recovered. Only granite recovered. Remarks Conglomerate Alluvium: granite. = = Rock Arg Gran Cg]. Cgl Gran Al Alteration L 3 L Poston Butte × M · L CuSi CuSi Other Cc Mineralization Property_ Oxides Pyrite Cpy D S Non-S Average Core Assay - % Cu rotary drill. Total 0.77 Core Rec % Bit ∞ 8 8 ä 17 25 17 4 16 NX core runs made with 9 20 04 80 75 ∞ Rock Sp 8 à Core 4-711 43 47 × = -= = = = = = = = = Interval 257.6 7.6 1010 350 108 383.0 7.0 416.0 6.0 480.0 5.0 503.0 4.0 573.0 10.0 818.0 10.0 0.8 0.990 3.0 8.0 6.0 247.0 5.0 386.0 1.0 Depth 133.0 394.0 1360 350 1468 +38

Final Depth 607'
Collar Elevation
Coordinates
Inclination

GEOLOGIC - ASSAY

5007

Sheet No. 1 of 3
Date Completed 9-4-62
Logged By RKK

Property POSTEN BUTTE

94z. vn. Last part of run dk gr dense. Same. Abundant CuOx & CuSi on St.Sh. 450 Same. Alt. locally mod. Sh. at 450 1/4" Gerro-mags. sl. chl. Diss. sulf. casts Quartz monzonite porphyry. Very weakly hornblende 1-2 mm. Weak argillization. Groundmass fn-tex., Bedrock estimated at 350 from rock bit cuttings. pheno. of feld. 1-4 mm. and biotite & w Same. Hm. on frac. Lighter color Mz. Rock bit cutting show stain of Cu 0x. alt to Lm. w. center Cusi(?) Feld. Blue-green w. adsorbed Cu Same. Abundant CuOx-CuSi. Sh. at sh. and gauge near end of run. Alluv. 0-350 Gila River gravels Remarks Sand, clay, gravels. Same. Less Cu0x-CuSi. Same - core broken. altered, leached. 45° Sott. Same. Mon. Por Rock Mon. Arg. Arg. Arg. Alteration pou Weak Mod. Arg. MK X XX Other Ë Lim CC Mineralization Cpy Pyrite Non-S Average Oxides Cusx Cusx CuSi Core Assay - % Cu 0.28 Total 0.72 0.72 1.85 0.38 1.90 0.26 0.52 0.34 Core 4 20 100 100 478 96 55 16 4 1/2 R.B. 4 1/2 R.B. Sp Core NXML NXML NXML NXM NXM 5.0 NXWL NXM 5.1 NXML 4.5 6.4 4.7 Interval 9.4 5.6 7.6 350 10 364.5 369.5 394.4 384.1 360 374.1 389.7 402.0 379.2 Depth 350

Same to 406' Locally mod. alt. poss Llm.

Jarosite. At 406' Gran. as below.

Same as desc, next page No visible cu this run.

Gran.

Mod. Arg.

0.15

100

NXM

6.0

415.0

0.26

00

NXML

7.0

0.604

Gran.

