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Classification

The ore deposits of the Johnson district are of the contact-metamorphic type. This is well shown by the metamorphism, and the occurrence of actinolite, diopside, vesuvianite, and grossularite, which are characteristic of contact deposits.

Supergene enrichment

Supergene enrichment in the district is not prominent. Very little chalcocite and other supergene sulphide minerals were found. The deposits appear to grade from the upper oxide into the primary sulphide zone directly.

Origin

The only intrusion outcropping on the surface which could be related to the ore deposits is the Texas Canyon granite. The Mammoth and Republic deposits are 3000 feet or more from the granite, but the distance may be less in depth. The fault fissures, which probably served as passages for the mineralizing solutions, all have a general trend from the granite toward the ore deposits. The presence of orthoclase in the ore deposits shows that a part of the solutions were potassic. On the whole the evidence points toward a genetic relation of the ore to the granite.

DOME - Ls Replacements
Radial Feeders

JOHNSON DISTRICT, ARIZONA.

R.E.S. Heineman. M.S. Thesis Univ. Arizona, 1927.

At foot of E slope of Little Dragoon Mts.

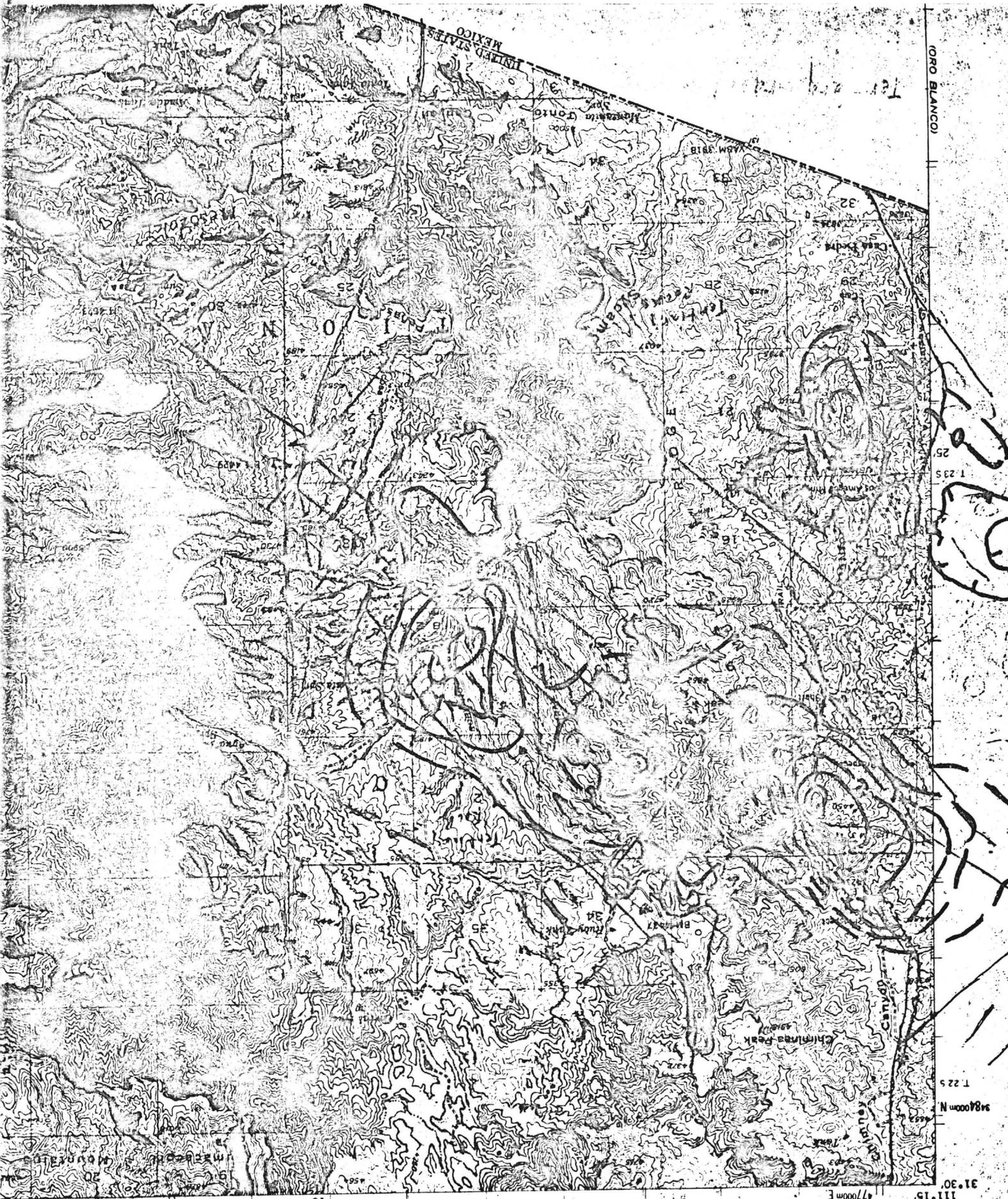
NW quadrant of N-plunging anticline. Radial faults perp. to Paleo beds, like the spokes of a wheel. Core of uplift is pre-Camb. schist. Toward S part of core, post-C Granite. Seds, basal cgl. Cambrian, quartzite also Cambrian (Bolsa quartzite), dolomitic ls Cambrian Abrigo, Devonian IB ls and ss, Carb. ls, mble.

Outside the district, S and W of the granite strata dip away from granite. Dome.

Qtz veins; PM slickensides. Bull quartz with large vugs. Carry tungsten in the granite.

Copper OBS in upper Abrigo, as in SW Bisbee; some from Carb. ls. In general ore follows favorable beds; also related to fissuring. Bornite, chalcocite, covellite, molybdenite, py ZnS. Main mineral cpy. ZnS IG with cpy., almost as plentiful. Calcite fills cracks in all the other minerals.

OBS 5000' plus from granite; but since granite contact slopes gently outward, distance may be less in depth. Fissures-faults, probably channels for solutions, are the radial faults and fissures, all trend from granite to the ore deposits.



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