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MICS 255

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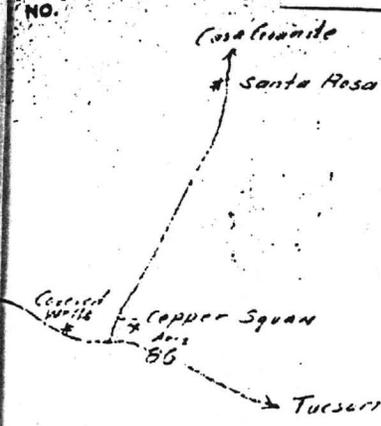
SCALE 1/500,000

DATE

DRAWN BY

CHECKED BY

MIAMI, ARIZONA



Name: Copper Squaw.

Location: 4 miles east of Covered Wells, Pima County, Arizona.

Owner: Control acquired by Vance Thornburg, 160 Main Street, Grand Junction, Colorado, from John A. Cooley of Santa Rosa, Arizona.

Guide: Bob Rule, Thornburg's foreman.

Size: 6 unpatented claims.

Present status: Cooley and helper are starting a drift on the 50' level beneath a uranium showing.

Development work: A 100(?) foot shaft, of which 50 feet is accessible, and a small stope, and several shallow pits on the main vein. A five foot pit on a parallel vein.

Geology: A N55°E fault zone in andesite porphyry dips 30 - 35° N. W. The zone has been traced along the surface for several hundred feet. Development work has exposed widths up to 2 feet that carry malachite and reportedly chalcocite. At about 40' in the shaft, a radioactive count about twice background is obtained.

A smaller parallel zone is about 50 feet to the southeast.

Production: 1 car / 5% Cu, 1 car / 3% Cu, 5 tons in stockpile of uranium copper ore (No assay).

Conclusions: The property is of no further interest.

Examined: 2-25-54

Examined by: W. W. S. - J. E. F.

PAPAGO RESERVATION RECONNAISSANCE 02060280

Papago Reservation

Outcrops southwest of Gu Achi (Fig. 15) suggest to J. Phillips a possible covered porphyry copper target area. An equigranular granitic rock appears to be the stratigraphically lowest rock type. It is overlain by arkosic clastics which, near the base of the sequence, contain conformable blocks of Paleozoic quartzite and carbonates which comprise many of the hills in the area. Andesitic volcanoclastics occur west of Noipa Kam, but their stratigraphic position is uncertain.

The abundance of coarse granite, probably Precambrian in age, in the clastic sediments together with blocks of Paleozoic carbonates resting on a granitic basement suggests the Paleozoic section may be missing in this area. In such a stratigraphic setting, the contact between granite "basement" and the Cretaceous clastics would be a favorable site for intrusions.

The principal alteration is widespread pervasive epidote in the arkosic sediments resembling that in similar rocks west of the Vekol copper deposit. In the Gu Achi epidotized area there are approximately 20 copper prospects and occurrences. These tend to occur in coarser beds where epidotization is more intense. The mineralization is chalcocite, chalcopyrite, and specularite. This low-sulfide assemblage is interpreted to be caused by a large, high pH hydrothermal system.