Final Depth 607'
Collar Elevation
Coordinates
Inclination

GEOLOGIC - ASSAY

Sheet No. 2 or 3
Date Completed 9-4-62
Logged By RKK

Property POSTEN BUTTE

POLIBUIDUI	15110						Property	11	LUSIEN DULL	1			Logged By RKK
Depth	Interval	Core		Core	Assay	- % Cu	Mineralization	lization		Alteration	tion	Rook	
		Size	Grav Rec	Rec % Total	S-noN lp	S Average	á	oy Cc	Other			Type	Renarks
419.9	4.9	NXM		75 0.84	47		X:- ON ON		E.	₩.	Arg.	Mz.	Quartz monzonite porphym with granite inclusions. Brecciated. Hm. stain. Feld Cu stained.
425.6	5.7	NXM		98 0.31			i ×		Ë -	vk.	Arg.	Gran.	Coarse textured granite. Pink feld. to I"-generally smaller. Color light to pink tones. Biotite fresh to rexf. or Chloritized. Same feld. cu stained. Some Mz at 421". Leached. diss. sulf.
432.5	6.9	NXML	2	100 00.19	6								Same gran. as above. Lim-LLm? Hm stain; 70° sh at 429. V. sh. end run.
0.044	7.5	NXML	01	94 0.28	00			++					Same 1' Mz at 435'; 1' Mz. at 437'
448.0	8.0	XML	2	100 0.75	2					Mod.	Arg.		Same: 441-445' st. sh. at 70° dip. w Mz. in sh. zone. Cu stain strong.
454.9	6.9	NXM	100	92.0 01	9								Same; 2' Mz, at 450-52. Cu st. feld.
6.094	0.9	NXM	O.	97 0.35	5								Same; Cu Si on 70° frac, Gran. soft-frac.
467.3	4.9	NXM	0)	95 0.34	4					WK	Arg.		Same: Cu Si on 70° frac. Gran. soft-frac.
474.1	6.8	NXM	100	84.0 0	80								Same
478.5	4.4	NXM	100	18.0 0.84	3					Wk	Mod.	Gran.	Same granite as above 475'-477' Mz. por at 30° ± Mz. strongly cu. stained in feld.
6.864	20.4	NXML	7	46 0.28	80					Wk -	Arg.	Gran.	Same cs. tex gran. as above. Diss leached sulf. Cu stain of feld. weak.
505.7	8.9	NXM	9	68 0.31									Same. Biot. fresh to rext. or chl.
512.8	7.1	NXM	7	73 0.36	,,0								Same. Biot. fresh to rext. or chl.
519.0	6.2	NXM	on	96 0.35	5								Same. Biot. fresh V. sh 512-19*
528.5	9.5	NXML	10	100 0.34	41		-						Same.

Final Depth 6071 Collar Elevation Coordinates Inclination

GEOLOGIC - ASSAY L

LOG

Sheet No. 3 of 3 Date Completed 9-4-62

534.4 5.9 540.4 6.0		-		No. of concessions and the second sec	The state of the s	Tourse and and have been decired and the second sec	CONTRACTOR DESCRIPTION OF THE PROPERTY OF THE
	-	Sp		Core Assay - % Cu	Mineralization	Alteration	00
	Size	Grav		S	Pyrite Cpy Cc Ott	Other	
+ +	WXM 6	1	91 0	0.29 Cu0x	Lim	m Wk Arg. Gran.	n. Same. CuSi abun. at 533'
	O NXML	Ju	95 0	0.24			Same.
545.9 5.5	5 NXML		85 0	0.28			
550.9 5.0	O NXWL		889	747.0		Mod.Arg.	Same. Some brecciation.
558.0 7.0	O NXML	یا	35 0	0.44		Wk Arg.	Same.
565.1 7.1	I NXML	7	100	0.16			Same. Much of core broken-brecciated.
573.0 7.9	9 NXWL	7	0 69	0.31			Same. Much of core broken-brecciated.
6.9 6.62	9 NXML	17	85 0	0.11		Wk Arg. Mz	Quartz monzonite porphyry. Same por. as above but dk-gr. and much
							fresher. l' at contact has cu st. feld. Biotite & Horn. fresh to chl. Diss leach sulf. Leach. sulf on frac.
586.4 6.	5 NXWL	T.	72 0	0.15			Same, Cu Si on frac, but generally no visible cu thru mass at rock as in most of hole above.
594.8 8.4	4 NXML	9	62 0	0.14			Same. Nearly fresh. Leached sulf. cast on frac. & diss.
601.1 6.3	3 NXWL	١	73 0	0.17			Same, 11 11 11 11 11 11
607.0 5.9	9 NXML	1	99	0.26		->	Same, 11 11 11 11 11 11

