

**U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY**

**Maps showing locations of mines and prospects in the
Butte 1°×2° quadrangle, western Montana**

**By
James E. Elliott, Jeffrey S. Loen, Kristine K. Wise,
and Michael J. Blaskowski**

Pamphlet to accompany
MISCELLANEOUS INVESTIGATIONS SERIES
MAP I-2050-C



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INTRODUCTION

The Butte 1°×2° quadrangle, in west-central Montana, is one of the most mineralized and productive regions in the U.S. Mining districts in this quadrangle, which include the world famous Butte or Summit Valley district, have produced a variety of metallic and nonmetallic mineral commodities valued at more than \$6.4 billion (at the time of production). Because of its importance as a mineral producing region, the Butte quadrangle was selected for study by the U.S. Geological Survey under the Conterminous United States Mineral Assessment Program (CUSMAP). Under this program, new data on geology, geochemistry, geophysics, geochronology, mineral resources, and remote sensing were collected and synthesized for the purpose of mineral resource assessment. The field and laboratory studies were supported, in part, by funding from the Geologic Framework and Synthesis Program and the Wilderness Program. This map is one of a number of reports and maps on the Butte 1°×2° quadrangle. Other publications resulting from this study include U.S. Geological Survey (USGS) Miscellaneous Investigation Series Maps I-2050-A (Rowan and Segal, 1989), I-2050-B (Rowan and others, 1991), I-2050-D (Elliott and others, in press a), and I-2050-E (Elliott and others, in press b); Miscellaneous Field Studies Maps MF-1925 (Wallace, 1987); and Open-File Reports 86-292 (Wallace and others, 1986) and 86-0632 (Elliott and others, 1986).

Data for a total of 1,128 mines, prospects, and mineral occurrences have been compiled for the Butte quadrangle. Mineralized sites are distributed throughout the quadrangle, but most sites are concentrated in principal mining districts; 78 percent of the mines, prospects, and occurrences are clustered in 47 established mining districts and the remaining 22 percent are more widely scattered in 23 geographic areas (fig. 1). The locations of mines and prospects are shown on the map and figures 3-14 and a brief description of each site and of each district or geographic area is in table 1 (in pamphlet), which is arranged by mining district or geographic area. The description of each site includes site number, name and alternate name(s), location by latitude and longitude, commodities present, geologic setting of site, type of deposit, size of production, type and extent of mine workings, and sources of data. Data for this report were obtained from the U.S. Geological Survey Mineral Resource Data System (MRDS; formerly known as the Computerized Resource Information Bank (CRIB)), from many published and unpublished sources, and from new geologic field work.

GEOGRAPHIC SETTING

The Butte quadrangle is bounded by latitudes 46° and 47° N and longitudes 112° and 114° W (fig. 1). The city of Butte is in the southeastern part; Helena, the state capital of

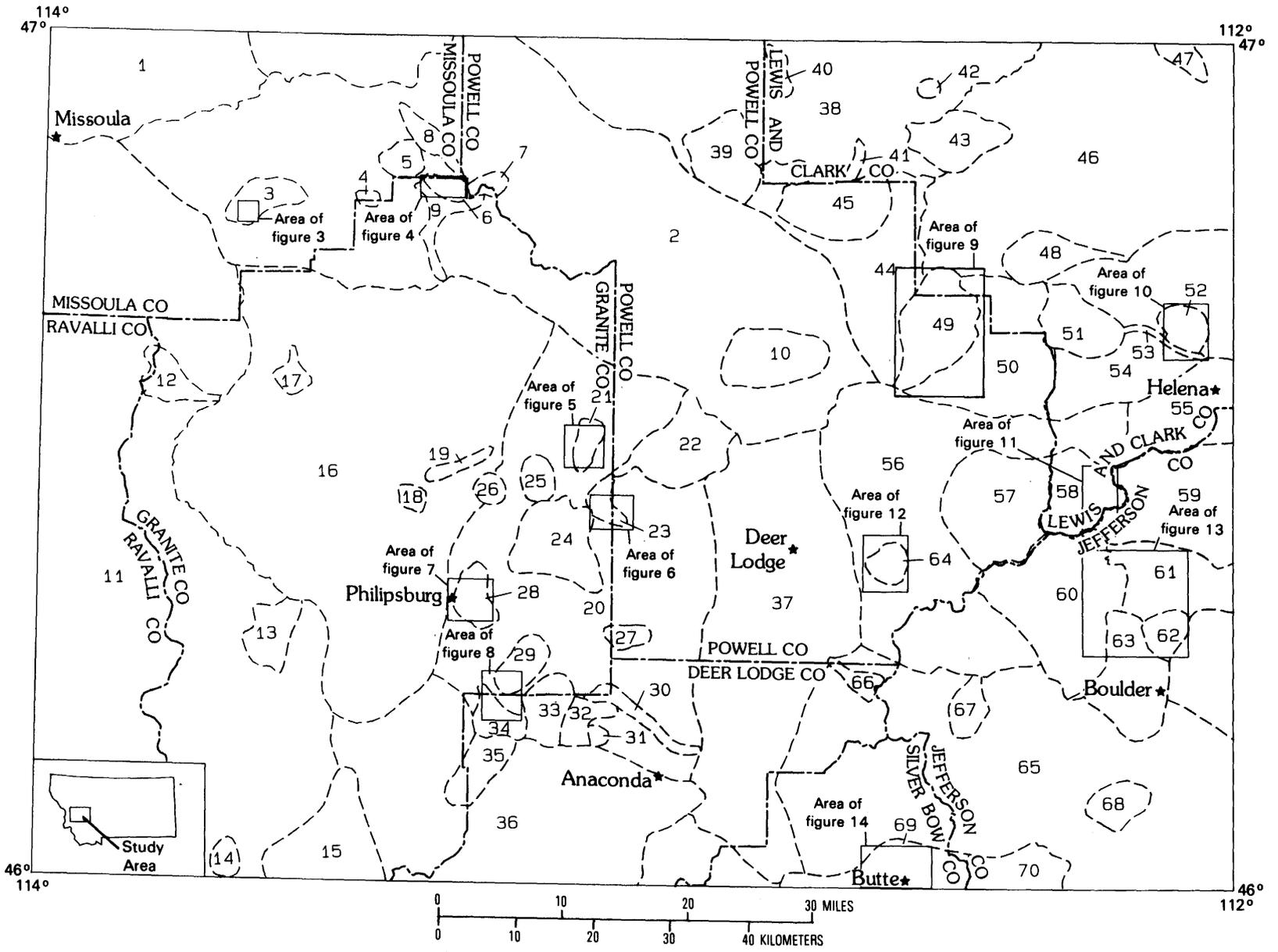
Montana, is on the eastern edge; and Missoula is near the northwestern corner of the quadrangle. Most of the quadrangle is in Granite, Powell, Lewis and Clark, and Jefferson Counties, and smaller parts are in Missoula, Ravalli, Deer Lodge, and Silver Bow Counties. The quadrangle includes numerous mountain ranges separated by intermontane valleys. The continental divide trends nearly south through the eastern part of the quadrangle to a point near Butte, and then trends generally west near the southern boundary of the quadrangle. East of the divide, drainage is to the Missouri River, and west of the divide, to the Clark Fork, which heads in the vicinity of Butte.

GEOLOGIC SETTING

The Butte quadrangle contains igneous, metamorphic, and sedimentary rocks that range in age from Proterozoic to Quaternary. Proterozoic, Paleozoic, and Mesozoic sedimentary rocks are abundant and widespread, as are Cretaceous and Tertiary plutonic rocks; the latter are in the cores of most mountain ranges and are associated with metamorphic rocks. Volcanic and volcanoclastic rocks of Cretaceous and Tertiary ages are found mostly in mountain ranges in the eastern and northern parts of the quadrangle. Intermontane basins are filled by Tertiary and Quaternary sedimentary rocks and surficial deposits.

The sedimentary record begins with rocks of the Belt Supergroup that were formed during Middle Proterozoic time when part of the Belt basin occupied the region of the Butte quadrangle; clastic and carbonate rocks of the Belt Supergroup have a total thickness of at least 52,000 ft in the quadrangle. Mafic dikes and sills were intruded into the Belt rocks, probably during Late Proterozoic time. During Paleozoic time, near-shore and shallow-water carbonate and carbonate-bearing clastic sediment was deposited and the resulting strata have a total thickness of about 7,900 ft; Paleozoic strata are mainly in the north, central, and northeastern parts of the quadrangle. Mesozoic sedimentary rocks were deposited in a foreland basin that accumulated about 22,000 ft of clastic and carbonate strata in the central part of the quadrangle and about 7,900 ft of equivalent strata in the northeastern part of the quadrangle.

In Late Cretaceous time, numerous stocks and several batholiths were emplaced at mesozonal and epizonal depths. The Boulder, Idaho, Sapphire, and Philipsburg batholiths, composed of monzogranite and granodiorite, and numerous stocks of diorite, granodiorite, and monzogranite were intruded during Late Cretaceous time. Hydrothermal activity during and following the waning stages of magmatism formed a variety of mesothermal and epithermal mineral deposits. The Elkhorn Mountains Volcanics, of Late Cretaceous age, are found as roof pendants and along the margins of the Boulder batholith and probably represent early extrusive phases of the magma which later formed the Boulder batholith.



EXPLANATION

Map No.	Name	Map No.	Name	Map No.	Name
1	Rattlesnake Creek area	25	Douglas Creek (Gird Creek) district	47	Wolf Creek district
2	Garnet Range area	26	Maxville area	48	Marysville (Silver Creek) district
3	Clinton district	27	Racetrack (Danielsville) district	49	Ophir (Snowshoe Creek, Carpenter Creek) district
4	Copper Cliff district	28	Philipsburg district	50	Dog Creek area
5	Coloma district	29	Red Lion (Hidden Lake) district	51	Austin district
6	Garnet (First Chance) district	30	Lost Creek district	52	Scratchgravel Hills area
7	Top O'Deep district	31	Blue-Eyed Nellie district	53	Sevenmile Creek area
8	Elk Creek area	32	Olson Gulch district	54	Stemwinder Hill area
9	Bear Creek area	33	Johnson Basin district	55	Helena (Last Chance) district
10	Garrison district	34	Georgetown (Southern Cross, Cable, Gold Coin) district	56	North Boulder Mountains area
11	Sapphire Mountains area	35	Silver Lake district	57	Elliston district
12	Welcome Creek district	36	Anaconda Range area	58	Rimini (Vaughn) district
13	Rock Creek area	37	Deer Lodge Valley area	59	Clancy district
14	Frog Pond Basin district	38	Blackfoot River area	60	Basin (Cataract) district
15	Moose Lake district	39	Big Blackfoot (Ogden Mountain) district	61	Wickes (Colorado) district
16	John Long Mountains area	40	Lincoln Gulch area	62	Amazon district
17	Alps district	41	McClellan Gulch district	63	Boulder (Comet) district
18	Black Pine (Combination) district	42	Seven-up Pete Gulch area	64	Emery (Zosell) district
19	Henderson Creek area	43	Stemple-Gould district	65	South Boulder Mountains area
20	Flint Creek Range area	44	Nevada Creek area	66	Oro Fino district
21	Dunkleberg district	45	Finn district	67	Lowland district
22	Pioneer (Gold Creek) district	46	Little Prickly Pear area	68	Big Foot (State Creek) district
23	Rose Mountain (Gold Creek) district			69	Butte (Summit Valley) district
24	Princeton (Boulder Creek) district			70	Pipestone district

Figure 1 (above and facing page). Index map showing locations of mining districts, geographic areas, and areas of figures 3-14, Butte 1°×2° quadrangle, Montana

The development of intermontane valleys during Tertiary time was accompanied by volcanism, erosion, and sedimentation. Extensive early Tertiary volcanism formed the Lowland Creek Volcanics in the southeastern part of the quadrangle, and formed volcanic fields in the Garnet Range, northern John Long Mountains, southern Sapphire Mountains, and east of Lincoln. Volcanic rocks of equivalent age are also found northeast of Deer Lodge in the northwestern part of the Boulder Mountains. Lacustrine and fluvial deposits accumulated in intermontane valleys during mid- to late-Tertiary time, concurrently, in part, with volcanism that contributed volcanic debris to intermontane basins. During late Tertiary time, extensive pediments formed, and gravel, some of which has been mined for placer deposits of gold, was deposited on the pediments.

Quaternary time was dominated by extensive alpine glaciation in many of the ranges in the quadrangle; icecaps occupied the topographic crests of the Flint Creek and Anaconda Ranges and the Boulder Mountains. Four glacial events have been identified in the Flint Creek Range and multiple glacial events probably occurred in the other ranges as well. Extensive glacial lakes repeatedly filled valleys in the northeastern and western parts of the quadrangle during the last glacial event. Postglacial time was one of erosion and alluvial deposition in modern stream channels.

The principal structural elements of the Butte quadrangle are the Sapphire thrust plate, the southwestern end of the Montana disturbed belt, and strike-slip faults of the Lewis and Clark line (fig. 2). The complexly faulted and folded Sapphire thrust plate occupies much of the western and central parts of the quadrangle and the Montana disturbed belt is in the northeastern part where it abuts faults of the Lewis and Clark line. The Lewis and Clark line consists of a broad zone of east-southeasterly to southeasterly trending faults that extends across the northern and northeastern parts of the quadrangle. Some steeply dipping faults of the Lewis and Clark line may have originated during deposition of the Proterozoic Belt rocks; however, most faulting and folding are the result of regional compression during late Mesozoic time. This compression formed an extensive foreland basin east of thrust plates that moved generally from west to east. Most of the pre-Tertiary sedimentary rocks in the quadrangle have been moved to their present positions by thrust and strike-slip faults. The most intense deformation occurred during Late Cretaceous time when laterally extensive thrust faults, zones of imbricate thrusts, and tight and overturned folds were formed. Most Late Cretaceous magmatic events postdate thrust and strike-slip faults; stocks and batholiths emplaced into the faulted terrane made the terrane more resistant to continued deformation. During early Tertiary time most of the present mountain ranges and drainage systems were formed during erosion and normal faulting at the margins of some ranges. Some normal faults along the east side of Deer Lodge

Valley and north of Elliston continued to slip during middle Tertiary time. Minor Quaternary faulting may be related to continued activity along some normal faults and along some strike-slip faults of the Lewis and Clark line.

MINERAL DEPOSITS

Large quantities of metallic and nonmetallic mineral commodities have been produced from the Butte quadrangle during its long mining history. The largest mining district, Butte or Summit Valley, is one of the richest and most productive mining districts in the world, and the value of its metal output, more than \$6 billion, is far greater than the combined total, about \$400 million, from the rest of the quadrangle. The two most important types of deposits that have been mined in the quadrangle are (1) hydrothermal vein and replacement deposits of base and precious metals and (2) placer deposits of gold. Other important deposit types are porphyry or stockwork deposits of copper and molybdenum; skarn deposits of gold, copper, silver, tungsten, and iron; vein and replacement deposits of manganese, tungsten, barite, and fluorite; and strata-bound deposits of phosphate. Large-tonnage, low-grade stockwork and disseminated gold deposits are currently being mined and are the targets of exploration by many companies and prospectors.

Copper is the most important commodity produced from the quadrangle and this metal has come mainly from the Butte district. This district also has yielded large amounts of silver, zinc, manganese, lead, gold, cadmium, bismuth, molybdenum, selenium, and tellurium. Many other districts in the quadrangle have also been substantial producers of gold, silver, lead, zinc, and copper. The Philipsburg district was a leading producer of manganese and also has produced appreciable amounts of precious and base metals. Significant quantities of tungsten, phosphate, fluorite, barite, sapphires, limestone, and silica have also been mined from various districts in the quadrangle. The most important period of geologic time for the formation of ore deposits in the region of the Butte quadrangle spanned the Late Cretaceous and Paleocene epochs; however, mineral occurrences possibly as old as Middle Proterozoic and certainly as young as Holocene are found within the quadrangle. The oldest occurrences of potential economic significance are of strata-bound copper and silver minerals in the Proterozoic Belt Supergroup. Some occurrences, such as those in quartzite of the Mount Shields formation, may be similar in origin to large copper-silver deposits at Troy, in northwestern Montana, that are presently being mined. Another period of metallization was during the Paleozoic when phosphate-rich beds were formed as part of the Phosphoria Formation of Permian age; these have been mined in several parts of the quadrangle and are still being mined in the eastern part of the Garnet Range. During the Late Cretaceous Epoch, most of the productive hydrothermal vein and replacement, porphyry-stockwork, and skarn

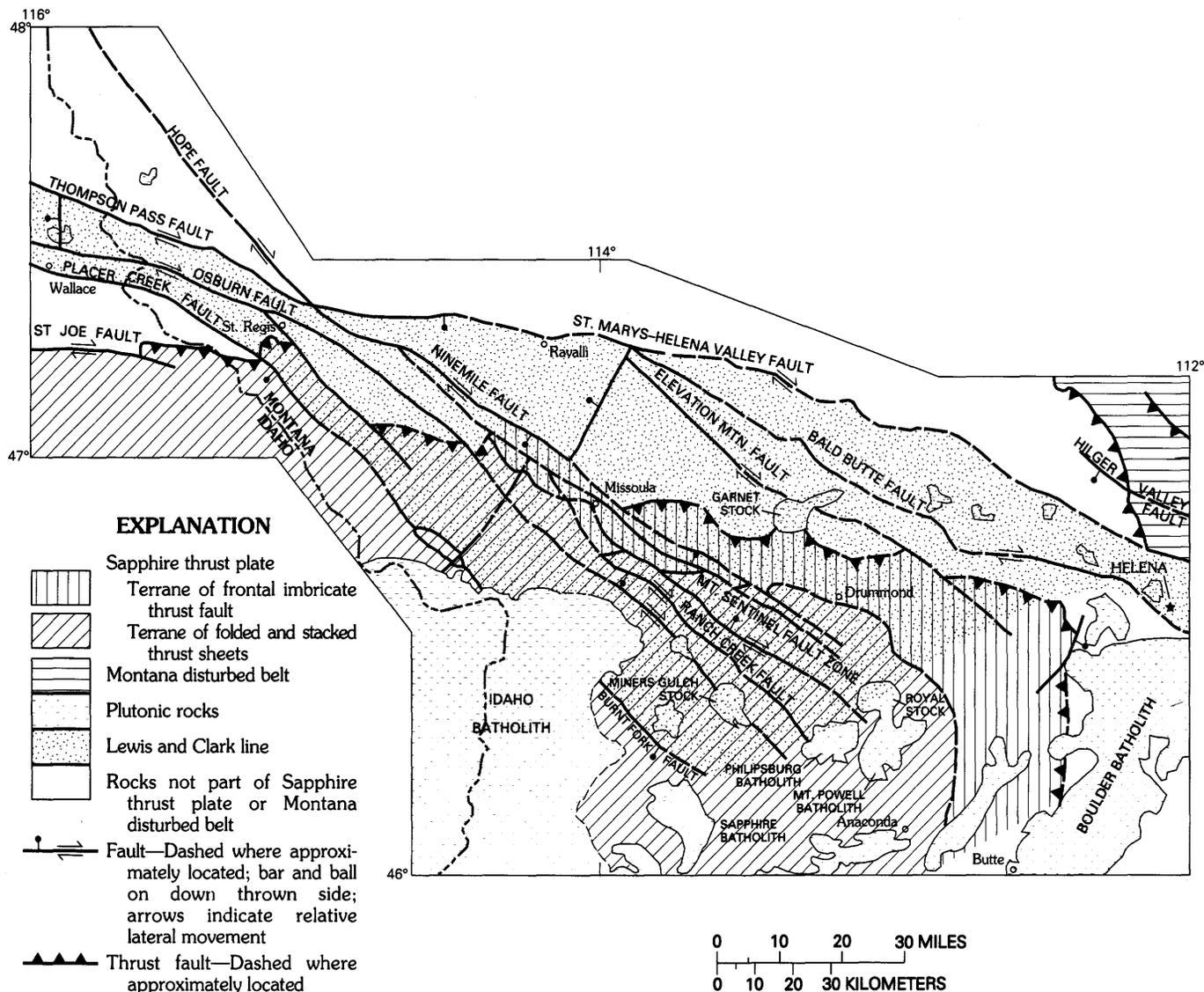


Figure 2. Principal structures and plutons of the Sapphire thrust plate

deposits formed. These deposits are temporally and spatially related to plutonic rocks of Late Cretaceous age. Some younger hydrothermal deposits are associated with Eocene volcanic rocks; a notable example is the Montana Tunnels mine (Sillitoe and others, 1985), which is a large, low-grade diatreme-hosted, stockwork-disseminated, gold-silver-zinc-lead deposit that formed in the middle Eocene Lowland Creek Volcanics. During Tertiary and Quaternary time, placer deposits formed as gold and other valuable minerals were released by weathering of host rocks and were transported and deposited on pediments, in alluvial fans, and in stream channels.

HISTORY OF MINING

The site of the first discovery of gold in Montana is in the Butte quadrangle. In 1852, Francois Finlay discovered

gold near the mouth of Gold Creek in the central part of the quadrangle (Browne, 1868; Taylor, 1868). Although Finlay did not find deposits rich enough to mine, news of his discovery led others to prospect in the area of Gold Creek. In 1858, a group of prospectors led by Granville Stuart also found gold along Gold Creek (Pardee, 1951). The first actual mining in Montana occurred during the summer of 1860 when Henry Thomas, called "Gold Tom" or "Tom Gold Digger" set up three small sluice boxes on Gold Creek and recovered \$1.50–\$2.00 per day in gold (Taylor, 1868). In 1860 and 1861, Stuart and others located promising placer deposits in the Gold Creek area, but they did not begin mining until the summer of 1862, when James and Granville Stuart and others built sluice boxes and recovered a small amount of gold from their claims (Pardee, 1951; Emmons and Calkins, 1913).

Early placer mining in the Gold Creek area, later to become known as the Pioneer district, was hindered by a lack of sufficient water to mine placer deposits topographically higher than the active streams and by the abundance of large boulders in gold-bearing stream channels. During much of the 1860's, prospectors were more attracted to richer and more easily worked placers such as the Bannack and Alder Gulch districts, approximately 150 mi south of the Pioneer district. The construction of the Rock Creek ditch in 1868–69 rejuvenated mining activity in the Pioneer district and led to discovery and mining of many rich placer deposits in succeeding years (Pardee, 1951). The Pioneer district eventually produced approximately \$6 million (value at time of production) in gold from placers.

The discovery of gold placer deposits, especially those at Bannack in 1862 and at Alder Gulch in 1863, led to a great influx of eager prospectors into Montana Territory and to rapid development of a mining industry. Many of the principal placer districts in the area of the Butte quadrangle were discovered during the 1860's. These include Last Chance Gulch (Helena district), Silver Bow Creek (Butte district), McClellan Gulch, Bear Creek, Lincoln Gulch, and Carpenter Creek (Ophir district) (nos. 55, 69, 41, 9, 40, 49; fig. 1). Last Chance Gulch, the present site of Helena, was located in the summer of 1864; placers along the gulch yielded about \$16 million of gold, mostly before 1868 (Browne, 1868; Knopf, 1913). Gold placers along Silver Bow Creek and its tributaries were also discovered during the summer of 1864 and yielded an estimated \$1.5 million of gold by 1867 (Miller, 1973). McClellan Gulch, also discovered during 1864, had a reported production by 1875 of \$7 million of gold (Lyden, 1948). The Bear Creek placers, in the northwest part of the Butte quadrangle, were discovered in 1865 and within a few years these deposits produced an estimated \$5 million of gold (Pardee, 1918). Also discovered in about 1865, Lincoln Gulch, in the northeastern part of the quadrangle, had an estimated production of about \$7 million of gold, nearly all of which was produced along a 7,400 ft stretch of the gulch (Lyden, 1948). The Carpenter Creek placers, in the Ophir district, were discovered in 1865 (Taylor, 1868) and are reported to have yielded gold worth \$5 million during the first 4 years of mining (Lyden, 1948). In 1865, the total value of gold produced in Montana was about \$18 million (Taylor, 1868).

Many of the principal lode deposits in the Butte quadrangle were found at about the same time or within a few years after the discovery of placer gold deposits. The Whitlatch-Union gold-bearing vein, a few miles south of Last Chance Gulch, was discovered in 1864 (Browne, 1868), and silver-lead and silver deposits were found nearly simultaneously with the discovery of gold placers in the Wickes district (no. 61, fig. 1). The Gregory lode deposit in the Wickes district, one of the earliest finds, was located in 1864 by prospectors traveling from Alder Gulch to Last Chance Gulch following news of the discovery of rich

placers there (Knopf, 1913). Other important early discoveries in the Wickes district were the silver-lead ore bodies of the Alta mine and silver-gold ore bodies of the Minah mine, which were discovered in 1864 and 1869 respectively (Knopf, 1913). The Lee Mountain mine, a large producer of silver-gold-lead-zinc ore, was discovered in the Rimini district (no. 58, fig. 1) in 1864 (Becraft and others, 1963), as was also the Hope mine, a large producer of silver ore, in the Philipsburg district (no. 28, fig. 1) (Emmons and Calkins, 1913). In 1867, a mill was built to treat the silver ores of the Hope mine; this was the first silver mill to be built in Montana Territory, and its construction required that materials be freighted to the site by wagon from Utah (Emmons and Calkins, 1913). In 1866, the rich gold-copper ores of the Atlantic Cable mine were discovered in the Georgetown district (no. 34, fig. 1; Emmons and Calkins, 1913), and lode gold deposits were discovered in the Garnet district (no. 6, fig. 1; Pardee, 1918).

The successful exploitation of mineral deposits in the area of the Butte quadrangle depended on development of regional transportation systems and on construction of mills and smelters to treat the ores. During the early period of mining, prior to 1883, the development of lode deposits was hampered by the lack of material and the remoteness of supply centers. Only ores of highest grade could be mined because of the high costs of shipping, milling, and smelting. During the 1870's, the principal transportation route to and from Helena was the Missouri River, via Fort Benton, Montana, 150 mi northeast of Helena; however, steamers could navigate the Missouri to Fort Benton only during high water, a period of 4 to 6 weeks each year (Knopf, 1913). During low water, steamers were forced to stop at Fort Union, several hundred miles east of Fort Benton. Ore was hauled by wagon to Fort Benton, then by boat to seaports, and finally by sea to Swansea, Wales, for smelting. Two alternate routes were used to receive supplies and to ship ore or bullion to outside markets: One way was by wagon to Salt Lake City, Utah, a distance of 500 mi; then by railroad to San Francisco; and finally by sea to Europe; and the other was by wagon to Walla Walla, Washington; then by boat down the Columbia River to the Pacific Ocean; and finally by sea to Europe. Milling costs were high for ores, particularly for silver ore because salt, which was used in great quantity in silver mills, had to be transported from Utah and, in 1871, salt cost \$120 per ton in Philipsburg (Emmons and Calkins, 1913).

The completion of the transcontinental Northern Pacific Railroad through Helena, Garrison, and Missoula in 1883 stimulated the mining industry in the Butte quadrangle and led to the peak period (about 1883 to 1900) of production of silver and gold in most mining districts. The new transcontinental railroad led to rapid development of many mining districts, which included the building of branch railroad lines, construction of new smelters, and enlarging of old smelters. For example, during this period of

1883–1900 in the Philipsburg and Georgetown districts, the Granite mine reached its peak of production and the largest ore bodies of the Bimetallic, Hope, and Cable mines were discovered and exploited (Emmons and Calkins, 1913). Other districts, such as the Marysville district (no. 48, fig. 1), principally a gold producer, also flourished during this period.

Since 1900, mining activity in the quadrangle has generally declined and most districts have not reached the high production levels attained during the late 1800's. A notable exception to this general decline however is the Butte district, in which the largest production was attained after 1900. During the post-1900 period, many districts had periods of increased production during World War I and during the late 1930's to early 1940's. For some commodities, such as manganese, tungsten, and phosphate, there was little demand prior to 1900, or their occurrence as economically exploitable deposits in the Butte quadrangle was unknown. Manganese was first produced from the Philipsburg district in 1900 and, subsequently, this district became the country's leading producer of manganese during World War I and, until the early 1960's, was the major domestic source of natural battery-grade manganese dioxide (Prinz, 1968). The Butte district was also a principal source of manganese; manganese was first mined in the Butte district in 1917, and for many years, until about 1959, this district was the largest U.S. producer of manganese (Miller, 1973). There was no significant production of tungsten from the Butte quadrangle until 1942. However, between 1942 and 1949, a dredge recovered a total of 142 tons of scheelite concentrate (about 142,000 lb. of tungsten) and 20,800 oz of gold from alluvium along Henderson Creek in the west-central part of the quadrangle (Walker, 1960). Tungsten was also produced from a number of small lode deposits in the quadrangle during a Government stockpiling program from 1954 to 1957. Another commodity that was not produced until about 1940 is phosphate; since then, however, large quantities of phosphate have been produced from the quadrangle, principally from the Garrison district (Swanson, 1968).

Although the peak of mining activity in most placer gold districts was during the 1860's and 1870's, a number of these districts experienced a resurgence of activity after 1900 when the new mining techniques of bucket-line and dragline dredging were introduced. The most productive period of dredging was from 1933 to 1957 when approximately \$7.8 million of gold was produced from dredges operating on Prickley Pear (Clancy district), Gold (Rose Mountain district), Henderson, Bear, and Carpenter Creeks and at Helena (Lyden, 1948; Walker, 1960).

