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The geology of, and known mineral occurrences within,  
Wilderness Study Area 4-8  
Jackson Mountain - Black Rock

by  
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**STATE OF ARIZONA  
BUREAU OF GEOLOGY  
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contents:

brief summary of geological features and known mineral  
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map of known mineral occurrences (within, and bordering,  
WSA 4-8)  
table of mineral occurrences (mine/prospect location,  
geology, mineral products, development and production)  
references cited

This report is preliminary and has not been edited or  
reviewed for conformity with Arizona Bureau of Geology  
and Mineral Technology standards.

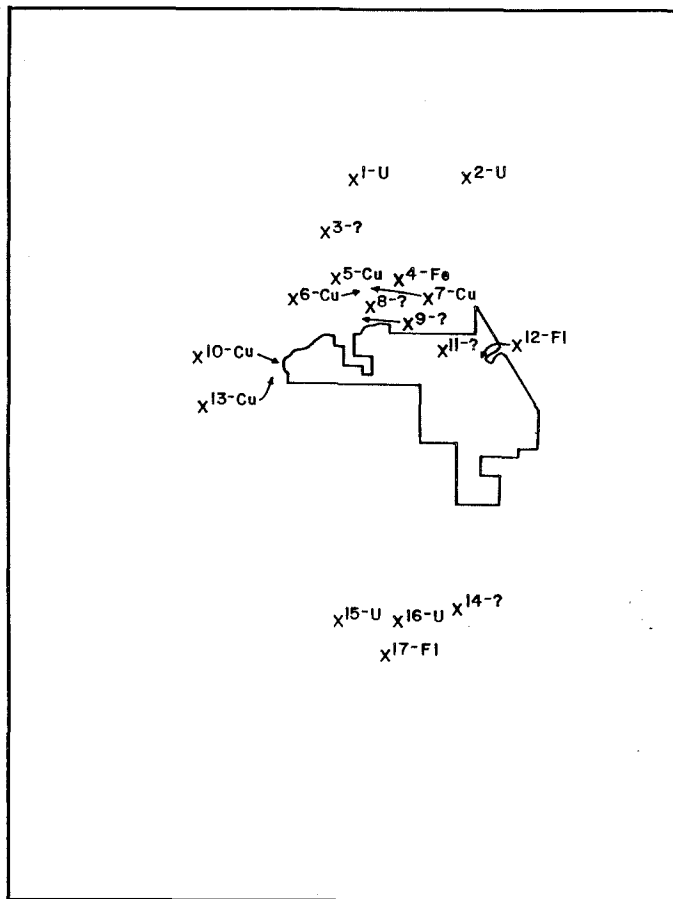
Brief summary of geological features and known mineral occurrences

Wilderness Study Area 4-8  
Jackson Mountain - Black Rock

- 1) The WSA is underlain by Precambrian metamorphic rocks, Cretaceous or Tertiary granite, and middle Tertiary volcanics. Bed-rock exposures are surrounded by late Tertiary-Quaternary basin-fill (sands, gravels, etc.). Three major fault systems transect the range;
- 2) Two groups of inactive prospects are located within the WSA; both are situated on the northern flanks of Jackson Mountain. The Spar Fluorite Group, largest mining operation in this area, produced 1200 tons of fluorspar prior to 1953; no further activity has been reported. Minor occurrences of secondary copper, lead, silver, and zinc minerals are associated with fluorspar; however, no significant production of these ores has been recorded.

No information concerning development, mineral commodities, or production is available for the second group of prospects within the WSA;
- 3) Fluorspar also occurs to the south of the WSA in Precambrian schist. Several prospect pits were located in this area. Records of production are unavailable;
- 4) There are reports of uranium radioactivity from five exploration prospects to the north and south of the WSA. No uranium production has been recorded from the Jackson Mountain region;
- 5) There are several copper occurrences in granitic rocks located in the south-central portion of the massive Tertiary granitic batholith to the northwest of Jackson Mountain. Minor amounts of lead, silver, and gold are associated with the copper deposits;
- 6) The Stanley-Aravaipa Mining District, to the west of the WSA, has been actively mined and prospected since the late 1800's. Lead, zinc, and silver deposits are contained in Precambrian metamorphosed igneous and sedimentary formations, Paleozoic sediments, Cretaceous or Tertiary granitic rocks, and middle Tertiary volcanics.

