



INDEX MAP SHOWING MINES AND PROSPECTS MAPS (MF-SERIES MAPS AND OPEN-FILE REPORTS) IN THE BLACK HILLS REGION

**EXPLANATION**

Mine—Location known. Distinguished from prospect by name of mine next to symbol. Alternate names or synonyms in parentheses. If there is enough space on the map, the entire mine name and synonym(s) are shown; otherwise, mine name may be abbreviated and synonym(s) deleted from map. All mine names and all synonyms are shown in the "Alphabetic list of mines".

Patented claim—See alphabetic and numeric lists of patented claims. Asterisk (\*) indicates part of claim extends into adjacent quadrangle. Dollar sign (\$) indicates most of claim in adjacent quadrangle. Boundaries between claims not shown.

Lode claim—Orientation of number parallel to long axis of claim.

Placer claim—Number approximately in center of claim.

**INTRODUCTION**

This map is one in a set of 25 maps (see index map) at 1:24,000 scale of the Black Hills region of South Dakota and Wyoming on which are shown a geologic classification of mines, a bibliography of mineral deposits, and locations of active and inactive mines, prospects, and patented mining claims. Some of these maps are published as U.S. Geological Survey Miscellaneous Field Studies Maps (MF series) and some as U.S. Geological Survey Open-File Reports (OF series); see index map. An earlier unpublished version of this set of maps was the data base from which plate 4 (scale 1:250,000) of DeWitt and others (1986) was compiled. Subsequent to that publication, the set has been revised and updated, and prospects and patented claims have been added. These revised and more detailed 1:24,000-scale maps should be used for the equivalent areas of plate 4 of DeWitt and others (1986).

**SOURCES OF INFORMATION**

Outlines of patented mining claims were obtained from 1:24,000-scale Forest Service Status Plans, available for inspection at the U.S. Forest Service, Rocky Mountain Region, 1117 West 8th Avenue, Denver, CO 80202. Names of patented claims were obtained from the Ouster County Courthouse, Ouster, South Dakota. Claims have been located as accurately as possible, but this map is not intended to be used for legal nor precise locations of mining claims.

Locations of mines and prospects were compiled from all available published and unpublished data. The locations of active and inactive mines in this quadrangle were taken from Allison (1940), Connolly (1933), Connolly and O'Hara (1929), Gardner (1939), Guterres (1940), O'Hara (1902), Page and others (1955), Redden (1963), Roberts and Rapp (1963), U.S. Bureau of Mines (1955, 1986), U.S. Geological Survey (1986), and Zeitner (1977). Also, in some instances, different sources of information gave conflicting location information for mines with the same name. Where possible, this conflict was resolved by comparing the name of the mine to adjacent patented claims by comparing the description of the deposit to the known geology and topography of the area, or by communication with past owners of the property. In some instances, a unique location could not be determined using existing information; in that event the most logical location was chosen. The location of some or many mines on this map may differ from those in present data bases such as

the U.S. Bureau of Mines Mineral Inventory Location System (MILS) or the U.S. Geological Survey Mineral Resources Data System (MRDS), formerly the Computerized Resources Information Bank (CRIB).

Locations of prospects in this quadrangle were taken from Redden (1963). Because of many quadrangles, or parts of quadrangles, have not been mapped in as much detail as other quadrangles, comparison of the density of prospects from one quadrangle to another, or even within one quadrangle, should not be attempted. As an example, part of a quadrangle may be shown on the map as having more prospects than another part, but the first part may have been mapped in greater detail than the second part. Similarly, a part of a quadrangle may have many prospects that are not shown on this map because the original source of information did not map prospect pits.

Geologic data for the map are from Campbell (1984), Garry (1982), Garry and others (1982), Ching (1973), Dunn and others (1983), Gries (1940), Hughes (1924), Kalkbrenner and Redden (1975), Kulk (1965), Lang (1957), Lang and Redden (1952), Morrison (1968, 1974), Page and Staats (1955), Page and others (1953), Redden (1963), Redden and Barton (1975), Riley (1970a, 1970b), Roberts and Cope (1968), Schwartz (1930), Shearer and others (1983), Shearer, Paplike, and Laul (1983), Smith and Roberts (1964), Staats and others (1963), Tullis (1939), Walker (1984), Walker, Paplike, and Laul (1982), and Walker and others (1986, 1987).

**PRECISION OF LOCATION INFORMATION**

All mine symbols except the unfilled diamond (◇) indicate that the location of the deposit is known within a 200-foot radius. The type of opening at a mine (adit, shaft, open pit, trench, and others) is designated by one of ten different symbols. The unfilled diamond symbol indicates that the location is known only to within a 1/4 mile radius and that the type of opening is unknown.