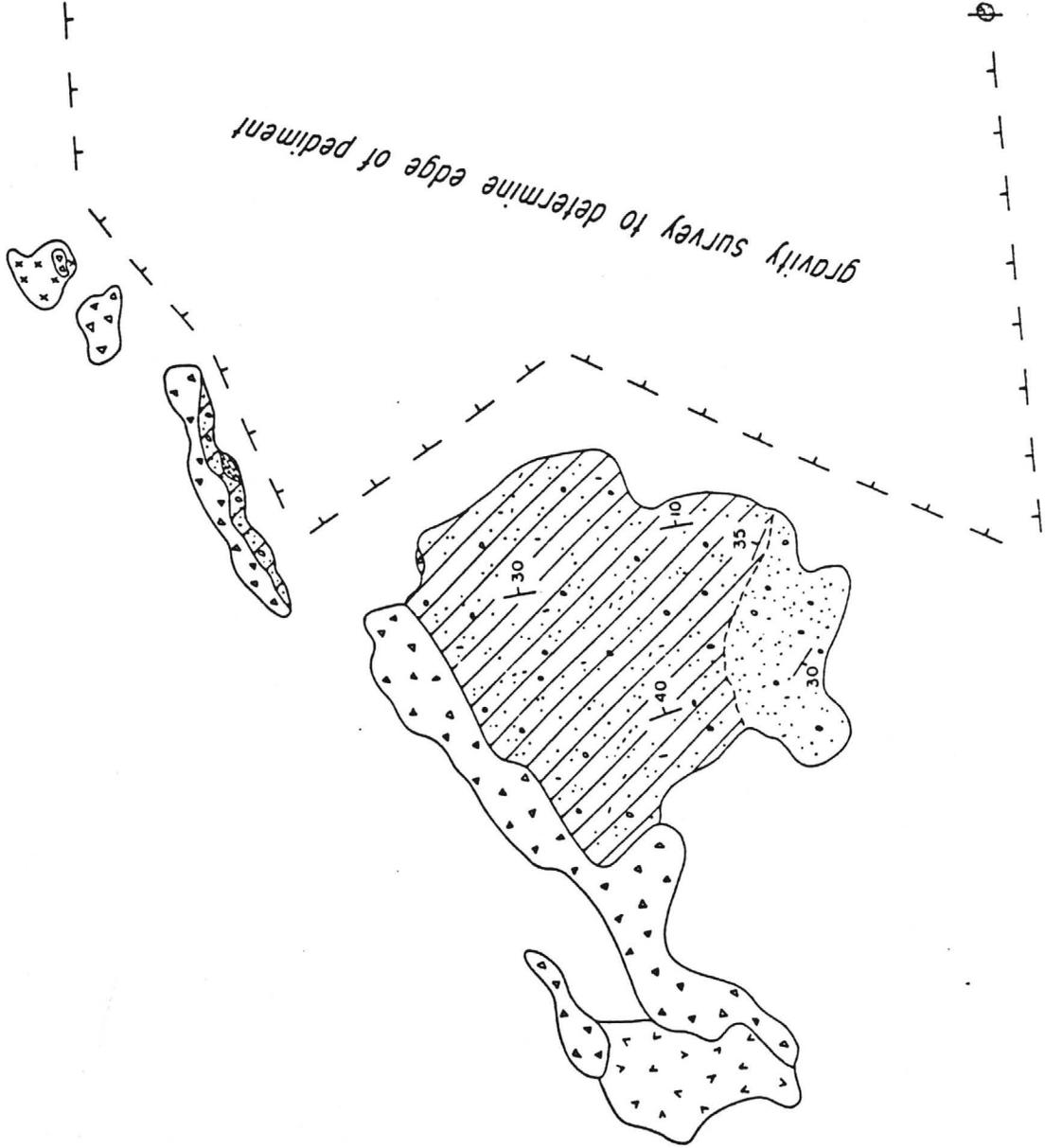
One area 1,000 feet by 800 feet (Fig. 15) in bedrock at the edge of cover has the alteration typical of the zone outside the pyritic halo of a porphyry copper system. This area is within the pervasive epidotization, but in addition has strong sericite envelopes with associated copper oxides a few feet wide along faults and fissures. Small bodies of intermediate porphyry may be intrusive into the sediments or interbedded volcanoclastics. If the porphyries are intrusive, they are probably related to the copper mineralization and the alteration.

The mineralization and alteration southwest of Gu Achi indicate potential for a porphyry-type system beneath cover to the east. It is recommended that a gravity survey be run to determine the edge of the pediment, followed by VIP adjacent to the sericitic area, and RIP of the remainder of the pediment (Fig. 15).