For additional discussions of the mineral potential of the Santa Teresa Mountain - Aravaipa region, see Ross (1925) and Simons (1964).

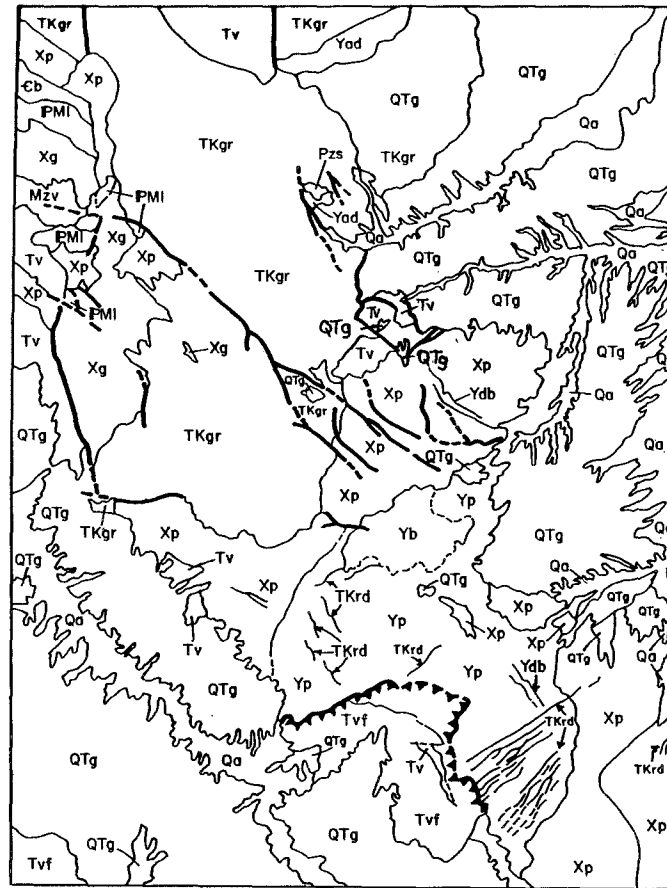


### EXPLANATION

Known mineral occurrences are located by map number, followed by type of mineral deposit. See accompanying table of mineral occurrences.

- X FI    fluorspar; associated copper, lead, silver, and zinc
- X Fe    iron oxides
- X Cu    copper, chiefly chalcopyrite
- X U    uranium
- X ?    unknown

**MINERAL OCCURRENCES IN  
THE JACKSON MOUNTAIN AREA  
(4-8)**



GEOLOGY OF THE JACKSON MOUNTAIN AREA  
(4-8)

sources of information include:  
Blacet and Miller, 1978  
Simons, F.S., 1969  
Wilson, E.D., and R.T. Moore, 1958

