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GEOLOGY OF THE EUREKA MINE, BOULDER COUNTY TUNGSTEN DISTRICT, BOULDER COUNTY, COLORADO

by

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ABSTRACT

Boulder Creek Quartz Monzonite was subjected to compressive stresses during Middle Eocene time that resulted in north-northeast and east-northeast trending fractures. The latter trend is represented by the Eureka vein. These fractures were subsequently filled by hydrothermal fluids which caused silica, sericite, and kaolinite alteration along with vein mineralization bearing tungsten minerals.

Narrow latite porphyry and intrusive breccia dikes cut the Eureka vein just prior to the completion of mineralization 48±4 million years ago. The epithermal Eureka vein fills a left lateral, reverse fault of small slip that extends approximately 3,000 feet (910 meters) along the north canyon wall of Middle Boulder Creek.

Host-rock type, structure, and pre-vein fault configuration were prominent factors in the control of quartz-ferberite-pyrite-scheelite mineralization.

Production from the Eureka mine has accounted for 1.25 percent of the recorded output in the Boulder County tungsten district of Colorado.

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