Inclination Vertical Final Depth 771.5 Collar Elevation Coordinates

LOG GEOLOGIC - ASSAY Property POSTEN BUTTE

Logged By

HOLE NO. P. B. 12 Sheet No. 1 of 2 Date Completed 10-12-62

150 170			3		-			1						WIII
150 170	Jenth H	Interior	Core			Assay -		Mine	ralizatio	L.	Ā	eration	Rock	
380 41/2° Rock Bit			Size			Non-S	Oxides				ier		Туре	2000
150' Rock Bit. Estimated top of bedrock. 150' Rock Bit. Estimated top of bedrock Bit. 150' Estimated top of bedrock Bit. Estimated top of bedrock Bit. 150' Estimated top of bedrock Bit.	380	380											Alluv.	clay, and gravel. Most of
150' Rock Bit. Strington Estimated top of bedrock. 150' Rock Bit. Strington Start of core. 150' Rock Bit. Strington Start of core. 150' Rock Bit. Strington Start of core. 151' Rixid Strington Start of core. Start of core. 151' Rixid Strington Start of core. Start of core. 152 Rixid Strington Start of core. Start of core. 153 Rixid Strington Start of core. Start of core. 154 Rixid Strington Start of core. Start of core. 155 Rixid Strington Start of core. Start of core. 156 Rixid Strington Start of core. Start of core. 157 Rixid Strington Start of core. Start of core. 158 Rixid Strington Start of core. Start of core. 158 Rixid Strington Start of core. Start of core. 157 Rixid Strington Start of core. Start of core. 158 Rixid Strington Start of core. Start of core. 159 Rixid Start of core. Start of core. 150 Rixid Start of core. Start of core. Start of core. 150 Rixid Start of core. Start of core. Start of core. 150 Rixid Start of core. Start of co														is a silty clay with erratically dist. pebbles and boulders.
150 Rock Bit. Sock Bit. Start of core. Start of	380													
7.5 NXML 80 0.03 Lim Wk Arg Gran	530	150											Gran.	alt., leached
5. 7.5 NXML 80 0.03 Lim Wk Arg Gran. Gs-gr, light pink, biotite granite. 3.8 NXML 42 0.02 Same Same Same Feld. hem. flooded. Sp. Llm. 5.2.2 NXML 50 0.03 WK Mod Same. Hem. on fractures Same. Hem. on fractures 6.9 NXML 16 0.03 WK Mod Same. Feld. hem. flooded. Sp. Llm. 6.9 NXML 36 0.02 Same. Hem. on frac. Same. Hem. on frac. 6.9 NXML 16 0.03 WK Mod Same. Hem. flooded. Sp. Llm. 6.9 NXML 17 0.03 Same. Locally st. alt. ser. Hem. abu 6.0 NXML 17 0.03 Same. Locally st. alt. ser. Hem. abu 6.0 NXML 18 0.02 Same. Locally st. alt. ser. Hem. abu 6.0 NXML 19 0.03 Same. Locally st. alt. ser. Hem. abu 6.0 NXML 19 0.04 Same. Locally st. alt. ser. Hem. abu 6.0 NXML 19 0.04 Same. Locally st. alt. ser. Hem. abu 6.0 NXML 19 0.04 Same. Locally st. alt. ser. Hem. abu 7.0 NXML 19 0.04 Same. Locally st. alt. ser. Hem. abu 8.0 NXML 10 0.04 Same. Locally st. alt. ser. He	531													Start of core.
3.8 NXWL 42 0.02 Same Feld hem. flooded. Sp. Llm. 5.2 NXWL 42 0.03 Same Feld hem. flooded. Sp. Llm. 5.3 NXWL 42 Tr	538.5	7	NXM	80		3				=			Gran.	
3.8 NXML 42 0.02 V Same. Hem. on 9.8 NXML 16 0.03 Wk Mod Same. Feld. he 6.9 NXML 36 0.02 Same. Locally 7.8 NXML 75 0.03 Same. Locally 4.0 NXML 75 0.03 Same. Locally 5.7 NXML 74 0.02 Same. 3.0 NXML 73 0.04 Same. 3.0 NXML 75 0.14 V Same. 2.0 NXML 75 2.57 Culox Fr. Andest ie DK. gr. ander 2.0 NXML 75 2.57 Culox Fr. Andest ie DK. gr. ander														
5.2 NXML 50 0.03 WK Mod Same. Hell. he 6.9 NXML 16 0.03 WK Mod Same. Feld. he 7.8 NXML 42 Tr Same. Same. Locally 9.7 NXML 74 0.03 Same. Same. 6.7 NXML 74 0.02 Same. Same. 6.7 NXML 48 0.02 Same. Same. 6.7 NXML 66 0.14 Y Y Same. 2.0 NXML 75 2.57 Cuox Fr. Andest ie DK. gr. ander	542.3	ñ	NXML	42	0.02	2								Same
6.9 NXWL 16 0.03 WK Mod Same. Feld. he 7.8 NXWL 42 Tr Mod St. Same. Locally Sp. jarosite. 4.0 NXWL 75 0.03 Same. Locally Sp. jarosite. 5.7 NXWL 74 0.02 Same. 4.6 NXWL 73 0.04 Same. 3.0 NXWL 75 2.57 Cuox 2.0 NXWL 75 2.57 Cuox	547.5	5	NXML	20	0.03	3					->			Hem. on frac
6.9 NXML 36 0.02 Rod St. Same. Locally Sp. jarosite. 7.8 NXML 42 Tr Rod St. Same. Locally Sp. jarosite. 4.0 NXML 75 0.03 Same. Same. 5.7 NXML 74 0.02 Same. 4.6 NXML 73 0.04 Same. 3.0 NXML 75 2.57 Cuox 2.0 NXML 75 2.57 Cuox Cuox Fr. Andestie DK. gr. ander Slack Cu Ox	557.3		NXM	91	0.03	3					×			Feld. hem. flooded. Sp.
7.8 NXML 42 Tr Andestie DK. gr. ande 4.0 NXML 75 0.03 Same. 5.7 NXML 74 0.02 Same. 4.6 NXML 73 0.04 Same. 3.0 NXML 66 0.14 Same. 2.0 NXML 75 2.57 Cu0x Fr. Andestie DK. gr. ande Black Cu 0x	564.2		NXML	36	0.05	2								Same.
4.0 NXWL 75 0.03 Same. Same. 5.7 NXWL 74 0.02 Same. 4.6 NXWL 48 0.02 Same. 3.0 NXWL 73 0.04 Same. 3.8 NXWL 66 0.14 Y Y Y 2.0 NXWL 75 2.57 Cuox Fr. Andestie DK. gr. andesite dike. CuSi.	572.0		NXM	42	1						Mo	St		
5.7 NXWL 74 0.02 Same. 4.6 NXWL 48 0.02 Same. 3.0 NXWL 73 0.04 Same. 3.8 NXWL 66 0.14 Y Y 2.0 NXWL 75 2.57 Cu0x Fr. Andestie DK. gr. andesite dike. CuSi. 2.0 NXWL 75 2.57 Cu0x Black Cu 0x	576.0		NXML	75	0.03	3								rore snattered
4.6 NXWL 48 0.02 Same. 3.0 NXWL 73 0.04 Same. 3.8 NXWL 66 0.14 Y Y Same. 2.0 NXWL 75 2.57 CuOx Fr. Andestie DK. gr. andesite dike. CuSi.	581.7		NXML	74	-	2								Same.
3.0 NXWL 73 0.04	586.3			84	0.05	2								Same.
3.8 NXWL 66 0.14	589.3		NXM	73	0.04									Same.
2.0 NXWL 75 2.57 CuOx Fr. Andestie DK. gr. andesite dike. CuSi.	593.1	-	NXML	99	0.14	-5-					*		->	Same.
	595.1	2.0	NXML	75	2.57		Cu0x				L		Andest	DK. gr. andesite dike. CuSi.
							CuSi							Black Cu 0x
			-		=		1							4

