

Gunnison County

Tomichi District (aka Whitepine District)

The Tomichi District was first described by Hill (1909) as bounded by the divide between Tomichi and Hot Springs Creeks on the west, the divide between Tomichi and Quartz Creeks on the north and by the continental divide on the east. He notes the town of Whitepine, but does not identify a **Whitepine District**. Crawford presented an exhaustive, detailed description of the Tomichi District in his 1913 bulletin for the Colorado Geological Survey. He does not mention Whitepine at all.

Harder (1908), following the lead of Leith (1906) named a Whitepine District. When describing the iron deposits of Gunnison County, calls out the Whitepine District as lying on the west slope of the Sawatch Range, ten miles north of Marshall Pass.

Henderson (1926) includes the Tomichi District in his compilation, specifying the location of the district as "sections 13-16, 21-29, 32-36 of T50N, R4E and somewhat southward into T49N, R4 and 5 E."

Vanderwilt (1947) places the Tomichi District ten miles north of Sargents around the old mining camp of Tomichi, "on the east slope of Tomichi Creek." He lists the Whitepine District as synonymous with the Tomichi.

Dunn (2003) states that the district overlaps or includes the Whitepine District, while Streufert (1999) follows Vanderwilt's (Ibid) lead as indicating they are the same district.

The geology and mineralization in the Tomichi District is virtually the same as in the adjoining districts of Tincup, Quartz Creek and Monarch (in Chaffee County). Lower Paleozoic sedimentary rocks overlie and are faulted against Precambrian granitic rocks. These are all affected by the Tertiary-age intrusion of the Mount Princeton Batholith and associated smaller dikes and sills.

Streufert (Ibid) presents excellent summaries of the mineralization drawn from the earlier works. Replacement deposits occur in carbonates with (mainly) lead-silver with minor gold, copper and zinc. They range from massive sulfide to sulfide-dominated mantos 30 to 40 feet thick and up to 200 feet long (Crawford, 1913; Streufert, 1999). Ores of chalcopyrite, galena, tennantite-tetrahedrite, sphalerite with minor gold occur in a gangue of limestone, dolomite, quartz, calcite, and barite. The Morning Star Mine is an example of that type of mineralization and is described in several of the references (Hill, 1908; Crawford, 1913; Dings and Robinson, 1967; Streufert, 1999).

A second type of mineralization are fissure veins. These occur mostly west of Tomichi Creek in quartz monzonite of the Mount Princeton intrusion. Some are found in Precambrian rocks but always near the Tertiary quartz monzonite bodies (Streufert, 1999). Veins range from several inches to five feet in width, and contain native gold and silver, tetrahedrite, chalcopyrite, galena and sphalerite in a pyritic quartz gangue (Crawford, 1913).

Iron ore occurs in the district both as contact metamorphic and as bog iron replacing organics. Crawford (Ibid) describes magnetite associated with serpentine and tremolite in the contact metamorphic deposits.

Heyl (1964) notes oxidized zinc ores at the Morning Star and Victor mines and a few other mines in the district. Vanderwilt (Ibid) lists total production as 75,700 oz silver; 180 oz gold; 2,480,000 lb lead; 2,640,000 lb copper.

An additional reference is Eberhart (1969).

Mines listed in the district (mindat.org and others as noted) include:

- Akron Victor Morning Star Mines^{1,2}
- Alice Tunnel^{2,3}
- Alpine Tunnell Old
- Alwilda^{1,2,3}
- Annie Hudson^{1,2}
- Ben Bolt^{1,2}
- Big Red No. 22
- Big Red No. 39
- Bill Short^{1,2}
- Breadwinner Occurrence^{1,2}
- Brittle Basin
- Brittle Silver Occurrence
- Chicago tunnel²
- Congress Tunnel Occurrence^{1,2}
- Copper Hill Occurrence (Clover Mtn.)
- David H Shaft^{1,2}
- Day Star Occurrence¹
- Defiance^{1,2}
- Denver City Tunnel^{1,2}
- Ensign Tunnel
- Erie Mine (Eureka)^{1,2}
- Erie Tunnel
- Eureka - Nest Egg^{2,3}
- Fort Scott (Oddie; Moore; D. A. Mason Occurrence)^{1,2}
- Hiawatha Occurrence^{1,2}
- High Mucka Muck; Jas. G. Blaine
- Hot Springs Valley Placers (MRDS - 10016372)
- Iron King^{1,2}
- Isabel Occurrence^{1,2}
- Kentucky Belle - Baby Gerald Mine
- Legal Tender Occurrence^{1,2}
- Lewiston - Pet^{1,2}
- Lilly^{1,2,3}
- Little Maud; Clinton; Silver Gem; Eastman; San Juan; Uncle Sam Occurrence
- Magna Charta Tunnel Occurrence^{1,2}
- Maid of Erin (Silver Pick)¹
- Mann Tunnel²
- Margo claim group (Vickie-Lee; Delores-Marie)
- Mazeppa; May (Akron)^{1,2}
- Morning Glim
- Morning Star Occurrence^{1,2,3}
- Mount Stella
- N.B.C. Occurrence
- North Star^{1,2}
- Parole Tunnel (Spar Copper Mine; Contact Mountain)³
- Potosi²
- Princeton and Blackhawk Mine
- Princeton Tunnel Occurrence^{1,2}
- Silver Cord^{1,2,3}
- Silver Dollar (Alice)¹
- Silver Trowel Tunnel³
- South Quartz Creek
- Spar Copper^{1,2,3}
- Tenderfoot¹
- Tokio²
- Tomichi
- Tomichi Dome
- Victor; Morning Star; David H.²
- Wand A Incline
- West Point^{1,2}
- White Pine