The most important mining district in the post-1900 period has been the Butte district. Initially the Butte district was a placer gold district but most of the placers had been mined by about 1867 and the total production, about \$1.5 million, was smaller than many other placer gold districts in the Butte quadrangle. The discovery of silver in 1865

signaled the beginning of the period in which Butte became one of the most important silver-producing districts of the U.S. Butte's greatest fame, however, came later after the discovery of copper-rich veins. During the late 1800's and since 1900, the Butte district has been one of the leading copper producers of the world. Because of its importance, some of Butte's rich and colorful history is summarized here from reports by Miller (1973) and Weed (1912).

The period of silver mining in Butte began with the first important discovery of silver in 1865 when the rich ore bodies of the Travona mine were found. Other discoveries followed rapidly thereafter and by the early 1870's, most of the important silver-bearing lodes had been discovered. Silver was difficult to recover from the ores initially because of complex mineralogy and it wasn't until about 1876 that satisfactory techniques for the treatment of silver ores of Butte were developed. By 1879 nearly all of the economically important veins had been located and Butte had become the leading mining district in Montana Territory. At the peak of the silver mining period, in 1887, five mills with a total of 290 stamps were processing nearly 400 tons per day of gold-silver ore. The ore yielded an average of about \$25 per ton in gold and silver. The silver mining period lasted until 1892 when a decline in silver price curtailed most silver production.

The first major discovery of copper at Butte occurred in 1882 when Marcus Daly found high-grade chalcocite ore on the Anaconda claim during the development of the claim as a silver mine. Shortly after this discovery, W.A. Clark encountered rich copper ore on the Colusa claim. These discoveries led to a great increase in the exploration for and mining of copper ores. During the period of 1882 to 1884, 37,000 tons of ore that averaged 45 percent copper were mined from the Anaconda claim and shipped to a smelter. By 1885, 25 companies were mining copper in the Butte district. The early shipments of high-grade copper ore were hauled by ox cart to Corinne, Utah, then by railroad to east coast ports, and finally by sea to Swansea, Wales, for smelting. After the completion of the Northern Pacific Railroad in 1883, ore was hauled to Portland, Oregon, and then by sea to Swansea. The high cost of transportation, however, combined with recognition that the deposits were of large size and high copper grades prompted construction of branch railroad lines and smelters to transport and process the ore locally. Much of the construction occurred between 1884 and 1900 and was financed by newly formed large mining corporations and holding companies. By 1906, Butte was the most important mining center in the U.S. and was second in the world after the Rand mines in South Africa. By the end of 1906, total production of the Butte district was estimated to be \$650 million and Butte was producing about 20 percent of the world's total copper.

One of the largest mining companies in Butte was the Daly syndicate, which was incorporated as the Anaconda Mining Company in 1891 and became the Anaconda Copper Mining Company in 1895. Other major companies,

controlled by Boston mine owners, were the Boston and Montana Consolidated Copper and Silver Mining Company and the Butte and Boston Consolidated Mining Company. Aware of the large potential for copper mining in Butte, New York financiers organized a large holding company, the Amalgamated Copper Company, in 1899, and this company secured stock control of the Anaconda Copper Mining Company and its subsidiaries as well as the Boston and Montana, Butte and Boston, and Parrott companies. During the period of 1898 to 1906, a major confrontation between some of the principal mining companies and F. Augustus Heinze was fought underground by miners and in courtrooms by lawyers over the ownership of mining properties and apex rights on several important veins in the Butte district. This strife ended in 1906 when the holdings of Heinze were purchased by Amalgamated Copper Company (Sales, 1964). In 1910, the holdings of Amalgamated were merged to form the Anaconda Copper Mining Company, which became the principal operating company in the Butte district.

Until 1952, copper ore from the Butte district was mined by traditional underground methods. During the period of 1952 to 1963, bulk-mining by block caving in the underground mines added substantially to the production of the district. Open-pit mining in the Berkeley Pit began in 1955, and by 1964 production from open-pit mining was approximately 61 percent of the annual copper production of the district. Underground mining was eventually phased out and the open-pit mining was the principal mining method until all mining ceased in 1983. Open-pit mining resumed in 1986 by Montana Resources and continues to the present. Significant quantities of copper have also been recovered almost continuously since the 1880's by precipitation of copper from underground mine waters and from acid leaching of low-grade copper ore. During the period of 1940 to 1963, the annual average amount of copper recovered from mine waters was 5,180,000 lb.

Copper was the principal metal produced in the Butte district, but the district has also produced large amounts of gold, silver, zinc, lead, manganese, molybdenum, cadmium, bismuth, sulfuric acid, selenium, and tellurium. High levels of copper production were achieved early and continued until 1983. Before block caving methods were used, the maximum annual production of copper was attained in 1916 when 292,698,764 lb of copper were produced from underground mines. In 1966, 1970, and 1972, when the majority of ore was mined by open-pit methods, total production of copper by all methods combined was more than 300,000,000 lb in each year.

PRODUCTION

Production data for mining districts and geographic areas in the Butte quadrangle are shown in table 2. The

quantity of metal produced (in troy ounces for gold and silver and in pounds for copper, lead, and zinc) and estimated or recorded values in dollars at the time of production are listed. There are few records of quantities of metals produced before 1904. Most of the data available before 1904 is in the form of estimates of dollar value at time of production and, except in the case of gold production from placer deposits, the estimates commonly include the combined value of two or more metals. The quantity of each metal produced can not be estimated without making assumptions about the grade of each metal and the tons of ore mined. Beginning in 1904, mine production was systematically recorded and reported in publications of the USGS (1904–1923) and later in publications of the U.S. Bureau of Mines (1924–present). The total quantities of metals shown in table 2 are minimum amounts because (1) of the lack of data on quantities of metals produced prior to about 1900, and (2) many districts had larger total production prior to 1900 than in the post-1900 period. Production of mineral commodities other than gold, silver, copper, lead, and zinc are shown in footnotes. The quantities of metals produced (table 2) are, except for gold, reported values from published and, for a few entries, unpublished sources. The quantity of gold produced (in troy ounces) was estimated for many placer districts based on the approximate price of gold at the time of production and, where available, the reported fineness of gold produced.

The Butte district has a total production valued at more than \$6 billion whereas the total of all other districts combined is about \$500 million. Even if the production of Butte district is excluded, the total production of mines in the remainder of the quadrangle is still much greater than adjacent quadrangles. For example, the value of production from mines in the Dillon 1°×2° quadrangle, covering another highly mineralized region directly south of the Butte quadrangle, is estimated to be approximately \$200 million (Loen and Pearson, 1984). Based on data shown in table 2, 17 districts or areas in the Butte quadrangle had production valued at more than \$5 million. The ten districts with the largest production are (1) Butte (greater than \$6 billion), (2) Wickes (\$125 million), (3) Philipsburg (\$91 million), (4) Marysville (\$40 million), (5) Garrison (\$30 million), (6) Helena (\$29 million), (7) Rimini (\$28 million), (8) Black Pine (\$22 million), (9) Boulder (\$17 million), and (10) Basin (\$16 million).

The five most important commodities produced from the Butte quadrangle, in order of dollar value, are copper, silver, gold, zinc, and lead. Besides these base and precious metals, mines in the quadrangle have produced phosphate, manganese, tungsten, cadmium, bismuth, sulfuric acid, selenium, tellurium, fluorite, sapphires, limestone, and silica.

DATA SOURCES AND METHODS OF COMPILATION

Data on mines and prospects were obtained mainly from the Mineral Resources Data System (MRDS), a USGS computer file that includes records on mineral occurrences throughout the U.S. All MRDS records were checked for accuracy by examination of original sources and revised if necessary. Parts of each MRDS record were selected and compiled in computer-based files for this report and for mineral resource assessment of the Butte quadrangle. MRDS records are available to the public through USGS Mineral Information Offices in Washington, D.C.; Tucson, Arizona; Reno, Nevada; and Spokane, Washington. Additional data were obtained from unpublished records of the U.S. Forest Service, field investigations during this study, and published reports more recent than those cited in MRDS; the latter include reports from wilderness study projects conducted by the USGS and the U.S. Bureau of Mines. All sources of data on mines and prospects are listed at the end of table 2.

Many of the records in the original MRDS file for the Butte quadrangle were deleted or not included in the compilation for this study because:

- (1) Many records were duplicates; data from these were combined into one record.
- (2) Location data were inadequate to locate mine or prospect within 0.25 sq mi (quarter section).
- (3) Many sites had little or no development and are probably of negligible economic potential.
- (4) Many records on nonmetallic commodities such as clay are not part of this study.

Several published sources of data used for MRDS and this study are, in part, previous compilations of mines and prospects data. Several of these are publications by the Montana Bureau of Mines and Geology; these include a compilation of data on mines in Montana (Krohn and Weist, 1977), on placer gold deposits in Montana (Lyden, 1948), and on mines and metallic mineral deposits for several counties. The county reports include those for Jefferson County (Roby and others, 1960), Powell County (McClerman, 1976), and Lewis and Clark County (McClerman, 1983). Data were also obtained from USGS publications; the most important of these are reports on the Philipsburg 30-minute quadrangle (Emmons and Calkins, 1913), on the Helena mining region (Knopf, 1913; Pardee and Schrader, 1933), on the Butte district (Weed, 1912), and on the Jefferson City 15-minute quadrangle (Becraft and others, 1963).

Approximately 150 mines and prospects (about 15 percent of the total number of localities) were examined during the course of field work in the quadrangle. Information collected from these site examinations were: (1) accu-

rate location of sites on 7.5- or 15-minute topographic maps, (2) descriptions of geologic setting of mine or prospect, (3) descriptions of mine workings, and (4) geochemical data from analyses of rock samples. The site examinations provided new or additional information on host rocks and associated igneous rocks, the kind and extent of alteration, the structural environment, and mineralogy of ore and altered rocks. Rock samples were analyzed chemically to determine the concentration of metals of economic interest and elements useful for geochemical indicators of alteration and mineralization. These newly acquired data were used to verify, revise, and update the MRDS data.

All data shown in tables 1 and 2 were compiled, edited, and formatted on minicomputers and microcomputers. A microcomputer-based digitizing and plotting program (Selner and Taylor, 1989) was used to prepare preliminary plots that show locations of mines and prospects.

MINES AND PROSPECTS

The locations of 1,128 mines and prospects in the Butte quadrangle are shown on the map and figures 3–14. Most sites are shown on the map, which is at a scale of 1:250,000. However, the series of 12 figures at scales of 1:24,000, 1:50,000, and 1:62,500 (figs. 3–14) show mines and prospects in areas and districts where localities are too closely spaced to show at a scale of 1:250,000. Boundaries of mining districts (map and figs. 3–14) reflect historical usage, and many were taken from published maps. In districts where boundaries are poorly defined the boundaries have been arbitrarily drawn so most or all of the mines or prospects in an area are included. In some districts the boundaries have been drawn along drainage divides. Mines and prospects that are widely scattered outside of established districts have been grouped into geographic areas that are defined generally by natural boundaries such as streams, drainage divides, intermontane basins, and mountain ranges. The geology and mineral deposits are described by mining district or geographic area (table 1).

The locations of mines and prospects are numbered on the map and figures 3–14; the numbers are keyed to table 1, and distinctive symbols are used to denote deposit type and production for each site. The sites are grouped by mining district or geographic area. For the purpose of numbering the sites, the quadrangle was arbitrarily divided generally into west and east halves, approximately along longitude 113°. The numbering scheme starts in the northwest part of the quadrangle, and numbers increase to the east and south in the west half. After all sites in the west half were numbered, the sites in the east half were numbered

starting in the northwest part of the east half, and the numbers increase to the east and south. The locations of sites were plotted on published 7½- or 15-minute topographic maps on the basis of source reports or maps. The latitude and longitude of each site was recorded using appropriate scales and templates.

Table 1 is organized by mining districts and geographic areas and by sequence of site numbers. Within each district or area, the sites are alphabetized. For each district or area, descriptions include name, alternate name, geologic setting, type of deposits, production status, and kinds of commodities produced. For each mineralized site in the district or area, table 1 lists name, alternate name(s), location by latitude and longitude, commodities present, brief description, and sources of data.

"Commodities present" (table 1) includes the commodities that have been produced by mining, commodities that are present in high enough concentrations to be of economic interest as coproducts and byproducts of mining, and elements of interest for geochemical exploration. The commodities or elements include those cited in recorded or estimated production data, those that occurred as major elements in reported minerals, and those detected by chemical analysis of samples collected at sites. The geochemical and commodity data are useful for classifying deposit types and for evaluating and interpreting the results of geochemical surveys.

The "description" (table 1) for each mine or prospect includes some or all of the following; type and extent of mine workings, form and shape of deposit, type of deposit, production status, principal commodities produced, and geologic setting (host rocks, associated igneous rocks, and structures). Deposits have been classified into 13 deposit types (table 3) based primarily on form and shape of deposit and geochemistry. The production of districts and mines, if known, has been classified into small, medium, large, and very large and as "not determined" if not known. These categories are based on the dollar value of production, at the time of production, or, if dollar value is not available, on tons of ore produced. The categories are: A small-size mine or district has produced less than \$50,000 or less than 2,500 tons of ore, a medium-size one has produced \$50,000 to \$499,000 or 2,500 to 24,000 tons of ore, a large-size one has produced \$500,000 to \$5,000,000 or 25,000 to 250,000 tons of ore, and a very large-size one has produced more than \$5,000,000 or more than 250,000 tons of ore. This classification is arbitrary and may not be appropriate for other areas or for a different scale of analysis.

The variety of mineral deposits, classified into 13 types, implies a wide range of physical and chemical conditions for their formation. Most deposits are of hydrothermal and epigenetic origin. Some deposits, such as strata-bound deposits of phosphate in Permian rocks and occurrences of copper and silver in Middle Proterozoic rocks, are probably syngenetic or, in the case of the copper

and silver occurrences, diagenetic. Most mines and prospects are vein and replacement deposits of base and precious metals; these include many of the largest and most productive mines of the quadrangle, such as the high-grade copper-zinc-lead-silver veins of the Butte district, the silver-gold veins of the Granite-Bimetallic (Philipsburg district) and Drumlummon (Marysville district) mines, the vein and replacement silver-zinc-lead bodies of the Alta mine (Wickes district), and zinc-lead-silver replacement bodies of the Forest Rose mine (Dunkleberg district). The second most abundant deposit type in the Butte quadrangle is placer gold/tungsten/sapphire deposits, which includes placer gold deposits in the Helena, Pioneer, and McClellan Gulch districts, and the Lincoln Gulch area; placer gold-tungsten deposits in the Henderson Creek area; and placer sapphire deposits in the Rock Creek area. Other abundant deposit types that have contributed significantly to mineral production are skarn tungsten/gold/copper and vein and replacement manganese deposits. Skarn deposits with large production are the Cable gold-silver-copper and the Spring Hill gold mines. Other deposit types include porphyry or stockwork copper/molybdenum/tungsten deposits, such as the Berkeley and Southeast Berkeley open-pit mines, and stockwork or disseminated gold/silver deposits, such as the Montana Tunnels open-pit mine.

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Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana

[Note: Site numbers are shown on the map and figures 3-14. Commodities present are listed in approximate decreasing order of importance. Codes for commodities, host rock(s), and associated igneous rocks and explained sources of data are listed following this table. References cited in district and area descriptions and numerical codes for sources of data are listed in Sources of Data at end of table 2]

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Rattlesnake Creek area						
The principal rock types in area are quartzite, siltite, and argillite of Missoula Group (Middle Proterozoic). In addition there are impure carbonate rocks of Helena Formation (Middle Proterozoic), small patches of Paleozoic sedimentary rocks, and Late Proterozoic diabase dikes and sills. Main structures are northwest-trending thrust and normal faults. Two major structural provinces, the Rattlesnake and Sapphire thrust plates (Wallace and others, 1983), converge in area. There is no recorded production from area.						
1	Frenchman's prospect	46-58-15	113-57-30	Ag	Minor occurrence of silver in quartz veins in quartzite (Yms). No production.	158
2	Holiday claim	46-57-24	113-59-15	Ag, Pb, Zn, Au	Shallow pits and trenches along vein in argillite (Ymi). No production.	134
3	Rattlesnake barite prospect	46-58-03	113-54-05	Ba	Barite vein along fault in quartzite (Ypi). No production.	8, 158
Garnet Range area						
Garnet Range area includes all of the Garnet Range except for several mining districts that are discussed separately below. Rock types are sedimentary rocks of Middle and Late Proterozoic, Paleozoic, Mesozoic, Tertiary, and Quaternary ages; plutonic igneous rocks of Late Cretaceous age; and volcanic rocks of Tertiary age. The structurally complex area has many northwest-trending thrust, normal, and strike-slip faults and folds. Southern part of area crossed by the leading edge of the Sapphire thrust plate which is a zone of imbricate thrusts that displace Middle Proterozoic, Paleozoic, and Mesozoic sedimentary rocks. Several mines and prospects are in area and outside of known mining districts; these include base- and precious-metal veins and skarns, manganese veins, gold placers, and limestone quarries. Area was large producer and principal products were silver, lead, manganese, and limestone.						
4	Baker and Sullivan mine	46-47-00	113-16-57	Pb, Ag, Cu	Several open pits and shafts along vein and replacement deposits in limestone (Es). Small producer of lead-silver ore.	98
5	Big Horn calcium quarry	46-42-37	113-12-07	Ls	Surface workings in limestone (Mm). Small producer of limestone.	78
6	Blacktail mine (Linton mine)	46-45-59	113-32-37	Ag, Pb, Cu, Zn, Au	Open-pit mine in veins in dolomite (Eh). Large producer of silver-lead ore.	134
7	Bohrer mine	46-43-15	113-02-40	Au, Ag, Pb, Cu, Zn	Underground workings in veins in shale (Esh). Small producer of gold, silver, lead, copper, and zinc.	144
8	Chloride mine	46-47-20	113-30-20	Pb, Ag	Underground workings in pipe-like structures and silicified zones in carbonate rock (Dj). Small producer of lead-silver ore.	98
9	Cook prospect (Arrowhead lease)	46-44-15	113-36-00	Mn, Au, Ag	Surface and underground workings in a manganese replacement zone in limestone (Es). Medium producer of manganese, gold, and silver.	134

10	Drummond quarry (Spring Gulch mine)	46-40-10	113-08-13	Ls	Surface and underground workings in limestone (Kk) beds. Small producer of limestone for smelter flux.	19, 35, 54
11	Hitchcock quarry	46-44-10	113-13-20	Ls	Surface workings in limestone (Mm) beds. Small producer of limestone.	19
12	Limestone mine	46-41-20	113-03-15	Ls	Surface workings in limestone (Mm) beds. Small producer of limestone.	35
13	Mitchell copper prospect	46-42-30	113-23-11	Cu, Pb	Underground workings in veins along fractures in quartzite (Je). Small producer of copper and lead.	152
14	Yourname Creek placer (Includes Deer Gulch)	46-53-11	113-09-00	Au, Ag	Surface workings in placer deposits in alluvium (Qs). Small producer of gold and silver.	90

Clinton district

The Wallace Creek granodiorite stock (Tertiary) intrudes thrust-faulted Cambrian and Middle Proterozoic sedimentary rocks. Northwest-trending steep faults cut thrust faults. Veins are in shear zones in sedimentary rocks and in granodiorite. District was a medium producer and principal products were copper, silver, lead, zinc, and gold.

15	Adaline mine	46-49-05	113-35-37	Pb, Ag, Cu, Au,	Underground workings along veins in shear zones in shale (Esh) near granodiorite (TKgd) contact. Small producer of lead-silver ore.	98
16	Aladdin mine	46-47-28	113-39-12	Cu, Ag, Au	Surface and underground workings in veins in granodiorite (TKgd). Small producer of copper ore.	98, 134
17	Bellevue mine	46-47-52	113-38-47	Cu, Ag, Au	Underground workings in veins in granodiorite (TKgd). Small producer of copper, silver, and gold.	77, 98
18	Cape Nome mine (Bullion, Moose)	46-47-22	113-39-11	Cu, Ag, Au, Pb, Zn, Ba, As, Sb, Bi	Several levels of underground workings totaling 5,000 ft in veins in schist (Ymi) and granodiorite (TKgd). Small producer of copper, silver, and gold.	39, 64, 67, 98, 134
19	Charcoal mine (Shawbut mine)	46-48-47	113-35-20	Ag, Pb, Zn, Au, Cu	Greater than 425 ft of underground workings along veins in granodiorite (TKgd). Small producer of lead-silver ore.	54, 98, 134
20	Copper Bell mine	46-47-20	113-39-45	Cu, Au	Greater than 200 ft of surface and underground workings along three veins in granodiorite (TKgd). No production.	98, 134
21	Daisy mine	46-48-52	113-35-45	Pb, Ag, Cu, Au	Underground workings in veins in shale (Esh) and quartzite (Ef, Ygr) near granodiorite (TKgd) contact. Small producer of lead-silver ore.	98, 134

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Clinton district--Continued						
22	Gowrie mine	46-49-21	113-38-48	Pb, Ag	Underground workings in veins in limestone (Es) Small producer of lead-silver ore.	98, 134
23	Hidden Treasure group	46-46-49	113-39-52	Cu, Ag, Au, Pb, Zn, As, Mo, Bi	Main producer in district. Two adits, with workings totaling over 2,000 ft, follow a series of sulfide-bearing quartz lenses in a shear zone in quartzite (Yms) near the contact with granodiorite (TKgd). Medium producer of copper, silver, gold, lead, and zinc.	39, 67, 98, 112, 130, 134
24	Hobo claim (Blue Grouse)	46-47-15	113-39-45	Ag, Cu, Pb, Sb	Two adits and a drift in veins along a fault in granodiorite (TKgd). Small producer of silver, copper, and lead.	134
25	Jack Pot mine	46-47-00	113-40-01	Cu, Ag, Au	About 300 ft of underground workings on veins in granodiorite (TKgd). Small producer of copper ore.	98, 134
26	Mongar mine	46-48-35	113-34-32	Ag, Cu, Pb	Underground workings on veins in shear zone in limestone (Es). Small producer of silver, copper, and lead.	29
27	Nellie mine	46-48-31	113-36-25	Pb, Ag, Cu, Au	Underground workings on veins in shear zone in granodiorite (TKgd). Small producer of lead- silver ore.	98, 134
28	Queen Mary Copper prospect (Northern Spy, Wisconsin)	46-47-27	113-39-04	Cu, Ag, Au, Ba	Adit, drift, shafts, and pits along veins in shear zone in granodiorite (TKgd). Small producer of copper ore.	134
29	Senate mine	46-46-48	113-39-45	Cu	Underground workings in veins in shear zones in quartzite (Yms) near contact with granodiorite (TKgd). Production undetermined.	98, 134
30	Sumpter mine (Black Hawk)	46-48-47	113-37-57	Cu, Ag	Underground workings in veins in shear zone in granodiorite (TKgd). Small producer of copper ore.	98, 134
31	Triangle and Grass Window mines (Morning mine)	46-47-26	113-40-03	Cu, Ag, Au	Numerous adits along a fracture zone in altered granodiorite (TKgd). Small producer of copper, silver, and gold.	98, 134

Copper Cliff district

Thrust-faulted sedimentary rocks of Middle Proterozoic and Cambrian age host base and precious metals in veins and breccia zones. The district was a small producer and principal products were copper, gold, and silver.

32	Blue Bell mine (Leonard mine)	46-48-16	113-27-12	Cu, Au, Ag, As, Sn, Sb	Vertical and inclined shafts along 10-ft-wide brecciated zone in quartzite (Ygr) and limestone (Esh). Small producer of copper ore.	39, 98, 134, 144
33	Copper Cliff mine	46-48-32	113-27-14	Cu, Au, Ag, Sb, As, Bi, Pb, Sn, Zn	About 1,500 ft of underground workings in breccia zones in quartzite (Ygr). Small producer of copper, gold, and silver.	35, 39, 98, 134

Coloma district

Metamorphosed Middle Proterozoic and Cambrian sedimentary rocks are found along the western contact of Garnet stock (Late Cretaceous granodiorite). Base- and precious-metal veins, mined chiefly for gold, occupy shear zones in granodiorite near contact with limestone. Placers were important producers of gold and silver during late 1800's. The Mammoth and Olympiad mines accounted for most early lode production. The district was medium producer and principal products were gold, silver, copper, and barite.

34	Coloma barite mine	46-50-08	113-23-53	Ba	Bulldozer cuts and trenches expose barite veins in quartzite (Ygr) and a latite porphyry (Tab) dike. Small producer of barite.	32, 39, 56, 80, 134
35	Dixie group	46-50-40	113-22-42	Au, Ag, Zn	Adit, 275 ft long, in fissure vein in granodiorite (Kgd). Small producer of gold ore.	80, 98, 134
36	Mammoth mine	46-50-33	113-22-57	Au, Ag, Cu, Sb, Pb	Shaft with several working levels. Veins follow contact of granodiorite (Kgd) and limestone (Eh). Medium producer of gold and silver ore.	35, 39, 80, 98, 117, 134
37	McGinnis and Washoe Creek placer	46-50-41	113-22-43	Au, Ag	Surface workings on placers in alluvium (Qs) in headwaters of creeks. Medium producer of gold and silver.	33, 90
38	Olympiad mine (Comet mine)	46-51-13	113-23-00	Au, Ag, Cu, Sb	More than 1,500 ft of workings along veins in shear zones in granodiorite (Kgd). Small producer of gold ore.	80, 98, 134
39	Rambler mine group (Valley, Crystal Springs, Clemantha, Cato)	46-50-45	113-22-55	Au, Ag, Cu, Sb, As, Mo, Pb	Series of prospects and several hundred feet of underground workings in veins in granodiorite (Kgd). Small producer of ore.	39, 80, 98, 134
40	Stinkwater Creek barite deposit	46-52-08	113-23-40	Ba	Surface prospects in barite veins in quartzite (Ygr). No production.	15, 98

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Garnet (First Chance) district						
Middle Proterozoic and Cambrian sedimentary rocks are folded, cut by thrust and normal faults, and intruded by granodiorite of the Late Cretaceous Garnet stock. Veins, valuable principally for gold, are in granodiorite. Vein and replacement deposits are conformable to bedding in limestone, quartzite, and hornfels near the granodiorite contact. Skarn deposits are at granodiorite-limestone contacts. The district was large producer and principal products were gold, silver, and copper.						
41	Alabama mine	46-48-58	113-18-32	Au	Underground workings along veins in shear zones in hornfels (Ygr) near granodiorite (Kgd) contact. Production not determined.	98, 134
42	Arkansaw mine	46-49-08	113-18-17	Au	Underground workings, including a 65-ft-deep shaft, in veins in granodiorite (Kgd). Production not determined.	98, 134
43	Armada prospect	46-48-37	113-18-58	Cu, Ag, Mo, W	Open cut in skarn deposit at contact of granodiorite (Kgd) with limestone (Esh). Production not determined.	39
44	Blue Moon prospect	46-49-35	113-19-35	W, Cu, Mo, Ag, Sn	Open cuts in skarn deposit at contact of granodiorite (Kgd) with carbonate rock (Dj). Production not determined.	39
45	Cascade mine	46-49-43	113-21-15	Au, Ag, Cu, Sb	Two adit levels totaling more than 1,150 ft along veins in shear zones in granodiorite (Kgd). Small producer of gold, silver, and copper.	98
46	Dandy mine (Big Six property)	46-49-00	113-17-52	Au, Ag, Zn, Cu, Mo, Sb	Three adit levels with crosscuts and raises which total about 3,000 ft. Deposits are veins in shear zones in quartzite (Ygr). Small producer of gold ore.	39, 56, 98, 134
47	Dewey mine	46-49-36	113-20-35	Au, Ag, Cu, Ba, Sb	Several mine levels, with workings totaling 1,400 ft, follow veins in shear zone in granodiorite (Kgd). Medium producer of gold, silver, and copper.	98, 117
48	Fairview mine	46-48-51	113-19-40	Au, Ag, Cu, Ba, Bi, Mo, Te	Underground workings follow telluride-bearing veins in shear zones in quartzite (Ygr). Medium producer of gold and silver.	98
49	Fourth of July mine	46-49-13	113-20-04	Au, Ag, Cu, Pb, Ba, Sb	Four adit levels totaling greater than 750 ft. Workings follow veins in shear zone in quartzite (Ygr). Small producer of gold and silver.	98, 149
50	Grant and Hartford mine	46-49-23	113-20-12	Au, Ag, Cu, Pb, Sb, Ba	About 3,000 ft of workings follow vein and replacement deposits along bedding planes in quartzite (Ygr) near contact with granodiorite (Kgd). Small producer of gold and silver ore.	35, 98, 117