Final Depth 771.5

ASARCO

ompleted 10-12-62 HOLE NO P.B.12 et No. 2 of 2 RKK By

Logged	N BUTTE	Property POSTEN BUTTE		Inclination
Date Cor)))))		Coordinates
Sheet No	20 - XARA	GFOI OGIC - ASSAV	S	Collar Elevation

Deoth	Interval	Core		Core	e Assay - % Cu	% Cu		Miner	eralization	С	٩	Alteration	Rock	
		Size	Grav Rec %	% Total	S-noN In	Average	Oxides F	Pyrite (Сру	Cc 0	Other		Туре	מעסקיי
9.409	9.5	NXML	44	4 0.02	2						Lim	Mod.	Aplite	Pink fn-text. Sp. diss lim. same hem. Leached
610-2	7.6	NXM	55	5 Tr									Aplite	Same as above to 6061, then mixed aplite
618.6	8.4	NXM	111	4 0.02	2						3	WK.	Aplite	Same, Hem, Flooding
631.2	12.6	NXM	710	90.0	9					4-4-	3	Wk. Arg. Gran.	Gran.	Same as above. Locally fresh.
6.049	9.7	NXM	19	7 0.02	2						3	Wk.		Same, Biot. rextl. to chl. Some fresh
8.059	9.6	NXML	88	3 0.03	3									Same. Some fresh biotite.
6.099	9.5	NXML	70	0.05	2		CuOx							Same. Tr. Cu0x CuSi
0.179	10.7	NXM	33	3 0.14	17		cnsı				Σ	Mod. Alt.		Same. Shearing Steep to 60°
680.7	9.7	NXM	17	7 0.02	2						Wk	k Mod.		Same. Very broken, crushed.
9.169	10.9	NXM	27	7 0.03	3						++			Same, Crushed, broken, gauge at 687'
0.769	5.4	NXM	26	5 0.07	7						++			Same,
7.707	10.7	NXML	72	61.0	6		Cuox				I.K	k Arg.		to
715.1	7.4	NXML	69	9 0.35	5		200							Same.
722.8	7.7	NXM	80	10.14	_+						++			Same.
731.1	8.3	NXML	100	0.22	2									Same.
741.5	10.4	NXM	32	0.87	7									Same.
			-				+	+		+				

Same. Less Cu stain, in feld, Leached sulf, sparse,

Same.

