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James Doyle Sell Mining Collection

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AMERICAN SMELTING AND REFINING COMPANY  
Tucson Arizona

May 29, 1958

Mr. L. H. Hart  
Chief Geologist  
New York OfficeTYNDALL MINING DISTRICT  
Salero Ranch Area  
Santa Cruz County, Arizona

Dear Sir:

Enclosed is copy of a report on an area in the southern Santa Cruz Mountains mapped by Mr. Brown.

As you know, Mr. Brown first worked with Mr. Kirkpatrick and then with Mr. Blucher. It was our impression that his field work was good, and he was assigned the Salero Ranch area to map by himself. When this work had been nearly completed, he encountered a zone of strong alteration on the east edge of the assigned area. Recognizing the possible significance of this zone, he traced it on eastward for some distance but did not have time to map the zone before it was necessary to report to Buchans.

We had not heretofore been aware of this alteration zone. Mr. Courtright now has spent one day in the area with Blucher and Brown. He states that the alteration zone resembles that in the Red Mountain area north of the Flux Mine. There are small patches of limonite after copper sulphides, but nothing has yet been found that appears to be of commercial size or grade. The limits of the alteration zone are not yet established. Blucher is now mapping the area in detail and will report on it probably within a couple of weeks.

Yours very truly,

Original Signed By  
K. Richard

KENYON RICHARD

Enclosure

KR/ds

cc - w/enclosures -

JHCourtright

AGBlucher

RLBrown

JHC

AMERICAN SMELTING AND REFINING COMPANY  
Tucson Arizona

May 21, 1958

MEMORANDUM FOR KENYON RICHARD

TYNDALL MINING DISTRICT  
Salero Ranch Area  
Santa Cruz County, Arizona  
Reconnaissance Geology

Acting upon your request, I have prepared the accompanying map (Attachment B) which shows the results of reconnaissance geological mapping in a portion of the southern Santa Rita Mountains. The mapping was done on aerial photographs; the geology was then posted on a photographically enlarged USGS topographic map. During the course of this mapping, an area in Mansfield Gulch, on the east flank of the Santa Rita Range, was determined to be of possible economic importance.

GENERAL

Access

Attachment A, an index map of Arizona, shows the location of the mapped area to be about six miles northwest of Patagonia. The area can be reached by a good road which leaves the Sonoita-Nogales Highway west of Patagonia and extends northerly to Josephine Canyon. Another road leaves the main highway at the Patagonia High School and skirts the east flank of the range.

History

The Tyndall Mining District has been carefully prospected for nearly fifty years, and many occurrences of sulphide mineralization in veins have been explored by adits and shafts. At the present time at least four prospectors are devoting full time to the area, and two prospect adits are being driven on different locations. In spite of this extensive exploration work, there has been no profitable production in the area. While mining claims are held by a number of individuals, the surface rights of nearly the entire area are held by the owner of the Salero Ranch.

GEOLOGY

The core of the area mapped is a quartz diorite, which has been overlain by a sequence of volcanic and sedimentary rocks and later intruded by monzonite and alaskite.

The diorite term is used here in a broad way, as the rock unit varies widely in its quartz content. The rock is equigranular and fine to medium in grain size. The rock is medium gray to reddish in color. Close jointing in

rectangular systems has aided in relatively deep weathering. The physical result of this weathering is that the slopes are covered by round cobbles and boulders. These boulders seem altered on the outside, but in the interior are composed of fresh rock.

Four intrusives in the granite and monzonite group were mapped. Three of these are coarse grained, pink rocks. Slight mineralization occurs at the contact between the three intrusives and the diorite they intrude. Another Alaskite intrusive was mapped in Mansfield Gulch which is intensely altered and locally mineralized.

A thick section of extrusive volcanic rocks and sediments overlies the diorite and forms the west flank of the Santa Rita Range in this area. The various members or formations in this section are grouped together in the reconnaissance map submitted with this report. However, several readily mappable units did appear. Listed from the top down, they are:

- Andesite
- Tuff - water lain at base
- Andesite
- Sedimentary cobble and pebble conglomerate.

These units are apparently conformable and dip slightly to the west.

#### MINERALIZATION AND ALTERATION

Sulphide mineralization in quartz veins is the dominant type of deposit in the Salero ranch area. Three major examples of this type of mineralization are the Salero, the Alto and the Wandering Jew veins, all of which are strong quartz veins between ten and twenty feet thick and thousands of feet in length. Galena, sphalerite and copper sulphides are irregularly distributed through the quartz in those veins. These structures, together with many other smaller veins of the same type, are oriented in an east-west direction, and are nearly vertical. It is these veins that have been so carefully prospected. The wall rock of many of these quartz veins has been weakly altered and mineralized with pyrite.

Two unimportant areas of weak to moderate alteration showed pervasive mineralization. One of these areas is located on the Silver Sally claims north of the Salero Ranch House. Study of the capping indicates a very small content of copper. The host rock of this mineralization is andesite.

The second area is located in the tuffaceous rocks south of the Salero Ranch. The rock was silicified and pyritized. Abundant pyrite cavities are now seen throughout the rock.

An area of possible economic importance was found in the extreme eastern portion of the map area, which extends for an unknown distance to the east and southeast. This area has been strongly altered and locally contains limonite

May 21, 1958

after chalcocite in good density. The area is now under study by A. G. Blucher, Jr., who will report in greater detail.