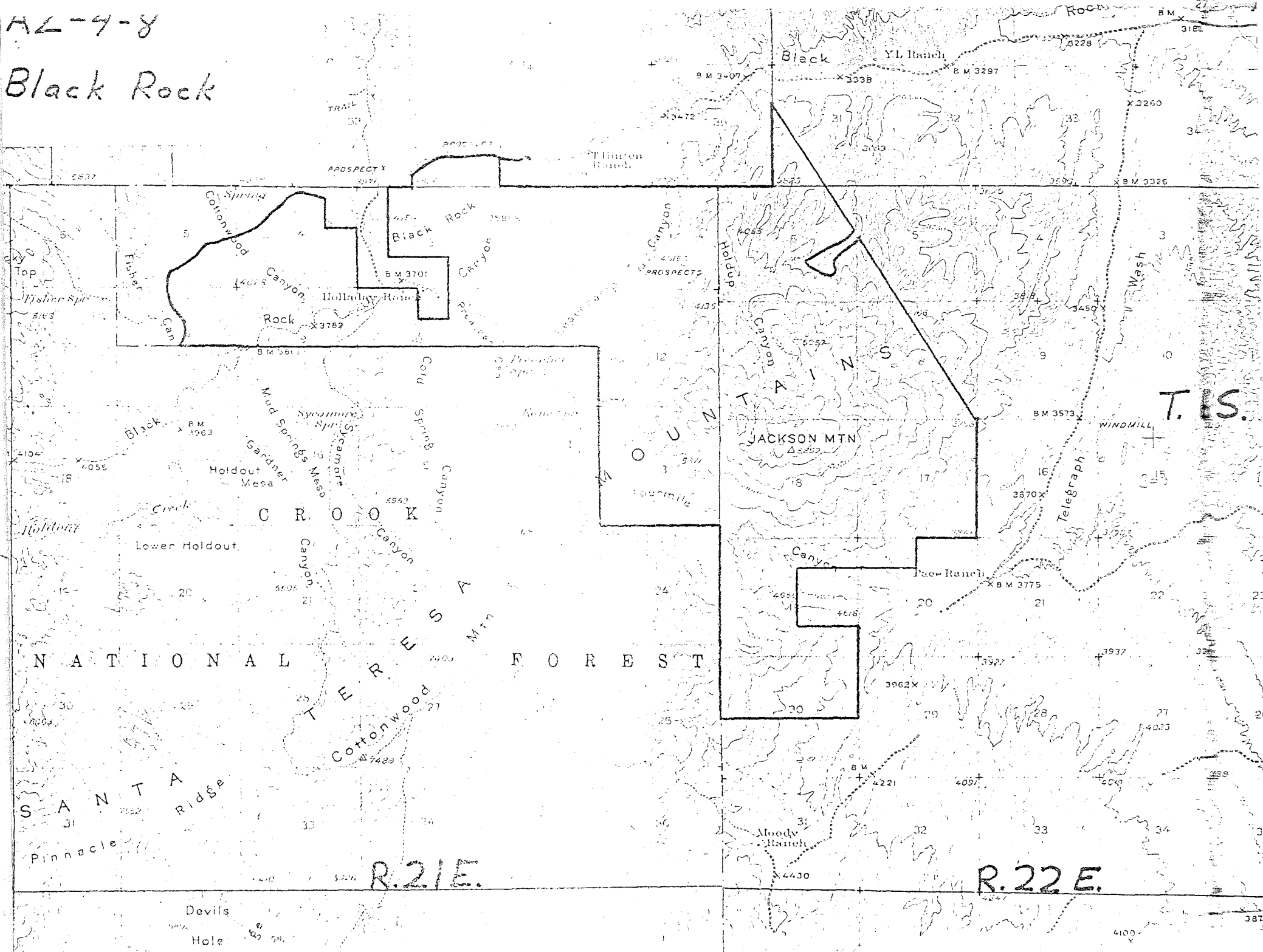
## EXPLANATION

Carboniferous Mesozoic - Cenozoic Lower Tertiary - Cretaceous	Quaternary - Late Tertiary	Qa	Younger alluvium; unconsolidated to weakly consolidated silt, sand and gravel.	
		QTg	Weakly to well-indurated conglomerate, fanglomerate, and breccia capping low terraces and ridges.	
	Tertiary	Tvf	Volcanic fanglomerate; well-indurated gravel, mudflow breccia, and mafic to intermediate volcanic flows.	
		Tv	Rhyolite welded ash-flow tuff and coarse-grained porphyritic andesite flows.	
	Cambrian	Precambrian	Tkrd	Dikes and small intrusive bodies of rhyolite and rhyolite porphyry.
			Tkgr	Porphyritic quartz monzonite and granodiorite-diorite; altered coarse-grained granite in south-central part of batholith contains disseminated pyrite and chalcopyrite.
			Mzv	Andesite and basalt flows and flow breccia with basal conglomerate.
			PMI	Fine-grained fossiliferous limestone; Horquilla and Escabresa formations.
	Cambrian	Precambrian	Eb	Bolsa Quartzite; orthoquartzite and grit with basal conglomerate unit.
			Pzs	Undifferentiated Paleozoic sedimentary rocks includes limestone, quartzite and shale.
Ydb			Diabase dikes and sills.	
Yad			Dripping Spring Quartzite of Apache Group.	
Yp			Coarse-grained porphyritic quartz monzonite, locally chloritized and foliated.	
Precambrian	Precambrian	Yb	Highly crushed and deformed porphyritic biotite quartz monzonite.	
		Xg	Laurel Canyon Granodiorite; coarse-grained porphyritic granodiorite.	
		Xp	Pinal Schist; locally containing units of granitic gneiss, pebbly quartzite, coarse-grained schist and cordierite gneiss.	
			contact	
			fault	
			low-angle fault, sawteeth on upper plate	



AL-4-8

# Black Rock



## KNOWN MINERAL OCCURRENCES

### JACKSON MOUNTAINS AREA (4-8)

#### Fluorspar, Uranium, and Copper Deposits

The Jackson Mountain region of the Santa Teresa range is chiefly composed of schists, quartzites, and gneisses of the late Precambrian Pinal Schist Formation. Rhyolite welded ash-flow tuffs (late Tertiary), and a massive granitic batholith (Tertiary or Cretaceous) covering approximately 50 square miles of the Aravaipa-Stanley region, are exposed to the north and northwest of Jackson Mountain. The Santa Teresa Mountains are surrounded by dissected coalescing pediments that slope northward and eastward to the terraced, alluvium-filled Gila Valley; three major fault systems, emplaced after the late Tertiary batholithic intrusion, transect the range (trending N20-30W, N70-80E, N60-70W, respectively).