43 0.15

NXM

11.8

771.5

12 0.24

NXM

759.7 18.2

Coordinates Inclination Vertical Final Depth 417.3 Collar Elevation

GEOLOGIC - ASSAY ASARCO

Date Completed 9-10-62 Logged By RKK HOLE NO PB 13 Sheet No. 1 of 1

Inclination	0	Vertical	cal		Property Poston Butte	1	Logged By RKK
Denth	i con a tri		Sp	Core	Core Assay - % Cu Mineralization Alteration	Book	
		Size	Grav	Rec %	Total Non-S Average Oxides Py	Type	Kenarku
320	320	4-2	Rock Bit	3it		l A I	Sand, clay, gravel.
320							Estimated top of bedrock from rock bit cuttings, but contact is not distinct.
394	4	××			Lim. Weak	Mz Por	Quartz monzonite porphyry, as below
014	91	4-2	Rock Bit	3it		=	Same.
4.414	4.4	NXW		97	0.02 Lim. Weak	Mz Por	Quartz, monzonite porphyry. Dark gray color. Abundant ferro-mag. minerals, mostly biotite. Por. texture not prominent. Weak alt. part of core almost fresh. Leached. Fractures and seams 1/16 - 1/8" of oft. and limonite. So diss. lim.
417.3	2.9	=		88	- <u></u>		

Final Depth 350 Collar Elevation Coordinates

ASARCO

GEOLOGIC - ASSAY POSTEN BUTTE

5007

Date Completed 10-25-62 Logged By RKK Sheet No. 1 of 1

Inclination		Vertical	cal.				Pro	Property	POSTEN		BUTTE		Logged By RKK
Teo.	in territ	Core	Sp Cc		Core A	Assay - % Cu	Σ	Mineraliz	alization		Alteration	Rock	Demork*
		Size	Grav Red	Rec % To	Total	Non-S Average Oxides	Oxides Pyrite	Сру	Cc	Other		Туре	
328	328	4 1/2	Rock Bit	Bit								Alluv.	Sand, clay and gravel.
345	17	4 1/2	Rock Bit	Bit							Weak	Mz.Por	Quartz monzonite porphyry as below.
350	5	××		30 0.	0.18					Ë	Lim. Weak Arg.	Mz.Por	Quartz monzonite porphyry, weakly alt. Leached. sp. diss. sulf. Biotite chlor. & in part alt. to lim. Pheno. not prominent.
23													

Final Depth 459 Collar Elevation Coordinates

GEOLOGIC - ASSAY

ASARCO

900

Sheet No. 1

Sheet No. 1

Date Completed 10-13-62

Looged By park

Coor	Coordinates	60							Proper	rty POSTEN		BUTTE			Date Completed 10-13-62 Logged By RKK
Denth	10000	Core	Sp	Core	Core	Assay - % Cu	" Cu		Miner	Mineralization	-	A	Alteration	0	
		Size	Grav	Rec %		Non-S	Average Oxides	Oxides P	Pyrite	Cpy C	Cc Other	Jer		Type	Remarks
398	398	4 1/2	4 1/2 Rock	Bit.										Alluv.	Alluvium consisting of sand clay and gravel.
004	2	4 1/2	4 1/2 Rock	Bit.										Gran.	Same as below.
410	10	×									-	Lia.	Mod .		Weak to mod. alt. granite. Arg. alt. of feld. Ferro-mag minerals change to sericite etc. Leached. Sulf. casts very sparse.
451	141	4 V2 Rock Bit	Rock	Bit											
459	∞	×										->	-	•	Same.
												•			
									^						
												-			
												-			

