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James Doyle Sell Mining Collection

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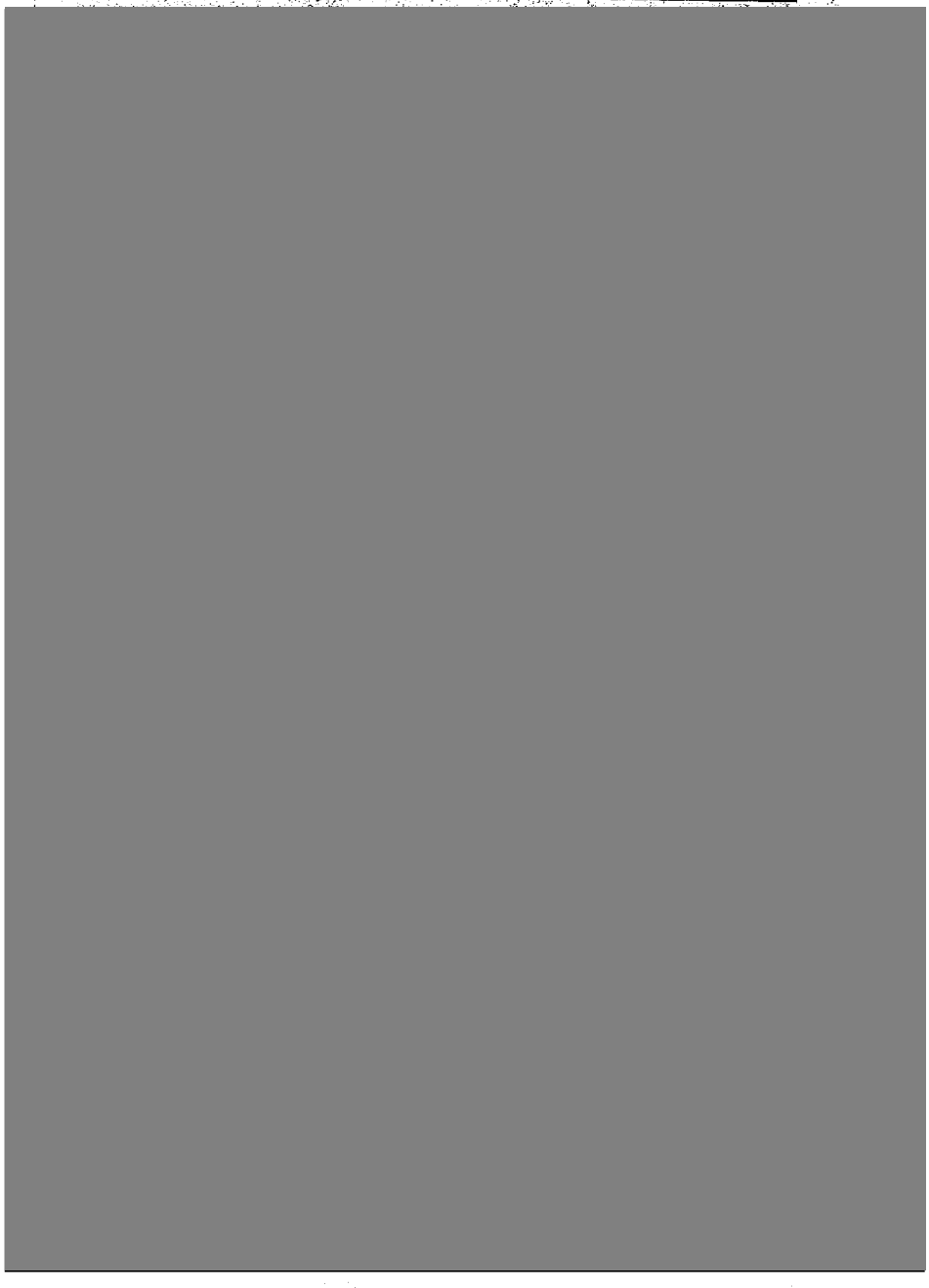
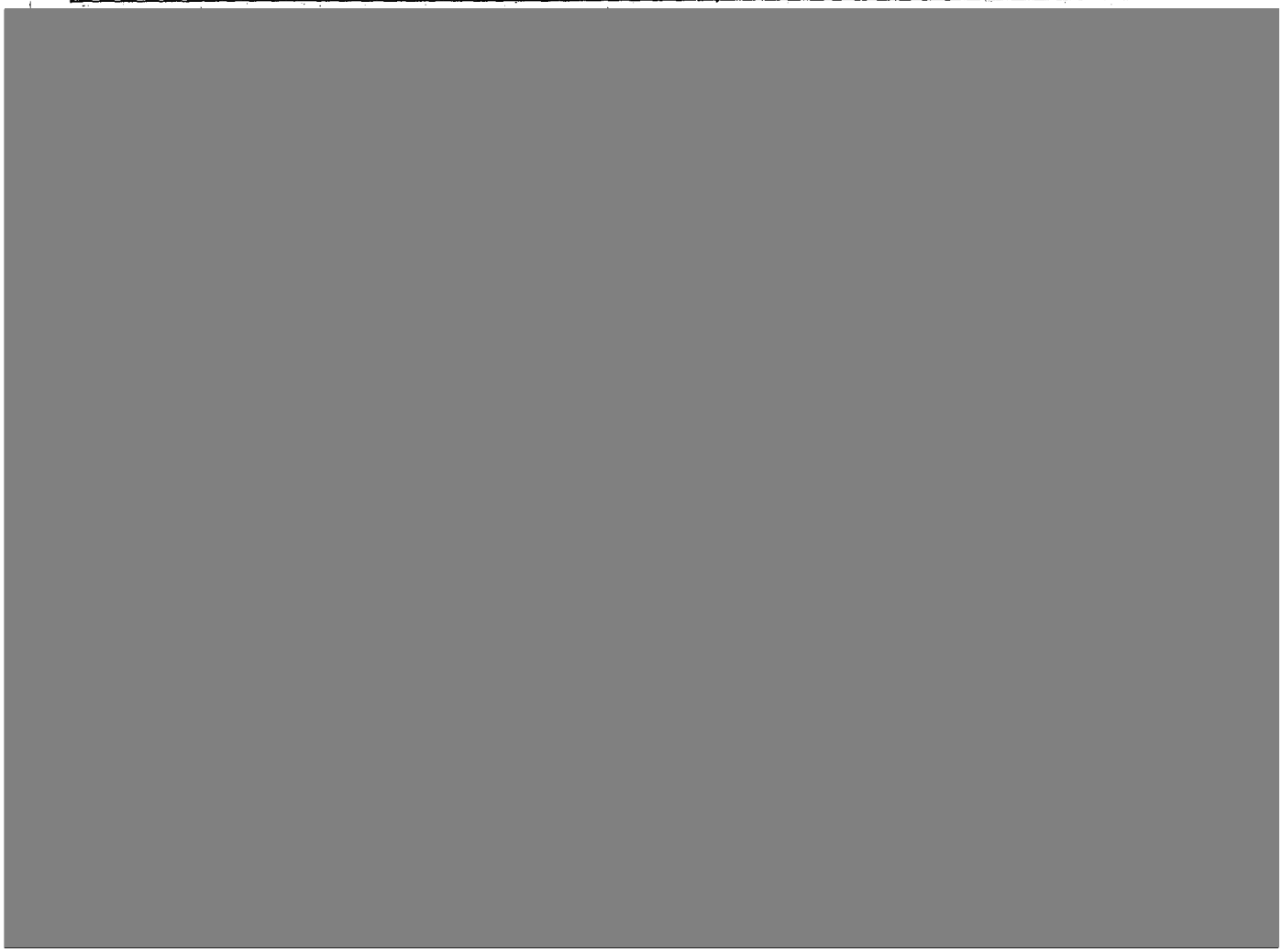
The Mining Record
Wed., July 12, 1972
Vol. 83, No.