Notes: ¹Specific description in Dings and Robinson (1967)

²Specific description in Crawford (1913)

³Brief description by Hill (1908)

Minerals listed in the district (mindat.org) include:

Acanthite	Diopside	Parsonsite
Actinolite	Dolomite	Phlogopite
Amphibole Supergroup	Enargite	Polycrase-(Y)
Anglesite	Epidote	Pyrite
Aragonite	Euxenite-(Y)	Quartz
var: Zincian Aragonite	Fluorite	'Serpentine Group'
Arsenopyrite	Gahnite	Siderite
Autunite	Galena	Silver
Azurite	var: Argentiferous Galena	Smithsonite
Baryte	'Garnet'	Sphalerite
'Calamine'	Gold	Stephanite
Calcite	Greenockite	Tennantite
Cerussite	Hematite var: Specularite	Tetrahedrite
Chalcocite	Hemimorphite	Topaz
Chalcopyrite	Kaolinite	Torbernite
Chlorargyrite	'Limonite'	Tremolite
'Chlorite Group'	Magnetite	Uraninite
Chrysocolla	Malachite	'Wad'
Copper	Molybdenite	Xenotime-(Y)
'Copper Stain'	Muscovite var: Sericite	Zircon
Cuprite	'Olivine'	

References:

Crawford, R.D. 1913. *Geology and Ore Deposits of the Monarch and Tomichi Districts, Colorado*. Colorado Geological Survey Bulletin 4.

Dings, M.G. and Robinson, C.S. 1957. *Geology and Ore Deposits of the Garfield Quadrangle, Colorado*. U.S. Geological Survey Professional Paper 289.

Dunn, Lisa. 2003. *Colorado Mining Districts: A Reference*. Colorado School of Mines, Golden, Colorado.

Eberhart, Perry. 1969. *Guide to Colorado Ghost Towns and Mining Camps*. Fourth, revised edition. Swallow Press, Athens, Ohio.

Harder, E.C. 1909. The Taylor Peak and Whitepine Iron-ore Deposits, Colorado *in* Contributions to Economic Geology, 1908, Part I, Metals and nonmetals except fuels--Iron and Manganese. U.S. Geological Survey Bulletin 380-E, pp.188-198.

Henderson, C.W. 1926. *Mining in Colorado, a history of discovery, development and production*. U.S. Geological Survey Professional Paper 138.

Heyl, A.V. 1964. Oxidized Zinc Deposits of the United States - Part 3, Colorado. U.S. Geological Survey Bulletin 1135-C.

Hill, J.M. 1909. Notes on the Economic Geology of Southeastern Gunnison County, Colorado *in* Hayes, C.W. and Lindgren, W. 1909. Contributions to Economic Geology, 1908: Part I - Metals and Nonmetals, except fuels. U.S. Geological Survey Bulletin 380, pp. 21-40.

Leith, C.K. 1906. Iron Ores of the Western United States and British Columbia. ; U.S. Geological Survey Bulletin 285.

Streufert, Randall K. 1999. Geology and Mineral Resources of Gunnison County, Colorado. Colorado Geological Survey Resource Series 37.

Vanderwilt, John W. 1947. Mineral Resources of Colorado. Colorado Mineral Resources Board, Denver, Colorado.

www.mindat.org, accessed August 2015.