Final Depth 560 Collar Elevation Coordinates

ASARCO

GEOLOGIC - ASSAY

5007

Date Completed 10-5-62 Logged By RKK HOLE NO P.B. 16 Sheet No. 1

Coor	Coordinates	n							Property.		POSTEN BUTTE	BUTT	44		Logged By RKK
		-		0.00	Core	Assay - % Cu	" Cu	3	Miner	Mineralization	0	q	Alteration	0	
Depth	Interval	Size	Gray	Rec %	Total	Total Non-S	1 (1)	Oxides Pyrite	Pyrite	Cpy	U	Other		Type	Remarks
400	004	7 7	Rock	k Bit.										Alluv.	Alluwium of gravel, sand silt and clay. Top of bedrock estimated at 400' from rock bit cuttings.
560	091	4 1/2	2 Rock	8 ::									ı.	Fe s t e	Light green-gray dense aphanitic rock-given field name of felsite. Very small phenocrysts of quartz and chlorite-like mineral. Fresh. From fresh appearance and texture this rock is believed to be post mineral. At 524-526 some of cutting are darker green probably representing an inclusion or segregation.
	Core	uns	with	rotary	drii										
954	7	NX		0											
536	8	XN		0											
											•				

Final Depth 977.5 Collar Elevation Coordinates

GEOLOGIC - ASSAY ASARCO

LOG

Sheet No. 1 Date Completed 10-30-62 HOLE NO P.B.17

Date Completed 10-30-62 Logged By RKK		Remarks	Gravel, sand, and clay, grading into basalt at base.	Black basalt with red clay and basalt near base.	Gray ash(?), clay, sand, and gravel.		Gravel, clay, ash (?) silt, and sand.	Estimate top of granite bedrock.	Coarse-gr, light colored, biotite granite Fresh.	Same.	Same.	Same.					
)	3008	Type	Alluv.	Basalt.	Alluv.	Basalt	Alluv.		Gran.			->					
TE	Alteration			52	4	64	ď		<i>L</i>	L	L	L					
TEN BUTTE		Other															
POSTEN	zation	°Cc							+++								
Property	Mineralization	Pyrite Cpy															
١٠	,	á															
		Average Oxides															
	Assay - % Cu	Non-S															
	Core	Total															
	Core	Rec %	Bit	-	=	=	=		-	50	100	33					
	-	Grav	Rock	=	=	=	=		=								
90	teles becomb on	THE REAL PROPERTY.	4 34	=	=	=	=		4 1/2	XN	××	NX					
Coordinates	formatol		120	120	330	80	160		<u>‡</u>	2	-	4.5					
Coor	Depth		120	240	570	650	810	810	954	956	973	977.5					

Final Depth 553 Collar Elevation Coordinates Inclination

GEOLOGIC - ASSAY

LOG

ASARCO

Date Completed 10-25-62 HOLE NO P.B. 18 Sheet No.1

Coordination	Coordinates								Property	arty	POSTEN		BUTTE		Date Completed 10-25-62 Logged By RKK
Depth	interior.	Core	Sp	Core	Core	Assay-	- % Cu		Mine	Mineralization	on	`	Alteration	Book	
	,	Size	Grav	Rec %	Total		Non-S Average	Oxides Pyrite	Pyrite	Сру	CC	Other		Type	Kenarks
432	432	4 1/2	Rock	Bit										Allux.	Sand, silt, clay, & gravel.
480	847	4 1/2	=	-									L	Felsite	Light green, dense, aphanitic felsite (field name). Small phen. of quartz and chlorite. Fresh. Probably a post-mineral rock.
553	731	4 1/2	=	=									L	Felsite	
	Core	runs w	ith	with rotary	drill	-1									
463	2	×		20								+ +		Felsite	Light green-gray.
465	2	××		0											
553	2	XX		0										Felsite	Same as above.
								^.							

Final Depth 533' Collar Elevation Coordi

GEOLOGIC - ASSAY LOG

ASARCO

HOLE NOP. 8.19

rdinates								Prop	Property	POSTE	POSTEN BUTTE	TE			Logged By RKK
interdi	Core	Sp	Core	Core	Assay -	% Cu		Mine	ralizat	hon		Alteration		Rock	
Size Grav Rec % Total Non-S Average Oxides Pyrite Cpy Cc Other	Size	Grav	Rec %	Total	Non-S	Average	Oxides	Pyrite	Сру	CC	Other		-	ype	מאוחנושנ