Boston Butte
Mined Co., Az

Sept. 1980.

Reserves

Mineable reserves of the Conoco Copper Project are calculated to be 820 million tons of ore averaging 0.4% copper. Overburden is estimated to be 1,380 million tons and waste to be 810 million tons.

Oxide ore is calculated to be 250 million tons averaging 0.45% copper above a cutoff of 0.23% copper. Acid soluble copper in the oxide ore averages 0.32% above a cutoff of 0.16%.

Sulfide ore is estimated to be 500 million tons averaging 0.39% copper above a cutoff of 0.20%. Sulfide ore contains recoverable, low-grade values of molybdenum, silver, and gold.

Ore reserves also include 70 million tons of low-grade oxide material averaging 0.24% copper above a cutoff of 0.10% copper. This material, which averages 0.12% acide soluble copper, can be segregated for dump leaching if merited by economic conditions.

Both the oxide and sulfide ore are continuous and unusually uniform in grade.

Reserve estimates are based on the logging of diamond-drilled holes designed from the start for computer compatibility. Reserves are calculated on assay values thus obtained, without adjustment for mine dilution.

A total of 276 holes was drilled to define the orebody. Based on a predetermined triangular grid plan, the deposit initially was drilled out completely on 1,000-foot grid centers; the drill spacing was then reduced to 500 feet. Subsequently, in the area to be mined during the first ten years, 250-foot centers were drilled. A pilot mine provided over 50,000 tons bulk material, both oxide and sulfide, which confirmed ore grade and continuity as predicted from drill hole samples.

A geologic cross section of the deposit in an east-west direction is shown on page 7. Post mineral faulting has broken the deposit into vertically displaced blocks. Excluding the deep down-dropped western portion of the deposit, the deposit is about one mile long in an east-west direction and 4,400 feet wide in a north-south direction.