N

EXPLANATION

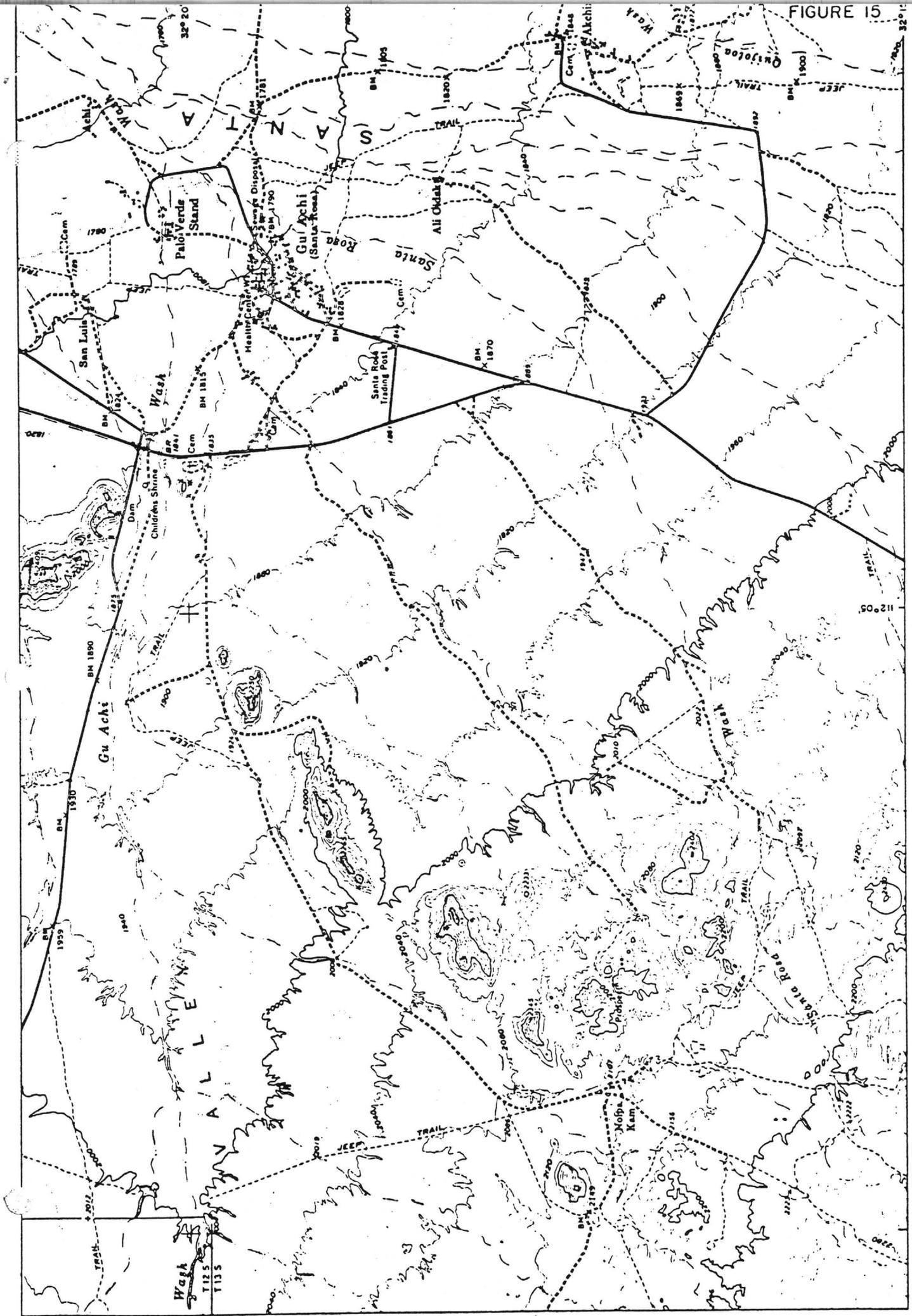
-  strong sericite alteration on structures, copper prospects
-  pervasive epidote alteration with copper prospects
-  Cretaceous andesitic volcanics
-  Cretaceous arkosic clastics
-  megabreccia of Paleozoic carbonates and quartzite in Cretaceous clastics
-  Precambrian ? granite