51	Haparanda mine (Aparanda)	46-48-38	113-17-38	Au	Underground workings in veins in quartzite (Ef) and schist (Ygr). Small producer of gold.	98
52	Herzer and Green property	46-48-58	113-18-45	Au, Ag	Three adits and one 60-ft-deep shaft in veins in quartzite (Ygr) near contact with granodiorite (Kgd). Small producer of gold ore.	149
53	Idaho mine	46-49-05	113-18-40	Au	Adit, several hundred feet long, along veins in granodiorite (Kgd). Small producer of gold.	98, 134
54	Independence prospect	46-48-42	113-18-40	Au	About 150 ft of underground workings along veins in shear zones in quartzite (Ygr). Production not determined.	98
55	International mine	46-49-45	113-20-14	Au, Ag, Cu	Over 100 ft of workings along veins in shear zones in granodiorite (Kgd). Small producer of gold, silver, and copper.	98
56	Jackie Marie mine (Spokane mine)	46-49-55	113-21-20	Au, Cu	Underground workings follow veins in shear zones in granodiorite (Kgd). Small producer of gold ore.	56, 98
57	Lowery mine	46-49-32	113-20-52	Au	Vein deposit in shear zone in limestone (Es) near contact with granodiorite (Kgd). Production not determined.	98
58	Lynx mine	46-48-40	113-18-52	Au, Cu	About 270 ft of adits and stopes along vein in shear zones in quartzite (Ygr). Small producer of gold and copper ore.	98, 134
59	Magone and Anderson mine	46-49-22	113-20-04	Au, Ag, Cu, Pb, Sb	Several mine levels in veins in shear zones along bedding planes in quartzite (Ygr). Medium producer of gold, silver, and copper.	35, 98, 117
60	Masculine mine	46-49-08	113-18-15	Au	Short adit and shaft along vein in shear zone in granodiorite (Kgd). Production not determined.	98, 134
61	Mountain View mine	46-49-23	113-19-43	Au	Underground workings and open cut follow quartz veins at and near the contact of granodiorite (Kgd) and limestone (Es). Producer of unknown quantity of ore.	39
62	Nancy Hanks mine (Minnie Palmer)	46-49-39	113-20-43	Au, Ag, Cu, Pb, Ba, Sb, As, Bi, Zn, Mo	Prominent mine with underground workings totaling about 1,500 ft. Deposit is a composite vein system in a shear zone in granodiorite (Kgd) and dolomite (Eh). Medium producer of gold, silver, copper, and lead.	35, 37, 39, 64, 98, 117
63	Ohio and Buckeye mine	46-48-57	113-17-47	Au	Underground workings along veins in shear zones in quartzite (Ygr). Production not determined.	98, 134
64	Powers Placer mine	46-49-48	113-18-24	Au, Ag	Surface workings in placer deposits in alluvium (Qs). Production not determined.	98

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Garnet (First Chance) district--Continued						
65	Red Cloud group (Red Cloud, Crescent, Lead King mines)	46-49-20	113-20-10	Au, Ag, Cu, Pb, Mo, Ba, Sb	Principal mine in district. Extensive underground workings totaling about 12,000 ft. Deposits are in veins along bedding planes in quartzite (Ygr) near the contact with granodiorite (Kgd). Large producer of gold and silver.	35, 98, 117, 131
66	Robert Emmet mine	46-49-18	113-20-04	Au, Ag	Underground workings, including adit levels and an inclined shaft, follow veins in shear zones in quartzite (Ygr) near granodiorite (Kgd) contact. Small producer of gold and silver.	98, 149
67	Shamrock mine	46-49-38	113-20-32	Au, Cu, Pb, Sb, Ba	Several mine levels totaling 1,200 ft along veins in fracture zones in granodiorite (Kgd). Medium producer of gold ore.	98
68	Sierra mine	46-49-54	113-20-12	Cu, Au, Ag, Sb	Two adits and an inclined shaft in a vein in granodiorite (Kgd). Small producer of ore.	98
69	Stone placer mine	46-48-50	113-18-33	Au, Ag	Open pit placer mine in high-level gravel (Qs) on drainage divide. Small producer of gold and silver.	98
70	Tiger mine	46-49-33	113-20-40	Au, Ag	Greater than 1,300 ft of workings along a fracture zone in recrystallized limestone and dolomite (Es) near contact with granodiorite (Kgd). Medium producer of gold and silver.	98, 117, 153
71	Willie mine	46-49-11	113-20-20	Au	Brecciated and iron-stained quartzite (Ygr) in the core of an anticline developed by one adit. Small producer of gold.	98
Top O'Deep district						
Paleozoic sedimentary rocks are cut by northwest-trending faults and intruded by small granodiorite stock that is similar to Late Cretaceous Garnet stock. Principal ore deposits are skarns along granodiorite-limestone contacts, and contain mainly gold, silver, and copper. The district was medium producer, and principal products were gold, silver, and copper.						
72	Bilk and Weasel Gulch placers	46-49-03	113-14-47	Au, Ag	Gold-bearing gravel and residual mantle (Qs), occupying gulches and drainage divides, was mined by ground sluicing and hydraulic giant. Medium producer of gold and silver.	90, 98
73	Boston mine (Hartford and Golden Angel (Klondike) claims)	46-49-33	113-15-52	Cu, Au, Mn, Ag, W, Zn	About 100 ft of workings in copper-bearing skarn in carbonate rock (Dj) near contact with granodiorite (Kgd). Production not determined.	39, 98

74	Gold Leaf mine	46-49-54	113-15-41	Au, Cu	Several open cuts, an inclined shaft, and a 484-ft-long adit on a quartz vein in granodiorite (Kgd). Small producer of gold and copper ore.	35, 98
75	Mountain mine	46-49-00	113-16-20	Cu, Au, Ag,	Shaft, 50 ft of drifts, and an open cut in a skarn at the contact of limestone (Esh) and granodiorite (Kgd). Small producer of copper ore.	39, 98
76	Pearl mine	46-49-18	113-15-22	Au, Cu, Mn, Mo, Sn, W	Vertical shaft, 300 ft deep, with four working levels in garnet-magnetite-epidote skarn at contact of carbonate rock (Dj) and granodiorite (Kgd). Small producer of gold and copper ore.	39, 98
77	Red Rock mine	46-49-38	113-15-17	Au, Ag, Cu	Principal mine in district. Open cuts, adits, and drifts follow vein for 500 ft or more in silicified carbonate rock (Dj) near contact granodiorite (Kgd). Small producer of gold ore.	98

Elk Creek area

Elk Creek and its tributaries drain parts of Coloma, Garnet, and Top O'Deep mining districts. Southern part of area is underlain by Garnet granodiorite stock (Late Cretaceous). Missoula Group sedimentary rocks (Middle Proterozoic) border north margin of stock and underlie northern part of Elk Creek area. Elk Creek gold placers, mined mainly during late 1860's, are principal mineral deposits. The area has been large producer, and principal products were gold from placers, barite from veins, and copper from a skarn deposit.

78	Elk Creek barite mine (Greenough mine)	46-52-50	113-22-26	Ba, Pb, Zn	More than 700 ft of underground workings along barite veins in quartzite and argillite (Ymi). Medium producer of barite.	8, 22, 32, 79, 80, 134
79	Elk Creek placer (Elk Creek Hydraulic, Warner, Davey, McKeivitt and Iverson placers)	46-53-38	113-23-05	Au, Ag	Placer deposits in alluvium (Qs) were mined by sluicing, hydraulicking, drift-mining, dry-land dredge, and drag-line dredge. Large producer of gold and silver.	33, 80, 90, 98, 134
80	Morse and Kennedy mine	46-52-56	113-21-55	Cu	Skarn deposit at contact of limestone (Ymi) and granodiorite (Kgd). Developed by open cut and a 200-ft-long adit. Small producer of copper ore.	98, 134

Bear Creek area

Bear Creek flows south, draining part of Garnet Range that includes Garnet and Top O'Deep mining districts. Bear Creek valley is underlain by thrust-faulted Middle Proterozoic and Paleozoic sedimentary rocks that are cut by northwest-trending, steeply dipping faults. Placer deposits, discovered in 1865, were among most productive in Montana. The area was a very large producer of placer gold.

81	Bear Creek placers	46-43-00	113-19-42	Au, Ag	Extensive placer mining of alluvium (Qs) by dredge, hydraulic giant, sluice, and drift. Very large producer of gold and silver from Bear Creek and Deep Creek and their tributaries.	33, 34, 35, 90, 98
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Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Garrison district						
Thrust-faulted and folded Paleozoic and Mesozoic sedimentary rocks are principal rock types in area. Tertiary volcanic and sedimentary units overlie older rocks in parts of area. Phosphate, mined from Permian Phosphoria Formation, is principal commodity. The district is a very large producer of phosphate.						
82	Anderson mine (Brock Mine, Warm Springs, and Anderson open-cut mines)	46-38-25	112-50-10	P, F	Mine has greater than 9,000 ft of workings to a depth of 1,500 ft below the surface and large open cuts. Phosphorite beds (Pp) are 3.5-4 ft thick. Very large producer of phosphate.	13, 28, 79, 114, 145
83	Gimlet mine	46-38-24	112-43-43	P	Haulage adit 6,100 ft long develops 3-ft-thick phosphorite bed (Pp). Medium producer of phosphate.	28, 53, 114
84	Gravelly mine	46-38-36	112-41-32	P	Haulage adit, and at least two working levels, total 3,300 ft in length. Phosphorite bed (Pp) is about 4 ft thick. Very large producer of phosphate.	28, 104, 114, 145
85	Luke mine (Mineral Hill)	46-37-11	112-42-21	P	Greater than 12,700 ft of workings including four adit levels, drifts, and stopes. Very large producer of phosphate.	28, 53, 114, 145
86	Relyea mine	46-37-44	112-48-15	P	Underground workings along a 9-12-ft-wide zone with several 1-2-ft-thick phosphorite beds (Pp). Medium producer of phosphate.	28, 79, 114
87	Warm Springs Creek quarry	46-39-00	112-45-30	Ls	Surface workings on limestone (Mm) beds. Small producer of limestone.	75, 91
Sapphire Mountains area						
This large area encompasses Sapphire Mountains along western side of Butte quadrangle. Principal rock types are formations of Belt Supergroup (Middle Proterozoic). Area is within Sapphire thrust system; sedimentary rocks are cut by numerous thrust, strike-slip, and steeply dipping faults. Sedimentary rocks have been intruded by Cretaceous granitic rocks of Idaho batholith and numerous other Cretaceous to Tertiary plutons that range in composition from pyroxenite to granite. Relatively few mineral deposits include base- and precious-metal veins, fluorite deposit, and small placer gold deposits. The area was a medium producer and principal products were gold, silver, copper, and fluorite.						
88	Ambrose Creek pegmatites	46-32-07	113-55-44	Sil	Bulldozer pits along quartz deposits in pegmatites in granodiorite (Kgd) of the Idaho batholith. Small producer of quartz for construction use.	20
89	Bee Bee No. 1 prospect	46-12-30	113-33-23	Au	One shaft, one adit, and several pits on vein in calcareous argillite (Ymi). Production not determined.	151

90	Bentz mine	46-07-31	113-36-55	Mo, Ag	Two adits, totaling 120 ft, follow molybdenite-bearing quartz veins in shear zones in granodiorite (Kgd). Production not determined.	157
91	Big Springs Creek placer	46-24-46	113-42-40	Au, Ag	Ground sluicing of placers in alluvium (Qs). Small producer of gold and silver.	90
92	Broken Bottle prospect (Congdon mine)	46-07-58	113-38-53	Ag, Pb, Zn	Adit and underground workings along quartz vein in granodiorite (Kgd). Production not determined.	39
93	Claremont mine	46-29-01	113-54-32	Cu	Several hundred feet of workings in vein in argillite (Yms). Production not determined.	134
94	Crystal Mountain fluorspar mine (Retirement group, Lumberjack outcrops)	46-00-21	113-53-12	F, Co, Nb, Zr, Y, Rm	Open pit mine in pods and veins of fluorite in monzogranite (Kmg). Very large producer of fluorite.	65, 78, 134, 135, 146, 147, 162
95	Eight Mile Creek placer	46-39-05	113-56-05	Au, Ag	Ground sluicing of placer deposits in alluvium (Qs). Small producer of gold and silver.	90
96	Green Goose-Moly Hogan prospect	46-04-54	113-39-47	Cu	A 35-ft-long adit and two pits follow sulfide-bearing quartz veins beneath gabbroic sill (TKgb) in quartzite (Yms). No production.	157
97	Hamilton vermiculite deposit (Gird Creek prospect)	46-15-43	113-53-18	Vm	Deposit of vermiculite produced by alteration of pyroxenite (TKa). No production.	110
98	Iron Cap mine	46-30-37	113-55-02	Fe	Shallow shaft in quartz vein in quartzite (Yms). Production not determined.	134, 151
99	Kent mine	46-07-29	113-39-47	Au, Ag, Cu, Pb, W	About 2,000 ft of underground workings along quartz veins in shear zone in granodiorite (Kgd). Small producer of gold, silver, copper, and lead.	39, 157
100	Last Chance prospect	46-04-40	113-39-55	Au	Two adits and six trenches in quartz veins in granodiorite (Kgd). Production not determined.	157
101	Little Wonder prospect	46-03-55	113-40-04	Au	Two adits in sulfide-bearing quartz veins along shear zone in granodiorite (Kgd). Production not determined.	157
102	McDonald mine	46-12-35	113-33-12	Au, Ag	Open pit, underground workings, and trenches in stratabound deposit in calcareous argillite and jasperoid (Yw). Produced unknown quantity of gold-silver ore.	39
103	Missoula barite deposit	46-49-18	113-59-34	Ba	Several pits in barite vein in quartzite (Yms). No production.	32, 134

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data	
Sapphire Mountains area--Continued							
104	Prospect (name unknown)	46-07-21	113-39-26	Ag	Three pits in quartz vein in granodiorite (Kgd). No production.	157	
105	Sand Basin placer (Coffee Pot, Cub, Elkhorn, Fred, Wanda, Little Jim, Lucky, Moose, Peanuts, Ranger)	46-11-38	113-41-43	W, Nb, Ta, Ree, Th	Rare-earth bearing placer deposits in alluvium (Qs). No production.	66	
106	Sleeping Child "A" prospect	46-00-39	113-49-46	Sil	Small occurrence of quartz in pegmatite in tonalite (Kmg). No production.	20	
107	Slocum Gulch barite deposit	46-30-30	113-55-40	Ba	Bulldozer cuts along barite veins in quartzite (Yms). No production.	32	
108	Stevens Ranch placer mine	46-12-25	113-33-17	Au, Ag	Pits and shallow shafts in soil and weathered bedrock consisting of altered argillite, silicified limestone, and jasperoid (Yw). Producer of unknown quantity of gold and silver.	39	
22	109	Stevensville barite deposit	46-28-16	113-54-20	Ba	Bulldozer cuts along barite veins in quartzite (Yms). No production.	32
110	T. M. T. prospect	46-03-28	113-40-15	Au, Ag, Pb	Two pits expose quartz veins in granodiorite (Kgd). No production.	157	
111	Three Mile Creek placer	46-37-05	113-55-05	Au, Ag	Some ground sluicing of placers in alluvium (Qs). Small producer of gold and silver.	90	
112	Todd prospect	46-04-38	113-42-53	Au	Adit and pits along sulfide-bearing quartz vein in quartzite (Yms). No production.	157	
113	Whaley mining claims	46-41-13	113-59-12	Ba, Cu, Au, Pb, Ag	Bulldozer cuts and underground workings in barite veins in quartzite (Yms). Production not determined.	32, 134	
114	White Cloud mine	46-39-00	113-57-15	Au, Ag	Two adits totaling 310 ft in length follow a vein in a shear zone in granodiorite (Kgd) of the Idaho batholith. Small producer of gold and silver.	134	

Welcome Creek district

Thrust-faulted Proterozoic sedimentary rocks of Mount Shields and Wallace Formations are cut by northwest-trending strike-slip and normal faults and intruded by the Tertiary or Cretaceous Welcome Creek monzogranite stock, and by Tertiary or Cretaceous mafic rocks. Base- and precious-metal-bearing quartz veins occupy shear zones in Middle Proterozoic argillite and quartzite. The district was a small producer of lode and placer gold.

115	Cleveland mine	46-36-55	113-49-15	Au, Ag	Three caved adits and a trench on quartz veins or pods in fracture zone in quartzite and argillite (Yms). Small producer of gold ore.	82, 134
116	BET claims	46-34-45	113-48-48	Au, W	Gossan-capped calc-silicate zone, apparently of replacement origin, in limestone (Yc). No production.	82
117	Cleveland Spring prospect	46-37-08	113-49-10	Au, Ag	Pits along quartz vein in quartzite and argillite (Yms). No production.	82
118	Lucky Star claim	46-36-40	113-49-20	Au, Ag	Two caved adits along a silicified zone in quartzite and argillite (Yms). Production not determined.	82
119	Welcome Creek and Cinnabar Creek placers	46-34-30	113-44-30	Au, Ag	Periodic ground sluicing of placers in alluvium (Qs). Small producer of gold and silver.	82, 132

Rock Creek area

Tertiary andesitic, latitic, and rhyolitic volcanic rocks overlie and intrude thrust-faulted Middle Proterozoic sedimentary rocks. Remnants of an extensive cover of Tertiary gravel mantle the volcanic and older sedimentary rocks. Sapphires and gold have been produced from placer deposits in gulches. The area is producer of undetermined quantities of sapphire and gold.

120	Gem Mountain sapphire mine (Chaussee sapphire mine)	46-14-52	113-35-28	Cor, Au	Producer of gem-quality sapphires from placer deposits in alluvium (Qs) and gravel deposits (Ts). Total production of sapphires not determined but was large (>\$1 million) during period of 1893-1943.	1, 21, 79
121	Basin and Quartz Creek placers	46-19-11	113-34-58	Au, Ag, Cor	Placer deposits in alluvium (Qs) and gravel deposits (Ts) mined by sluicing and hydraulic giant. Small producer of gold, silver, and sapphire.	71, 90

Frog Pond Basin district

Thrust-faulted rocks of Middle Proterozoic Wallace and Mount Shields Formations have been intruded by Late Cretaceous granodiorite of the Sapphire batholith and covered by Quaternary glacial deposits. Sulfide-bearing quartz veins occupy shear zones in Proterozoic rocks and granodiorite. District was a medium producer and principal products were gold, silver, copper, lead, and zinc.

122	Anderson prospect	46-02-17	113-40-37	Ag, Cu, Pb, As, Sb	Prospect on fissure vein in shear zone in granodiorite (Kgd). No production.	166
123	Heaney mine (Frog Pond lode)	46-01-31	113-40-41	Au, Ag, Pb	Workings, about 500 ft long, follow sulfide-bearing quartz veins in granodiorite (Kgd). Small producer of gold, silver, and lead.	157

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of site	Sources of Data	
Frog Pond Basin district--Continued							
124	Joker prospect	46-00-11	113-39-58	Ag	Pits and trenches on quartz veins and stringers in granodiorite (Kgd) and quartzite (Yms). No production.	157	
125	Log Cabin prospect	46-01-53	113-39-21	Ag	Five shafts with about 580 ft of workings, and pits and trenches on veins in shear zones in granodiorite (Kgd) and limestone (Yc). Production not determined.	157	
126	Lutz Creek placer (Gold Bar, Agnes, Townsend placer)	46-01-47	113-39-52	Au, Ag	Two trenches in alluvium (Qs) are possible sites of former ground sluicing. Production not determined.	157	
127	Lutz mine (Gold Leaf mine)	46-00-27	113-40-36	Au, Ag, Cu, Pb, Zn	Three adits and five shafts on two veins in granodiorite (Kgd). Small producer of gold, silver, copper, and lead.	39, 157	
128	Millers mine	46-01-48	113-40-48	Au, Ag, Cu, Pb, Zn, As, B	Inclined shaft with extensive underground workings on sulfide-bearing quartz veins in shear zones in granodiorite (Kgd). Small producer of gold, silver, copper, lead, and zinc.	39, 157	
24	129	Montana Prince claim group	46-00-50	113-40-55	Au, Ag, Pb, Zn, Mo, Mn	Two adits and two shafts totaling over 1,500 ft in length, and numerous pits in several quartz veins in shear zones in granodiorite (Kgd). Production not determined.	39, 157
130	Nancy Lee prospect	46-01-42	113-40-50	Au	Three shafts and five pits follow sulfide-bearing quartz vein in granodiorite (Kgd). Production not determined.	157	
131	O'Brien prospects (Hidden Lead)	46-00-17	113-39-35	Ag, Au, Pb, Cu, Zn, Sb	Numerous small workings on several sulfide-bearing quartz veins in shear zones in quartzite (Yms) near granodiorite contact. Production not determined.	39, 151, 157	
132	Prospect (name unknown)	46-00-05	113-40-40	Au, Ag	Workings along 280-ft-long zone of sulfide-bearing quartz veins and altered granodiorite (Kgd). Production not determined.	157	
133	Prospect (name unknown)	46-00-08	113-40-05	Au, Ag	Two caved adits on sulfide-bearing quartz vein 3.5 ft wide in granodiorite (Kgd). Production not determined.	157	
134	Townsend prospect	46-01-49	113-40-10	Au, Ag, Pb, Cu	Two shafts and 20 pits follow sulfide-bearing veins in granodiorite (Kgd). Production not determined.	157	

135	Tuscarora prospect	46-30-00	113-40-15	Au, Ag	Three shafts follow limonite-stained shear zones in altered granodiorite (Kgd). Production not determined.	157
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Moose Lake district

Most of the district is underlain by quartzite and argillite of the Middle Proterozoic Mount Shields Formation. Other sedimentary formations of Middle Proterozoic and Paleozoic ages also are present in district. Several northeast-trending thrust faults have been mapped in area, and in southeast part of district this thrust-faulted sequence is intruded by two Late Cretaceous granodiorite stocks. Most mineral deposits are sulfide-bearing quartz veins, many of which are along shear or fault zones. A stratiform zone of copper and silver minerals in quartzite also is found in district. The district was a medium producer, and principal products were gold, silver, and copper.

136	Banner mine	46-03-03	113-32-07	Au, Ag, Cu, Zn, As	Caved shaft with two levels of workings in sulfide-bearing quartz veins in quartzite (Yms). Medium producer of gold, silver and copper.	39, 157
137	Barbara Ann claim	46-00-09	113-29-47	Ag, Pb, Zn, Cu, Au	Shafts, adits, underground workings and pits in quartz veins in dolomite (Eh). Small producer of ore containing silver, copper, and lead.	40
138	Bluebird prospect	46-04-16	113-28-56	Cu, Ag	Shaft, adit, and pits in stratabound deposit in quartzite (Yms). No production.	39
139	Carp mine (Carpp mine)	46-02-21	113-26-10	Cu, Ag, Pb, Zn, Sb	More than 1,000 ft of drifts and crosscuts in brecciated limestone (Eh) stained by copper minerals. Small producer of copper.	39, 44
140	Lucky Seven claims	46-00-03	113-27-47	Ag	Adit and open cuts in veins in granodiorite (TKgd). No production.	40
141	M and T mine	46-04-05	113-31-55	Au, Ag, Pb, Cu, As, Sb	Underground workings along veins in diorite (TKgb). Small producer of gold, silver, lead, and copper.	39, 56, 144
142	Muloney Basin prospect	46-00-55	113-25-55	Cu, Mo, Ag	Quartz vein in granodiorite (TKgd). No workings and no production.	40
143	Muloney mine	46-01-59	113-26-16	Ag, Cu, Pb, Zn, Au	Shaft, adits, and pits in quartz vein in dolomite (Eh). Production not determined.	40
144	Old Dominion mine	46-02-55	113-31-28	Au	Underground workings in quartz veins in quartzite (Yms). Production not determined.	39
145	Rainbow prospect	46-00-22	113-34-29	Au, Sil, Ag, Cu, Pb, Mo, Bi, Sb	Prospects for gold and quartz crystal along veins in quartzite (Ymi). Production not determined.	39, 157

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data	
John Long Mountains area							
Proterozoic sedimentary rocks have been folded into broad synclines and anticlines and cut by thrust faults. Thrust-faulted Paleozoic and Mesozoic rocks are in the northeast part of area. Rocks also displaced by steeply dipping normal or reverse faults and strike-slip faults that trend northwesterly. Miners Gulch stock (Late Cretaceous granodiorite) intrudes Middle Proterozoic sedimentary rocks in center of area. Tertiary volcanic rocks and alluvial gravel locally mantle older rocks. Mineral deposits are gold-bearing quartz veins in sedimentary rocks and in granodiorite of Miners Gulch stock and gold placers. The area was a medium producer and principal products were gold, silver, and tungsten.							
146	Alder Gulch placer	46-25-44	113-30-21	Au, Ag	Placer deposits in alluvium (Qs) were mined by hydraulic mining and ground sluicing. Small producer of gold and silver.	12, 86	
147	Anseley mine	46-24-15	113-30-34	Au, Ag	Underground workings in veins in argillite (Yms). Small producer of gold ore.	12, 86	
148	Annie claim	46-27-32	113-16-57	Au	Adit in vein in gabbro sill (TKgb) in limestone (Yc). Production not determined.	44	
149	Brewster Creek placer	46-36-42	113-38-40	Au, Ag	Ground sluicing of placers in alluvium (Qs). Small producer of gold and silver.	90	
150	Copper Creek prospect	46-29-35	113-24-40	Ag, Cu, Pb, Zn, As, Sb, Bi, Au	Adits and pits along quartz vein in quartzite (Yms). Production not determined.	39	
26	151	Douglas mine	46-27-23	113-19-30	Au, Ag	About 700 ft of workings follow vein in shear zone in sandstone and shale (Yc). Small producer of gold and silver.	44
152	Flint Creek placer	46-19-50	113-19-08	Au, Ag	Ground sluicing of placers in stream and bench deposits (Qs). Small producer of gold and silver.	33, 90	
153	Franz prospect	46-31-25	113-25-30	W, Au, Ag	Adit, shafts, and bulldozer trenches in vein and replacement deposit along bedding of sandstone (Yms). Small producer of tungsten ore.	155	
154	Harvey Creek placer	46-35-50	113-26-55	Au, Ag	Minor ground sluicing of placers in alluvium (Qs). Small producer of gold and silver.	90, 149	
155	Hawkeye mine	46-19-00	113-25-00	Ag, Cu, Pb, Zn, As, Sb	Two shafts and several adits in quartz veins in argillite and siltite (Ysn). Production not determined.	39	
156	Last Chance mine	46-28-30	113-15-55	Au, Cu, Ag,	About 500-ft-long adit along vein in shear zone in limestone (Yc). Small producer of gold.	44, 54, 64	
157	Mine (name unknown)	46-19-48	113-33-17	Au, Mo, Pb, As	Several hundred feet of underground workings along veins in limestone (Yh). Production not determined.	39	
158	Mine (name unknown)	46-25-12	113-30-38	Au, Ag, Cu, Pb, As	Three adits along veins in granodiorite (Kgd). Production not determined.	12, 86	

159	Miners Gulch-Cowan Gulch placers	46-24-39	113-31-45	Au, Ag, Ba	Alluvium and colluvium (Qs) were mined by ground sluicing and hydraulic giant. Numerous prospects in quartz-barite veins. Small producer of gold and silver.	12, 86
160	Mountain Ram mine	46-14-08	113-27-10	Ag, Au, Ba, Cu, Mo, Sn, As	Adits, shafts, and pits totaling over 350 ft in veins and replacement bodies in limestone (Yh). Small producer of silver and gold.	39, 44
161	Niles Gulch placer	46-25-30	113-30-25	Au, Ag	Placers in alluvium (Qs) were mined by ground sluicing. Small producer of gold and silver.	12, 86
162	Peacock mine	46-27-55	113-19-15	Ag, Cu	Two adits, totaling about 700 ft in vein in limestone (Yc). Small producer of silver and copper.	44
163	Prospect (name unknown)	46-27-43	113-24-10	Mo, Bi, As, Pb	Pits and drill holes in closely spaced and stockwork quartz veins in altered quartzite (Yms). No production.	39
164	Prospect (name unknown)	46-20-15	113-33-02	Au, Ba, Mo	Two adits expose veins in limestone (Yh) and granite porphyry (TKmg). No production.	39
165	Prospect (name unknown)	46-20-09	113-33-10	Au, Ba, As, Cu, Mo	Several prospect pits and an adit along quartz-barite-filled breccia zones in limestone (Yh) near contact with granite porphyry (TKmg). No production.	39
166	Ramona Creek prospect	46-29-52	113-34-55	Mo, Sn	Molybdenum stockwork deposit in quartzite (Ybo) was explored by drilling. No production.	39
167	Sallie Mellen claim	46-29-11	113-15-30	Ag, Au, Cu, Pb	Underground workings along vein in shear zone in quartzite (Ef). Production not determined.	44
168	Sawpit Gulch placer	46-23-48	113-31-46	Au, Ag	Placers in alluvium (Qs) were mined by ground sluicing and using washing plants. Medium producer of gold and silver.	12, 86
169	Shakespeare mine	46-16-00	113-29-18	Ag, Cu, As, Sb	Several adits and pits in quartz vein in limestone (Yh). Production not determined.	39
170	Silver King mine	46-18-07	113-30-01	Au, Ag, Cu, Pb, As, Sb, Bi	Two adit levels and several hundred feet of underground workings in a vein in limestone (Yh). Small body of granodiorite (Kgd) is exposed on south side of surface workings. Large producer of silver and gold.	39, 79