Mines and prospects whose locations could not be verified to within closer than a 1/4 mile radius were not plotted on the map.

**PATENTED CLAIM AND MINE LISTS**

Patented mining claims are listed both numerically and alphabetically. Mines are listed alphabetically. For ease in locating the claim or mine on the map, the legal description (section, township, range) is given.

Each patented claim on the map is represented by a number keyed to the numeric and alphabetic listings. Where possible, the claim numbers are plotted approximately in the center of the claim and parallel to its long axis. Boundaries between adjacent claims are not shown. An asterisk (\*) following a claim number indicates that most of the claim is in this quadrangle, but it extends into the adjacent quadrangle. A dollar sign (\$) following a claim number indicates that part of it is in this quadrangle. Claims outlined with a solid line are patented claims; claims outlined with a dotted line are patented placer claims. Many placer workings on unpatented claims have not been plotted on the map, principally because the workings lacked a name.

On the map, the most common or most used name of a mine is normally next to its mine symbol. If there is space, any alternate names or synonyms are in parentheses following the most common name. On some maps, where space does not permit showing the first name or any alternate names, alternate names are shown by a single letter, two letters, or an abbreviation of the name; the mines are keyed to that letter or abbreviation in the alphabetic and numeric lists. Mines with more than one name have the alternate name(s) or synonym(s) shown in parentheses in the alphabetic list. The first alternate name or synonym is also alphabetized in the alphabetic list of mines; second or third alternate names may not be alphabetized. Invariant alternate names are not alphabetized and are followed by a query (?).

**CLASSIFICATION OF MINES AND DEPOSITS**

Mines and deposits are categorized according to geologic criteria of age, environment of formation, and contained metals, as in DeWitt and others (1986), p. 52-53. Deposit-type letter designations (D, E, and G), corresponding to those in DeWitt and others (1986), are used in the alphabetic list of mines. The criteria used for the deposit types are briefly summarized below and are explained more fully in DeWitt and others (1986).

**PRINCIPAL TYPES OF DEPOSITS**

D—Early Proterozoic veins and shear zones are discordant deposits of gold, silver, lead, and minor amounts of zinc, copper, and arsenic formed in a metamorphic and tectonic environment about 1.4-1.9 Ga. Hydrothermal solutions concentrated the metals in sedimentary rocks.

E, F, G, H, I, and J—Early Proterozoic pegmatites were formed in an igneous and metamorphic environment about 1.4-1.9 Ga. Hydrothermal solutions from the Harvey Peak Granite concentrated lithium, beryllium, tin, and tungsten in the surrounding metamorphic rocks and the granite. Large deposits of feldspar and muscovite-rich rock were similarly formed in the granite. E deposits rich in feldspar; F pegmatites rich in tin and tungsten; G, lithium-rich deposits; H, potassium-feldspar and mica-rich pegmatites; I, pegmatites with large amounts of mica; J, beryllium-rich deposits.

L—Cambrian paleobeach deposits are accumulations of bedded sedimentary material formed in a surface marine environment about 500 Ma. Have action created concentrations of high-purity, well-rounded silica sand.

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**Alphabetic list of patented claims**

[Asterisk (\*) indicates that part of claim extends into adjacent quadrangle; dollar sign (\$) indicates that most of claim is in the adjacent quadrangle]

Claim number	Name of Claim	Location
016	Caledonia	Sec. 1 74S 83E
018	Caledonia No.2	Sec. 1 74S 83E
017	East Caledonia	Sec. 1 74S 83E
007*	Eldorado Placer	Sec. 3 74S 83E
008	Empire	Sec. 3 74S 83E
010	Fractional Tin	Sec. 3 74S 83E
025	Gold Star	Sec. 5 74S 84E
024	Gold Star No.1	Sec. 5 74S 84E
023	Gold Star No.2	Sec. 5 74S 84E
019	Hartwell No.3	Sec. 5 74S 84E
027	Lake	Sec. 5 74S 84E
028	Lincoln	Sec. 6 74S 84E
022	Little Dorothy	Sec. 6 74S 84E
034	Longmore No.1	Sec. 18 74S 84E
026	Nascott No.5	Sec. 5 74S 84E
033	New York Mica	Sec. 18 74S 84E
006	North Pole	Sec. 34 73S 83E
002*	North Pole No.4	Sec. 34 73S 83E
009	North Pole No.5	Sec. 34 73S 83E
003*	North Pole No.6	Sec. 34 73S 83E
030	North Side	Sec. 18 74S 84E
032	Old Sannson	Sec. 5 74S 84E
036	Old Sannson Hillside	Sec. 5 74S 84E
004	Rainbow No.3	Sec. 5 74S 84E
020	Rainbow No.4	Sec. 6 74S 84E
035	Red Spar Lode	Sec. 23 74S 83E
004	Silver Queen	Sec. 34 73S 83E
009	Tin Men	Sec. 35 73S 83E
013	Warren Draw No.1	Sec. 36 73S 83E
012	Warren Draw No.2	Sec. 36 73S 83E
011	Warren Draw No.3	Sec. 36 73S 83E
039	West Side	Sec. 18 74S 84E
001*	West Side Queen	Sec. 34 73S 83E
015	White Spar Mica	Sec. 34 73S 84E
014	White Spar No.2 Mica	Sec. 34 73S 84E