The deposit lies about 350 feet below the surface along the eastern portion. The oxide zone generally is 300-500 feet thick, and the bottom of the deposit extends to 2,400 feet below the surface.

Overburden consists of conglomerate and alluvium. Major host for the copper mineralization is Precambrian granite in which the distribution of mineralization was controlled by the emplacement of a Laramide granodiorite porphyry.

The mineralogy of the oxide ore consists principally of chrysocolla, with some tenorite, cuprite and native copper occurring. The copper in the sulfide ore is almost exclusively in chalcopyrite. Both the oxides and sulfides are confined to sharply defined zones, showing little mixing or chalcocite enrichment at the boundaries.

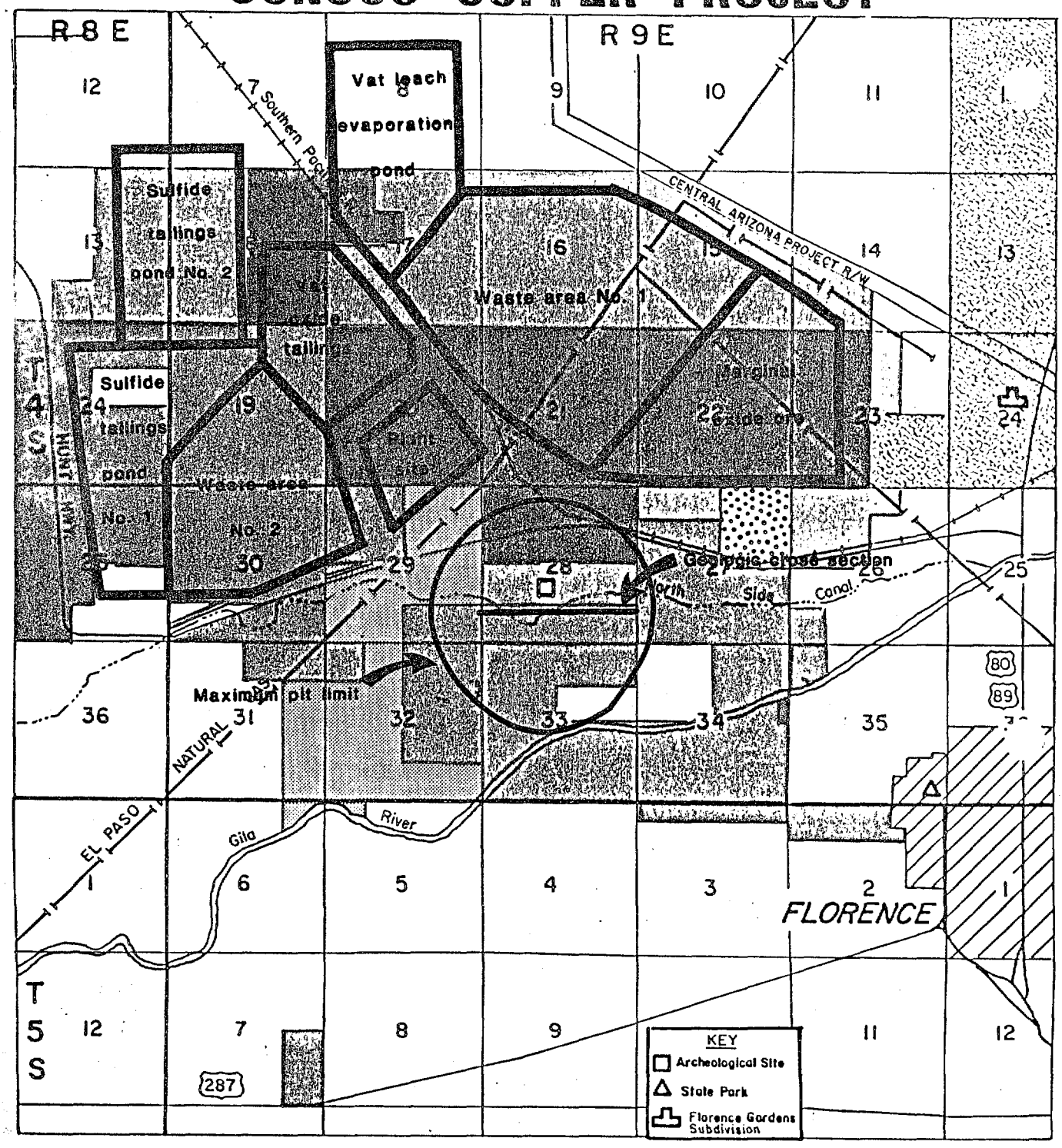
The deep down-dropped western portion of the deposit extends across the boundary between Conoco's property and the adjoining property owned by Asarco. At completion of mining the main orebody, there is some potential for mining this deeper deposit.

Pit Design: 50' benches
working slopes 2:1
final slopes overburden 1:1
" " ore zone 1.9:1

ultimate excavation a nearly circular conical pit, about 7300 feet in diameter at surface, and 1,900 feet deep.