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Alps district						
Quartzite and argillite of Mount Shields, Bonner, and Snowslip Formations of Middle Proterozoic age have been thrust-faulted and cut by northwest-trending dip-slip and strike-slip faults. Sulfide-bearing quartz veins occupy fissures in Mount Shields Formation. The district was a small producer and principal products were gold and silver.						
171	Alps mine	46-35-25	113-34-45	Au, As, Ba	Several adits and open cuts in quartz veins in siltite and quartzite (Yms). Production not determined.	39
172	Argo mine	46-34-35	113-34-50	Au, Ag, W, Mo	Fissure filling veins in quartzite and argillite (Yms) contain pyrite, wolframite, and ferberite. Explored by 4,700 ft of workings on two main levels. Small producer of gold and silver.	156
173	Hidden Treasure mine	46-35-34	113-35-50	Au, W	Underground workings in vein in quartzite (Yms). Small producer of gold.	117
Black Pine (Combination) district						
Thrust-faulted quartzite and argillite of Mount Shields Formation (Middle Proterozoic) have been cut by northwest-trending, steeply dipping normal faults. Quartz veins contain base and precious metals and tungsten. The district is a very large producer and principal products were silver, copper, gold, tungsten, lead, and zinc.						
174	Bear and Float prospect	46-26-42	113-21-55	W	Shafts and bulldozer cuts explored for huebnerite-bearing vein in quartzite (Yms). No production.	150, 155
175	Black Pine mine (Combination mine)	46-26-52	113-21-56	Ag, Au, Cu, W, Pb, Zn, As, Sb	Extensive underground workings totaling more than 15,000 ft. Main veins follow bedding planes in quartzite and argillite (Yms). Very large producer of silver, gold, copper, tungsten, lead, and zinc. Has produced nearly continuously since 1974 to present.	39, 44, 45, 63, 77, 79, 154, 155
176	Double Eagle prospect	46-27-18	113-23-00	W, Ag, Cu, Sb	Shallow shaft, surface workings, and drill holes explored for huebnerite- and tetrahedrite-bearing quartz veins in quartzite (Yms). No production.	155
Henderson Creek area						
Sedimentary rocks of Mount Shields, Snowslip, and Helena Formations have been thrust-faulted and subsequently cut by northwest-trending oblique-slip faults. Faulted rocks were intruded by granodiorite of the Henderson Creek stock (Late Cretaceous); only small part of top of this stock is exposed in valley of Henderson Creek. Mineral deposits in area include base and precious metal veins and replacement deposits, stockwork tungsten deposits in granodiorite, and placers that were mined for gold and tungsten. The area was a large producer and principal products were gold, tungsten (mainly from placers), silver, and copper.						
177	Bunker Hill mine	46-28-50	113-19-15	Au, Ag, Cu	Five adits, totaling 2,200 ft, in vein and replacement deposits in limestone (Yh) near contact with granodiorite (Kgd). Small producer of gold, silver, and copper.	44, 153

178	Deer Hunter prospect	46-28-56	113-20-28	W	Surface workings in vein and replacement deposit in quartzite (Yms). No production.	155
179	General Washington placer	46-29-00	113-18-48	W	Placers in alluvium (Qs) were mined for scheelite during 1940's. Small producer of tungsten.	68, 155
180	Henderson Gulch tungsten prospect	46-28-50	113-19-27	W, Au, Ag, Mo	Numerous exploratory trenches in deposit of disseminated scheelite in granodiorite (Kgd). No production.	39, 68
181	Henderson Gulch placer	46-30-06	113-15-42	Au, Ag, W	Gold and scheelite placers in alluvium (Qs) were mined by ground sluicing, hydraulic giant, drift mining, and dragline shovel. Large producer of gold, silver, and tungsten.	44, 90, 144, 154, 155
182	Prospect (name unknown)	46-29-04	113-18-54	Au, Cu, As	Adit along vein in shear zone in argillite and quartzite (Ymi). Production not determined.	39
183	Sunrise mine (Queen mine)	46-29-05	113-19-42	Au, Ag, Cu, Pb, W, As, Sb, Bi, Mo	Fourteen adits with greater than 7,000 ft of underground workings, in vein and replacement deposits in marble (Yc) near contact with granodiorite (Kgd). Medium producer of gold, silver, copper, and lead.	13, 25, 39, 44, 155

Flint Creek Range area

Area includes all of Flint Creek Range outside of 14 established mining districts which are described separately below. Flint Creek Range is underlain by tightly folded and thrust-faulted sedimentary rocks that range in age from Middle Proterozoic to Late Cretaceous age and by three large plutons and several small intrusive bodies. Principal plutons are Late Cretaceous in age and include Philipsburg batholith (granodiorite), Royal stock (granodiorite), and the Mount Powell batholith (biotite-muscovite monzogranite). Other smaller intrusive bodies are Cretaceous or Tertiary in age, range from diorite to granite in composition, and include Cable and Lost Creek and Racetrack Creek stocks, and diorite porphyry sills in Dunkleberg district. Range was deeply eroded during Tertiary time, which resulted in accumulation of thick basin deposits in valleys and along range fronts. Numerous glacial deposits and geomorphic features are result of intense glaciation during Pleistocene. Mineral deposits of the area include base and precious metal veins, tungsten-bearing veins, skarns, molybdenum-bearing stockworks, and placers. The area was a medium producer and principal products were gold, silver, and copper.

184	American Beauty prospect	46-25-23	113-03-20	Ag, Au, Mo	Two caved shafts, numerous trenches, and pits along pyrite- and molybdenite-bearing quartz veins in shear zones in altered granodiorite (Kgd). Production not determined.	41
185	Arrowhead and South America prospect	46-22-03	112-55-03	Sil	Prospect pits in massive quartzite (Yms) near contact with granodiorite (Kgd) of Mount Powell batholith. No production.	46, 47
186	BM-COR prospect (Tolean prospect)	46-25-16	113-03-03	Mo, Zn	Caved shaft and adits and several pits and trenches in stockwork quartz-molybdenite veins in altered granodiorite (Kgd) of Royal stock. Drilling indicates large, subeconomic resource of molybdenum. No production.	46, 47

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Flint Creek Range area--Continued						
187	Billie Goat mine	46-19-28	113-08-57	Cu, Ag, Zn, Sb	Shaft and 34-ft-long adit in quartz vein in granodiorite (Kgd) of Philipsburg batholith. Production not determined.	46, 47
188	Black Trail prospect	46-19-07	113-08-33	Ag, Cu, Pb	Caved shaft on 2-in. vein in a shear zone in granodiorite (Kgd) of the Philipsburg batholith. Production not determined.	46, 47
189	Bluebird claim	46-25-26	113-00-20	Au, Ag	One 20-ft-long adit along a quartz vein in a shear zone in granodiorite (Kgd) of the Royal stock. Production not determined.	41
190	Copper lode prospect (Bonanza prospect, Manley claims)	46-18-53	112-56-52	Cu, Ag, Pb, Zn	Two adits in quartz vein in sheared argillite (Yc) near granodiorite (Kgd) contact. Production not determined.	46, 47
191	Deceiver prospect	46-27-03	113-00-01	Ag, Cu	Shaft, 25-ft-deep along a 0.5 ft-thick quartz vein in a shear zone in granodiorite (Kgd) of the Royal stock. Production not determined.	41
192	Dry Gulch placer (Dry Creek, Modesty Creek)	46-15-43	112-57-08	Au, Ag	Sluice workings in placers in alluvium (Gs). Small producer of gold and silver.	33, 36, 90
193	E. G. prospect (East Goat Mountain)	46-23-28	113-01-42	Mo, Au, Ag	Two adits in quartz veins in granodiorite (Kgd) of Royal stock. Molybdenum-bearing stockwork has been investigated by four drill holes, totaling 2,800 ft. No production.	46, 47
194	Eldorado claim	46-25-42	113-03-52	Au	Prospect with 200-ft-long adit along vein in a shear zone in granodiorite (Kgd) of the Royal stock. Production not determined.	44
195	G. M. prospect	46-24-35	112-57-02	Cu, Pb, Ag, W	Shaft at contact of limestone (Yc) and dacite porphyry (Td?). Production not determined.	46, 47
196	Hidden Treasure- Ramona prospect	46-18-45	113-08-15	Au, Cu, Pb	Adit, shaft, and pits follow vein in shear zone in granodiorite (Kgd) of the Philipsburg batholith. Production not determined.	46, 47
197	Independence mine	46-27-00	113-00-22	Au, Ag, Cu	Five adits and a trench in a sulfide-bearing quartz vein along a steeply dipping shear zone in granodiorite (Kgd). Small producer of gold, silver, and copper.	41, 91
198	Indian Meadows prospect	46-19-23	113-05-50	Ag	Iron- and manganese-stained shear zone in granodiorite (Kgd) of the Philipsburg batholith. Small amount of trenching. No production.	46, 47

199	Last Chance claim	46-24-00	113-17-48	Cu, Ag, Au, Sb	More than 500 ft of workings in a vein in a shear zone in limestone (Yh). Small producer of gold-silver ore.	44, 54, 64
200	Montpark mine (Gypsy Queen, Pitman)	46-22-56	113-03-15	W, Cu, Au, Ag	Shafts, adits, and pits, totaling more than 165 ft in a scheelite-bearing skarn at the contact of limestone (Mm) and granodiorite (Kgd) of the Royal stock. Production not determined.	27, 156
201	Mountain Top prospect	46-25-20	113-03-57	Au, Ag, Mo	Six adits and two pits in mineralized quartz veins along faults and shear zones in granodiorite (Kgd). Production not determined.	41
202	New York prospect	46-25-28	113-03-00	Mo	One pit in a vein deposit in granodiorite (Kgd) of the Royal stock. No production.	41
203	North Star mine	46-25-49	113-13-50	Cu	Shaft and adits totaling about 300 ft along a copper-carbonate-bearing vein in a fault zone in quartzite (Yms). Small producer of copper.	44, 77, 78, 153
204	Northern Cross mine (Anna, Maude, Caledonia claims)	46-17-13	113-07-10	Au, Cu, As	Shaft and two adits in a quartz vein that follows a fault zone in limestone (Mm). Small producer of gold ore.	36, 44
205	Nugget prospect	46-26-30	113-01-00	Ag, Au	One 80-ft-long adit in a fractured quartz vein along a shear zone in granodiorite (Kgd). Production not determined.	41
206	Phosphate prospect at Albicaulis Lake	46-20-15	113-04-27	P	Phosphorite (Pp) was prospected along a 10,000 ft strike length. Production not determined.	46, 47
207	Rock Creek prospect	46-24-50	113-03-53	Au, Ag, Cu, Pb, Mo	Three adits and two pits along quartz vein in a shear zone in granodiorite (Kgd). Production not determined.	46, 47
208	Ryan mine	46-27-11	113-01-40	Au, Ag, Cu, Pb, As, Sb, Bi, W, Zn	Several adits follow veins in quartzite (Je) cut by granodiorite (Kgd) dikes. Small producer of gold, silver, and copper.	39, 91
209	Schramm prospect	46-26-55	112-57-47	Au, Ag	Two adits, one 1,400 ft long and the other caved, explore placer in subterranean stream deposit along fractures in limestone (Mm). No production.	41
210	Snow White silica mine	46-15-01	112-58-30	Sil	Surface workings on quartz-pebble conglomerate (Ygr). Small producer of industrial silica.	20, 36, 54
211	Thompson Lake prospect	46-22-53	113-03-00	Ag, W, Mo, Zn, Cu	Four shafts in a skarn zone at the contact of limestone (PMs) and granodiorite (Kgd) of the Royal stock. Production not determined.	46, 47

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Flint Creek Range area--Continued						
212	Tibbets mine (Poker Chip)	46-27-18	113-00-56	Au, Ag, Cu, Pb	About 200 ft of underground workings along veins in quartzite (Kk). Small producer of gold, silver, and copper.	39, 91, 151
213	Tungsten mines (Entrepreneur National Silver and Tungsten Co. mine)	46-16-25	113-03-55	W, Ag, Mn, Pb, Cr	Surface and underground workings follow hubnerite-bearing veins in a shear zone in monzogranite (Kmg) of the Mount Powell batholith. Small producer of tungsten.	36, 39, 44, 151, 156
214	Twin Peaks mine	46-17-31	113-08-15	W, Mo	Underground workings in a skarn at the contact of limestone (Es) and granodiorite (Kgd). No production.	44, 156
215	Warm Spring Creek placer	46-15-40	113-08-14	Au, Ag	Surface workings in placers in alluvium (Qs). Small producer of gold and silver.	90
216	Wight Manganese mine	46-29-30	113-11-45	Mn	Developed mine in manganese veins in limestone (Mm). Small producer of manganese.	152
217	Willow Creek placer	46-28-08	112-54-44	Au, Ag	Surface workings in placers in alluvium (Qs). Small producer of gold and silver.	90
218	Winchell placer (Kolbeck)	46-33-30	113-12-20	Au, Ag	Hydraulic mines in placers in gravel (Ts). Medium producer of gold and silver.	83, 90, 140
Dunkleberg district						
Tightly folded and thrust-faulted Mesozoic strata have been intruded by Cretaceous diorite porphyry. Lead-, zinc-, silver-bearing quartz vein and replacement deposits are in Cretaceous sedimentary rocks. The district was a large producer and principal products were zinc, lead, silver, copper, and gold.						
219	Bellaire mine	46-31-13	113-05-20	Pb, Zn, Ag, Cu	Adit and trenches in vein in shale and sandstone (Kb). Production not determined.	113
220	Bouvard lode claim	46-31-58	113-04-03	Ag, Pb, Zn	Shaft along vein in shale (Kb). No production.	151
221	Culver mine	46-30-46	113-05-55	Ag, Pb	Surface workings in a vein and replacement deposit in shale and sandstone (Kb). Production not determined.	113
222	Forest Rose mine (Simmer Jack)	46-30-58	113-05-06	Pb, Ag, Zn, Cu, Au, As, Sb, Sn, Cd	Several thousand feet of underground workings along vein and replacement deposits in fault zones in limestone (Kk) near the axis of an anticline. Medium producer of silver-lead ore.	39, 99, 113, 144
223	Hatta mine (Magnet mine)	46-32-17	113-03-52	Ag, Pb, Zn, Cu As, Sb, Sn	Surface and underground workings follow a vein in a shear zone in diorite porphyry (Kd). Small producer of silver-lead ore.	39, 77, 99

224	Henry lode claim	46-31-40	113-04-00	Ag, Pb, Zn	Two inclined shafts in a vein in sandstone and shale (Kb). No production.	151
225	Homestake mine	46-29-40	113-05-18	Zn, Pb, Cu, Ag, Au	Surface and underground workings in a replacement zone along faults in limestone and shale (Kk). Production not determined.	113
226	Jackson mine	46-31-51	113-04-06	Ag, Pb, Au, As, Cu, Sb, Sn, Zn	Underground workings along a vein in diorite porphyry (Kd). Small producer of silver-lead ore.	39, 99, 113
227	Kirkendal mine	46-29-43	113-05-30	Zn, Pb, Cu, Ag, Au, Sb	Adit, 740 ft long, in vein and replacement deposits in a fault zone in limestone and shale (Kk). Production not determined.	113
228	Koski mine (Lower Kirkendal adit)	46-29-43	113-05-32	Pb, Zn	Adit, 400 ft long, along replacement deposits in a shear zone in shale (Kk). Production not determined.	113
229	Monarch mine	46-30-45	113-05-20	Pb, Zn, Ag, Cu, Au	Adit and trenches along a vein and replacement deposit in shear zones in shale and limestone (Kk). Production not determined.	113
230	Monitor mine	46-30-47	113-05-36	Ag, Pb	Shaft and trenches along a vein and replacement deposit in shear zone in shale and sandstone (Kb). Small producer of silver and lead.	113
231	Mountain Chief mine	46-30-20	113-05-40	Pb, Zn, Ag, Au, Cu	Underground workings in vein and replacement deposits in limestone and shale at fault intersections (Kk). Small producer of lead-zinc ore.	113
232	Pearl mine	46-30-36	113-05-50	Pb, Ag, Cu	Underground workings in a vein along a fault in shale (Kb). Small producer of lead ore.	99, 113
233	Prospect (name unknown)	46-29-58	113-05-52	Ag, Zn, Cu, Cd	Several adits in a vein in limestone, sandstone, and shale (Kk). Production not determined.	151
234	Samuel lode claim	46-32-00	113-04-00	Ag, Pb	Underground workings along a vein in a shear zone in sedimentary rocks (Kk). No production.	151
235	Shamrock mine	46-29-45	113-05-40	Pb, Zn, Cu, Au, Ag	Underground workings follow vein and replacement deposits in fault zones in limestone and shale (Kk). Small producer of lead-zinc ore.	113
236	Snowhome mine	46-30-38	113-05-25	Pb, Zn	Adit along a vein and replacement deposit in a shear zone in limestone (Kk). No production.	113
237	Summit mine	46-30-50	113-05-55	Ag, Pb, Au	Two short adits in a vein along a bedding plane in sandstone (Kb). Small producer of silver-lead ore.	99, 113

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Dunkleberg district--Continued						
238	Sun mine	46-30-40	113-05-36	Ag, Pb	Shaft and trenches in vein and replacement deposits along a fault in shale and sandstone (Kb). Small producer of silver-lead ore.	113
239	Sunset mine	46-31-55	113-04-55	Ag, Pb, Zn, Cu	Adit, 100 ft long, in a vein in diorite (Kd). Small producer of silver-lead ore.	99, 113
240	Tangelfoot mine	46-30-35	113-05-20	Zn	Adit along vein and replacement deposit in a shear zone in limestone (Kk). Production not determined.	113
241	Wasa mine	46-29-47	113-05-37	Zn, Ag, Cu, Pb, W	Four adit levels, totaling about 1,500 ft, follow a replacement deposit in limestone (Kk). Medium producer of zinc-silver ore.	99, 113, 144
Pioneer (Gold Creek) district						
District was one of largest gold-producing districts in Butte quadrangle and all production was from placers. Gold placers are in gravel of extensive deposits of Tertiary age, in glacial outwash and stream alluvium along present drainages, and in colluvium on hillslopes of Quaternary age. Previous studies (Pardee, 1951) suggested that most of important gold placer deposits were result of transport by glaciers, deposition in moraines, and reworking into fluvial terraces during Pleistocene. Present studies, however, show that most gold was transported and deposited in alluvial fan-gravel deposits during the Tertiary and later reworked, in part, during Pleistocene and Holocene into present drainage channels. The first reported discovery of gold in Montana was from this district in 1852 along Lower Gold Creek. Placer mining was most active between 1869 and 1900, but extensive dredging was conducted along Pioneer Gulch intermittently from 1905 to 1957. District was very large producer of gold.						
242	Ballard Hill placers (Ballard mine, Job's Point)	46-29-46	112-59-00	Au, Ag	Hydraulic mines in alluvial fan gravel (Ts). Medium producer of gold and silver.	84, 105
243	Batterton Bar placer	46-29-40	112-55-20	Au, Ag	Hydraulic mines in alluvial fan gravel (Ts). Medium producer of gold and silver.	84, 105
244	Dry Gulch placer	46-30-45	112-56-10	Au, Ag	Gravel (Ts), alluvium (Qs), and colluvium (Qs) were mined by ground sluicing. Medium producer of gold and silver.	84, 105
245	French Gulch placer	46-30-30	112-58-30	Au, Ag	Extensive ground sluicing of glacial outwash (Qs) between glacial moraine (Qs) and alluvial fan deposits (Ts). Medium producer of gold and silver.	84, 105
246	Lower Gold Creek placer (China Bar)	46-34-03	112-55-02	Au, Ag	Ground sluicing of placers in outwash (Qs) and alluvium (Qs). Small producer of gold and silver.	33, 44, 90, 105
247	Lower Pioneer Gulch placer	46-31-43	112-57-00	Au, Ag	Three bucket line dredges have mined glacial outwash (Qs). Large producer of gold and silver.	33, 84, 90, 91, 105

248	Main Fork of Pioneer Gulch placer (includes K and K Bar, Kohrs and Bielenberg mine, and 1916 pit)	46-30-00	112-58-00	Au, Ag	Extensive hydraulic mine workings and underground workings in gravel (Qs, Ts) underlying glacial till (Qs), and in Pleistocene glacial outwash (Qs). Large producer of gold and silver.	81, 84, 105
249	Orphan Boy placer mine	46-28-25	112-55-25	Au, Ag	Gold-bearing alluvium (Qs) was mined by ground sluicing and washing plant. Small producer of gold and silver.	84, 105
250	Pikes Peak Creek placer	46-31-00	112-54-45	Au, Ag	Gravel (Ts) and outwash (Qs) were mined by dredging, sluicing, dragline, and hydraulic giant. Medium producer of gold and silver.	33, 84, 90, 105
251	Pilgrim Bar placer	46-30-10	112-55-05	Au, Ag	Extensive ground sluicing was done on gravel (Ts). Large producer of gold and silver.	84, 105
252	Pioneer Bar placer	46-31-15	112-57-35	Au, Ag	Extensive ground sluicing of gravel (Ts) and outwash (Qs). Large producer of gold and silver.	81, 84, 105
253	Reservoir Gulch placer	46-31-15	112-57-50	Au, Ag	Placers in alluvium (Qs) were mined by ground sluicing and dredging. Medium producer of gold and silver.	84, 105
254	Squaw Gulch placers (Squaw Gulch and Kelly and Irvine pits)	46-29-30	112-55-55	Au, Ag	Extensive hydraulic workings in gravel (Ts). Medium producer of gold and silver.	84, 105
255	Treadwater Bar, Wilson Bar, and Wood's Flat placers	46-31-12	112-55-30	Au, Ag	Gravel (Ts) and colluvium (Qs) were extensively mined by ground sluicing. Medium producer of gold and silver.	84, 105
256	West Fork of Independence Creek placer (includes Windy Hill)	46-31-47	112-53-30	Au, Ag	Gravel (Ts), which form hill cappings on ridges, were mined by ground sluicing and hydraulicking. Alluvium (Qs) in small valleys draining the gravel-capped ridges was also mined. Medium producer of gold and silver.	84, 105

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Rose Mountain (Gold Creek) district						
Folded and thrust-faulted Mesozoic sedimentary rocks were intruded by Royal stock (granodiorite) of Late Cretaceous age. Lode deposits are principally gold- and silver-bearing fissure quartz veins in granodiorite. Pineau and Master mines have produced coarse placer gold from glacial deposits. The district was a medium producer and principal products were gold and silver.						
257	Blue Streak No. 2 prospect	46-26-16	113-02-57	Au, Ag	Two adits and trenches along veins in shear zones in granodiorite (Kgd). Production not determined.	41
258	Comet prospect	46-26-00	113-01-20	Ag, Au	One caved shaft in shear zone in altered granodiorite (Kgd). Production not determined.	41
259	Gold Creek placer	46-27-52	113-03-23	Au, Ag	Sluice workings in placers in alluvium (Qs). Small producer of gold and silver.	44, 90, 105
260	Hawkeye, Florence and Josephine prospect	46-25-58	113-03-15	Au, Ag	One shaft and numerous pits in quartz veins along shear zones in altered granodiorite (Kgd). Production not determined.	41
261	John G. Carlisle mine	46-26-40	113-02-30	Au, Ag, Cu, Pb, Zn	Five adits follow sulfide-bearing quartz veins along a shear zone in granodiorite (Kgd). Small producer of gold and silver.	41, 44
262	Lancaster prospect	46-26-08	113-01-48	Ag	One pit along iron-stained quartz veinlets in granodiorite (Kgd). No production.	41
263	Lost One prospect (Clear Grit)	46-26-12	113-02-32	Au, Ag, Cu	Caved adit and pits along iron-stained quartz veins in a hydrothermally altered shear zone in granodiorite (Kgd). Production not determined.	41
264	Mudhole prospect	46-25-55	113-02-21	Au, Ag	Trenches and pits in pyrite- and limonite-bearing quartz veins in altered granodiorite (Kgd). No production.	41
265	Master placer mine (McFarland)	46-28-30	113-02-30	Au, Ag	Placers in glacial deposits (Qs) were mined by underground methods and by dragline. Medium producer of gold and silver.	90, 105
266	Neversweat prospect	46-26-25	113-02-50	Au, Ag	One trench along an iron-stained shear zone in altered granodiorite (Kgd). No production.	41
267	Pineau placer mine (Friday mine)	46-27-37	113-03-50	Au, Ag	Glacial deposits (Qs) were mined by dragline, bulldozer, washing plant, and sluicing. Medium producer of gold and silver.	90, 105
268	Potosi mine	46-26-07	113-03-51	Ag, Cu, Au	Developed mine in vein and replacement deposits in granodiorite (Kgd). Small producer of silver, copper, and gold.	44, 54

269	Queen mine (Pikes Peak)	46-25-48	113-01-05	Ag, Pb, Cu, Ba, Sb	Two adits follow iron- and manganese-stained quartz veins in shear zones in granodiorite (Kgd). Production not determined.	41
270	September Snow prospect	46-25-42	113-02-15	Ag, Au	Three adits and one trench along iron-stained quartz veins in hydrothermally altered shear zone in granodiorite (Kgd). Production not determined.	41
271	Snow Bunny prospect (Majestic Claim)	46-26-15	113-01-56	Au, Ag, Cu	One adit and four shafts follow sulfide-bearing quartz veins along a shear zone in granodiorite (Kgd). Production not determined.	41

Princeton (Boulder Creek) district

Princeton district includes much of drainage basin of Boulder Creek and is underlain by folded and thrust-faulted sedimentary rocks of Middle Proterozoic through Cretaceous age. Sedimentary rocks were intruded by two Late Cretaceous granodiorite plutons--Royal stock to east and Philipsburg batholith to south. Valley of Boulder Creek was glaciated and contains deposits of till and outwash. Quartz fissure veins, containing mainly gold, silver, and copper, are in sedimentary rocks and granodiorite. Skarn tungsten deposits and base- and precious-metal replacement deposits are in limestone near igneous contacts. The district was large producer and principal products were gold, silver, lead, copper, and zinc.