		-					-	-					Ca page 1
40.00	O		Sp Core	Core	Assay - % Cu	_	Σ	Mineralization	zation		Alteration		
	1	Size G	Grav Rec %		Total Non-S Average	e Oxid	Oxides Pyrite	re Cpy	CC	Other		Type	The Total And Th
75	75 4	4 1/2" Rock	Rock Bit									Alluv.	Sand, silt, boulders. Unconsolidated gravel from surface to 75' gave trouble
													in drilling.
456 38	381 4	4 1/2"	Rock Bit									Alluv.	Clay, silt, sand, gravel, small boulders.
456													Estimated top of bedrock, from rock bit cuttings.
9 915	4 0.9	4 1/2 F	Rock Bit				+ +					Gran.	Decomposed granite, as below.
517.5	1.5 NX		100								·		Granite, decomposed and weathered.
529.0 11.5		4 1/4	Rock Bit										
533.0 4	4.0 NX		06								NilV.W.	->	Granite. Coarse-Grained, biotite. Color gray-pink, Some large pink-colored feldspar crystals. Very slight alteration or change may be due to weathering.
					,								
						-							
			7.										
						-							

Final Depth 3921 Collar Elevation Coordinates Inclination

GEOLOGIC - ASSAY

LOG

Sheet No. 1 Date Completed 11-10-62 Logged By RKK

Coordination	Coordinates								Property		POSTEN	BUTTE	ш)	Date Completed 11-10-62 Logged By RKK
Depth	Interval		Sp	Core	Core	Assay -	₩ Cu		Miner	alization	Ç	٩	Alteration	7000	
		Size	Grav	Rec %	Total	Non-S	Non-S Average	Oxides Pyrite		Cpy	U	Other		Type	Renarks
20	20	4 1/2		R.B.										Alluv.	Gravel, sand, clay.
42	22	4 1/2		8.8										Alluv.	Gravel
140	86	4 1/2		R.B.										Alluv.	Clay, sand, silt, gravel.
278	138	4 1/2		R.B.										Basalt	Black basalt.
316	38	7/1 7/2		R. B.										Alluv.	Sand, clay, and gravel, reddish color.
364	84	4 1/2		R.B.								>	V.W. Ser	Ser Gran.	Rock bit cutting indicate brown decomposed granite as below.
369	5	XX		100							-	Lim. V.W.		Ser Gran.	
															reld. essentially fresh. SI. lim. stain- ing due to weathering of ferromag. & magnetite. No evidence at diss. sulf.
389	20	4 12		R.B.										Gran.	Cuttings indicate same.
392	3	NX		100								+ - + - + →	→	Gran.	Same.
												+			

Final Depth 491' Collar Elevation Coordinates

GEOLOGIC - ASSAY ASARCO

LOG

Sheet No. 1 Date Completed 11-17-62 HOLE NO P.B.21

Coo	Coordinates						٩	Property		POSTON B	BUTTE		Date Completed 11-17-62 Logged By RKK
Depth	Interval			Core	Assay -	- % Cu	2	Mineralization	zation		Alteration	-	
		Size Grav	N Rec %	Total	Non-S	Average	Oxides Pyrite	ite Cpy	y Cc	Other		Type	Remarks
5	5	4 1/2"	R.B.									Alluv.	. Clay, soil.
20	51	4 1/2 "	8.8										Gravel, boulders
38	18	11/2"	R.B.										Sand, boulders, gravel.
94	8	4 1/2"	R. B.										Same.
374	328	4 1/2"	8.8									->	Sand, clay, and gravel.
374													Top of bedrock.
904	32	1 12	8.							he he	Mod.	Por?	Rock bit cuttings, not definitely identified, are small, hem. soaked, and largely aphanitic. Resemble felsite at 16 g 18.
410	.41	X								E.	St.	Ser. Por?	Soft, white, st. alt. ser. rock, possibly a mon. por. Sp. lim after sulf. in streaks and diss. Possible fault zone. or fissure.
747	32	4 1/2"	R.B.									Por-Gr	r. Cutting probably in part granite and part porphyry.
445	3	XX	100							Lia.	3-	Arg. Gran.	Cr-gr., biotite granite. Alt. weak Leached.
482	37	4 1/2"	8. B.							-	->		
487	5.0	NX	100	0.02			PoW		Tr.		W. Arg.	CD.	Same granite as above. Py, diss and in streaks, Biotite fresh to sl. chlor,
167	0.4	X	100	0.03			ром		<u>.</u>			-	Same.