Full production: 32,000 tons/year electrowon cathode copper
55,000 tons per year of electrorefined cathode (with
450,000 ounces silver/year & 5,000 ounces gold/year
800 tons of 90% molybdenum disulfide/year.

CONOCO COPPER PROJECT



CONOCO PROPERTY

- 100% fee simple & minerals
- Lease of 100% surface & minerals
- Conoco owns 100% surface & 50% minerals; leases other 50% from Federal Land Bank
- Conoco owns surface; minerals
- Mining claims only - public surface
- Option to purchase

OTHER PROPERTY

- Asarco property
- Poston Butte, Pinal County Historical Society

AMERICAN SMELTING AND REFINING COMPANY
TUCSON ARIZONA

February 7, 1974

TO: W. L. Kurtz

FROM: J. D. Sell

Aztec Expl. & Devel. Co.
Aztec & Getty Oil Drill Holes
Poston Butte Area
Pinal County, Arizona

Summary

Four diamond drill holes were scanned, which were drilled on a property now being held by Aztec Exploration and Development Company north of Poston Butte. Two of the holes were drilled by Aztec in 1970-1971 (A-series) and two by Getty Oil Company during an option in 1972 (G-series).

All four holes penetrated bedrock of Precambrian granite, none of which had more than a trace of copper, altho up to 1% sulfide was encountered as pyrite in the chloritized ferromag sites. None of the core inspected was altered beyond a weak chloritization and shredding of the biotites, except for a small amount of muscovite granite found in the bottom of Getty G-2 below 1100 feet. None of the core had been split for assay.

Conglomerate found in three of the holes is identified as Yellow Peak Conglomerate of Blucher and equivalent to the Whitetail Conglomerate. Pebbly trains and sand bedding suggest dips of 45 to 60 degree inclination in the conglomerate. This indicates moderate tilting of various blocks at various time intervals. The overlying younger conglomerate and basalt dip from 20 to 30 degrees.

Most fracturing and fault zones noted have steep 60-70 degree inclination. No increasing in shearing or faulting was noted to suggest flat faulting to be an operative mechanism in the area of the drill holes.

Apparently Conoco has drill holes inside and on three sides of the property, but no information on them is presently available.

Minor production and copper values are found in two separate east-west shear zones, but lateral extension into the wall rock was not noted.

Based on the information gained and the five ASARCO Poston Butte holes drilled in 1961-1963, no readily identifiable targets, either through alteration-mineralization zoning or structural considerations, were established.

Ownership

As shown on the attached Xerox, the area outlined is held by the Aztec Exploration and Development Company, c/o Robert E. Wilfong, P.O.Box 349, Florence, Arizona 85232. Also involved in the company are a Mr. Stanley L. Avery, and Mr. and Mrs. Joseph D. Lumbrazo, all of California.

Production and Drilling

Mr. Wilfong verbally stated during the recent examination (Jan. 30) that in 1970 he had shipped 20 tons of hand-cobbed copper oxide, chrysocolla, and chalcocite to the smelter at Inspiration. The shipment apparently ran over 4% copper. The material was taken out of a shaft and crosscut (now caved) and an open cut. The area is shown on the map as "open cut".

Aztec has drilled a number of rotary holes as assessment work on the claims. No cuttings are available and the holes were not plotted.

All core available for the Aztec and Getty drilling is stacked at random alongside the house being occupied by Mr. and Mrs. Wilfong (the old ticket agent's house alongside the SP railroad which goes by Poston Butte). The attached logs are from core scanned and, as noted, this was not the entire core available, but only that readily available and identifiable.

Wilfong cored two holes, A-1 and A-2, with BX core in an E-W shear zone with some andesite porphyry cutting Precambrian granite. A-1 core terminated at 359 feet, altho the hole was stated to be 500 feet deep. Core from A-2 was found to a depth of 145 feet and Wilfong could not remember its depth.

Getty Oil Company drilled, by rotary and core, two holes: G-1 to a depth of 2000 feet and G-2 to a depth of 1280 feet. As noted from the attached logs, some core was scanned to nearly the bottom of each hole.

It would take several days to go through all the available core.