272	Albion mine	46-23-42	113-05-30	Ag, Au, Cu, Pb, F, Sb	More than 2,900 ft of underground workings, including two main adits. Two fissure veins follow shear zones along bedding planes in quartzite and shale (Kk, Je) and the near contact of these rocks with granodiorite (Kgd) of Royal stock. Small producer of silver-gold ore.	44, 117, 128, 135	
37	273	Banker mine (Bryan and Banker claim)	46-24-56	113-10-07	Ag, Pb, Au, Zn, F	Underground workings along two veins in limestone (Erl). Small producer of silver ore.	44, 128
274	Bloomington mine	46-24-21	113-06-03	Pb	Over 875 ft of underground workings follow four veins in granodiorite (Kgd) of the Royal stock. Small producer of lead ore.	44	
275	Blue Bird mine	46-25-08	113-05-02	Au, Ag, Cu, Pb	Adits, totaling 320 ft, follow veins in granodiorite (Kgd) of the Royal stock. Small producer of gold ore.	44, 79	
276	Brooklyn mine (Pierre mine, S. Brooklyn mine)	46-23-25	113-07-20	Ag, Pb, Zn, Cu, Ba, Sb, As	Several adits, totaling 2,300 ft in length, follow veins in carbonate rocks (Mm, Dj). Small producer of silver, lead, zinc, and copper.	39, 44, 77, 138	
277	Caroline and Iron Mountain claims	46-23-28	113-07-22	Au	Several short adits in a vein in limestone (Mm). Production not determined.	44	
278	Copper lode	46-24-11	113-09-06	Cu, Au, Ag	Vein deposit in shear zone in limestone (Mm). Production not determined.	150	
279	Deerlodge Basin prospect	46-23-43	113-04-48	Ag, Pb, W, Zn, Cu	Vein deposit in shear zone in granodiorite (Kgd) of Royal stock. Workings include pits and one adit. Production not determined.	46	

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Princeton (Boulder Creek) district--Continued						
280	Delaware mine	46-26-41	113-09-12	Ag, Pb	Shaft and adit, totaling about 300 ft, in vein in shear zone in quartzite (Pq). Small producer of silver and lead.	44
281	Dg prospects (Dg 1-11 claims)	46-23-03	113-07-10	Ag, Pb, Zn	Four adits and prospect pits in vein deposit in limestone (Mm). No production.	46
282	Finley Basin prospect	46-22-03	113-03-59	W	Tungsten prospect in skarn at contact of limestone beds (Pms, Mm) and granodiorite (Kgd). Drilling done during 1974-79 indicates large tonnage of subeconomic tungsten resources. No production.	46
283	Goat Mountain vein	46-22-49	113-03-55	Ag, Cu, Au	Three adits on vein deposit in sandstone (Je). Production not determined.	44
284	Gold Hill mine	46-24-23	113-11-10	Au, Cu	Six shafts, totaling about 300 ft, along veins in dolomite (Eh). Medium producer of ore.	44, 117
285	Gold Reef mine	46-22-51	113-11-53	Au, Ag, Cu	Two adits, totaling about 1,500 ft, in veins in quartzite and argillite (Ysn). Small producer of gold ore.	44, 64
286	Granite Creek prospect	46-22-27	113-06-05	Ag, Pb, Cu, Zn, W, Au	Adit in vein in limestone (Mm). Production not determined.	46, 151
287	Jefferson mine	46-22-46	113-08-45	Cu, Pb	Two adits along vein deposit in limestone (Mm). Small producer of copper and lead.	29, 44
288	Little Gold Creek placer	46-24-48	113-07-58	Au, Ag	Placers in alluvium (Qs) were worked by ground sluicing. Small producer of gold and silver.	90
289	Mayflower Vein	46-22-38	113-08-47	Cu, Pb	Underground workings follow vein in limestone (Mm). Small producer of copper ore.	44
290	Moonlight mine (Sunlight mine)	46-25-33	113-08-18	Au, Ag, Cu, Pb, P	Slightly mineralized fault breccia in phosphatic shale (Pp) was mined. Small producer of gold, silver, copper, and lead.	28, 54, 77, 114
291	Mountain Lion mine	46-25-09	113-08-12	Ag, Pb	Vein deposit in shear zone in quartzite (Pq). Small producer of silver-lead ore.	44
292	Nonpareil mine	46-23-55	113-08-15	Ag, Pb, Cu	Shaft and two adit levels in vein deposit at faulted contact of two carbonate beds (Dj, Mm). Medium producer of silver-lead ore.	44, 56, 138
293	North Fork Granite Creek prospects	46-23-03	113-05-05	Ag, W, Cu, Pb, Zn	Four adits, two shafts, and trenches in vein and skarn zones in sandstone (Ks) and granodiorite (Kgd). Production not determined.	46

294	Powell mine (Mount Powell mines)	46-20-50	113-04-18	Ag, Cu, Pb, Zn, Sb, As	Over 2,500 ft of workings, including four adits, deposit is vein in shear zone in sandstone, shale (Je), and limestone (Mm). Small producer of silver and copper.	36, 39, 44
295	Princeton Gulch placer (Maywood, Summit)	46-25-15	113-09-50	Au, Ag, PGM	Placers in outwash (Qs) were mined by ground sluicing and drifting. Small producer of gold and silver.	33, 44, 56, 90
296	Princeton mine	46-25-05	113-09-45	Ag, Pb, Zn	Shaft and adits, totaling 1,500 ft, along vein in limestone (Erl). Small producer of silver ore.	44, 117
297	Rombauer mine	46-22-46	113-07-22	Ag, Pb, Cu, Au	Underground workings in skarn deposit at contact of carbonate rock (Dj) and granodiorite (Kgd) of the Royal stock. No production.	44
298	Royal mine (Port Royal)	46-24-39	113-05-30	Au, Ag, Pb, Cu	Mine worked through five adits, totaling about 7,700 ft. Deposits are veins in a shear zone in granodiorite (Kgd) of the Royal stock. Large producer of gold ore.	39, 44, 138
299	Saranac mine	46-25-10	113-09-54	Ag, Pb, Zn, Cu, Au, Ba	Underground workings along vein in limestone (Es). Small producer of silver, lead, zinc, copper, and gold.	64, 76, 150
300	Sixteen-to-One claim	46-23-28	113-05-22	Cu	Prospect in vein along bedding plane of quartzite (Kk). No production.	44
301	Starlight Quartz lode claim	46-23-35	113-06-55	Ag, Pb, Cu, Zn, Au	Shaft and adit along vein deposit in limestone (Mm). No production.	151
302	Sunday mine	46-24-44	113-05-40	Au, Ag	Shaft and adits, totaling greater than 940 ft, along veins in shear zone in granite (Kgd). Medium producer of gold ore.	44, 138
303	Travonia claim	46-24-41	113-09-38	Pb, Zn, Au, Ag, Cu	Adits, totaling 250 ft, in veins in limestone (Erl). Production not determined.	44
304	Tussle mine	46-25-27	113-05-10	Ag, Au, Cu, Pb	Main shaft with three adit levels. Vein deposit in granodiorite (Kgd) of Royal stock. Small producer of silver, gold, copper, and lead.	44, 153
305	Upper Granite prospect	46-23-27	113-05-13	Ag, Pb, Cu, W	Trenches along vein in shear zone in granodiorite (Kgd) of Royal stock. No production.	46

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Douglas Creek (Gird Creek) area						
Paleozoic and Mesozoic strata strike north and are cut by imbricate thrust faults and deformed by isoclinal folds. The area is a small producer of phosphate from the Permian Phosphoria Formation.						
306	Barnes mine (Nelly claims, Copper Queen, Snow storm, Black Bear)	46-27-25	113-09-13	Cu, P	Surface and underground workings in stratabound copper and phosphate deposits in sandstone (Je) and phosphorite (Pp). Production not determined.	44, 104, 114
307	Blue Bell mine	46-27-28	113-10-12	P	Adits and trenches in phosphorite beds (Pp). Production not determined.	93
308	Douglas Creek mine (Northwest Improvement Co. mine)	46-29-30	113-09-02	P	Three adit levels, totaling over 700 ft, in phosphorite beds (Pp). Small producer of phosphate.	28, 54, 104, 114, 117, 145
309	Edgar mine (Omer Edgar mine)	46-29-30	113-10-30	P	Two adits and strip mine excavations in phosphorite beds (Pp). Small producer of phosphate.	28, 104, 114, 145
310	Gird Creek prospect	46-27-43	113-08-42	P	Two adits and trenches on phosphorite beds (Pp). Production not determined.	114
311	Prospect (name unknown)	46-28-44	113-09-24	P, Cr, Y, La	Test pit on phosphorite bed (Pp). Test samples contained high Cr, Y, and La concentrations. Production not determined.	151
Maxville area						
Middle Proterozoic and Paleozoic sedimentary rocks are cut by numerous thrust faults. Thrust faults are offset by northwest-trending steeply dipping normal and oblique-slip faults. Veins, containing gold, silver, and copper, occupy shear zones in Middle Proterozoic quartzite and in Cambrian limestone. The district was medium producer of gold, silver, and copper from veins, and of phosphate from phosphorite beds in the Permian Phosphoria formation.						
312	Copper State mine (Hoffman property)	46-28-50	113-15-20	Cu, Au, Ag	Adits and shafts follow a vein in a shear zone in limestone (Yh). Small producer of copper ore.	44, 153
313	Durand mine	46-27-53	113-14-25	Au, Ag, As	Six adits, totaling about 375 ft, follow two veins along shear zones in quartzite (Ef). Small producer of gold and silver.	44, 153
314	Eagle claim	46-28-15	113-15-12	Cu	Surface and underground workings along vein in shear zone in marble (Yh). Small producer of copper ore.	44, 153
315	Field's prospect (Field's tunnel)	46-27-22	113-13-22	P	Two adits follow phosphorite (Pp) bed. No production.	97, 101, 114

316	Homer claim	46-28-30	113-14-58	Au, Ag	Adit greater than 210 ft long, along vein in shear zone in quartzite (Ef). Production not determined.	44
317	Johnson claim	46-27-20	113-15-13	Au, Cu	Prospect in vein along shear zone in quartzite (Yh). No production.	44
318	Londonderry mine (Goldonna mine)	46-28-23	113-14-38	Ag, Au, Pb, Zn	Short adits and open cuts in two veins in quartzite (Yms). Small producer of gold-silver ore.	44, 153
319	Mother Vein claim	46-28-28	113-15-22	Au, Cu	Prospect along 20 ft vein in shear zone in quartzite (Yh). No production.	44
320	New Seattle mine (Dolly Quartz mine)	46-27-58	113-14-25	Au, Ag	Underground workings in vein in quartzite (Ef). Small producer of gold ore.	64, 79
321	Skeels mine (Washington Phosphate and Silver Co.)	46-27-08	113-13-30	P	More than 620 ft of underground workings in phosphorite beds (Pp). Small producer of phosphate.	28, 104, 114
322	Twin Buttes claim	46-27-29	113-14-27	Cu, Pb	Adit, 180 ft long, along vein in shear zone in dolomite (Eh). Production not determined.	44

Racetrack (Danielsville) district

Rocks in this district include part of Mount Powell muscovite-biotite monzogranite batholith of Late Cretaceous age and older rocks in contact with batholith. Older rocks are sedimentary rocks of Middle Proterozoic, Cambrian, and Mississippian age and the Racetrack Creek igneous and metamorphic rocks. These rocks, of Cretaceous age, include quartz diorite, diorite, granodiorite, and xenoliths of metasedimentary rocks; contain evidence of multiple deformation and have been intruded by abundant pegmatite and aplite dikes that are related to the Mount Powell batholith. In the valleys, older rocks are mostly covered by Pleistocene glacial and Holocene alluvial deposits. Minor vein and replacement deposits in Cambrian limestone and Cretaceous quartz diorite and placer gold deposits have been exploited along valley of Racetrack Creek. The district was a small producer and principal products are gold, silver, and copper.

323	Amazon mine	46-16-53	113-01-20	Au, Ag, Cu	Four adits totaling 450 ft along a vein in quartz diorite (Kmd) of the Racetrack Creek intrusive rocks. Medium producer of gold, silver, and copper.	36, 91
324	Dark Horse mine	46-18-01	112-59-40	Au, Ag, Cu	Adits and shafts in vein and replacement deposits in dolomite (Eh). Small producer of gold, silver, and copper.	36, 91
325	Racetrack Creek placer	46-17-23	113-00-32	Au, Ag	Surface workings in placers in alluvium and surface mantle (Qs). Small producer of gold and silver.	90
326	Tungsten occurrence (name unknown)	46-18-24	112-59-00	W, Cu, Mn, Be, Zn, Ag	Surface workings in skarn and quartz vein at contact of limestone (Mm) and diorite (Kmd) and aplite (Ka). No production.	39, 152
327	Valley View mine (No. 4)	46-18-01	112-58-48	Ag, Au, Cu, Pb, Zn, Bi	One shaft and trenches on vein and replacement deposits in limestone (Mm). Small producer of silver, gold, and copper.	39, 151

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Philipsburg district						
Folded and faulted sequence of sedimentary rocks (Proterozoic to Jurassic) is in contact with granodiorite of Philipsburg batholith (Late Cretaceous). The mineral deposits occur as: (1) steeply dipping quartz veins; (2) quartz veins along bedding; (3) manganese-rich replacement bodies; and (4) skarn magnetite deposits. Most important deposits are east-west trending veins in the granodiorite, and northwest- and east-west-trending veins and replacement deposits in Paleozoic carbonate rocks that have been folded into a north-plunging anticline. Principal sedimentary host rocks are carbonate beds of Upper Cambrian Hasmark and Red Lion Formations and Devonian Maywood and Jefferson Formations. This district has been a large producer and principal products have been manganese, silver, zinc, lead, copper, and gold.						
328	Annie Marony mine (Climax mine, Marony mine)	46-19-30	113-15-35	Pb, Mn, Ag	Adits, totaling greater than 970 ft, in vein and replacement deposits in dolomite (Eh) near contact with granodiorite (Kgd). Small producer of lead and manganese ore.	44, 56, 102, 115
329	Basin mine	46-19-58	113-17-04	Ag, Cu, Sb	Adits and pits, totaling 365 ft, in veins and skarn deposits in limestone (Erl). No production.	44
330	Bernard mine	46-19-36	113-15-58	Mn	Shaft, 65 ft deep, along vein in limestone (Esh) near contact with granodiorite (Kgd). Small producer of manganese.	59, 102
331	Blackmail mine	46-19-53	113-16-02	Ag, Zn, Pb	Underground workings on vein and replacement deposits in carbonate rocks (Eh, Erl). Small producer of silver ore.	44, 115
332	Bryant mine (Lady Bryant, Seal Rock)	46-19-55	113-16-16	Ag, Mn	Open pit, shafts, and adits in vein and replacement deposits in dolomite (Eh). Small producer of silver and manganese ore.	102, 115
333	Cadgie Taylor mine	46-20-49	113-16-12	Ag, Cu, Au, Pb, Zn, Sil, Ba	Surface and underground workings along a vein that follows bedding of carbonate rock (Dj). Small producer of silver ore.	44, 64, 76, 79, 115
334	Chicago mine	46-20-22	113-15-52	Mn	Underground workings in replacement deposit in carbonate rock (Dj) near contact with granodiorite (Kgd). Small producer of manganese.	59, 115, 144
335	Cliff mine	46-19-51	113-16-14	Ag, Mn	Two adits and shaft, totaling more than 650 ft, follow vein and replacement deposits in dolomite (Eh). Production not determined.	44, 102, 115
336	Comanche mine (Comanche Extension)	46-20-35	113-16-10	Ag, Mn	Underground workings in vein and replacement deposits in carbonate rock (Dj). Small producer of ore.	63, 102, 144
337	Copper Jack mine	46-21-14	113-16-58	Cu	Shaft and adits, totaling 550 ft, in skarn at contact of limestone (Mm) and granodiorite porphyry (Kgd). No production.	44

338	Coyle mine (John Coyle and Torrit claims)	46-19-37	113-15-54	Ag, Mn	Adits and shafts, totaling more than 1,440 ft, in vein and replacement deposits in carbonate rocks (Eh, Esh) near contact with granodiorite (Kgd). Medium producer of ore.	59, 102, 115
339	Dissett mine (Red Hill)	46-21-00	113-17-29	P, Fe, Al	More than 1,700 ft of underground workings in phosphorite beds (Pp). Small producer of phosphate.	28, 104, 114, 145
340	Flagstaff Hill prospect	46-19-46	113-17-53	P	Adit and several trenches along phosphate beds (Pp). Production not determined.	104, 114
341	Granite-Bimetallic mine (Blaine Shaft, Ruby Shaft, Granite Mountain)	46-18-58	113-14-31	Ag, Au, Cu, Pb, Zn, Sb, As	Extensive workings, including five main adits, two deep shafts, and a long drainage tunnel. Total length of workings is about 20 miles. Several steeply dipping subparallel veins cut grano- diorite (Kgd). Supergene enrichment zones in veins were very rich in silver. Very large producer of silver, gold, copper, lead, and zinc.	24, 43, 44, 76, 78
342	Granite Belle claim	46-19-12	113-14-43	Ag, Pb, Cu, As	About 1,500 ft of underground workings along vein in granodiorite (Kgd). No production.	44
343	Headlight mine (Moonlight group)	46-20-08	113-16-00	Ag, Mn, Cu, Pb, Zn, Sb	About 50,000 ft of underground workings follow vein and replacement deposits in shear zones in carbonate rocks (Erl, Dj, Dm). Medium producer of manganese and silver ore.	44, 59, 87, 102, 115
344	Hobo mine (North Granite)	46-20-10	113-15-14	Ag, Au, Pb, Zn, Sb, As	Four adits, totaling 5,500 ft, follow a vein in granodiorite (Kgd). Medium producer of gold- silver ore.	44, 63
345	Hope group (Potosi, Porter, Take All, Field, Prince, Imperial, Little Emma, Comanche, Cuno Shaft, Jubilee, Shapleigh mine)	46-20-38	113-16-27	Ag, Cu, Pb, Au, Mn, Ba, Sb, As, F	Numerous shafts and adits, totaling about 18,000 ft. Many vein deposits are present and are localized along bedding plane fractures in carbonate rock (Dj) and in crests and troughs of minor folds. Large producer of silver-manganese ore.	24, 44, 79, 115
346	Horton mine (Horseshow)	46-20-01	113-16-15	Mn	Underground workings in vein and replacement deposits in dolomite (Eh). Small producer of manganese.	102, 115
347	Isabelle Queen prospect	46-20-05	113-16-55	Ag, Mn, W	Underground workings 90 ft long and shallow pits in replacement deposit in shear zone in dolomite (Eh). No production.	155
348	Levi Burr mine	46-19-36	113-15-53	Ag, Zn, Mn	Underground workings along vein and replacement deposits in dolomite (Eh). Small producer of silver ore.	44, 115
349	Little Emma mine	46-20-45	113-16-21	Ag, Mn	Underground workings follow vein and replacement deposits in carbonate rock (Dj). Small producer of ore.	44, 77

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Philipsburg district--Continued						
350	Marie mine	46-20-29	113-15-52	Mn, Ag, Zn	Shaft, adit, and pits in vein and replacement deposits in carbonate rock (Dj) near granodiorite (Kgd) contact. Medium producer of manganese and silver.	102, 115, 117, 144
351	Midnight mine (Imperial)	46-20-02	113-16-08	Ag, Cu, Mn, Ba	More than 150 ft of underground workings in vein and replacement deposits in dolomite (Eh). Small producer of silver ore.	44, 115
352	Mitchell mine	46-20-13	113-15-48	Ag, Au, Pb, Mn, Zn, As, Sb	Underground workings, totaling 800 ft, in vein and replacement deposits in carbonate rock (Dj) near contact with granodiorite (Kgd). Small producer of ore.	44, 115
353	Murphy mine	46-21-13	113-15-10	Ag, Cu, W	Surface and underground workings in vein and replacement deposits in limestone (Mm, Dj) near contact with granodiorite (Kgd). Scheelite occurs in disseminated zones. Small producer of silver and copper.	155
354	Mystery mine	46-20-01	113-16-42	Ag, Mn, Cu, Pb F	Underground workings, totaling 1,500 ft, in vein and replacement deposits in dolomite (Eh). Small producer of ore.	44, 115, 128, 144
355	N. G. group (Mountain View, Manganese fraction)	46-20-03	113-16-37	Mn, Ag	Surface workings along vein and replacement deposits in dolomite (Eh). Small producer of manganese.	102, 115, 144
356	North Star mine	46-20-12	113-17-05	Cu, Ag, W, Mo	Four adits, two shafts, and bulldozer cuts in veins and altered carbonate rocks (Dj, Dm) contain disseminated scheelite and powellite. Small producer of copper and silver.	155
357	Pearl mine	46-19-39	113-15-33	Ag, Pb, As, Sb	Underground workings that total 400 ft along vein in granodiorite (Kgd). Small producer of ore.	44
358	Puritan mine	46-20-03	113-15-10	Ag, Au, Pb, Zn, Sb	About 600 ft of underground workings follow vein in granodiorite (Kgd). Small producer of silver ore.	44
359	Redemption Iron mine (Iron Age)	46-19-20	113-16-32	Fe, Mn, Ag, Au, Pb, F	About 1,325 ft of underground workings in skarn, vein, and replacement deposits near the contact of dolomite (Eh) and granodiorite (Kgd). Small producer of iron, manganese, and silver ore.	31, 44, 102, 115, 144
360	Royal Metals tunnel	46-19-20	113-14-40	Ag	Underground workings, totaling about 750 ft, along three veins in granodiorite (Kgd). No production.	44

361	Salmon mine	46-19-52	113-15-48	Ag, Zn, Pb	Underground workings along vein in carbonate rock and shale (Erl, Eh) near contact with granodiorite (Kgd). Production not determined.	44
362	San Francisco mine	46-20-30	113-15-45	Au, Ag, Pb, Mn, Cu, Zn, As, Sb	Several mine levels, with workings totaling about 3,600 ft, in vein in granodiorite (Kgd). Small producer of gold-silver ore.	44, 115
363	Sanders mine (Saunders mine)	46-20-17	113-15-53	Ag, Au, Pb, Mn	Adit and open pit in vein and replacement deposits in carbonate rock (Dj) near contact with granodiorite (Kgd). Small producer of silver, gold, and lead.	44, 102, 115
364	Scratch Awl mine	46-19-54	113-15-58	Ag, Pb, Zn, Mn, Cu, Au, As	Underground workings in vein and replacement deposits in carbonate rock (Eh, Esh, Erl) near contact with granodiorite (Kgd). Medium producer of silver, lead, zinc, manganese, and copper.	44, 59, 87, 102 115
365	Sharktown mine	46-19-56	113-15-50	Mn, Ag	More than 400 ft of underground workings along vein and replacement deposits in carbonate rock (Dj) near contact with granodiorite (Kgd). Small producer of manganese.	102, 115
366	Silver Chief mine	46-20-06	113-15-51	Ag, Pb, Au	Underground workings in vein in granodiorite (Kgd). Medium producer of ore.	44, 115
367	Silver lode Iron mine (Kentucky)	46-19-08	113-16-27	Fe	Underground workings in a skarn deposit near the contact of dolomite (Eh) and granodiorite (Kgd). Small producer of iron.	44, 115
368	Sweet Home mine	46-20-37	113-16-17	Ag, Mn, Au	Surface and underground workings in vein and replacement deposits along bedding planes in carbonate rock (Dj). Small producer of silver ore.	13, 44, 153
369	Terrid mine	46-19-31	113-15-51	Mn, Ag, Pb	Underground workings, totaling about 625 ft, in vein and replacement deposits in limestone (Esh). Small producer of manganese ore.	44
370	Three Metals and Salt Hill tunnel	46-19-46	113-14-38	Ag, Pb, As, Sb	At least 1,434 ft of underground workings along veins in granodiorite (Kgd). Small producer of ore.	44
371	Trout mine group (Pocahontas, Speckled Trout, Gem, Algonquin group)	46-19-46	113-16-01	Mn, Ag, Pb, Cu, Zn, Au, As	Ten levels of mine workings totaling about 30,000 ft. Deposit is a brecciated replacement zone containing irregular bodies of manganese ore in dolomite (Eh). Large producer of manganese, silver, lead, copper, zinc, and gold.	24, 29, 44, 50, 59, 87, 102, 115, 166
372	True Fissure mine	46-20-06	113-15-53	Ag, Pb, Zn, Mn, Cu, Ba, As, Sb	Shaft and adits follow several veins, and open pit follows manganese replacement deposit. Host rock is carbonate rock (Erl, Dj) near granodiorite (Kgd) contact. Medium producer of silver, lead, zinc, manganese, and copper.	44, 59, 76, 87, 102, 115

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Philipsburg district--Continued						
373	Two Percent mine	46-20-20	113-16-18	Ag, Zn, Pb, Au, Mn, Cu,	Two inclined shafts with nine working levels, totaling about 4,000 ft. Vein and replacement deposits are in carbonate rock (Dj). Medium producer of silver, zinc, lead, and gold.	44, 59, 115, 117
374	Wenger No. 2 mine (Wegner No. 2)	46-19-44	113-16-27	Mn, Ag	One adit along vein and replacement deposits in a shear zone in dolomite (6h). Small producer of manganese and silver.	102, 144
375	White Horse mine	46-19-46	113-16-37	Mn, P	Underground workings, totaling about 345 ft, in a replacement deposit in dolomite (6h). Small producer of manganese.	102, 115, 144
376	Young America claim	46-19-13	113-15-20	Au, Ag	Open cut along vein in shear zone in granodiorite (Kgd). Small producer of ore.	44, 64
Red Lion (Hidden Lake) district						
District occupies upper basins of North Fork of Flint and Warm Springs Creeks and most of Cable Mountain. Folds and faults in sedimentary rocks (Middle Proterozoic and Paleozoic) have northeast trends and, in the northern part of the district, sedimentary rocks are contact metamorphosed along southern margin of Philipsburg batholith (Late Cretaceous granodiorite). Types of deposits present in district include: (1) quartz veins in quartzite; (2) vein, skarn, and replacement deposits in carbonate rocks; and (3) placers. Many deposits are in carbonate rocks below klippe of Mount Shields Formation (Middle Proterozoic) quartzite that forms the top of Cable Mountain. The district was a medium producer and principal products were gold and silver.						
377	Bronze lode	46-14-30	113-13-10	Au, Ag	Small prospect along vein in shear zone in limestone (Yh). No production.	151
378	Delta lode claim	46-14-10	113-12-50	Au	Adit follows vein in a shear zone in carbonate rock (Dj). No production.	151
379	Flint Creek mine (Alliance mine)	46-14-11	113-12-40	Au, Ag, Te, Bi	More than 1,000 ft of underground workings on a vein in shear zone in quartzite (Yms). Small producer of gold ore.	31, 36, 44
380	Golden Eagle mine	46-13-58	113-12-50	Au, Ag, Te, Bi	More than 900 ft of surface and underground workings along vein in a shear zone in quartzite (Yms). Small producer of gold ore.	36, 44
381	Golden Jubilee mine	46-16-05	113-11-54	Au, Ag	Open pit and decline along quartz vein in shear zone in dolomite (6h). Medium producer of gold.	39
382	Gould-Corry lode	46-17-00	113-09-23	Au, Ag, Cu, W	Three shafts, totaling more than 60 ft, in replacement deposit and skarn zone between dolomite (6h) and granodiorite (Kgd). Production not determined.	36
383	Greater New York mine	46-16-51	113-09-53	Au	Shaft, with greater than 100 ft of workings, along vein in shear zone in dolomite (6h) and shale (6sh). Production not determined.	44

384	Grubstake mine	46-14-15	113-12-40	Au, Ag	Underground workings in vein in quartzite (Yms). Small producer of gold and silver.	36, 144
385	Hannah mine	46-16-48	113-10-42	Au, Ag, Mn	More than 340 ft of workings in vein and replacement deposits in dolomite (Eh). Small producer of gold ore.	36, 39, 44
386	Hidden Lake mine	46-13-54	113-11-57	Au, Ag, As, Bi, Zn	About 2,100 ft of underground workings in veins in quartzite (Yms). Medium producer of gold and silver.	36, 39
387	Letus No. 1 lode claim	46-16-25	113-11-50	Au, Ag	Surface and underground workings follow vein in shear zone in limestone (Yh) near contact with granodiorite (Kgd). No production.	151
388	Lila Dixon and American Flag lodes	46-16-36	113-10-25	Au	Adits and trenches along veins in dolomite (Eh). Small producer of gold ore.	36
389	Mickey mine (Garrett mine)	46-14-18	113-12-55	Au, Ag, Mn, Bi	Adit, about 150 ft long, along vein in shear zone dolomite (Eh). Small producer of ore.	36, 79, 151
390	Modoc lode	46-16-45	113-10-15	Au, Cu	Surface and underground workings along contact of granodiorite (Kgd) and dolomite (Eh). Iron and copper sulfide minerals are in limestone along the contact and disseminated in granodiorite. Production not determined.	10, 36, 44
391	Montana mine	46-15-41	113-11-15	Au	Underground workings totaling about 100 ft, follow vein in shear zone in quartzite (Yms). Small producer of gold ore.	36, 44
392	Nineteen Hundred mine	46-16-30	113-09-23	Au	More than 500 ft of underground workings along vein in shear zone in quartzite (Yms). Small producer of gold ore.	36, 44
393	North Fork of Flint Creek placers (Autumn, Little George, Willow claims)	46-14-31	113-13-00	Au, Ag	Prospects in placers in alluvium (Qs). Production not determined.	151
394	Porter mine	46-15-08	113-12-15	Au	Underground workings in vein in dolomite (Eh). Small producer of gold ore.	36, 44
395	Radar lode	46-15-57	113-11-53	Au	Bulldozer cuts expose vein in shear zone in carbonate rock (Dj). Production not determined.	151
396	Red Lion mine	46-16-18	113-10-54	Au, Ag, Co, Ni	Two shafts in veins in dolomite (Eh). Small producer of gold ore.	36, 39, 44, 117
397	Robinson mine (Blue-Eyed Annie)	46-14-41	113-11-30	Au, Ag, Bi	More than 230 ft of underground workings along vein in a shear zone in quartzite (Yms). Small producer of gold and silver.	36, 39, 44

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Red Lion (Hidden Lake) district--Continued						
398	St. Thomas mine	46-16-35	113-09-30	Au	More than 200 ft of underground workings in vein in quartzite (Yms). Small producer of gold ore.	36, 44
399	Yellow Metal mine	46-16-10	113-09-35	Au	About 500 ft of underground workings along vein in shear zone in quartzite (Yms). Small producer of gold.	44
Lost Creek district						
District encloses valley of Lost Creek, where Proterozoic, Paleozoic, and Mesozoic sedimentary rocks, Tertiary monzogranite, Tertiary volcanic rocks, and Quaternary glacial and alluvial deposits occur. Several thrust and steeply dipping normal and reverse faults offset Mesozoic and older sedimentary rocks in district. Most of lode deposits are in Paleozoic carbonate rocks near Lost Creek monzogranite stock, which is enriched in several trace and minor elements that include fluorine, tin, rubidium, niobium, lead, and zinc. District was a small producer of gold, silver, copper, and lead from placer, vein, and replacement deposits.						
400	Blue Bottle prospect	46-13-17	113-04-52	W	Surface and underground workings follow veins and zones of disseminated scheelite in carbonate rock (Dj). No production.	155
401	George mine	46-13-28	113-04-00	Ag, Pb, Cu, Sb	Adits and shafts in replacement deposits in limestone (Es). Small producer of silver-lead ore.	36, 44
402	Great Eastern mine (Contact lode, Diamond placer)	46-11-57	112-58-33	Au, Ag, Ls, Cu, Zn	Three short adits and two short shafts, totaling about 300 ft, in replacement deposits in limestone (Mm) near monzogranite (Tmg) contact. Small producer of gold ore and limestone.	7, 36, 78, 150
403	Lost Creek placer (Antelope and Spring Creeks)	46-09-45	112-53-25	Au, Ag	Alluvium (Qs) mined by ground sluicing and by dry-land dredge. Small producer of gold and silver.	90
404	Silver King mine	46-14-07	113-02-43	Ag, Cu, Pb, Sb	Two incline shafts in replacement deposit in dolomite (Ch). Small producer of silver-copper ore.	36, 44
405	Silver prospect (Name unknown)	46-13-17	113-04-23	Ag, Pb, Zn, Cu, Sb	Nine shafts, two adits, and pits in a skarn deposit in limestone (Es) near the monzogranite (Tmg) contact. Production not determined.	151
406	Silver Queen mine	46-13-10	113-01-07	Au	A series of adits along a vein in shear zone in limestone (Yh). Small producer of gold.	36, 44

Blue-Eyed Nellie district

District is in belt of thrust-faulted sedimentary rocks of Middle Proterozoic and Paleozoic age. Principal units are the Hasmark Formation (Cambrian), the Madison Group (Mississippian), and Quadrant Quartzite (Pennsylvanian). The district was a medium producer of silver and lead from oxidized replacement deposits in Hasmark Formation. Limestone from Madison Group and silica from the Quadrant Quartzite have been quarried for former smelter at Anaconda, Montana.