CONCLUSIONS

Road reconnaissance made in connection with the mapping has indicated that further small scale work could be done to the east and southeast of the area covered by the attached map. Other than the area in Mansfield Gulch, noted above, no targets for future consideration were mapped in the Salero Ranch area.

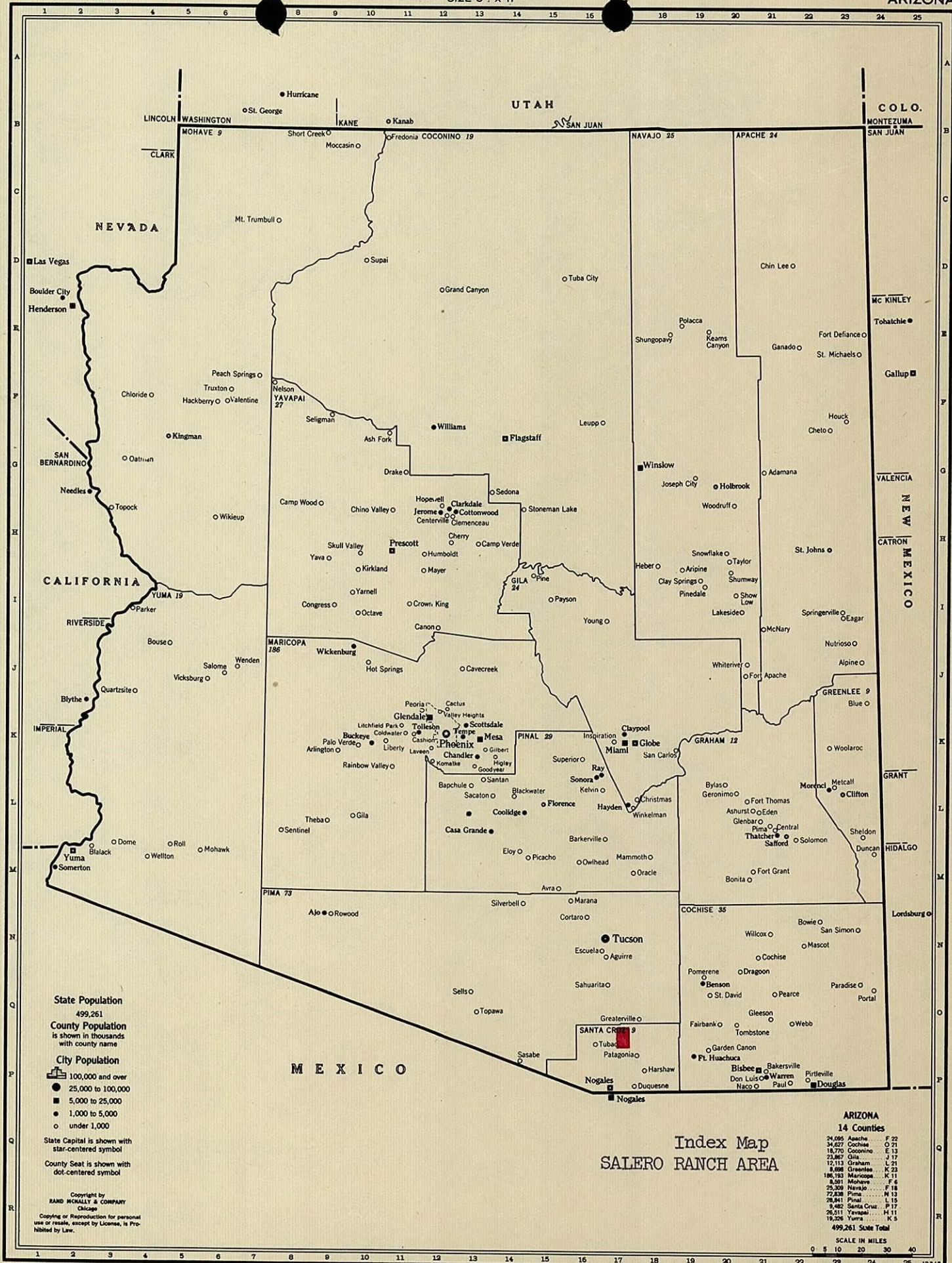
*R. L. Brown Jr.*  
R. L. BROWN, JR.

## Attachments

RLB/ds

cc: JHCourtright  
AGBlucher



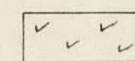




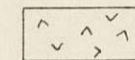


## EXPLANATION

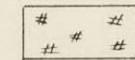
### ROCK TYPES



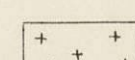
Quartz Diorite



Volcanic and Sedimentary Rocks



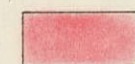
Monzonite



Alaskite

TO ACCOMPANY Memo...  
DATED May 21, 1958  
BY R.L. Brown Jr.

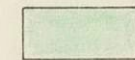
### ALTERATION



Moderate to Strong

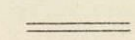


Weak to Moderate

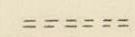


Barren to Very Weak

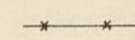
### CULTURE



Improved Roads



Jeep Road



Forest Service Fence



Shaft



Adit

Geology mapped on aerial photographs and  
plotted on U.S.G.S. topographic sheets

SALERO RANCH AREA  
Southern Santa Rita Mountains  
TYDALL MINING DISTRICT  
Santa Cruz County, Arizona  
Scale 1" = 2640'

Geology by:  
R.L. Brown

April, 1958  
Map No. 1398

ATTACHMENT B