ASARCO, see map, drilled 5 holes on the north side of the railroad and these were reported in reports by Blucher (1961) and Kirkpatrick (1963). Synopsis of these are as follows:

PB-1	0-410	p€ gr and minor monzonite. 0.05% copper
PB-6	0-80	Gila River gravels
	80-675	Conglomerate (Yellow Peak)
	675-809	p€ gr and minor monzonite; less than 0.05% copper
PB-7	0-160	Gila River gravels
	160-307	p€ gr; less than 0.05% copper

PB-17	0-120	Gila River gravels
	120-240	Poston Butte basalt
	240-570	Gila River gravels
	570-650	Poston Butte basalt
	650-810	Conglomerate (Yellow Peak?)
	810-977	p€ gr; less than 0.05% copper
PB-20	0-316	Gila River gravels
	316-392	p€ gr; less than 0.05% copper

Conoco has drilled and cored a number of holes in the area of the Aztec holdings. Other holes apparently exist, but were not visited during my reconnaissance with Mr. Wilfong. Conoco hole No. 1 was drilled near ASARCO hole No. 1 on the west side of Poston Butte. Also several holes adjacent to ASARCO hole No. 6 and Getty's G-2 east of Poston Butte. Also a series in the east half of section 21. At the Conoco hole marked as C-2, core chips were found which indicated weak chloritization of the ferromags with pyrite in some of the sites. Minor veining of qtz-py-cp also occurred.

None of the drilling to date has encountered any significant alteration-mineralization, suggesting the Poston Butte mineral zone extends east of Poston Butte.

On the basis of tilted conglomerate capped blocks, several north-trending(?) faults are suggested, such as between a) PB-20 and PB-17, b) just east of G-2, and c) between PB-7 and G-1. All probably are reflected in the north-trending drainages presently developed in the Gila River gravels as shown on the map. Present information does not resolve the tilt and potential slide problem of the Poston Butte mineral deposit.

James D. Sell

JDS:lb
Attachs.

Bob Wilfong Hole A-1 - BX drilling

Box	Footage	Remarks
5	140-150 (4' recov.)	Weathered pC gr. Wk. chloritz biot. 6" gouge zone near bottom.
	150-160 (2' recov.)	Weathered pC gr.
	160-170 (4' recov.)	Weathered pC gr to crushed pC gr. Some strong shears @ 45-70°. Strong Fe stain, chloritiz. & Fe stained biotite.
8	180-200? pC gr.	Fe-stained & chloritized biot., some shearing & crushing.
9	190-200 pC gr.	Wk. chl. on shreddy biot. Minor absorbed CuOx.
12	230-250? pC gr.	Wk. chl. shreddy biot., Fe-stained.
13	240-270 pC gr.	Wk. chl. shreddy biotite, Fe-stained. Several 1/4" epidote veinlets w/qtz in 5" section labeled 240-250.
18	325-332 pC gr.	Fe stained w/wk chloritized biotite. FeOx shears at 45°.
19	332-341 pC gr.	As above, w/minor epidote in few biotite sites.
21	346-352 pC gr.	Fe-stained, weak chloritized shreddy biotite.
28(?)	352-359 pC gr.	Wk chloritized shreddy biotite. Fe-stained. Apparent shearing w/some crushing. Last of recovered core. Hole reported to be 500 feet deep w/150' of rods, barrel, and bit lost in hole. No explanation as to where other core to ±490 is at!!??

Bob Wilfong Hole A-2 - BX Drilling

Box	Footage	Remarks
1	0-100	Cgl (Tw?) Red brown matrix w/minor andesite porphyry clasts; major pC gr clasts, shears @ 30-60°.
3	136-145	Cgl? Highly broken, mainly andesite porphyry w/shiny black biotites, some cloudy feldspars, and minor Fe stain.

Conoco Hole C-2 - Rotary Drilling with Core

Core chips found at the site indicate chloritized biotite in Precambrian granite with some pyrite in ferromag sites, thin stringers of quartz-pyrite-minor chalcopyrite. Overall very weak alteration and apparent mineralization.

No chips found at other Conoco drill sites.

Getty Oil Hole No. 1 - NX Core

Drilled by Joy 1972

Box	Footage	Remarks
	0-290	Rock Bit
	290-295	Core Run
	295-395	Rock Bit
	395-2000	Core
1	290-295	Silt.
	395-401	Cgl. (Tw). Pebble trains @ +60° incl. Orange-brn matrix.
2	401-411	Cgl. (Tw). Steep (+60°) iron stained shear surfaces; similar interval pebble inclination.
5	430-440	Cgl. Apparent steel +45° incl. to pebble zones & fractures.
20	567-576	pЄ gr., Fe-stained biotite w/shreddy edges.
24	613-622	" " Shiny biotite, some shredding along edges.
41	761-770	" " Slightly shreddy edges.
45	798-806	" " Strong weathering(?) falling apart in box. Fe-stained shiny biotite.
51	937-947	" " Black biot., minor chlorite, some clay.
63	963-973	" " Entire box sheared and crushed @ 70°. Fe-stain, wk chlorite alt.
84	1152-1162	" " Shiny biotite; some oxidation along steep shears.
99	1289-1299	" " Fe-stained, chlortz. biot., minor clay. Diabasic dike @ 1292-1294.
113	1420-1429	" " Chloritized biotite, minor Fe-stain.
117	1458-1467	" " Chlortiz. biot. w/Fe-ox (mag?) in some sites; minor clay.
122	1505-1514	" " Chloritized biotite w/py in sites. Oxidized along shears.
129	1571-1581	" " Black biotite w/minor chlorite, some clay.
137	1648-1658	" " Wk chloritizing of biot; slight pinking of feldspars.
139	1666-1676	" " Chloritz. biot. w/py in sites, w/wk clay; +60° shears with chlorite-qtz-pyrite.
141	1685-1694	" " Chloritz. biot. High angled fractures, oxidized. Some calcite along some high.
159	1854-1864	" " Chloritz. repl. Femag sites, minor clay. Core not badly broken, but cut by high angled +50° shears with minor oxidized iron. No quartz veining.
165	1909-1919	" " Chloritized biotite w/wk clay, possibly some sericite.
166	1919-1937	" " Chloritized biotite w/minor clay. General high angled shears w/minor iron staining.