407	Blue-Eyed Nellie Creek quarry	46-10-31	113-03-58	Sil	Open pit quarry in quartzite (IPq). Small producer of silica.	36
408	Blue-Eyed Nellie mine	46-11-00	113-03-38	Ag, Pb, Zn, Cu, Sb, Cd, As, Bi, Sn	About 2,400 ft of workings in replacement deposits in dolomite (Ch). Large producer of silver-lead ore.	36, 39, 44, 117
409	Brown's quarry	46-10-06	113-03-58	Ls	Open pits in limestone (Mm) beds. Large producer of limestone.	19, 79, 153
410	Luke quarry	46-10-38	113-03-07	Sil	Quarry in quartzite (IPq). Small producer of silica.	75, 77, 153

Olson Gulch district

Folded and thrust-faulted sedimentary rocks of Proterozoic and Paleozoic age have been intruded by small plutons of Cretaceous granodiorite. The district was a small producer of silver, gold, copper, iron, and tungsten from several small vein, replacement, and skarn deposits.

411	Big Bear prospect	46-12-50	113-04-37	W	Bulldozer cuts expose scheelite-bearing lenses of skarn in interbedded limestone and shale (Es). No production.	155
412	Black Chief Iron mine	46-10-51	113-06-20	Fe, Zn	Open-pit mine with one adit in magnetite-bearing skarn at the contact of limestone (Mm) and granodiorite (Kgd). Small producer of iron ore for use as smelter flux.	31, 36, 44, 151
413	Bresnahan and Fenner prospect	46-11-40	113-04-53	Ag, Cu, Pb, W, Bi, Co	Bulldozer cut and adit in base- and precious-metal-bearing quartz vein and scheelite-bearing marble (Ch, Dj, Mm). No production.	155
414	Cameron mine	46-10-10	113-06-20	Ag, Cu, Pb, Sil	Shafts, adit, stopes, pits, and trenches in vein and replacement deposits in quartzite and dolomite (Es). Small producer of silver ore.	36, 39, 44, 54, 153
415	Carbonator prospect	46-11-23	113-06-35	Ag, W	Shaft, 35 ft deep, along silver-bearing vein in shear zone. Scheelite float occurs above 150 ft adit. Host rocks are carbonate rock (Dj) and granodiorite (Kgd). No production.	155
416	Grey Rock claim (Bung Your Eye)	46-10-41	113-06-25	Au, Fe	Adit with about 350 ft of workings along a gold-bearing vein in a shear zone. Site is near contact of limestone (Mm) and granodiorite (Kgd). Skarn at contact contains magnetite. Production not determined.	36, 44

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Olson Gulch district--Continued						
417	Mayflower claim (Gold Crown lode)	46-10-33	113-06-40	Au	Adits and trenches totaling more than 775 ft. Deposit is in vein in shear zone in granodiorite (Kgd). Production not determined.	36, 44
418	Pay Day mine	46-12-28	113-05-30	W	Trenching and diamond drilling were done on a scheelite-bearing skarn in fractured limestone (Esh) near contact with granodiorite (Kgd). Small producer of tungsten.	155
419	Rambler mine	46-11-37	113-06-17	Ag, W	Adits and pits along quartz vein in carbonate rock (Dj). Small producer of silver.	36, 155
420	Sager-Murphy prospect	46-12-34	113-02-32	W	Adit, shaft, pits, and trenches along quartz stringers in shear zone in limestone (Dj, Dm). No production.	150, 156
421	Silver Chain-Antelope mine	46-12-20	113-05-52	Ag, Cu, Pb, Zn, W, Sb, As, Cd, Bi	Shafts, adits, and pits in vein and replacement deposit in carbonate rocks (Mm, Eh) that are between a small granodiorite (Kgd) plug to north and a diorite (Kd) stock to the south. Medium producer of silver ore.	36, 44, 52, 153
422	Smith prospect	46-11-33	113-06-03	Ag, W	Adit, shaft, five bulldozer cuts, and several pits in skarn in marble (Eh). Small producer of silver.	155
423	Stormway-Morgan Evans mine	46-12-13	113-06-05	Ag, Cu	Four adits, totaling more than 600 ft, in vein in diorite (Kd). Production not determined.	36, 44
Johnson Basin district						
Folded and faulted Paleozoic rocks (Cambrian to Pennsylvanian) have been intruded by small bodies of granitic to dioritic plutonic rocks (Cretaceous to Tertiary). Most of deposits are vein and replacement types in carbonate sedimentary rocks. District was small producer and main products were silver, tungsten, copper, lead, and zinc.						
424	Ben G. prospect	46-13-01	113-09-00	W	Bulldozer cuts expose mineralized fractures in marble (Eh) near contact with granodiorite (Kgd). No production.	155
425	Cliff prospect	46-13-06	113-07-45	W	Adits and bulldozer cuts along zone of disseminated scheelite in carbonate rock (Dj) near contact with monzogranite (Kmg). No production.	44, 155
426	Fox prospect	46-14-18	113-06-40	Ag, Pb, Cu, W	Adit and shaft along vein in shear zone in limestone (Mm). No production.	44, 155
427	Mike Hannon mine (Hannon mine, McMasters shaft)	46-13-18	113-09-25	Ag	Underground workings totaling more than 500 ft along vein and replacement deposits in carbonate rock (Dj). Small producer of silver ore.	36

428	Mine (name unknown)	46-13-38	113-07-05	Ag, Cu, Ba	Shaft, pits in a vein in limestone (Mm). Production not determined.	151
429	Moonlight prospect	46-10-31	113-10-11	W	Three adits follow a replacement deposit in a shear zone in dolomite (Eh). No production.	155
430	Richmond mine (Ontario mine)	46-11-00	113-09-18	Ag	More than 450 ft of underground workings in vein and replacement deposits in carbonate rocks (Es). Small producer of silver ore.	36
431	Straw Hat prospect	46-13-50	113-06-53	W	Two shafts along scheelite-bearing fracture zone in granitic rocks (Kmg). No production.	155
432	Tip Top mine (Abbot, Bretz, Farmers mine, New Year, Emma)	46-12-33	113-08-46	W, Ag, Cu, Pb, Sb, As, Bi, Zn	Shaft, with about 300 ft of workings, in vein and replacement deposit in dolomite (Eh). Medium producer of tungsten and silver ore.	36, 39, 44, 153, 155
433	Welcome mine	46-13-50	113-08-48	Ag, Pb, Cu, Zn, Sb	Greater than 500 ft of underground workings in vein and replacement deposits in limestone (Mm, Es). Small producer of silver ore.	36, 44

Georgetown (Southern Cross, Cable, Gold Coin) district

Thrust- and normal-faulted sequence of Proterozoic and Paleozoic rocks have been intruded by Late Cretaceous granodiorite of Cable stock. Most mineral deposits are hosted by carbonate sedimentary rocks, especially Hasmark Formation (Cambrian), near contact of the stock but some deposits are as much as a mile away from stock or entirely in stock. Types of deposits are: gold-, copper-, and iron-bearing skarn deposits in carbonate rocks; gold, silver, and tungsten veins and replacement deposits in carbonate rocks; gold veins in granodiorite; and gold placers. District has been large producer and principal products were gold, silver, copper, lead, and tungsten.

434	Black Moon claim	46-11-33	113-14-20	Au	Underground workings along vein in a shear zone in granodiorite (Kgd). Production not determined.	44
435	Cable mine	46-12-00	113-12-59	Au, Ag, Cu, Pb, Fe, Mn, Zn, As, Sb	Extensive underground workings, totaling more than 15,000 ft, in vein, replacement, and skarn deposits in carbonate rocks and shale (Eh, Esh) near the contact of the Cable stock (Kgd). Oxidized, near-surface ore was richest. Large producer of gold, silver, copper, lead, iron, manganese, and zinc. Iron and manganese were used for smelter flux.	17, 36, 37, 43, 44, 51, 106, 127
436	Cable placer	46-11-47	113-12-50	Au, Ag	Residual surface deposits (Qs) were mined on top of and down slope from the Cable mine orebody. Medium producer of gold and silver.	33, 44, 90, 103
437	Cable Creek placer (Paregon, Boca)	46-11-20	113-11-40	Au, Ag	Prospects in placers in alluvium (Qs). Production not determined.	44
438	Champaign lode claim	46-12-22	113-14-05	Ag, Pb, Zn, Cu	Underground workings along vein in shear zone in limestone (Es). Production not determined.	151
439	Georgetown placers	46-11-53	113-14-58	Au, Ag	Alluvium (Qs) mined by ground sluicing and by dragline. Small producer of gold and silver.	33, 36, 44, 90

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Georgetown (Southern Cross, Cable, Gold Coin) district--Continued						
440	Gold Coin mine	46-10-30	113-14-41	Au, Ag, Cu,	A series of adits, with about 2,500 ft of underground workings, in vein and replacement deposits cut by faults. Host rock is dolomite (Eh). Large producer of gold and silver.	29, 36, 44, 153
441	Hold Fast-Short Shift-Goldenwedge mines	46-12-30	113-14-00	Au, Ag, Cu	Underground workings totaling 8,000 ft in vein and replacement deposits in dolomite (Eh). Large producer of gold, silver, and copper.	36
442	Luxemburg mine	46-11-34	113-14-25	Au	Adit and shafts, totaling about 700 ft, follow five veins in granodiorite (Kgd) of the Cable stock. Small producer of gold.	36, 44
443	Montana claim (Montana mine, Deer Lodge)	46-12-20	113-14-50	Au, Ag, Cu, Sb	Adit, with 104 ft of workings, along vein in shear zone in carbonate rock (Dj). Small producer of gold ore.	36, 44
444	Ontario mine	46-12-01	113-15-08	Ag, Pb, Cu, Ba, As	Underground workings in vein and replacement deposits in carbonate rock (Dj). Small producer of silver ore.	36, 44
445	Orphan Boy-Orofino mine	46-12-35	113-14-00	Au	Several shafts along vein and replacement deposits in carbonate rock (Dj). Small producer of gold ore.	17, 36, 44
446	Pyrenees mine	46-11-43	113-14-15	Au, Ag, Cu, As	More than 3,000 ft of underground workings along veins in shear zones in granodiorite (Kgd). Ore was oxidized and enriched near surface. Medium producer of gold ore.	17, 36, 44, 117, 153
447	Reliance mine	46-12-02	113-14-35	Au	Adit, and about 180 ft of underground workings, along vein in a shear zone in carbonate rock (Dj). Small producer of gold.	44
448	Revenue mine	46-11-54	113-13-56	Au	Adit, pits, and trenches follow vein in shear zone in granodiorite (Kgd). Small producer of gold.	36
449	Southern Cross mine	46-12-37	113-14-07	Au, Ag, Cu, Bi, As, Sb, Fe	Inclined shaft with five levels, totaling about 16,000 ft. Deposits are veins and replacements in dolomite (Eh). Large producer of gold, silver, and copper.	9, 17, 36, 37, 44, 51, 117, 153
450	Twilight mine	46-13-07	113-13-45	Au	More than 625 ft of underground workings in vein and replacement deposits in dolomite (Eh). Small producer of gold.	44

Silver Lake district

Geologic setting is similar to that of Georgetown district except that no intrusive rocks are exposed in Silver Lake district. Folded and faulted Cambrian, Devonian, and Mississippian metasedimentary rocks are predominant. Deposits are vein and replacement types in Cambrian and Devonian carbonate rocks. The district was a medium producer and principal products were tungsten, silver, copper, lead, zinc, and gold.

451	Blackshirt prospect	46-09-06	113-13-55	Ag, W	Shaft and bulldozer cuts along vein in fracture zone in carbonate rock (Dj). Production not determined.	155
452	H. L. M. prospect	46-08-40	113-13-15	W, Ag	Two adits, with workings totaling 600 ft, follow vein in shear zone in limestone (Eh). Small producer of tungsten.	155
453	McCabe prospect	46-10-16	113-13-33	W	Adit and several trenches in scheelite-bearing vein in carbonate rock (Dj). Small producer of tungsten.	144, 153, 155
454	Mine (name unknown)	46-07-10	113-17-05	Ag	Underground workings along veins in dolomite (Eh). Production not determined.	152
455	Mine (name unknown)	46-06-48	113-17-48	Ag	Underground workings along veins in dolomite (Eh). Production not determined.	152
456	Minnie Lee prospect (Black Tail No. 1, Minnie Lee 1 and 2 mines, Lucky Seven)	46-07-42	113-17-17	Ag, Cu, W	Several adits and pits along a 1-ft-wide vein in carbonate rock (Dj). Small producer of ore.	53, 155
457	Monk claim	46-06-04	113-18-13	Ag, Cu, Pb, Zn, As, Sb	Underground workings, pits, and trenches follow quartz vein in dolomite (Eh). Production not determined.	39, 40
458	New Hope lode	46-10-17	113-12-52	Au, Ag, Pb	Adit, about 150 ft long, along vein in a shear zone in limestone (Es). Production not determined.	151
459	Okoreka mine	46-08-28	113-14-18	Ag, Pb, Cu, Sb	Underground workings in a replacement deposit in limestone (Dm). Small producer of silver ore.	44
460	Sheila prospect	46-09-39	113-13-47	W	Surface workings in disseminated scheelite zone in carbonate rock (Dj). No production.	155
461	Silver Hill mine	46-08-20	113-13-57	Cu	Underground workings in stratabound zone between dolomite and shale (Eh, Erl). Production not determined.	44
462	Silver Moss mine (Hansen-Meloy prospect)	46-09-40	113-13-11	Ag, W	Two shafts and bulldozer cuts along vein and replacement deposits in limestone (Eh). Small producer of silver ore.	44, 64, 81, 155

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Silver Lake district--Continued						
463	Silver Reef mine (Silver Fleet mine)	46-10-19	113-13-06	Ag, Au, Pb, Cu, Zn, Sb	Adit and shafts, totaling about 300 ft, along vein and replacement deposits in shear zone in limestone (Erl). Medium producer of silver and gold.	36, 44, 76, 77, 153
464	Storm Lake tungsten prospect	46-06-51	113-15-39	W, Ag	About 650 ft of workings follow scheelite- and tetrahedrite-bearing zones at contact of limestone (Es) and granodiorite (Kmd). Small producer of tungsten.	44, 144, 153
465	Sunshine mine (Tarlach mine, Tungstar mine)	46-06-27	113-16-07	Ag, W, Pb, Cu, Zn, Sb, As	Over 750 ft of workings on several tetrahedrite- and scheelite-bearing quartz veins in altered dolomite (Eh) in fault zone. Small producer of silver and tungsten ore.	52, 144, 153, 155
466	The Short Stuff prospect	46-06-52	113-17-10	Ag, Cu, Pb, Sb	Two adits and numerous pits along vein in dolomite (Es). Production not determined.	151
467	Tommy prospect	46-08-25	113-14-00	Ag, W	Surface workings expose vein in shear zone in carbonate rock (Dj). No production.	155
468	Trigger mine	46-09-40	113-13-48	W, Ag	Three adits, stopes, several bulldozer cuts, and drill holes in replacement deposits along shear zones in dolomite (Dj). Medium producer of tungsten.	44, 144, 153, 155
469	War Eagle claim (War Eagle mine)	46-09-56	113-16-04	Au, Cu	Adit, with more than 150 ft of workings, follows vein in shear zone in carbonate rock (Dj). Production not determined.	44
Anaconda Range area						
Anaconda Range area includes northern flank of Anaconda Range in south-central part of map. Core of Anaconda Range has numerous plutons (Cretaceous and Tertiary) that range in composition from diorite to two-mica monzogranite. Northern part of range is underlain by complexly folded and faulted sedimentary rocks of Middle Proterozoic, Paleozoic, and Mesozoic age. Many folds and faults trend north to northwest. Range was glaciated during Pleistocene and all valleys contain thick glacial deposits. Mineral deposits include vein, replacement, pegmatite, and skarn types. The area was a small producer of silver ore and placer gold.						
470	Big Six prospect (St. Tung)	46-05-00	112-59-30	W, F, Be, Bi	Pits and trenches in sheared monzogranite (Kmg) and mylonite that have disseminated scheelite, wolframite, and fluorite. No production.	48, 156
471	Jetty mine (Balkan lode)	46-09-31	113-05-15	Ag, Ba, Zn, F, Pb, Cu, Sb	Four adits in vein and replacement deposits in quartzite (Pq) and limestone (Mm). Small producer of silver ore.	32, 44, 135, 166
472	Kurt Peak occurrence	46-02-37	113-17-03	Ag, Cu	Quartz vein in limestone (Yh). No workings and no production.	40

473	Main Range Beryl occurrence	46-02-00	113-08-10	Be	Small beryl occurrence in pegmatite in monzogranite (Kmg). No production.	107
474	Margaret and Lake View placers	46-04-30	113-16-01	Au, Ag	Minor surface workings in placers in alluvium (Qs). Production not determined.	90
475	Mill and Clear Creek placers	46-04-30	112-56-20	Au, Ag	Ground sluicing of placers in alluvium (Qs). Small producer of gold and silver.	32, 90
476	Mill Creek Beryl occurrence	46-04-53	113-05-21	Be, F	Beryllium- and idocrase-bearing zones at contact of quartz diorite stock (Kmd) and limestone (Esh). At least three beryllium-bearing zones as much as 900 ft in length are present. No production.	107
477	One Hundred Acre Meadow prospect	46-05-26	113-18-37	Ag, Cu	Shaft and many pits and trenches along quartz vein in dolomite (Eh). No production.	40
478	Rainbow Pass occurrence	46-02-30	113-19-05	Au, Ag, Cu	Quartz vein in limestone (Yh). No workings and no production.	40
479	Silver mine (name unknown)	46-04-00	113-24-58	Ag	Underground workings in veins in dolomite (Eh). Production not determined.	152
480	Weathervane Hill prospect	46-06-00	112-55-00	F, Pb, Ag	Shallow pits and adits along fault zone in limestone (PMS). Fluorite crystals as much as 1 in. wide occupy fissures and vugs in veins as much as 2 ft thick. Production not determined.	128, 135

Deer Lodge Valley area

The Deer Lodge Valley is north-trending intermontane basin that contains thick sequence of Tertiary and Quaternary basin deposits. The area was medium producer of gold from one placer gold deposit.

481	Caribou Creek placer	46-19-06	112-44-05	Au, Ag	Ground sluicing of placers in alluvium (Qs). Medium producer of gold and silver.	90
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Blackfoot River area

The principal rock types of Blackfoot River area are sedimentary rocks of Belt Supergroup (Middle Proterozoic). These include the Spokane and Empire Formations (Ravalli group), Helena Formation, and Snowlip, Mount Shields, and Shepard Formations (Missoula Group). Broad, open folds and steeply dipping normal, reverse, and strike-slip faults are dominant structures. In eastern part of area the Proterozoic sedimentary rocks have been intruded and covered by Tertiary andesitic and rhyolitic volcanic rocks. Several granodiorite plutons (Tertiary and Cretaceous) are in southern part of area. Western part of the area is mostly covered by Quaternary glacial and alluvial deposits. Mineral deposits include base- and precious-metal veins and gold placers. The area was a small producer and principal products were gold, silver, copper, and lead.

482	Butterfly Quartz lode	46-52-46	112-34-48	Au, Ag, Pb, Zn, Cu	Adit along vein in shear zone in argillite (Yh). No production.	151
483	Gold Dollar mine	46-54-30	112-39-16	Au	Adit, with 1,000 ft of workings, along vein in argillite (Ysn). No production.	151
484	Keep Cool Creek placer	46-58-00	112-39-25	Au, Ag	Placers in alluvium (Qs) were mined by surface workings and underground shafts. Small producer of gold and silver.	90

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Blackfoot River area--Continued						
485	Liverpool Creek placer	46-58-27	112-41-07	Au, Ag	Placers in alluvium (Qs) were mined by surface workings. Small producer of gold and silver.	90
486	Mammoth mine	46-54-46	112-31-25	Cu, Ag, Au	Developed mine along vein in shear zone in andesite (Tab). Small producer of copper, silver, and gold.	150
487	Marcum Hill mines	46-57-05	112-56-58	Ag, Pb, Au, Cu	Open-pit mining of quartz vein in granodiorite (Kgd). Small producer of silver, lead, gold, and copper.	91
488	Moose Creek placer	46-55-05	112-50-51	Au, Ag	Ground sluicing of placers in alluvium (Qs). Small producer of gold and silver.	90
489	Pack Horse lode	46-54-22	112-38-05	Au, Pb, Cu	Shaft along vein in limestone (Yh). No production.	151
490	Poorman Creek placer	46-52-32	112-36-15	Au, Ag	Ground sluicing of placers in alluvium (Qs). Small producer of gold and silver.	33, 90, 106
491	Sauerkraut Gulch placer	46-54-53	112-45-15	Au, Ag	Surface workings in placer deposits in alluvium (Qs). Medium producer of gold and silver.	90, 106
492	Stonewall Creek placer	46-57-50	112-42-05	Au, Ag	Outwash (Qs) was mined by ground sluicing and dry-land dredge. Small producer of gold and silver.	90
Big Blackfoot (Ogden Mountain) district						
<p>The Ogden Mountain stock (Late Cretaceous granodiorite) intruded sedimentary rocks of Helena, Snowslip, and Shepard Formations (Middle Proterozoic). Sedimentary rocks are offset by normal faults and, in the southwest part of the area, by right-lateral strike-slip faults of the Bald Butte fault zone. Tertiary volcanic and sedimentary rocks cover older rocks in places. Mineral deposits are base- and precious-metal veins, gold placers, and tungsten skarn. The district was a medium producer and principal products were gold, silver, copper, and lead.</p>						
493	Blackfoot mine (Blackfoot Gold mine)	46-51-50	112-50-48	Au, Ag, Pb, Cu, W, Bi, Mo	Largest mine in district, containing 1,300 ft of workings along weathered veins in limestone (Yh) near granodiorite (Kgd) contact. Medium producer of gold, silver, copper, and lead.	39, 91, 143
494	C.D. Hurd placer	46-51-35	112-53-57	Au, Ag	Ground sluicing of placers in alluvium (Qs). Small producer of gold and silver.	56
495	Chicken Creek placer	46-48-40	112-49-00	Au, Ag	Placers in alluvium (Qs) were mined by ground sluicing. Small producer of gold and silver.	90
496	Chimney Creek placer	46-50-41	112-51-10	Au, Ag	Placers in alluvium (Qs) were mined by ground sluicing. Small producer of gold and silver.	90

497	Deer Creek mine	46-50-48	112-48-42	Au, Ag	Over 3,000 ft of workings follow quartz veins along contact between argillite (Ysn) and granodiorite (Kgd). Production not determined.	143
498	Deer Creek placer	46-48-48	112-50-14	Au, Ag	Placers in alluvium (Qs) were mined by ground sluicing. Small producer of gold and silver.	90
499	Higgins mine	46-52-11	112-52-00	Au, Ag, Pb, W	Thirty feet of underground workings along quartz veins in shear zones in granodiorite (Kgd). Small producer of gold and silver.	91, 156
500	Hobby Horse mine	46-51-45	112-52-00	Au, Ag, Pb, W, Bi	More than 390 ft of workings (two shafts, two working levels) in fissure veins in granodiorite (Kgd). Small producer of gold, silver, and lead.	11, 39, 56, 91, 156
501	Hunter mine	46-52-20	112-49-50	Ag, Pb, Cu, Sb	Developed mine in veins in argillite (Yh) near contact with granodiorite (Kgd). Small producer of silver, lead, and copper.	143
502	Last Chance mine (Christine mine)	46-52-00	112-51-45	Ag, Pb	Inclined shaft and trenches along quartz veins in granodiorite (Kgd). Production not determined.	143
503	McCacran mine	46-54-13	112-50-57	Ag, Pb, Cu, W, Sb	Four adits in veins in granodiorite (Kgd). Production not determined.	91
504	Nevada Creek placer	46-49-58	112-53-40	Au, Ag	Ground sluicing and dry-land dredging of placers in alluvium (Qs). Small producer of gold and silver.	91
505	New Progress and Old Timer prospects (Western mines)	46-52-18	112-50-12	W, Ag, Au, Cu, Pb, Sb	Underground workings, totaling 420 ft, follow quartz vein in bedding-plane fault in limestone (Yh). Scheelite is in skarn between limestone (Yh) and granodiorite (Kgd). Production not determined.	150, 156
506	Plutarc mine (Snowflake mine)	46-52-06	112-51-55	Au, Ag, Pb, W	Over 110 ft of adits and shafts along vein in fault zone in granodiorite (Kgd). Production not determined.	91, 144, 156
507	Roselle mine	46-52-01	112-53-05	Au, W	Adit, 300 ft long, in vein in granodiorite (Kgd). No production.	156
508	Smith-Jones mine	46-51-43	112-52-25	Ag, Au, Sb	Inclined shaft, 40 ft deep, in vein in argillite (Yh). Production not determined.	152
509	Wasson Creek placer	46-54-00	112-52-25	Au, Ag	Placers in alluvium (Qs) were mined by ground sluicing. Small producer of gold and silver.	90
510	Wilson Creek placer (Kilburn, Raleigh)	46-52-43	112-52-27	Au, Ag	Ground sluicing of placers in alluvium (Qs). Medium producer of gold and silver.	144

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Lincoln Gulch area						
Calcareous siltite and argillite, and limestone of Helena Formation (Middle Proterozoic) have been intruded by thin intermediate to mafic dikes (Late Proterozoic). Quaternary till and alluvial and terrace gravels occupy valley of Lincoln Creek. Area is one of the most famous gold-producing districts of quadrangle and was very large producer of gold from placer deposits. An undetermined amount of gold has also been produced from a vein deposit.						
511	Lincoln Gulch placer	46-56-30	112-45-05	Au, Ag, W	Alluvium (Qs) was worked by dredge, underground workings, and by ground sluicing. Very large producer of gold and silver.	90, 106, 117, 156
512	Blackfoot mine (Big Blackfoot mine)	46-56-36	112-45-23	Au	Adit, with 2,500 ft of underground workings, along vein in shear zone in limestone (Yh) intruded by diorite dike (Kd). Production not determined.	106, 123
513	Mine (name unknown)	46-59-08	112-46-56	Au, Ag	Two adits in vein and replacement deposits in calcareous siltstone and argillite (Yh) that are intruded by dike of andesite porphyry (Kd). Production not determined.	39
McClellan Gulch district						
McClellan Gulch is underlain by argillite, siltite, limestone, and quartzite of the Helena, Snowlip, Shepard, and Mount Shields Formations (Middle Proterozoic). At head of gulch, granodiorite of Dalton Mountain stock (Late Cretaceous) is in contact with Mount Shields and Shepard Formations. The district was very large producer of gold from placer deposits in the gulch. Source of gold is probably vein deposits in and near contact of Dalton Mountain stock.						
514	McClellan Gulch placer	46-52-54	112-37-53	Au, Ag	Extensive surface and underground workings in placer deposits in alluvium (Qs). Very large producer of gold and silver.	33, 90, 106
515	Wiggins mine	46-50-18	112-38-55	Au, Ag, Pb, Cu, Bi	Several adits along quartz veins in granodiorite (Kgd) of Dalton Mountain stock. Production not determined.	39
Seven-Up Pete Gulch area						
Area is mineralized intrusive-extrusive volcanic center that was probable source of much of surrounding (Tertiary) andesitic and rhyolitic volcanic rocks. Sulfide-bearing quartz veins are along shear and breccia zones in andesite. The area is a medium producer and principal products were gold and silver.						
516	Columbia mine	46-56-55	112-30-30	Au, Ag, Mo	Three-hundred-foot shaft with several working levels along vein in andesite (Tab). Small producer of gold and silver.	39, 106
517	Last Chance mine	46-56-28	112-31-27	Au, Ag, Ba, As, Cu, Mo	About 3,000 ft of underground workings along vein in andesite (Tab). Small producer of gold and silver.	39, 106
518	Rover mine	46-56-35	112-30-21	Au, Ag	Underground workings in vein in andesite (Tab). Small producer of gold and silver.	106

Stemple-Gould district

Sedimentary rocks of Helena, Empire, and Spokane Formations (Middle Proterozoic) have been intruded by diorite sills and dikes (Late Proterozoic), Granite Butte granodiorite stock (Cretaceous) and quartz monzodiorite stock (Tertiary). Proterozoic rocks are cut by northwest-trending, steeply dipping normal, reverse, and strike-slip faults. Ore deposits are fissure-filling veins in stocks, vein and replacement deposits in sedimentary rocks, and placers. The district was a large producer and principal products were gold, silver, copper, and iron.