GENERALIZED GEOLOGY
GU ACHI SW
PIMA COUNTY, ARIZONA

scale in miles
 0 1 2

Geology by J.S. Phillips
 drafted by B. Kiefer
 illus. no. 1973-104



Lone Mountain District
Copper - Arizona

SUBMITTED TO

Tucson, Office, Bear Creek Mining Company. A. T. Stone and P. J. Bennett spent February 23 to 26, and March 16 and 17, 1954, examining and preparing a geological reconnaissance map of the general area.

DATA SUBMITTED

No data was received by the Tucson Office. We prepared a geologic reconnaissance sketch of the Lone Mountains (Fig.1) and a Brunton and pace traverse (Fig.2) of the mineralized area.

LOCATION

The Lone Mountain (Brownell) mining district is located approximately eight miles due north of Covered Wells (Quijotoa) Arizona, in the northern extension of the Brownell Mountains. The center of the range of hills examined lies at $32^{\circ}17'$ latitude and $112^{\circ}07.5'$ longitude.

ACCESS

The area is accessible from Covered Wells, Arizona, located 87 miles west of Tucson on Highway 86. Follow the Casa Grande Road leading north from Covered Wells for 13 miles to the town of Santa Rosa (Gu Achi). The area lies five miles southwest of Santa Rosa and can be reached by following any of the dirt roads trending southwest from there.

AREA

The area mapped by Bear Creek contains the northern extension of the Brownell Mountains. The extension forms a low range of hills trending roughly north-south, approximately four and one-half miles long by two and one-half miles wide. The area is bounded on all sides by broad, flat alluvial valleys.

Lone Mountain District
Copper - Arizona

TITLE

With the exception of the southeastern portion of the area mapped, the range of hills are apparently free of mining claims. The southeastern portion contains two mining claims, the Black Beauty Nos. 1 and 2. No attempt was made to contact the owners of the above claims.

All of the area lies in the Papago Indian Reservation.

HISTORY

Unknown.

GENERAL GEOLOGY

The northern part of the Lone Mountain District is an area of sedimentary rocks which strike generally east-west to northeast and dip to the south 15° - 20° . The northern part of the area mapped consists chiefly of limestone while the southern part is chiefly clastic sediments, including conglomerate, arkose and sandstone. Two small hills of a granitic rock crop out in the extreme northern part of the district. (See Fig. 1)

Faulting is general throughout the area but few faults of apparent large displacement were observed. One strong, flat fault, striking east-west and dipping 15° to the south, crops out at the intersection of two arroyos in the center of the area. The hanging wall is of fresh limestone while the foot wall is obscured. A strong normal fault, revealed in several of the workings to the southeast, strikes north-south and dips vertically. Numerous shear zones and fissures of small displacement were found in the clastic sediments but little disturbance was observed in the limestones.

Alteration is confined chiefly to the clastic sediments and consists of widespread epidotization. The limestones are fresh with the exception of an exposure of silicified and epidotized limestone which crops out in the east-central portion of the area.

Lone Mountain District
Copper - Arizona

MINERAL DEPOSITS

A number of shallow prospects with copper showings are present in the part of the area mapped as conglomerate. They all show similar characteristics, i.e.; they are found in the coarser facies of the conglomerate; the mineralization is invariably chalcocite with minor chrysocolla and malachite; epidotization is present with the mineralization; the mineralized zone is ill-defined and the limits are not distinguishable; and the mineralization is usually associated with shearing and fissures of relatively small displacement.

The strongest mineralization is on a low hill of arkose and conglomerate near the center of the district, (Fig. 1) and is covered by the Black Beauty claims. A Brunton and pace map of the workings was made. (Fig. 2) The mineralization consists of chalcocite blebs in the matrix of the conglomerate. The blebs range in size from that of a pinhead to an inch across but are generally about a quarter of an inch in diameter. The chalcocite is distributed throughout the rock with no more arrangement than the pebbles themselves and is not confined to fissures or shear planes. The mineralized conglomerate is epidotized but otherwise not appreciably altered.