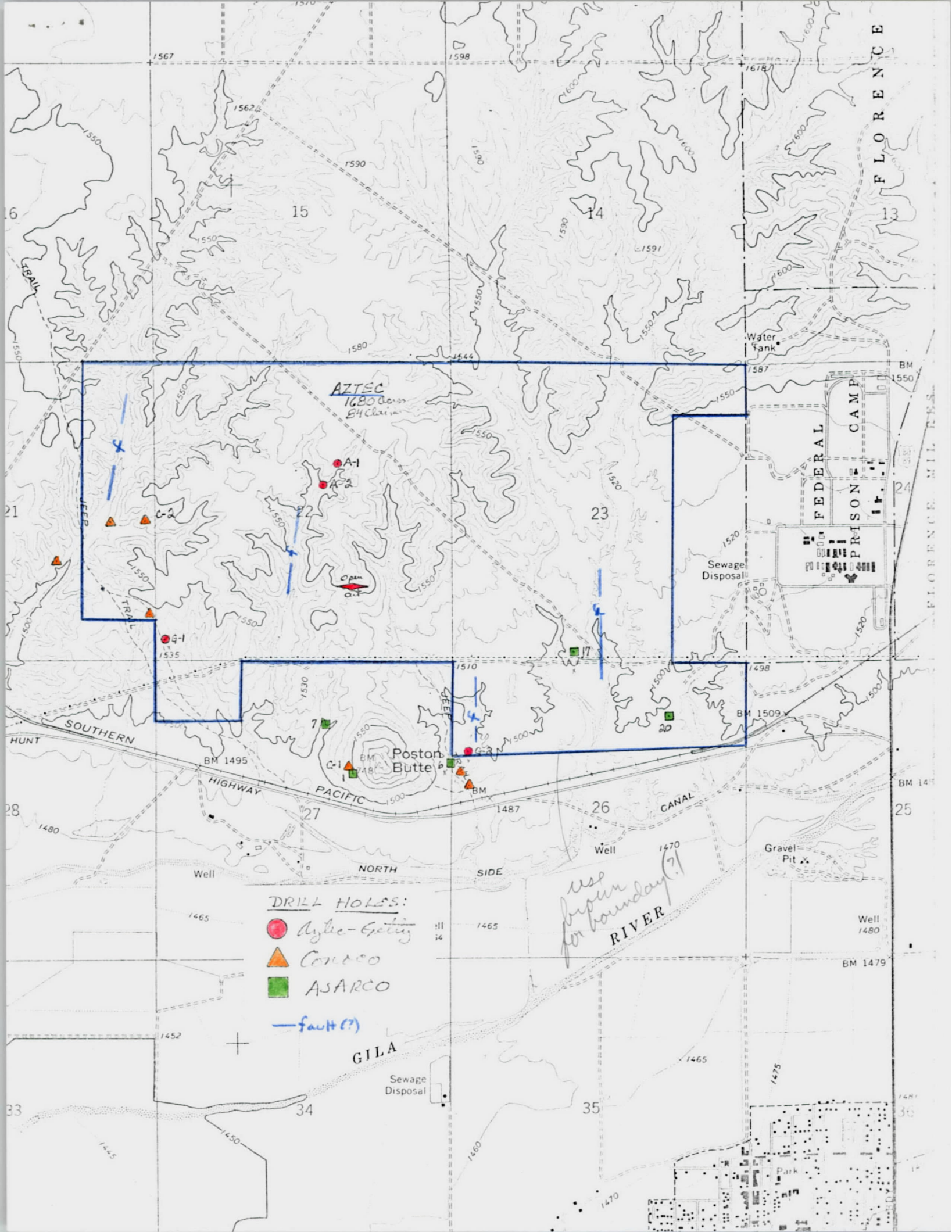
Note: Feldspar seems to increase in "pinking" with depth and increased chloritization of the biotite.

No veining by qtz. or sulfides noted except along few shears (see box 139).