Coarse-grained crystalline fluorspar deposits in the vicinity of Jackson Mountain (map numbers 12,17) occur as fissure vein deposits in gneissic granite and porphyritic quartz monzonite units of the Pinal Schist formation. Veins are nearly vertical and fluorspar is mixed with copper carbonates, chiefly chrysocolla, lead, silver, and zinc. Fluorspar deposits, located to the south of Jackson Mountain also evidenced some uranium content.

Pyrite and chalcopyrite are irregularly disseminated in altered coarse-grained granodiorite and porphyritic quartz monzonite throughout the south-central portion of the massive Tertiary granitic batholith (map numbers 5-7). The Fisher Prospect (map number 10) contains oxidized copper minerals, primarily chrysocolla and chalcopyrite, in veins within the batholith; narrow dikelets of aplite containing abundant micropegmatite, as well as some lead, silver, and gold, are associated with the copper deposits.

Iron ore, partially oxidized to leucoxene and associated with trace titanium, has been prospected from granodiorite in the southern part of the batholith (map number 4).

Uranium minerals associated with iron oxides, occur in contact zones between diabase intrusives and Precambrian quartzites (map number 1), in Quaternary-Tertiary gravel deposits to the north of Jackson Mountain, within pegmatites and porphyritic quartz monzonite of Precambrian age (map number 16), and as coatings on fracture planes in lower units of the Pinal Schist Formation.

Data on grades, tonnage, and early mining activity are largely unavailable.

Map No.: 4-8-1

Mine: Brushy Claims

Location: T. 5S  
R. 21E

Sec. 9  
SW

Lat. 33-00-27N  
Long. 110-12-17W  
Elev. 4471 Ft.

Geology:

Uranium minerals occur in altered zone near contact between diabase intrusives and Precambrian quartzite countryrock. Uranium is associated with iron oxides.

Mineral Products: Uranium ( $U_3O_8$ )

Development and Production: Exploration prospect; 2 small prospect pits. Claims owned by Dan Hinton, as of 1954.