The two shafts in the center of the detailed map (Fig. 2) encounter a low angle fault at a depth of five to eight feet, below which no mineralization occurs. The foot wall of the fault is a grey, fine-grained rock which contains much tarnished biotite and argillic material with rounded quartz grains and is possibly volcanic. This same rock is revealed in the trench 75 feet north of the range pole. The exposure is 20 feet wide and bounded on the north and south by conglomerate. The northern contact is described by a fault striking east-west and dipping 25° south while the southern contact is obscured. Another shaft, some 600 feet southwest of the range pole, also discloses a strong fault striking N 25° W and dipping 57° south, below which no mineralization occurs.

The mineralization is nowhere sufficiently strong nor continuous to produce an orebody.

Lone Mountain District
Copper - Arizona

Mineral Deposits

One of the unusual features of the deposit is the complete lack of primary metallic minerals other than chalcocite, the malachite and chrysocolla having probably been formed by oxidation of the chalcocite.

The chalcocite is closely associated with the epidote-rich portions of the conglomerate and is limited to the matrix material, quartz and calcite. Thin-section studies show it was not deposited as a product of sedimentation but was introduced after the formation of the conglomerate. For the most part, its introduction came after recrystallization of the quartz and the growth of the epidote.

Two possible sources exist for the mineralization; deposition of chalcocite by meteoric waters or deposition by hydrothermal solutions. There are no other known copper deposits located in the vicinity of the Lone Mountains. It is the writers' opinion that mineralization of the conglomerate resulted from hydrothermal solutions and accompanied or closely followed the formation of the epidote.

Development

Several shallow shafts and prospect pits are the total development in the area.

Ore Reserves

None.

Plant

None.

Financial Proposals

Not discussed.