Getty Oil Hole No. 2

Total Depth 1280 feet. Joy, NX, 1972

Box	Footage	Remarks
8	543-553	Cgl (Tw). Reddish brown matrix. All clasts p€ gr unless noted. Definitive pebble lenses @ 45-50°; shears at 60°.
21	662-672	Cgl. (Tw). Wk suggest of 45-60° incl; some diorite clasts.
22	672-687	Cgl.(Tw). Internal shears and few pebble zones @ 40-50°.
25	700-708	Cgl.(Tw). Rubble, few 30-40° faces of shears(?).
39	827-837	p€ gr. Fe-stained, some hem-mag in biot sites, wk shreddy chlorite on edges.
40	837-846	" " As above w/wk to mod chl along edges of biot.
48	911-920	" " Wk chloritized biotite; oxidation along wk shears.
52	947-956	" " Chlorite along edges of biotite. Some shearing.
53	956-966	" " Chliz. biotite w/very minor py in some sites; Py & moly in 45° shear w/qtz-muscovite.
59	1015-1025	" " Fe-stained, slightly shreddy biotite; Fe oxide stain on +60° shears.
74	1155-1165	" " going to graphic granite. 50-50 Chlorite biotite with minor muscov.
75	1165-1175	" " going to graphic granite. As above. Minor pyrite in biotite sites assoc. w/30° shears, also very minor py in minor qtz-muscovite zones.
76	1175-1184	" " Strongly chloritized biotite w/some silica addition(?).
86	1265-1274	Graphic granite. Biotite completely converted to muscovite; minor chlorite left, rare py(?) oxidiz.


AZTEC
1680 acres
84 Claims
A-1
A-2
C-2
C-1
G-1
G-2
Open Cut
Water Tank
BM 1550
FEDERAL PRISON CAMP
Sewage Disposal
BM 1509
Poston Butte
BM 1495
SOUTHERN PACIFIC HIGHWAY
HUNT
NORTH SIDE CANAL
Well
Gravel Pit
Well
BM 1479
GILA RIVER
Sewage Disposal
Park
FLORENCE
JEEP TRAIL
DRILL HOLES:
Aztec-Getty
Cotasco
ASARCO
fault (?)
use for boundary (?)

ASARCO Incorporated
Tucson Arizona

July 24, 1975

TO: W. L. Kurtz

FROM: J. D. Sell

Florence Area
Pinal County, Arizona

John Kirkwood (Conoco, 623-3627) called and asked if he could look at the cuttings and core from the Asarco hole PB-32 in Section 1, west of Poston Butte, in the graben block.

Asarco has previously traded the log of the hole to Conoco and he noted that the hole went into a "bouldery conglomerate" and terminated in same at 2017 feet ending with a spot core.

He has recently completed a hole a mile west of PB-32 and cored 1720 feet of "boulder conglomerate" before cutting bedrock. John is interested in trying to correlate these conglomerates and hopefully to determine source directions.

(Did PB-32 contain mineralized fragments?)

Apparently Conoco has drilled a number of holes in the Cholla Butte area and John feels that some of the information could be released for the inspection of cuttings and core from TB-32.

James D. Sell

JDS:lb

ASARCO Incorporated
Tucson Arizona

August 15, 1975

TO: W. L. Kurtz

FROM: J. D. Sell

East of Cholla Butte
(West of Poston Butte)
Blackwater District
Pinal County, Arizona

In discussing PB-32 with J. Kirkwood the other day, he mentioned that Conoco had drilled some twenty-eight holes east of Cholla Mtn. in testing the zone. The attached map indicates the relative grouping of the holes as gleaned from the Florence quad map.

He mentioned they found only teasing alteration-mineralization and they are still questioning whether the zone is a far fringe of the Poston Butte deposit or is associated with another center between the Graben Block and Cholla Butte. He felt the bedrock alteration-mineralization was fracture controlled and had little increase in intensity or grade with depth.