References:

USBM Files, Brushy Claims  
USAEC, 1954, A-P-277  
USGS Bylas Quad (1:62500)











Map No.: 4-8-6

Mine: Prospects

Location: T. 5S

Sec. 32

Lat. 32-57-35N

Long. 110-12-36W

Elev. 4220 Ft.

Geology:

Disseminated pyrite and chalcopyrite in altered coarse-grained granodiorite and porphyritic quartz monzonite (Tertiary or Cretaceous). Quartz monzonite has been extensively shattered and sheared in region; multiple shear joints strike NE-SW and NW-SE, generally dipping 25°S.

Mineral Products: Copper: Chalcopyrite; Pyrite

Development and Production: Surface exploration prospects; extent of development unknown.

References:

USBM Files, Prospects  
USGS Jackson Mtn. Quad (1:24000)  
Blacet and Miller, 1978

Map No.: 4-8-7

Mine: Prospect

Location: T. 5S                      Sec. 33                      Lat. 32-57-32N  
                  R. 21E                      NE                              Long. 110-11-38W  
Geology:                              Elev. 3830 Ft.

Copper minerals disseminated in coarse-grained porphyritic andesite flow comprising lower unit of the Tertiary Galiuro Volcanics. Andesite flows in region are commonly vesicular in their upper portion. Contact of andesite porphyry with Tertiary granodiorite and quartz monzonite (containing disseminated pyrite and chalcopyrite) of the massive granite batholith is several thousand feet to the west.

Mineral Products: Copper

Development and Production: Surface exploration prospect; extent of development unknown.

References:

USBM Files, Prospect  
Blacet and Miller, 1978  
USGS Jackson Mtn. Quad (1:24000)



Map No.: 4-8-9

Mine: Prospect

Location: T. 5S  
R. 21E

Sec. 33  
SE

Lat. 32-56-56N  
Long. 110-11-31W  
Elev. 3880 Ft.

Geology:

Prospect located in coarse-grained porphyritic andesite flow comprising lower unit of the Tertiary Galiuro Volcanics. Andesite flows in region are commonly vesicular in their upper portion. Contact of andesite porphyry with massive granite batholith (Tertiary), containing disseminated deposits of pyrite and chalcopyrite, is less than 1/4 mile to the west.

Mineral Products: Unknown. Copper prospects in vicinity.

Development and Production: Surface exploration prospect.

References:

USBM Files, Prospect  
Blacet and Miller, 1978  
USGS Jackson Mtn. Quad (1:24000)













Map No.: 4-8-15

Mine: Moss Claims

Location: T. 7S  
R. 21E

Sec. 16  
C N2

Lat. 32-49-48N  
Long. 110-12-12W  
Elev. 5400 Ft.

Geology:

Uranium radioactivity associated with fracture planes coated by hematite in a quartz vein in porphyritic quartz monzonite (late Precambrian). Located on or near N-S trending rhyolite dike (Tertiary-Cretaceous). Foliation and parallel bedding of quartz monzonite strike N-S and dip 75° to west.

Mineral Products: Uranium (U<sub>3</sub>O<sub>8</sub>)

Development and Production: Exploration Prospect; surface prospect pits. Owned by Mrs. Joe Rogers (1954 - ?)

References:

USBM Files, Moss Claims  
USAEC, 1954, A-P-364  
Blacet and Miller, 1978  
USGS Buford Hill Quad (1:24000)  
Ross, 1925, p. 34

Map No.: 4-8-16

Mine: Denny Claims

Location: T. 7S                      Sec. 14                      Lat. 32-49-30N  
                  R. 21E                      C                              Long. 110-10-15W  
Geology:                              Elev. 4860 Ft.

Prospects located in pegmatites in porphyritic quartz monzonite (late Precambrian). Radioactivity associated with iron oxides. No uranium minerals visible on surface.

Mineral Products: Uranium ( $U_3O_8$ )

Development and Production: 3 exploration prospect pits; owned and operated by W. A. McBride (1955 - ?)

References:

USBM Files, Denny Claims  
USAEC, 1954, A-P-371  
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