**Numerical list of patented claims**

[Asterisk (\*) indicates that part of claim extends into adjacent quadrangle; dollar sign (\$) indicates that most of claim is in the adjacent quadrangle]

Claim number	Name of Claim	Location
001*	West Side Queen	Sec. 34 73S 83E
002*	North Pole No.4	Sec. 34 73S 83E
003*	North Pole No.6	Sec. 34 73S 83E
004	Silver Queen	Sec. 34 73S 83E
005	North Pole No.5	Sec. 34 73S 83E
006	North Pole	Sec. 34 73S 83E
007*	Eldorado Placer	Sec. 3 74S 83E
008	Empire	Sec. 3 74S 83E
009	Tin Men	Sec. 35 73S 83E
010	Fractional Tin	Sec. 3 74S 83E
011	Warren Draw No.1	Sec. 36 73S 83E
012	Warren Draw No.2	Sec. 36 73S 83E
013	Warren Draw No.3	Sec. 36 73S 83E
014	White Spar No.2 Mica	Sec. 34 73S 84E
015	White Spar Mica	Sec. 34 73S 84E
016	Caledonia	Sec. 1 74S 83E
017	East Caledonia	Sec. 1 74S 83E
018	Caledonia No.2	Sec. 1 74S 83E
019	Hartwell No.3	Sec. 5 74S 84E
020	Rainbow No.4	Sec. 6 74S 84E
021	Rainbow No.3	Sec. 5 74S 84E
022	Little Dorothy	Sec. 6 74S 84E
023	Gold Star No.2	Sec. 5 74S 84E
024	Gold Star No.1	Sec. 5 74S 84E
025	Gold Star	Sec. 5 74S 84E
026	Nascott No.5	Sec. 5 74S 84E
027	Lake	Sec. 5 74S 84E
028	Lincoln	Sec. 6 74S 84E
029	Lincoln	Sec. 6 74S 84E
030	North Side	Sec. 18 74S 84E
031	Longmore No.1	Sec. 18 74S 84E
032	West Side	Sec. 18 74S 84E
033	New York Mica	Sec. 18 74S 84E
034	Longmore	Sec. 18 74S 84E
035	Red Spar Lode	Sec. 23 74S 83E
036	Old Sannson Hillside	Sec. 5 74S 84E

**Alphabetic list of mines**

[Deposit-type letter designations are explained in the text]