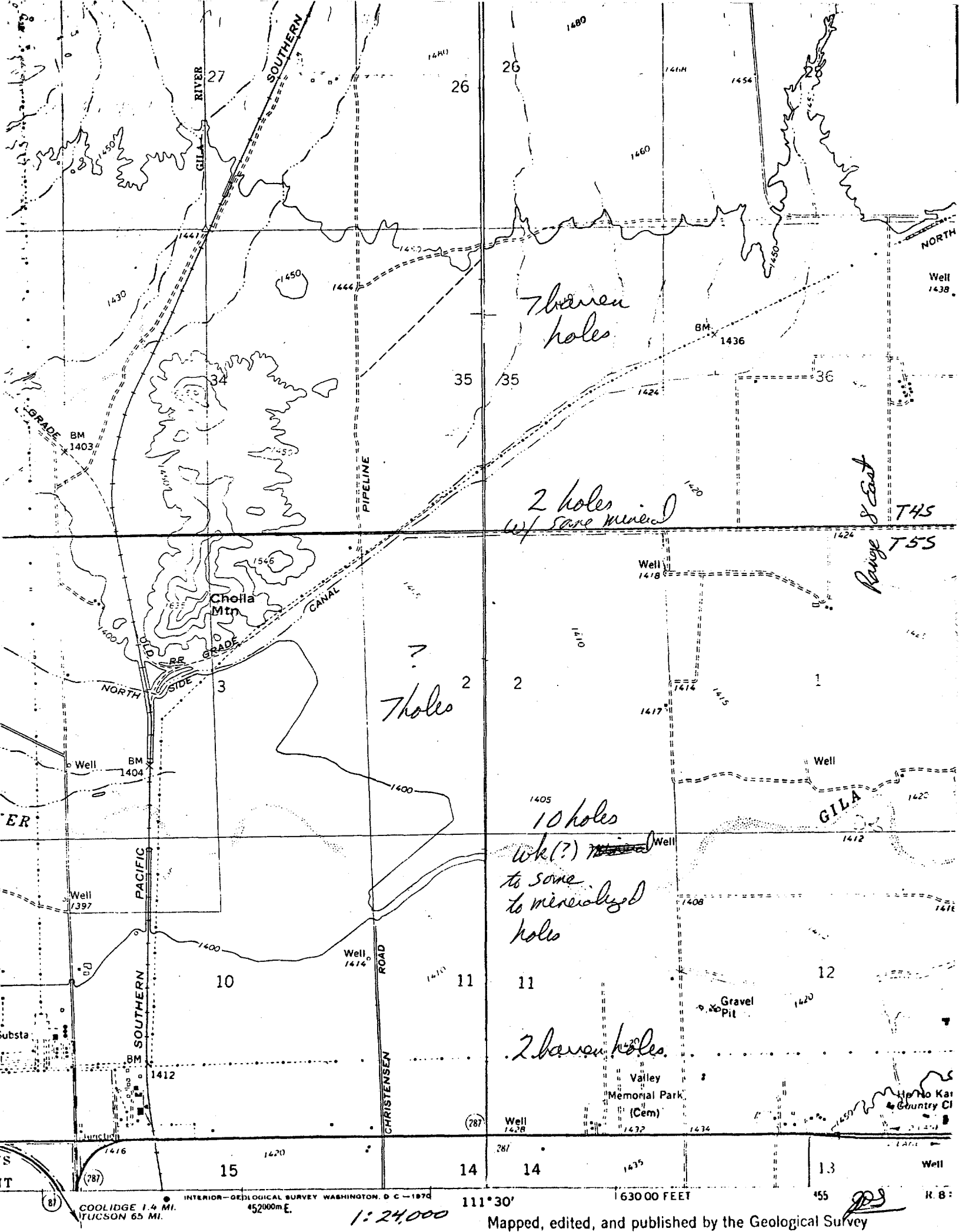
They apparently have found a north-trending fault zone in the east half of Section 2 which has up to 1500 feet of displacement on it (east side down) with a "Whitetail" equivalent on the east and only Gila gravels on the west.

Flat structures are also evident.

They plan to continue to test the zone in Sections 1 and 12 with 5 to 8 more holes.

J. D. Sell

JDS:lb
Att.



INTERIOR—GEOLOGICAL SURVEY WASHINGTON, D C—1970

COOLIDGE 1.4 MI.
TUCSON 65 MI.

452000m E.

111°30'

630 00 FEET

1:24,000

Mapped, edited, and published by the Geological Survey

ASARCO

Southwestern Exploration Division

April 26, 1979

FILE MEMORANDUM

USBM Drilling Plans
Poston Butte Project
Pinal County, Arizona

The USBM will diamond drill out of the bottom of one of our rotary holes starting sometime around May 15. A recent directive from the government requires that all prospective bidders do less than $2 million of annual business and be minority owned. They ended up with 2 bidders. The successful bidder was Grubbs Drilling of Eloy. The drill will be provided by Wallaby Enterprises of Tucson. The driller will be Michael Grubbs, the young son of the owner of the company. The costs to the USBM will be $85 an hour even though the USBM will supply all mud, the core tube, and all diamond bits. Quite obviously the government is more concerned with supporting small business than it is in getting a job done competently and inexpensively.

Grubbs Drilling has an exceptionally poor record in this area. The problems of using a small-time, expensive contractor with an inexperienced man on a rig, which is supplied by a second party, are obvious. I made the strongest possible argument to the USBM that this was a ridiculous arrangement and would cost them far more than one of the more reputable firms from whom we normally solicit bids. My contacts in the USBM (Chamberlain and D'Andrea) agreed with me, but current government regulations require that small businesses be given the first chance to bid. They assured me that under no circumstances will Wallaby see the core and that they have used the Grubbs-Wallaby combination in the past with fair success. The alternative was to abandon the program because government regulations, again, state that if there is a successful bidder, then the bid may not be resubmitted and the project must go ahead as planned or be abandoned.

F. T. Graybeal

FTG:lb

cc: WLKurtz
RBCrist
HGKreis
JDSell
NPWhaley