519	Crown mine	46-51-06	112-28-13	Au	Underground workings, totaling more than 100 ft, in vein in granodiorite (Kgd). Small producer of gold.	58, 106
520	Gold Creek placer (Blue Jay)	46-54-10	112-28-59	Au, Ag	Ground sluicing of placers in alluvium (Qs). Production not determined.	151
521	Gould Creek placer (Blue Star)	46-53-03	112-23-19	Au, Ag	Ground sluicing of placers in alluvium (Qs). Production not determined.	90, 151
522	Homestake mine	46-53-18	112-29-00	Au, Cu	Two adits and stopes, totaling more than 500 ft, in veins in andesite (Tab). Small producer of gold ore.	92, 106
523	Hubbard mine (Mill tunnel)	46-52-15	112-27-13	Au	Underground workings, totaling about 7,000 ft, in vein and replacement deposits in granodiorite (Kgd). Small producer of gold.	106
524	Jay Gould mine (Stemple mine)	46-52-55	112-27-31	Au, Ag, Cu, Fe	More than 12,000 ft of underground workings along veins in shear zones in hornfels (Ye). Large producer of gold, silver, copper, and iron.	77, 106
525	Nakoma mine (Golconda mine)	46-52-42	112-28-04	Au	About 3,150 ft of underground workings along veins in shear zones in hornfels (Ye). Small producer of gold.	106
526	Prize mine	46-51-12	112-28-20	Au, Cu	Underground workings, totaling about 800 ft, in vein and replacement deposits in granodiorite (Kgd). Small producer of gold-copper ore.	106
527	Rooster Bill Creek placer (Margaret)	46-54-03	112-27-03	Au, Ag	Ground sluicing of placers in alluvium (Qs). Production not determined.	151
528	Silver Bell mine (Swansea mine)	46-53-22	112-32-42	Au, Ag, Cu, Pb	Two shafts, a crosscut tunnel, and drifts along vein near contact of granodiorite stock (Kgd) and calcareous argillite (Ye). Medium producer of gold, silver, copper, and lead.	92

Nevada Creek area

Area includes most of Nevada Creek valley and mountains along north side of valley except for area of Finn district. Folded and faulted sedimentary rocks (Middle Proterozoic to Cambrian) underlie the mountains. Valley is filled with Tertiary and Quaternary sediments and bounded on north and northeast by Bald Butte fault. The only mine, a gold placer, was a small producer of gold.

529	Three Mile Creek placer	46-42-25	112-35-15	Au, Ag	Placer deposits in alluvium (Qs) were worked by ground sluicing. Small producer of gold and silver.	90, 106
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Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Finn district						
Finn district includes gold placers along southwest-flowing tributaries to Nevada Creek. Thrust-faulted and folded sedimentary rocks of Helena, Mount Shields, Shepard, and Snowslip Formations (Middle Proterozoic) were intruded by Dalton Mountain granodiorite stock (Late Cretaceous) in mountainous northeastern part of the district. A northwest-trending fault separates Nevada Creek valley from mountains. The valley is underlain by Tertiary and Quaternary deposits. The district is a large producer of gold and silver, mostly from placer deposits. Base- and precious-metal veins that are near contact of stock have been mined for gold, silver, and copper.						
530	American Gulch placer	46-46-27	112-38-52	Au, Ag	Surface workings in placer deposits in alluvium (Qs). Small producer of gold and silver.	90
531	Buffalo Gulch placer	46-48-38	112-44-30	Au, Ag	Surface workings in placer deposits in alluvium (Qs). Small producer of gold and silver.	90, 106
532	Humdinger mine	46-50-17	112-41-46	Au, Ag, Cu	Developed mine in veins in quartzite (Yms) near contact with granodiorite (Kgd). Small producer of gold, silver, and copper.	27
533	Jefferson Creek placer	46-47-33	112-42-56	Au, Ag	Surface workings in placer deposits in alluvium (Qs). Medium producer of gold and silver.	29, 56, 77, 90, 106
534	Madison Gulch placer	46-47-38	112-42-50	Au, Ag	Placer deposits in alluvium (Qs) were mined by sluicing and dry-land dredge. Small producer of gold and silver.	90
535	Mine (name unknown)	46-50-53	112-40-05	Au, Ag, Pb, Cu, Bi	Several adits along quartz veins in granodiorite (Kgd) of Dalton Mountain stock. Production not determined.	39
536	Washington Creek placer	46-47-02	112-39-57	Au, Ag	Placer deposits in alluvium (Qs) were mined by sluicing and dry-land dredge. Most productive gulch in district. Medium producer of gold and silver.	56, 90, 106, 149
Little Prickly Pear area						
Most of area is underlain by argillite, siltite, and quartzite of Middle Proterozoic Greyson, Spokane, and Empire Formations (Ravalli group), which have been intruded by diorite sills (Late Proterozoic). Middle and upper Belt units (Helena, Snowslip, Shepard, and Mount Shields Formations and the Bonner Quartzite) are in the southwest part of the area, Paleozoic and Mesozoic sedimentary rocks and a Cretaceous latite sill are in the northeast corner of area, and Tertiary volcanic rocks are in the northwestern part of the area. Pre-Tertiary rocks have been deformed by west-northwest-trending strike-slip faults in central and southern parts of area, and by northwest-trending folds, thrust faults, and steeply dipping faults in northern and northeastern parts of area. Principal mineral deposits are gold placers; however, some base- and precious-metal veins also are present. The area was a large producer and principal products were gold, lead, zinc, copper, and silver.						
537	Big Ox mine	46-47-30	112-17-43	Pb, Zn, Cu, Ag	Underground workings along veins in argillite (Yh) cut by diorite (ZYg) dikes. Small producer of lead-zinc ore.	2, 153
538	Canyon Creek copper prospect	46-59-45	112-19-00	Cu, Ag	Occurrences of copper and silver in 25 ft sequence of quartzite interbedded with reddish shale (Ys, Ye). Ore minerals are chalcocite, digenite, bornite, and native silver. No production.	148, 152

539	Canyon Creek Gold prospect	46-49-26	112-18-52	Au, Ba, As	Thin quartz veins in silicified volcanic conglomerate (Tab). No production.	39
540	Canyon Creek placer	46-51-04	112-17-40	Au, Ag	Terrace deposits (Qs) were mined by ground sluicing. Small producer of gold and silver.	90, 106
541	Cottonwood Creek and Gravel Range placers	46-50-27	112-19-04	Au, Ag	Placers in alluvium of two ages (Ts, Qs) were mined by ground sluicing. Small producer of gold and silver.	90, 106
542	Krasny Gulch placer	46-50-46	112-15-50	Au, Ag	Ground sluicing of placers in alluvium (Qs). Small producer of gold and silver.	152
543	Occurrence	46-57-25	112-10-57	Cu, Ag, Ba, Mo, Bi	Occurrence of strata-bound copper minerals in argillite and siltite (Ys). No production.	163
544	Occurrence	46-56-10	112-08-32	Cu, Ag, Ba,	Occurrence of strata-bound copper minerals in quartzite bed (Ye). No production.	163
545	Occurrence	46-55-48	112-07-29	Cu, Ag, P	Occurrence of strata-bound copper minerals and phosphorite in limestone and siltite (Ys). No production.	62, 74, 163
546	Occurrence	46-54-16	112-17-01	Cu, Ag, Ba	Occurrence of strata-bound copper minerals in argillite and siltite (Ys). No production.	163
547	Piegan Gulch placer	46-47-42	112-20-28	Au, Ag	Dredging and ground sluicing of placers in alluvium (Qs). Medium producer of gold and silver.	33, 90
548	Prospect (name unknown)	46-50-53	112-27-14	Cu, Pb	Prospect on quartz veins near contact of limestone (Yh) and granodiorite stock of Granite Butte (Kgd). Production not determined.	163
549	Prospect (name unknown)	46-53-41	112-22-00	Cu, Ag, Zn, Pb, Sb, As, Hg	Prospect adit along quartz vein at contact of siltite (Ys) with microgabbro sill (ZYg). Production not determined.	163
550	Prospect (name unknown)	46-53-24	112-17-56	Cu, Ag, Ba	Prospect adit on occurrence of strata-bound copper minerals in argillite and siltite (Ys). Production not determined.	163
551	Sieben Ranch quarry (Picture Stone No. 1)	46-51-10	112-11-52	St	Quarry in silty limestone (Yg). Small producer of building stone.	7
552	Virginia Creek placer (Tarhead, Lopear, and Specimen Creeks)	46-53-08	112-20-30	Au, Ag	Placer deposits in alluvium (Qs) were mined by ground sluicing and hydraulic mining. Large producer of gold and silver.	90, 106

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Wolf Creek district						
Northwest-trending zone of thrust-faults of Montana disturbed belt deform Middle Proterozoic to Cretaceous sedimentary rocks, which underlie this district. Sulfide-bearing veins occupy shear zones in argillite of Middle Proterozoic age. The district was a small producer of silver, gold, and copper.						
553	Bissonette mine (Champion, Liberty)	46-59-53	112-06-04	Ag, Cu, Pb, Zn, Ba, As	Underground workings, totaling more than 800 ft, along veins in shear zones in argillite (Ys). Small producer of silver ore.	76, 106
554	Hudson group (Montreal, Hudson, and Honeycomb)	46-59-30	112-06-20	Cu, Ag, Au	About 450 ft of underground workings follow veins in shear zones in argillite (Yg). Small producer of copper, silver, and gold.	106
555	Little Creek placer	46-59-23	112-04-53	Au, Ag	Ground sluicing of placers in alluvium (Qs). Small producer of gold and silver.	90
556	Sheep Creek group	46-58-06	112-03-55	Cu	Two shafts along veins in shear zones in argillite (Ys). No production.	106
Marysville (Silver Creek) district						
Limestone and calcareous argillite and siltite of Middle Proterozoic Helena and Empire Formations have been folded, cut by faults, and intruded by the Marysville granodiorite stock (Late Cretaceous). Area is bordered on southwest by major strike-slip fault. A wide zone of contact metamorphosed rocks is present around Marysville stock and above an unexposed granite stock (determined by drilling) in area of Bald Butte. Mineral deposits include base- and precious-metal veins in granodiorite and hornfels, a stockwork molybdenum zone, mineralized breccia, skarns, and gold placers. The district was a large producer and principal products were gold, silver, lead, copper, and zinc.						
557	Bald Butte mine	46-43-22	112-20-47	Au, Ag, Pb, F, Mo, Cu, Zn, Bi, W	Underground workings in veins in hornfels (Ye) near a diorite porphyry dike (Kd) and in contact zone of granite (Tmg). A stockwork molybdenum zone has been explored by core drilling. Large producer of gold-silver ore.	2, 39, 72, 128, 129, 135, 159
558	Bell Boy mine	46-44-22	112-21-42	Au, Ag, Pb, Zn, Cu, F	About 1,000 ft of underground workings along veins in shear zones in hornfels (Ye). Large producer of gold-silver ore.	106
559	Belmont mine	46-44-42	112-19-02	Au, Ag	Underground workings along veins in shear zones in hornfels (Yh) near granodiorite (Kgd) of Marysville stock. Small producer of gold-silver ore.	2, 72, 94, 106, 153
560	Calumet mine	46-45-15	112-17-40	Au, Mn	Underground workings totaling 1,000 ft, in vein in limestone (Yc) near contact with granodiorite (Kgd). Small producer of gold ore.	106
561	Cruse mine (Bald Mountain mine)	46-44-56	112-19-14	Au, Ag, Pb	More than 1,000 ft of underground workings in veins in hornfels (Ye) near granodiorite (Kgd) of the Marysville stock. Small producer of gold ore.	2, 72, 106

562	Drumlummon mine	46-44-36	112-17-45	Au, Ag, Cu, Mn, Sb, Be	More than 2,000 ft of underground workings in veins in hornfels (Yh) near granodiorite (Kgd) of the Marysville stock. Very large producer of gold, silver, copper, and manganese.	2, 23, 37, 39, 60, 64, 72, 106, 159
563	Earthquake mine	46-44-17	112-22-09	Pb, Cu, Ag, Zn, F, As	About 200 ft of underground workings follow veins in shear zones in hornfels (Ye). Small producer of lead-copper ore.	39, 106
564	Empire Creek placer (Lost Horse Creek)	46-45-20	112-22-20	Au, Ag	Ground sluicing of placers in alluvium (Qs). Small producer of gold and silver.	90
565	Empire mine	46-45-21	112-20-52	Au, Ag, Cu, Pb, Zn	Over 1,500 ft of underground workings in veins in hornfels (Yh). Medium producer of gold, silver, copper, and lead.	3, 39, 64, 72, 106, 139
566	Guerin lode	46-44-21	112-22-56	Cu, Pb, Ag, Au	Shaft, about 40 ft deep, along vein in hornfels (Ye). No production.	151
567	Little Ox mine	46-46-22	112-19-12	Au, Ag, Pb, Zn, Sb	Underground workings in veins in limestone (Ye). Small producer of gold, silver, lead, and zinc.	2, 144, 153, 166
568	M and L mine	46-45-10	112-20-40	Au, Ag, Cu, Pb	Several shafts and adits follow veins in hornfels (Yh) near the contact with granodiorite (Kgd). Medium producer of gold, silver, copper, and lead.	64, 72, 106
569	Mammoth claim	46-44-18	112-22-07	Au, Cu	Surface and underground workings along veins in shear zones in hornfels (Ye). Small producer of gold and copper.	106, 153
570	Nile mine	46-44-17	112-21-55	Pb, Cu	More than 1,250 ft of workings, on the surface and underground, along veins in shear zones in hornfels (Ye). Small producer of lead ore.	106
571	Ottawa mine (Prentice property)	46-44-50	112-17-10	W, Cu	More than 1,440 ft of underground workings in skarn near the contact of limestone (Yh) and granodiorite (Kgd) of the Marysville stock. Skarn contains disseminated scheelite. Production not determined.	150, 156
572	Penobscot mine	46-43-50	112-21-22	Au, Ag	About 1,000 ft of underground workings in veins in hornfels (Ye). Large producer of gold-silver ore.	60, 72, 94, 106
573	Piegan-Gloster mine	46-45-43	112-20-27	Au	More than 1,200 ft of underground workings in veins in granodiorite (Kgd) of the Marysville stock. Small producer of gold.	72, 106
574	Shakopee mine	46-44-24	112-22-05	Ag, Pb, Cu, F	Underground workings along veins in shear zones in hornfels (Ye). Small producer of ore.	106
575	Shannon mine	46-44-00	112-20-06	Au, Ag	Numerous underground mine levels, totaling about 21,000 ft. Deposits are veins in shear zones in hornfels (Yh). Large production of gold and silver.	2, 149, 153

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Marysville (Silver Creek) district--Continued						
576	Silver Creek placer	46-44-38	112-10-40	Au, Ag	Placers in alluvium (Qs) were mined by ground sluicing. Large producer of gold and silver.	90
577	Staples mine	46-45-18	112-17-36	Au	About 620 ft of underground workings along veins in hornfels (Yh) near contact with granodiorite (Kgd). Small producer of ore.	106
578	Towsley mine	46-44-27	112-21-47	Ag, Pb, Cu, F	Underground workings follow veins in shear zones in hornfels (Ye). Small producer of ore.	106
579	Trinity Gulch placer	46-45-35	112-16-16	Au, Ag	Placers in alluvium (Qs) were mined by ground sluicing. Small producer of gold and silver.	90
580	Windy Ridge prospects	46-46-18	112-19-33	Au, W	Surface and underground workings in skarn in hornfels (Ye) near dikes of granodiorite (Kgd). No production.	150, 156
Ophir (Snowshoe Creek, Carpenter Creek) district						
<p>Blackfoot City granodiorite stock (Late Cretaceous) and small satellitic granodiorite stock intrude folded sedimentary rocks of Middle Proterozoic through Cretaceous ages in northern part of district. Avon valley, in southern part of district, occupies a basin formed by northwest-trending faults near mountain front. Lode deposits are skarns, veins, breccia, and irregular replacement bodies. Mineral deposits contain mainly gold, silver, and copper and are primarily in limestone near granodiorite contact. Placers are in Quaternary alluvium and in Tertiary gravel. The district was a very large producer and principal products were gold, silver, copper, lead, tungsten, and phosphate.</p>						
581	Ajax mine	46-42-32	112-29-30	Au, Ag, Cu	Four adits and several shafts along irregular replacement body in dolomite (Eh). Medium producer of ore containing gold, silver, and copper.	85, 91, 106
582	Arnold mine (Bielenberg, Boulder ores, Strategic, Snowshoe)	46-40-40	112-28-02	Cu, Ag, Au, W, Pb	Several hundred feet of underground workings and surface cuts along skarn and veins in limestone (Mm) near contact with granodiorite (Kgd). Medium producer of ore containing gold, silver, copper, lead, and tungsten.	91, 106, 156
583	Bumble Bee mine (Morning Star)	46-41-45	112-30-45	Ag, Au, Cu	Shaft, about 100 ft deep, in skarn in carbonate rock (Dj) near contact with granodiorite (Kgd). Medium producer of ore containing gold, silver, and copper.	13, 64, 91
584	Butterfly prospect	46-40-19	112-32-04	Au, Cu, Ag, Sb	Three shafts along veins in shear zones in limestone (Mm) near contact with granodiorite (Kgd). Production not determined.	85, 91

585	Carpenter Creek placer	46-36-00	112-33-16	Au, Ag	Placer mine workings extend along Carpenter Creek valley for 8 mi. Alluvium (Qs) was mined along valley by ground sluicing in upper part and by dredging along lower 1.5 mi. Gravel (Ts) along west side of valley was mined by ground sluicing for length of 5 mi. Large producer of gold from placers.	90, 106
586	Coon's prospect	46-41-18	112-31-50	Cu, W, Mn, Mo	Open cut in skarn in limestone (Em) near contact with granodiorite (Kgd). Production not determined.	39, 91, 156
587	Cyclone mine (Whirlwind)	46-42-00	112-30-15	Cu, Au, Ag, W	Surface and underground workings in skarn in carbonate rock (Dj) near contact with granodiorite (Kgd). Small producer of ore containing copper, gold, and silver.	56, 91
588	Deadwood Gulch placer	46-41-24	112-27-30	Au, Ag	Ground sluicing of alluvium (Qs) along 1.4 mi of valley. Location of discovery of largest gold nugget (158.7 oz) found in Montana. Production not determined.	90, 106
589	Denver mine	46-40-54	112-32-32	Au, Ag, Cu, Sb	Adit and shaft on veins in a shear zone in quartzite (Ybo) near contact with granodiorite (Kgd). Production not determined.	106
590	Eldorado mine	46-42-00	112-30-13	Au, Ag, Cu, Pb Zn	Shafts along skarn zone in carbonate rock (Dj) near contact with granodiorite (Kgd). Medium producer of ore containing gold, silver, copper, lead, and zinc.	85
591	Esmeralda mine	46-41-17	112-26-30	Au, Ag, Cu	Numerous adits and shafts totaling several hundred meters and surface cuts in replacement deposits in limestone (Mm). Producer of unknown amount of ore containing gold and silver during late 1800's.	85, 91
592	Eureka Gulch placer	46-38-30	112-32-20	Au, Ag	Alluvium, eluvium, and lag deposits (Qs) were mined by ground sluicing and washing plant. Production not determined.	90
593	Fairview mine (Coulson mine)	46-40-55	112-32-47	Ag, Au, Pb, Cu, Sb, As, Te	Two shafts along quartz veins in shear zones in granodiorite (Kgd). Medium producer of ore containing gold, silver, copper, and lead.	78, 91, 106
594	Flagstaff mine	46-40-47	112-28-13	Cu, Ag, Au, W	Underground workings in skarn in limestone (Mm) near contact with granodiorite (Kgd). Small producer of ore.	91, 106
595	Illinois Gulch placer			Au, Ag	Ground sluicing of alluvium (Qs). Production not determined.	85
596	Jack Pine mine (Trout Creek, Senecal)	46-40-00	112-27-30	P	Surface and underground workings in phosphorite beds (Pp). Small producer of phosphate.	28, 114, 142, 145

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Ophir (Snowshoe Creek, Carpenter Creek) district--Continued						
597	Katie Allen mine	46-40-30	112-31-59	Au, Ag, Cu	Trenches and adits along zones of disseminated pyrite in rhyolite (Trv) and altered granodiorite (Kgd). Small producer of ore containing gold, silver, and copper.	81
598	Ladysmith mine	46-40-40	112-27-48	Cu, Ag, Au, W	Developed mine in skarn in limestone (Mm) near contact with granodiorite (Kgd). Medium producer of ore containing tungsten, copper, silver, and gold.	91, 152
599	Little Daisy mine (Orient, Maggie, Alice)	46-41-10	112-29-45	Ag, Au, Pb, Cu, Sb, As	Underground workings in skarn and veins in carbonate rock (Dj) near contact with granodiorite (Kgd). Small producer of silver-gold ore.	91, 106
600	McKay mine	46-41-52	112-26-15	Au	Underground workings in veins in granodiorite (Kgd). Small producer of gold ore.	91, 106
601	Mexican Gulch placer	46-40-55	112-30-40	Au, Ag	Alluvium and eluvium (Qs) were mined by hydraulic giant and ground sluicing. Production not determined.	85
602	Mine (name unknown)	46-39-52	112-29-35	Au, Ag	Adits and shafts in skarn zone in carbonate rock (Dj) near contact with granodiorite (Kgd). Production not determined.	85
603	Nancy Helen mine	46-41-28	112-31-08	Au, Ag, Cu	Adit along veins in shear zones in granodiorite (Kgd). Production not determined.	85
604	Nora Darling mine	46-42-08	112-30-15	Au, Ag, Cu	Adits along a replacement deposit in carbonate rock (Dj). Small producer of ore containing gold, silver, and copper.	85, 153
605	Nugget Gulch placer	46-42-14	112-29-53	Au, Ag	Mining of alluvium (Qs) by ground sluicing, hydraulic giant, and underground drifting. Production not determined.	85
606	Ophir Creek placer	46-37-55	112-32-32	Au, Ag	Placers in alluvium (Qs) and gravel (Ts) were worked by ground sluicing and dragline dredging. Large producer of gold.	90, 106
607	Ophir mine (Reservoir)	46-40-27	112-32-23	Cu, Au	Several shafts along shear zone in quartzite (Ybo). Small producer of ore containing gold and silver.	56, 91, 106
608	Opsata mine	46-40-36	112-32-26	Au, Ag	Shaft on vein in quartzite (Ybo). Small producer of gold-silver ore.	106

609	Price claims	46-41-21	112-29-10	Au, Ag, Cu	Surface and underground workings in vein and replacement deposit in carbonate rock (Dj) near granodiorite (Kgd) contact. Small producer of ore.	54, 106
610	Snowshoe Creek placers	46-36-03	112-32-00	Au, Ag	Placer mines in alluvium (Qs) along 5 mi of Snowshoe Creek, 6 tributaries to Snowshoe Creek, and in gravel (Ts) on benches along sides of valley. Placers mined by ground sluicing, hydraulic giant, and underground methods. Large producer of gold.	90, 106
611	Tiger Gulch placer	46-40-14	112-32-26	Au, Ag	Ground sluicing of alluvium and eluvium (Qs). Production not determined.	85
612	Victory mine	46-42-20	112-30-20	Au, Ag, Cu, Mo, Bi	About 500 ft of underground workings in replacement deposit in brecciated carbonate rock (Dj) near granodiorite (Kgd) contact. Medium producer of gold-silver ore.	39, 91, 106

Dog Creek area

Most of central and northern parts of area are underlain by sedimentary rocks ranging in age from Middle Proterozoic to Cretaceous, which are folded into a southeast-plunging syncline. Several imbricated listric thrust faults of the frontal zone of Sapphire thrust plate have been mapped in southwestern part of area. Normal faults are in northern part of area. Southwestern corner of area contains Tertiary and Quaternary sedimentary rocks and Tertiary rhyolite flows. Principal mineral deposits are gold placers and stratabound phosphate deposits. Some vein and skarn deposits are also in the area. The area was a medium producer and principal products were gold, phosphate, limestone, copper, and silver.

613	Blue Bell mine	46-37-28	112-18-15	Cu, Ag, Au, Mo, Zn, Pb, Sn, W	Surface and underground workings in skarn in limestone (PDs) near granite (Kmg). Small producer of copper ore.	39, 72, 91, 106
614	Dog Creek and tributaries placer (Uncle Ben Gulch)	46-40-30	112-22-50	Au, Ag	Placer deposits in alluvium (Qs) were mined by ground sluicing. Small producer of gold and silver.	90
615	Dog Creek phosphate	46-40-05	112-23-10	P	Shaft in phosphorite beds (Pp). Small producer of phosphate.	28, 114
616	Elliston phosphate mine (Little Blackfoot River mine)	46-33-44	112-25-20	P	Adit, 70 ft long, in phosphorite beds (Pp). Small producer of phosphate.	28, 114
617	Elliston quarry	46-33-45	112-23-10	Ls	Several quarries in limestone (Mm). Small producer of limestone.	19, 52, 54, 71
618	Gold Canyon Creek placer	46-37-10	112-24-45	Au, Ag	Placer deposits in alluvium (Qs) were mined chiefly by underground drifts. Medium producer of gold and silver.	90
619	Homestead property	46-36-25	112-25-07	Cu, Au, Ag	Underground workings along veins in quartzite (Es). Small producer of ore.	152
620	Little Blackfoot River placer	46-33-45	112-25-32	Au, Ag	Ground sluicing of placer deposits in alluvium (Qs). Small producer of gold and silver.	90, 106

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Dog Creek area--Continued						
621	Newman Brothers	46-34-03	112-25-58	P	Surface workings in phosphorite beds (Pp). Production not determined.	114
622	Sawmill Gulch Phosphate mine	46-35-00	112-22-46	P	Adit in phosphorite beds (Pp). Medium producer of phosphate.	114
623	Senecal incline	46-33-45	112-24-10	P	Inclined shaft, 80 ft deep, in phosphorite beds (Pp). Production not determined.	114
Austin district						
Austin district includes part of northern border zone of Boulder batholith (granodiorite and monzogranite of Late Cretaceous age) and sequence of Middle Proterozoic, lower Paleozoic, and upper Paleozoic sedimentary rocks in contact metamorphic zone. This sedimentary sequence has been cut by numerous normal faults and intruded by several small bodies of Late Cretaceous granodiorite and Tertiary dacite. Mineral deposits include skarn, vein, and placer deposits. The district was a medium producer and principal products were silver, copper, lead, gold, iron, zinc, and tungsten.						
624	Baldy Smith mine	46-40-10	112-13-20	Ag, Pb, Au, As	Surface and underground workings follow veins in shear zones in quartzite (Ef) and dacite (Td). Production not determined.	106
625	Blue Jay mine (Red Bird mine)	46-40-55	112-14-35	Cu, Ag, Pb, Fe, Sb	Inclined 350 ft shaft in skarn in limestone (Ysh) at a contact with andesite (Kem). Medium producer of copper, silver, lead, and iron (used as smelter flux).	31, 106
626	Boeing prospect	46-39-00	112-18-15	F, Pb, Cu, Au, Ag	Surface and underground workings in vein and replacement deposits containing fluorite and base and precious metals in limestone (Es) associated with dacite dikes (Td). Production not determined.	128, 135
627	Copper Hill mine	46-39-25	112-14-25	Ag, Fe, Au	Two adit levels in skarn at contact of limestone (Es) and monzogranite (Kmg). Small producer of silver, iron, and gold ore.	106
628	Greenhorn and Skelly Creek placers (Evans- Jones placer)	46-39-30	112-11-35	Au, Ag, W	Surface and underground workings in placer deposits in alluvium (Qs). Small producer of gold, silver, and tungsten.	33, 90, 106, 156
629	King Tut mine	46-39-43	112-14-10	Ag, Pb, Zn, Sb, As	About 200 ft of underground workings in skarn in limestone (Es) near contact with monzogranite (Kmg). Small producer of silver-lead ore.	106
630	Osage Chief mine (Crissman mine)	46-39-02	112-14-39	Au, Cu, Fe	Open cut and inclined shaft in skarn in limestone (Mm) near contact with monzogranite (Kmg). Small producer of gold-copper-iron ore.	31, 106
631	Strawberry mine	46-42-24	112-16-35	Au	Underground workings along veins in argillite (Yh) near diorite dike (Kd). Small producer of gold.	72

632	War Eagle mine	46-38-30	112-13-03	Fe, Ag, Pb	Underground workings in skarn in carbonate rock (Dj) near contact with monzogranite (Kmg). Medium producer of iron and silver ore.	31, 106
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Scratchgravel Hills area

Principal rock unit in area is Cretaceous Scratchgravel Hills stock, which consists of augite-hornblende monzonite. This stock intruded sequence of Proterozoic rocks which includes Spokane and Empire Formations and diorite sills. Mineral deposits are precious-metal-bearing skarns, veins, and replacement bodies. The district was large producer and principal products were gold, silver, lead, copper, and silica.