Deposit Type	Name of Mine	Location
D	Bebington	Sec. 33 73S 84E
L	Big Tom (Kem)	Sec. 12 74S 83E
L	Black Hills Sand-Cliff	Sec. 33 74S 84E
D	Caledonia	Sec. 1 74S 83E
J	Corky	Sec. 12 74S 83E
E	Dubuque (Gayle)	Sec. 31 73S 84E
E	Eruption	Sec. 1 74S 83E
E	Gayle (Dubuque)	Sec. 31 73S 84E
E	Gravel Pits	Sec. 34 73S 83E
J	Helen Beryl	Sec. 26 74S 83E
J	Ken (Big Tom)	Sec. 12 74S 83E
E	Keystone	Sec. 36 73S 83E
E	Lincoln	Sec. 6 74S 84E
E	Lincoln No.2	Sec. 5 74S 84E
E	Lincoln No.3 Lode	Sec. 22 74S 84E
E	Lincoln No.6 Lode	Sec. 27 74S 84E
G	Lithia Lode	Sec. 36 73S 83E
G	Lookout No.5 Lode	Sec. 27 74S 84E
E	MacArthur	Sec. 15 74S 84E
D	May	Sec. 14 74S 83E
J	Michael Beryl	Sec. 16 74S 83E
J	New York	Sec. 4 74S 84E
I	New York	Sec. 18 74S 84E
E	Old Missouri	Sec. 28 74S 84E
E	One Point	Sec. 8 74S 84E
E	Pleasant Valley	Sec. 7 74S 84E
E	Punch	Sec. 27 74S 84E
E	Rainbow No.3	Sec. 6 74S 84E
E	Rainbow No.4	Sec. 6 74S 84E
I	Ray Prospect	Sec. 15 74S 84E
I	Red Bird Lode [Consolidated]	Sec. 15 74S 84E
E	Red Bird Lode	Sec. 27 74S 84E
E	Red Poppy Lode	Sec. 23 74S 83E
E	Rock Ridge (Rocky Ridge)	Sec. 23 74S 83E
E	Ruby Ridge (Rocky Ridge)	Sec. 4 74S 84E
E	Royal Flush	Sec. 31 73S 84E
E	Ruberta	Sec. 3 74S 84E
E	Short Lode	Sec. 15 74S 84E
G	Tin Mountain	Sec. 35 73S 83E
E	Tip Top	Sec. 8 74S 84E
E	Tom Carroll	Sec. 6 74S 84E
E	Unnamed	Sec. 24 74S 83E
E	Volcano	Sec. 1 74S 83E
H	Warren Draw	Sec. 36 73S 83E
E	White Mica	Sec. 34 73S 84E
E	White Mica No.1	Sec. 7 74S 84E
J	White Spar	Sec. 34 73S 84E
J	White Spar No.2	Sec. 34 73S 84E
J	White Spar No.3	Sec. 34 73S 84E
J	White Spar No.4	Sec. 34 73S 84E
J	White Spar No.5	Sec. 34 73S 84E
J	White Spar No.6	Sec. 34 73S 84E
J	White Spar No.7	Sec. 34 73S 84E
J	White Spar No.8	Sec. 34 73S 84E
J	White Spar No.9	Sec. 34 73S 84E
J	White Spar No.10	Sec. 34 73S 84E
J	White Spar No.11	Sec. 34 73S 84E
J	White Spar No.12	Sec. 34 73S 84E
J	White Spar No.13	Sec. 34 73S 84E
J	White Spar No.14	Sec. 34 73S 84E
J	White Spar No.15	Sec. 34 73S 84E
J	White Spar No.16	Sec. 34 73S 84E
J	White Spar No.17	Sec. 34 73S 84E
J	White Spar No.18	Sec. 34 73S 84E
J	White Spar No.19	Sec. 34 73S 84E
J	White Spar No.20	Sec. 34 73S 84E
J	White Spar No.21	Sec. 34 73S 84E
J	White Spar No.22	Sec. 34 73S 84E
J	White Spar No.23	Sec. 34 73S 84E
J	White Spar No.24	Sec. 34 73S 84E
J	White Spar No.25	Sec. 34 73S 84E
J	White Spar No.26	Sec. 34 73S 84E
J	White Spar No.27	Sec. 34 73S 84E
J	White Spar No.28	Sec. 34 73S 84E
J	White Spar No.29	Sec. 34 73S 84E
J	White Spar No.30	Sec. 34 73S 84E
J	White Spar No.31	Sec. 34 73S 84E
J	White Spar No.32	Sec. 34 73S 84E
J	White Spar No.33	Sec. 34 73S 84E
J	White Spar No.34	Sec. 34 73S 84E
J	White Spar No.35	Sec. 34 73S 84E
J	White Spar No.36	Sec. 34 73S 84E
J	White Spar No.37	Sec. 34 73S 84E
J	White Spar No.38	Sec. 34 73S 84E
J	White Spar No.39	Sec. 34 73S 84E
J	White Spar No.40	Sec. 34 73S 84E
J	White Spar No.41	Sec. 34 73S 84E
J	White Spar No.42	Sec. 34 73S 84E
J	White Spar No.43	Sec. 34 73S 84E
J	White Spar No.44	Sec. 34 73S 84E
J	White Spar No.45	Sec. 34 73S 84E
J	White Spar No.46	Sec. 34 73S 84E
J	White Spar No.47	Sec. 34 73S 84E
J	White Spar No.48	Sec. 34 73S 84E
J	White Spar No.49	Sec. 34 73S 84E
J	White Spar No.50	Sec. 34 73S 84E

MAP SHOWING LOCATIONS OF MINES, PROSPECTS, AND PATENTED MINING CLAIMS, AND CLASSIFICATION OF MINERAL DEPOSITS IN THE FOURMILE 1/2-MINUTE QUADRANGLE, BLACK HILLS, SOUTH DAKOTA

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