Paul J. Bennett

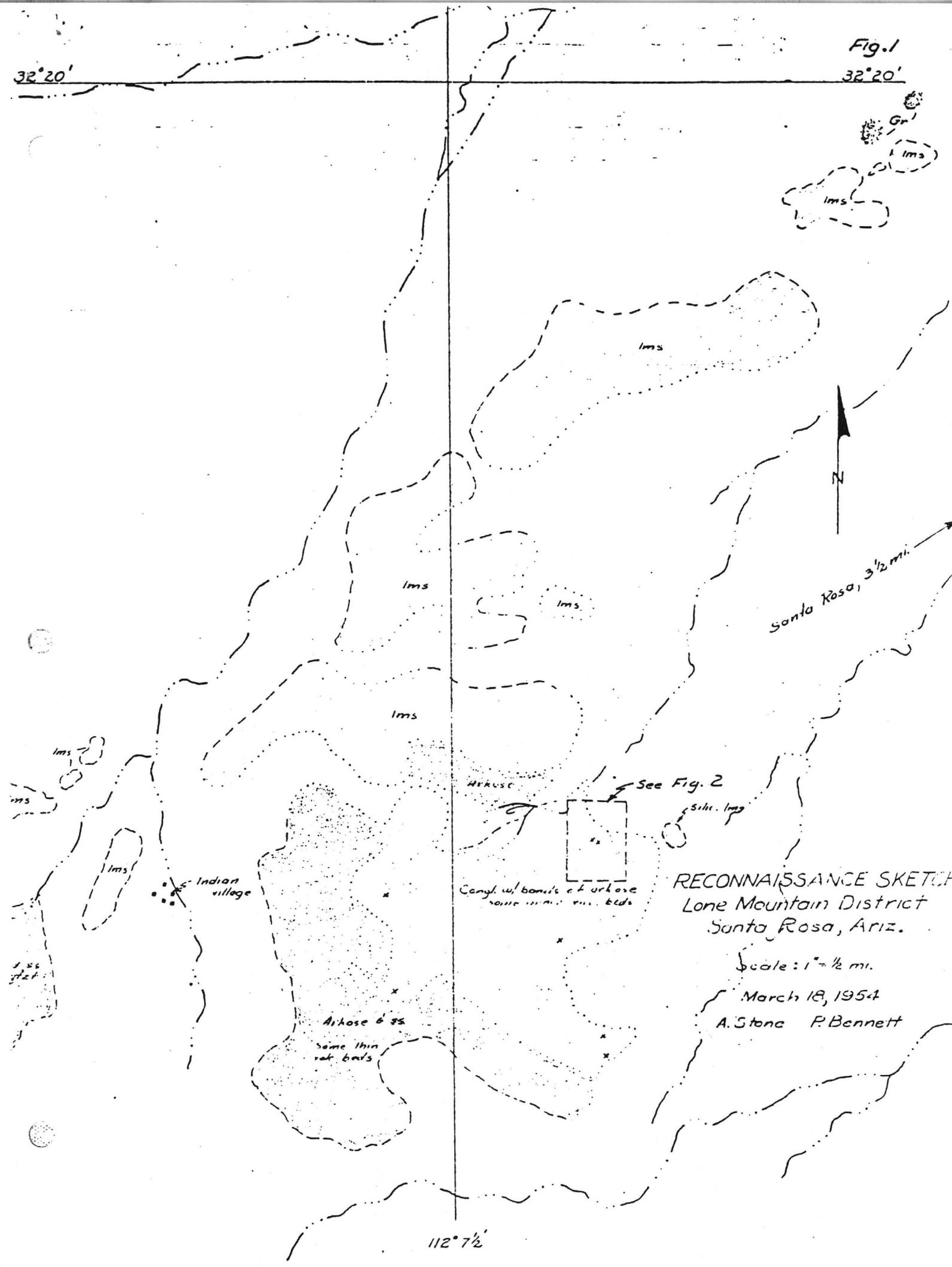
Tucson, Arizona April 30, 1954

Alfred T. Stone
Alfred T. Stone

Fig. 1

32° 20'

32° 20'



RECONNAISSANCE SKETCH
 Lone Mountain District
 Santa Rosa, Ariz.