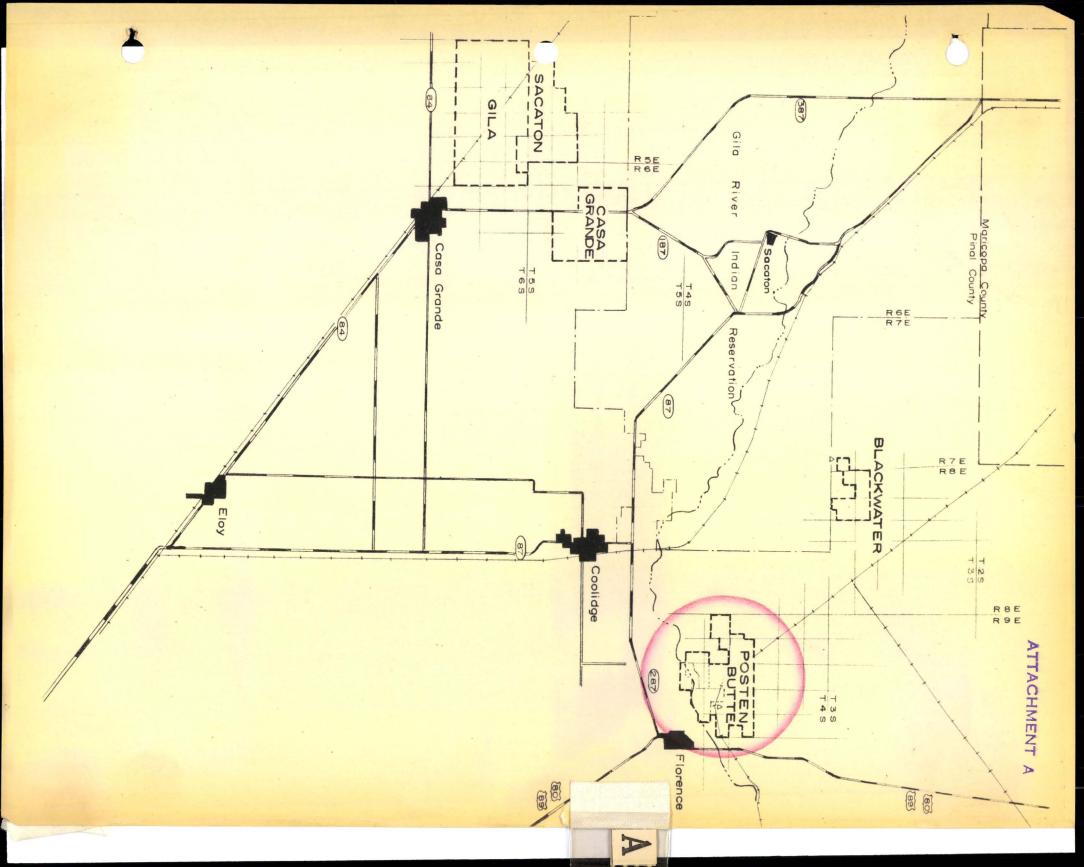
Final Depth 430. Collar Elevation Coordinates

GEOLOGIC - ASSAY

5007 POSTON BUTTE ASARCO

Date Completed 11-20-62 HOLE NO. P.B.22 Sheet No. 1

Inclination	ation						Pro	Property F	PUSION BUILE	BUILE	1	Logged By RKK
Depth	Interval	Core	-	Core	Core A	Assay - % Cu	N	Mineralization	-	Alteration	-	
		Size	Grav Rec	-	Total N	Non-S Average	Oxides Pyrite	Сру	Cc Other	1	Type	Remarks
51	5.	4 1/2		R.B.							Allux.	Silt, sand, clay of soil,
361	311	31 4 1/2"	8	R. B.							Alluv.	Gravel and boulders.
345	3091	309' 4 1/2"	8	R.B.							Alluv.	Sand, silt, clay, and gravel.
345								•				Estimated top of bedrock.
380	351	4 1/2"	å	80					Jar. Lim.	Mod,	Arg, Gran.	Moderately altered, decomposed granite as below.
385	5	X	100		0.12	Sample Fr.	3		Lim	m. Mod. W.		Coarse-grained, pink colored, moderately to weakly alt. granite. Arg. alt. Lim. sp., abundant jarosite. Leached. Sulfides originally sparse.
430	45	th 1/2:	œ œ		0.02 ((390-420)						Rock bit cutting indicate same granite.



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