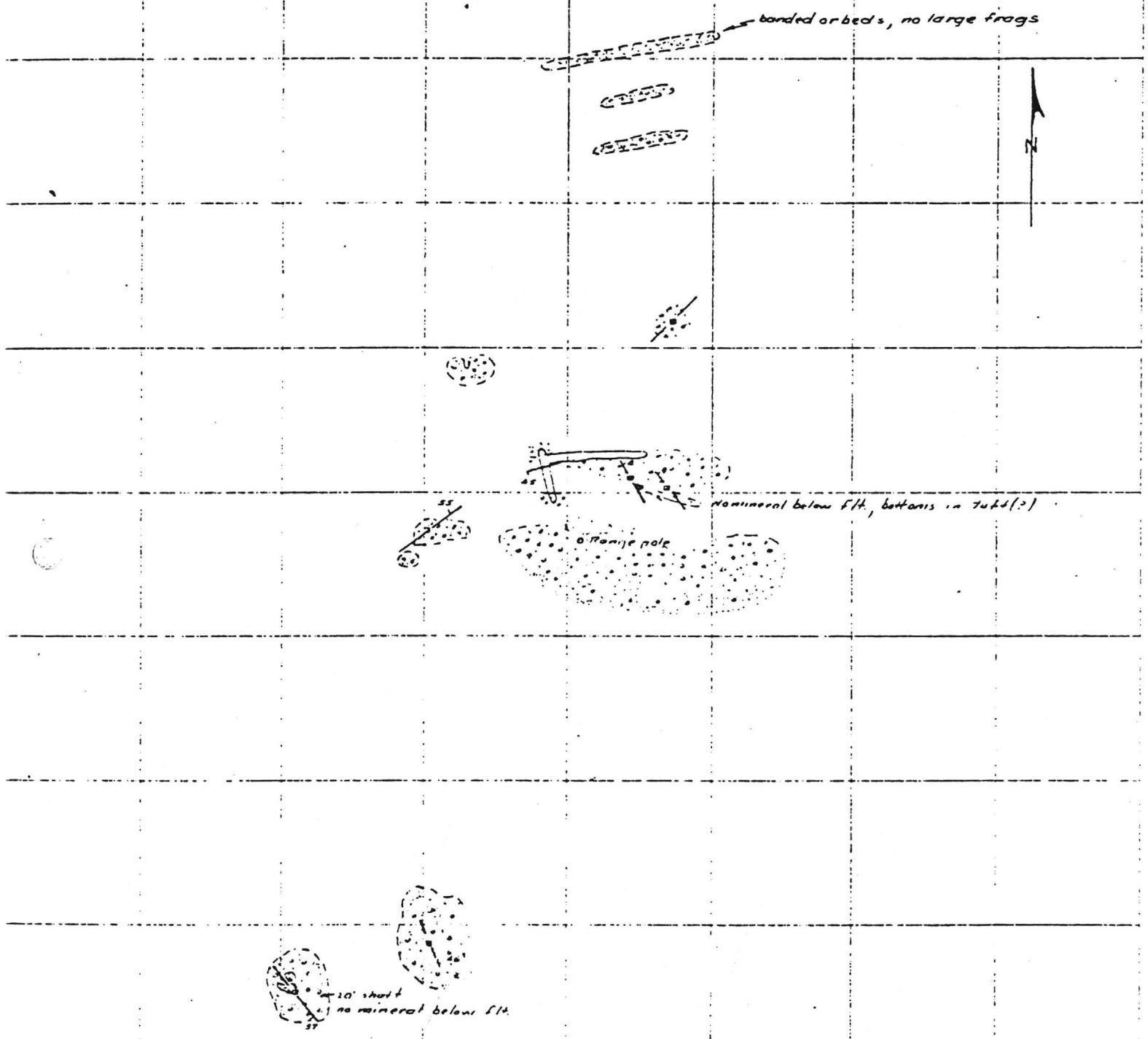
Scale: 1" = 1/2 mi.

March 18, 1954

A. Stone P. Bennett

112° 7 1/2'

Fig. 2



Brownell Mine:

Anaconda Copper Mining Company by E.F. Reed, D. Davis, March 1945
Location: T14S, R2E (32 12'N, 112 09')

- Located in Quijotoa Mining District
- Schist or schistose volc., recrystallized and silicified limestones intruded by sills and diabase; N-S shearing and fracturing
- Copper carbonates and silicates noted in seams and fractures, and in a few narrow veins
- Copper occurrences are scattered and irregular; Fe staining more general
- No chalcocite enrichment, presence of primary sulphides
- No further attention

Brownell Mining District, Pima County, AZ
Zephyr-White Wing Prospects near Covered Wells

Anaconda Report, Sept. 1954 by G.A. Barber
-Loc. 12 mi. North of Covered Wells, Papago Indian Reservation in T13S/R2E

White Wing Claims (Harris Duke)

- Unaltered rhyolitic volc. with local porphy. texture
- E-W shear zone (N85E, dip steeply to N), copper carbonates (mal.,azu.) occurring as weak coatings and thin seams, FeOx present in minor amounts
- Copper values ranging from .6-1.7% with 1-10.2 oz Ag, tr Au over widths of 2.5'-3.5'
- Samples taken in 1955 by same author averaged .29% Cu

Zephyr Claims

- Same geology but stronger dark FeOx as stains and narrow seams
- Shallow open cuts, loc. pits and shafts driven on seams of malachite and azurite
- Grab sample (12" wide stringer) returned 18.8 oz. Ag, tr Au, 4.92% Cu; mineralized volc. rock from shallow pit assayed 3.14 oz Ag, tr Au, 2.5% Cu