633	Ariadene claim	46-39-51	112-03-23	Ag, Pb	Underground workings follow veins in shear zones in monzonite (Kmd). Production not determined.	106	
634	Ajax mine	46-39-17	112-03-39	Au, Ag, Cu	Underground workings, including 2 inclined shafts, along veins in shear zones in monzonite (Kmd). Small producer of gold, silver, and copper.	106	
635	Blue Bird Copper and Silver Mining Co. mine	46-39-30	112-03-22	Pb, Ag, Cu, As	Shaft, with two working levels totaling about 700 ft, along veins in shear zones in monzonite (Kmd). Small producer of lead-silver ore.	106	
636	Blue Bird mine	46-40-07	112-05-50	Ag, Pb	About 130 ft of underground workings along veins in shear zones in monzonite (Kmd). Small producer of silver-lead ore.	106	
637	Bonanza mine	46-40-00	112-03-51	Ag, Pb, Au	About 120 ft of underground workings follow veins in shear zones in monzonite (Kmd). Small producer of ore.	106, 153	
69	638	Butcherknife Creek placer	46-41-16	112-05-00	Au, Ag	Ground sluicing of placers in alluvium (Qs). Small producer of gold and silver.	33, 90, 106
639	Come Again mine	46-41-00	112-05-00	Au, Ag, Sil	Surface workings in veins in hornfels (Ye) near monzonite (Kmd). Small producer of gold, silver, and silica.	13	
640	Drumheller mine (Aster, Howard)	46-40-22	112-06-25	Pb, Ag, Au, Cu	Shaft with two working levels, totaling 500 ft, along veins in shear zones in shale (Ye) associated with diorite dikes (ZYg). Small producer of lead, silver, and gold.	39, 106	
641	Elizabeth mine	46-40-52	112-04-09	Au, Ag, Pb, Cu, As	Surface and underground workings follow veins in shear zones in monzonite (Kmd). Small producer of gold ore.	106	
642	Ella mine	46-40-41	112-05-11	Au, Mn	About 850 ft of underground workings along veins in shear zones in monzonite (Kmd). Small producer of gold ore.	106	
643	Fairview claim	46-38-45	112-04-04	Pb, As	Open cuts expose veins in shear zones in monzonite (Kmd). Production not determined.	106	

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Scratchgravel Hills area--Continued						
644	Franklin mine (Sam Gaty, Doctor Steele)	46-38-20	112-04-21	Au, Ag, Cu, Pb, Sil, Zn	Extensive underground workings totaling about 5,800 ft in veins in shear zones along contact between argillite (Yra) and monzonite (Kmd). Medium producer of gold-silver ore.	56, 76, 106
645	General Harrison mine	46-40-55	112-05-30	Au, Cu	Surface and underground workings along veins in shear zones in argillite (Ye) near the monzonite (Kmd) contact. Production not determined.	106
646	Golden Crown mine	46-41-07	112-04-58	Au, Ag, Cu, Sb	Glory hole, inclined shaft, and 680 ft of underground workings along veins in shear zones in hornfels (Ye) near contact with monzonite (Kmd). Small producer of silver ore.	106
647	Guy mine	46-40-03	112-03-40	Ag, Pb	Three adits follow veins in shear zones in monzonite (Kmd). Production not determined.	106
648	Hopeful mine	46-40-14	112-03-48	Au, Pb, Cu, As	Numerous adits and inclined shafts along veins in shear zones in monzonite (Kmd). Small producer of ore.	106
649	Iowa Gulch placer	46-41-00	112-06-10	Au, Ag	Ground sluicing of placer deposits in alluvium (Qs). Small producer of gold and silver.	33, 90, 106
650	Iridescent claim	46-39-40	112-03-15	Cu	Open pit in skarn in limestone (Yra) near contact with monzonite (Kmd). No production.	106
651	Julia mine	46-39-24	112-03-55	Pb, Ag, Au, As, Mn, Cu, Co	Shaft and open pit along veins in shear zones in monzonite (Kmd). Small producer of lead, silver, and gold.	39, 53, 106
652	Katy mine	46-39-58	112-03-40	Ag, Au, Pb, Cu	Several thousand feet of underground workings in three veins in altered monzonite (Kmd). Medium producer of ore.	106
653	Lexington mine	46-39-45	112-04-10	Ag, Pb, Au, Cu, Mn, As, Zn	Extensive underground workings in veins in shear zones near a skarn (Yra) in monzonite (Kmd). Medium producer of silver, lead, and gold.	39, 77, 106
654	Magpie group	46-38-53	112-04-00	Ag, Pb, Au, Cu	Inclined shaft and surface pits follow veins in shear zones in monzonite (Kmd) and skarn (Yra). Small producer of ore.	106
655	Moonlight mine	46-40-19	112-03-51	Ag, Pb, Cu	Adits and inclined shafts, totaling 400 ft of workings, along two veins in shear zones in monzonite (Kmd). Small producer of silver ore.	106

656	Mullin claim	46-41-03	112-04-35	Au, Cu	Adit, with 1,000 ft of underground workings, follows veins and skarn (Yra) in monzonite (Kmd) Small producer of gold ore.	106
657	Nettie mine	46-40-09	112-05-40	Au, Ag, Cu, Mo, Pb	Surface workings and an inclined shaft, with about 180 ft of workings, along veins in shear zones in monzonite (Kmd). Small producer of gold ore.	106
658	North Star claim	46-40-55	112-04-25	Au, Ag, Cu	Open cuts expose three veins in monzonite (Kmd). Small producer of gold ore.	106
659	Queen of The Valley claim	46-41-00	112-04-25	Au	Inclined shaft and open cuts along veins in shear zones in monzonite (Kmd). Production not determined.	106
660	Regina claim	46-40-40	112-05-55	Au	Inclined shaft in veins in monzonite (Kmd). Production not determined.	106
661	Scratch Gravel mine	46-38-15	112-03-55	Au, Ag, Pb, Zn	About 3,000 ft of underground workings along veins in shear zones in hornfels (Yra) near contact with monzonite (Kmd). Medium producer of gold-silver ore.	106
662	Wayside mine	46-40-22	112-05-58	Au, Cu	Open cuts and underground workings along veins in shear zones in hornfels (Ye) near contact with monzonite (Kmd). Small producer of gold ore.	106
663	Yellowstone claim	46-40-30	112-05-55	Au	Open cuts follow veins in shear zones in monzonite (Kmd). Production not determined.	106

Sevenmile Creek area

Sevenmile Creek drains Austin district and part of Scratchgravel Hills area. Area is underlain by sedimentary rocks of the Middle Proterozoic Helena, Spokane, and Empire Formations (Belt Supergroup), Late Proterozoic diorite, and Late Cretaceous granodiorite. Quaternary alluvium in Sevenmile Creek and tributaries were mined for placer gold over distance of about 12 mi. The area was a large producer of gold.

664	Sevenmile Creek placer	46-37-44	112-03-18	Au, Ag	Extensive placer workings in alluvium (Qs). Large producer of gold.	90, 106
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Stemwinder Hill area

Western part of area is underlain by granodiorite of Boulder batholith and Elkhorn Mountains Volcanics, both Cretaceous in age, and in eastern part, by sequence of metamorphosed sedimentary rocks of Middle Proterozoic through late Paleozoic age. Mineral deposits are in skarns and veins that contain silver, lead, gold, tungsten, and molybdenum. Area was small producer and principal products were silver, lead, and gold.

665	Anderson prospect	46-36-55	112-11-15	Au, W, Mo	Underground workings in vein in limestone (Mm) and granite porphyry (Kmg). Vein contains gold, scheelite, and molybdenite. Small production of gold.	156
666	Blue Cloud prospect	46-35-55	112-10-10	W, Mo	Scheelite-bearing skarn along contact of diorite porphyry (Kd) and limestone (Es). No production.	156

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Stemwinder Hill area--Continued						
667	Blue Cloud Mining Co. placer	46-36-30	112-10-39	Au, Ag	Placers in alluvium (Qs) were mined by dragline. Small producer of gold and silver.	149
668	Dutro mine (Old Dominion)	46-35-33	112-09-38	Au, Bi, Sn	Inclined shaft, 150 ft long, in gold-bearing skarn deposit at contact of dolomite (Es) and diorite (Kd). Small producer of ore.	72, 106
669	Helena mine	46-37-37	112-07-27	Au, Ag, Pb, Zn	Shaft, with about 2,000 ft of workings, in vein in argillite (Ye) near contact with monzogranite (Kmg). Small producer of gold, silver, and lead.	106
670	Looby mine	46-37-32	112-07-27	Au, Ag, Pb, Zn	Underground workings in vein in argillite (Ye) near the contact with monzogranite (Kmg). Small producer of gold, silver, and lead.	106
671	Perry claims (Fairview claims)	46-36-28	112-10-20	Pb, Ag, W	Shafts, pits, and trenches in vein in shale (Es). No production.	156
672	Rock Rose mine (Dandy mine)	46-37-42	112-07-20	Au, Ag, Pb, Zn	Underground workings in vein in argillite (Ye) near contact with monzogranite (Kmg). Small producer of gold, silver, and lead.	106, 144
673	Silver Coin mine	46-36-48	112-08-35	Ag, Pb, Cu, Au, Zn, As, Sb, V	Underground workings, totaling over 400 ft, in skarn deposit at the contact of limestone (Yh) and granodiorite (Kgd). Small producer of silver ore.	106, 144
Helena (Last Chance) district						
Rocks of Helena district are mainly limestone, shale, and sandstone of Middle Proterozoic, Paleozoic, and Mesozoic ages that have been folded, faulted, and, along the south and west parts of district, intruded by Late Cretaceous monzogranite and granodiorite of Boulder batholith. Lode deposits are gold-bearing veins in granodiorite and vein, replacement, and skarn deposits in Paleozoic limestone at or near contacts with granodiorite. Last Chance Gulch was major producer of placer gold. The district was a very large producer and principal products were gold and silver.						
674	Big Indian mine	46-32-17	112-01-20	Au	Open cuts, glory hole, and adits are along veins in shear zones in granodiorite (Kgd). Medium producer of gold.	6, 106, 122
675	Helena limestone mine	46-34-49	112-03-05	Ls	Open pit mine in limestone (Es). Small producer of limestone.	19
676	Helena placer	46-37-8	112-01-38	Au, Ag	Placer deposits in alluvium (Qs) were mined by electric-powered dredge during 1935-1945. Large producer of gold and silver.	90
677	Holmes Gulch placer	46-33-10	112-00-00	Au, Ag	Placer deposits in alluvium (Qs) were mined by sluicing, dragline, and dry land dredge. Small producer of gold and silver.	122

678	Independent prospect	46-33-12	112-04-08	Au, Ag, W	Two adits, with greater than 150 ft of workings, in veins at contact of limestone (Mm) and andesite porphyry dike (Kd). Small producer of gold and silver.	156
679	Last Chance Gulch placer (Oro Fino, Dry and Grizzly Gulches)	46-35-06	112-02-32	Au, Ag	Placer deposits in alluvium (Qs) were mined by sluicing and dredging. Very large producer of gold and silver.	14, 33, 61, 90, 106
680	Nelson Gulch placer	46-34-40	112-09-25	Au, Ag	Surface workings in placer deposits in alluvium (Qs). Small producer of gold and silver.	90, 106
681	Spring Hill mine	46-33-18	112-05-45	Au, Ag, Pb, Cu, As, Bi	Open pit and three adit levels in skarn at contact of limestone (Mm) and granodiorite (Kgd). Large producer of gold ore.	37, 39, 70, 72, 106
682	Whitlatch-Union mine (Owyhee and McIntyre inclines)	46-32-53	112-05-34	Au, Ag	Extensive underground workings in veins partly in hornfels (Kk, Js) and partly in granodiorite (Kgd). Very large producer of gold ore.	72, 106, 117
683	Yellowjacket mine	46-32-20	112-02-00	Au, Ag	Underground workings along two veins in shear zones in granodiorite (Kgd). Small producer of gold and silver.	106, 122, 149

North Boulder Mountains area

Area is entirely underlain by igneous and volcanoclastic rocks except for small areas of Mesozoic sedimentary rocks in northern part. Principal units include Cretaceous Elkhorn Mountains Volcanics, Tertiary and Cretaceous basaltic and andesitic rocks, and Tertiary rhyolitic volcanic rocks. Granodiorite and monzogranite of Boulder batholith are exposed in southeast corner of area. Mineral deposits of area consist of veins and placer deposits that are mainly in plutonic rocks of Boulder batholith. The area was a small producer and principal products were silver, gold, lead, and copper.

684	Blackbird mine	46-16-30	112-26-55	Au, Ag	Adit and shaft in quartz veins in alaskite (Ka) and monzogranite (Kmg). Production not determined.	39, 133
685	Carbonate King mine	46-31-43	112-25-54	Ag, Pb, Au, Cu, Zn	More than 425 ft of underground workings along veins in shear zones in sandstone and shale (Kk). Small producer of silver, lead, gold, and copper.	91
686	Carlson prospect (Jefferson prospect)	46-16-07	112-26-00	Pb, Zn, Ag, Cu, Au, As, Sb	Prospect in vein in andesite (Kem). Production not determined.	122
687	Carlson quartz prospect	46-16-45	112-24-30	Sil	Small prospect on quartz crystal occurrence in monzogranite (Kmg). No production.	20, 133
688	Gopher mine	46-15-14	112-24-50	Pb, Ag, Bi	Shaft and pits in quartz vein near contact of quartz latite (Tlc) with andesite (Kem). Production not determined.	39, 133

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
North Boulder Mountains area--Continued						
689	Iron Mountain iron deposit	46-18-03	112-23-11	Ba, Fe	Inclined shaft and adit along barite vein in monzogranite (Kmg). Production not determined.	133
690	Leadville mine	46-18-52	112-32-40	Ag, Pb, Au	More than 175 ft of workings on veins in monzogranite (Kmg). Small producer of silver, lead, and gold.	76, 106, 122
691	Mike Renig Gulch placer (Mike Rienig Gulch placer)	46-31-40	112-19-33	Au, Ag	Ground sluicing of placer deposits in alluvium (Qs). Small producer of gold and silver.	90
692	North Boulder mine	46-16-03	112-25-37	Au, Pb, Ag, Bi,	Shaft and pits in quartz vein at andesite (Kem) contact with monzogranite (Kmg). Production not determined.	39, 133
Elliston district						
District is underlain by andesitic tuff, breccia, and flows of the Elkhorn Mountains Volcanics, which have been intruded by Late Cretaceous monzogranite of Boulder batholith. Ore deposits are base- and precious-metal veins in volcanic rocks and monzogranite and small gold placers. District was large producer and principal products were gold, silver, lead, and copper.						
693	Anna R. and Hattie M. mine	46-27-17	112-20-36	Au, Ag, Cu, Pb, Mn, As, B, Zn, Bi	Underground workings, totaling about 1,200 ft, in veins along contact of monzogranite (Kmg) with aplite (Ka). Small producer of gold, silver, copper, and lead.	39, 89, 91, 133, 149
694	Big Dick mine (Evening Star)	46-28-35	112-24-25	Au, Ag, Pb, Cu, Zn, As, Sb, Bi	Underground workings, totaling about 1,500 ft, in veins in andesite breccia (Kem). Medium producer of gold, silver, lead, copper, and zinc.	39, 72, 91, 106 133
695	Black Jack mine	46-28-42	112-24-15	Au, Ag, Pb, Cu, Zn, As	About 650 ft of underground workings in veins in shear zones in andesite breccia (Kem). Small producer of gold, silver, lead, and copper.	91, 106, 133
696	Blackfeet Nos. 1 and 3 claims	46-28-24	112-25-42.	Pb, Zn, Ag, Au	Underground workings in veins in andesite (Kem). No production.	151
697	Bluebird mine	46-28-19	112-25-28	Ag, Pb, Au	Two adits and stopes along veins in shear zones in andesite (Kem). Small producer of ore.	91, 133
698	Brooklyn mine	46-28-16	112-25-30	Ag, Pb, Zn, As	More than 300 ft of underground workings in veins in andesite (Kem). Production not determined.	91, 106
699	Bullion mine	46-27-45	112-18-20	Ag, Pb, Zn	Vertical shaft along veins in shear zones in monzogranite (Kmg). Production not determined.	89, 91, 133

700	Charter Oak mine	46-29-25	112-24-59	Ag, Au, Pb, Cu, Zn, Sb, As	Five adits along veins in shear zones in andesite (Kem). Small producer of silver, gold, lead, copper, and zinc.	53, 91, 106, 133, 166
701	Clark mine	46-30-44	112-24-17	Pb, Zn, Cu, Sb	Surface and underground workings follow veins in mineralized breccia in andesite (Kem). Production not determined.	91, 121
702	Flora mine	46-28-57	112-25-40	Ag, Pb, Au, Zn	Adit, 500 ft long, along veins in shear zones in andesite (Kem). Production not determined.	91, 106, 133, 153
703	Golden Anchor mine	46-28-40	112-24-40	Au, Ag, Pb, Zn, As, Sb	Two shafts and two adits, totaling 5,000 ft, along veins in shear zones in volcanic rocks (Kem). Small producer of gold, silver, lead, and zinc.	91, 106, 133, 166
704	Hard Luck mines	46-25-43	112-22-12	Ag, Au, Zn, Pb, Cu	Adit, 450 ft long, follows veins in shear zones in monzogranite (Kmg). Production not determined.	77, 91, 133, 150
705	Hub Camp group	46-28-56	112-21-33	Au, Ag, Pb, Cu, Zn, As, Sb	Underground workings follow veins in shear zones in monzogranite (Kmg). Small producer of gold, silver, lead, copper, and zinc.	91, 133
706	Julia mine	46-27-57	112-22-45	Au, Ag, Pb, Cu, Zn, Sb	300-ft shaft with two working levels which total over 1,500 ft along veins in shear zones in monzogranite (Kmg) and andesite (Kem). Small producer of gold ore.	72, 91, 106, 133
707	Kimball mines	46-27-50	112-25-00	Au, Ag, Pb	Adit, 250 ft long, in veins in andesite (Kem). No production.	91, 133
708	Lilly-Orphan Boy group (Lily-Orphan Boy group)	46-26-34	112-20-27	Ag, Au, Pb, Zn, Cu, As, B, Sb, Bi	Surface and underground workings follow veins in shear zones in monzogranite (Kmg). Small producer of silver, gold, lead, zinc, and copper.	6, 39, 72, 89, 91, 116, 133
709	Monarch mine	46-24-25	112-24-10	Ag, Pb, Au, Cu, Zn, As, Sb	Largest mine in district. About 3,000 ft of underground workings on veins in andesite (Kem) and monzogranite (Kmg). Large producer of silver, lead, gold, copper, and zinc.	72, 78, 91, 106, 133
710	Negros mine	46-29-11	112-25-25	Ag, Pb, Au, Zn, Cu	Two adits, with more than 350 ft of underground workings, in veins in andesite (Kem). Small producer of silver, lead, gold, zinc, and copper.	78, 91, 133
711	Ohio and Speculator prospect	46-26-58	112-25-04	Au	Two adits, totaling more than 250 ft, in veins in andesite (Kem). Production not determined.	91, 133
712	Ontario Creek placer (Eddy claim)	46-25-53	112-23-10	Au, Ag	Ground sluicing of placer deposits in alluvium (Qs). Small producer of gold and silver.	90
713	Ontario mine	46-25-45	112-20-26	Au, Ag, Pb, Cu, Zn, As, B, Bi	More than 1,120 ft of underground workings along veins in shear zones in monzogranite (Kmg). Small producer of gold, silver, lead, and copper.	39, 72, 91, 106, 133

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Elliston district--Continued						
714	Sadie mine	46-29-55	112-24-05	Ag, Pb, Cu, Au, Zn, As, Sb	About 1,000 ft of underground workings follow veins in shear zones in andesite (Kem). Production not determined.	91, 106, 133
715	Surething mine (O'keefe)	46-26-25	112-19-54	Au, Ag, Pb, Zn, Cu, U, As, B, Sb, Bi	Adit and open cut along veins in monzogranite (Kmg). Medium producer of gold, silver, and lead.	39, 91, 117, 133
716	Telegraph Creek placer	46-29-23	112-22-15	Au, Ag	Ground sluicing of placer deposits in alluvium (Qs). Small producer of gold and silver.	72, 90
717	Telegraph mine	46-27-52	112-18-50	Au, Ag, Pb, Cu	Adit in veins in monzogranite (Kmg). Small producer of gold, silver, lead, and copper.	91, 133
718	Third Term mine	46-30-10	112-21-08	Au, Ag, Cu, Pb, Zn, Ni, Sb, As	Underground workings, totaling 900 ft, along veins in shear zones in andesite (Kem). Small producer of gold, silver, copper, lead, and zinc.	79, 91, 166
719	Viking mine	46-28-36	112-22-24	Ag, Pb, Au	Adit, 500 ft long, along veins in shear zones in monzogranite (Kmg). Production not determined.	91, 133
720	Wolverine mine	46-26-01	112-23-27	Ag, Pb, Au, Cu,	Two adits in veins in andesite (Kem). Small producer of silver, lead, gold, and copper.	13, 91, 133
Rimini (Vaughn) district						
Principal rocks in district are Late Cretaceous monzogranite and aplite of Boulder batholith. Boulder batholith intruded andesitic rocks of Cretaceous Elkhorn Mountains Volcanics. Tertiary rhyolite flows locally cover older rocks. Veins in granitic rocks contain silver, lead, gold, and locally, copper and zinc. The district was very large producer and principal products were gold, silver, lead, zinc, and copper.						
721	Alice lode	46-28-58	112-15-35	Pb, Ag	Shaft along veins in shear zones in monzogranite (Kmg). No production.	151
722	Alley mine	46-27-42	112-14-50	Ag, Pb, Zn, Cu, As	Shaft and adits, with about 580 ft of workings, along two veins in shear zones in monzogranite (Kmg). Production not determined.	6
723	American Flag mine	46-28-15	112-14-14	Ag, Au, Pb, Zn, Cu	Shaft along veins in shear zones in monzogranite (Kmg). Small producer of ore containing silver, gold, lead, and zinc.	6, 106
724	Armstrong mine	46-28-51	112-17-01	Ag, Pb, Au, Zn, Cu, Ram	Four adits, with workings totaling about 1,500 ft, follow veins in shear zones in monzogranite (Kmg). Small producer of ore containing silver, lead, gold, and zinc.	106, 133

725	Beatrice mine	46-28-53	112-18-15	Au, Ag, Pb, Zn, Cu	Adit and inclined shaft, with 1,350 ft of workings, along veins in shear zones in monzogranite (Kmg). Small producer of gold-silver ore.	133
726	Betsy Ross mine (1900 group)	46-27-21	112-16-25	Ag, Pb, Au	Two adits, with workings totaling more than 300 ft, along veins in shear zones in monzogranite (Kmg). Production not determined.	106
727	Bunker Hill mine	46-28-10	112-14-52	Ag, Pb, Au, Zn, As	Three adits, with workings totaling about 1,200 ft, along veins in shear zones in monzogranite (Kmg). Medium producer of ore containing silver, lead, gold, and zinc.	6, 106, 153
728	Carlson mine	46-25-17	112-17-47	Au	Shafts and adits, totaling about 1,000 ft, in silicified vein and replacement zones in rhyolite (Trv). Production not determined.	106, 133
729	Daniel Stanton mine (Stanton mine)	46-28-15	112-14-45	Ag, Pb, Zn, Au, U	Two adit levels with raises and stopes along veins in shear zones in altered monzogranite (Kmg). Small producer.	6, 106
730	Eureka mine	46-28-24	112-14-15	Ag, Pb, Au, Zn	More than 1,900 ft of underground workings follow veins in shear zones in monzogranite (Kmg). Small producer.	6, 106
731	Evergreen mine	46-28-02	112-14-52	Ag, Pb, Au, Zn, Cu, As, Sb, Ram	Two adits along veins in shear zones in monzogranite (Kmg). Medium producer of ore containing silver, lead, gold, zinc, and copper.	6, 117
732	Free Speech mine (Free Speech No. 1 mine)	46-28-27	112-14-30	Pb, Ag, Au, As	Two adits and a shaft along veins in shear zones in monzogranite (Kmg). Small producer of ore containing lead, silver, and gold.	6, 64
733	Hamlet mine	46-28-10	112-14-32	Ag, Pb, Au, As	Underground workings along veins in shear zones in monzogranite (Kmg). Production not determined.	6, 106
734	Horsefly mine	46-27-32	112-12-35	Ram	Adit along veins in shear zones in monzogranite (Kmg). Production not determined.	6
735	Johnny mine (Johnnie)	46-28-24	112-14-56	Pb, Ag	Adit along veins in shear zones in monzogranite (Kmg). Small producer.	6, 106, 153
736	Justice mine (Clementha, Clementh)	46-28-24	112-16-57	Au, Ag, Pb, Cu, As, Sb, Ram	Extensive underground workings, totaling about 1,600 ft, along veins in shear zones in monzogranite (Kmg). Small producer of ore containing gold, silver, lead, and copper.	133
737	Lee Mountain mine	46-29-08	112-14-49	Ag, Au, Zn, Pb, Sb, As	Seven mine levels with about 9,600 ft of workings. Deposits are in parallel veins and stringers in shear zones in altered monzogranite (Kmg). Large producer of silver, gold, zinc, and lead.	6, 106, 117

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Rimini (Vaughn) district--Continued						
738	Lexington mine	46-28-21	112-14-24	Ag, Au, Pb, Zn, As, Sb	Several adits, with workings totaling more than 400 ft, along veins in shear zones in monzogranite (Kmg). Medium producer of ore containing silver, gold, and lead.	6, 106
739	Little Lilly group	46-29-14	112-14-38	Ag	More than 1,670 ft of underground workings along veins in shear zones in monzogranite (Kmg). Small producer of silver.	6
740	Little Sampson mine	46-28-32	112-14-40	Pb, Ag, Cu, Zn, Au, As, Sb	More than 1,150 ft of underground workings follow veins in shear zones in monzogranite (Kmg). Small producer.	6, 29, 106, 166
741	Lucky Joe mine	46-28-07	112-17-15	Au, Ag, Cu	Underground workings in veins in monzogranite (Kmg). Small producer.	77, 133
742	Mammoth mine	46-28-32	112-14-00	Pb	Surface and underground workings along veins in shear zones in monzogranite (Kmg). Production not determined.	6, 106
743	McCawber mine (M'Cawber)	46-28-15	112-14-35	Ag, Pb	Shaft along veins in shear zones in monzogranite (Kmg). Small producer.	6, 106
744	Mine near Banner Creek (name unknown)	46-25-57	112-13-35	Ag, Pb, As, U	Surface and underground workings along veins in shear zones in monzogranite (Kmg). Production not determined.	6
745	Monte Cristo mine	46-27-00	112-15-52	Ag, Au, Cu, Pb, Zn	Several adits and pits along veins in shear zones in monzogranite (Kmg). Small producer of ore containing silver, gold, and copper.	78, 79, 133
746	North Pacific mine	46-28-20	112-14-10	Ag, Pb, Au	Underground workings along veins in shear zones in monzogranite (Kmg). Small producer of ore containing silver, lead, and gold.	6, 106
747	O.H. Bassett mine	46-28-26	112-14-36	Ag, Pb, Au, Zn, As, Sb, Mn, Cu, Bi, W, Sn	Adit, 250 ft long, follows veins in shear zones in monzogranite (Kmg). Production not determined.	6, 39, 106
748	Paupers Dream mine (Basin Creek)	46-25-19	112-17-45	Au, As	Open pits, adits, and shafts in disseminated deposit in rhyolite (Trv). Very large producer of gold.	106, 133
749	Peerless Jennie mine (Peerless Jenny, Peerless)	46-25-52	112-14-24	Ag, Pb, Zn	Shaft and adits, totaling about 440 ft, along veins in shear zones in monzogranite (Kmg). Small producer of ore containing silver, lead, and zinc.	6, 72, 106

750	Porphyry Dike mine	46-25-40	112-17-15	Au, As	Open pit and two adits in disseminated gold deposit in rhyolite (Trv) cut by dikes and faults. Medium producer of gold ore.	37, 72, 106, 133
751	Red Mountain tunnel (Montana Lead Crosscut tunnel No. 1)	46-28-50	112-14-40	Ag, Pb, Au, Zn, Cu, As	More than 3,600 ft of underground workings along about 40 veins in shear zones in monzogranite (Kmg). Small producer of ore.	6, 106
752	Russel mine (96 mine)	46-28-08	112-14-56	Ag, Au, Pb, Zn, As	Underground workings follow veins in shear zones in monzogranite (Kmg). Production not determined.	6, 106
753	S.P. Bassett mine	46-28-00	112-14-45	Ag, Pb, Cu, Zn, As, Sb	Adit and shaft along veins in shear zones in monzogranite (Kmg). Production not determined.	6, 106
754	Silver Cord mine	46-28-07	112-14-20	Ag, Pb	Underground workings along veins in shear zones in monzogranite (Kmg). No production.	6, 106
755	South Pacific mine	46-28-20	112-14-34	Ag, Pb, Au, Zn	Underground workings along veins in shear zones in monzogranite (Kmg). Small producer of ore containing silver, lead, and gold.	6, 106
756	Teal Lake mine	46-28-10	112-14-42	Ag, Pb, Zn, Au, As	Adit follows veins in shear zones in monzogranite (Kmg). Small producer of silver, lead, zinc, and gold.	6, 106
757	Tenmile Creek placer (Gould placer; Monitor, Tucker, and Minnehaha Creeks)	46-30-28	112-15-38	Au, Ag	Hydraulic mining and ground sluicing of placers in alluvium (Qs). Medium producer of gold and silver.	33, 90, 106, 133
758	Transit mines	46-27-48	112-15-09	Au, Ag, Pb, Zn	Underground workings along veins in shear zones in monzogranite (Kmg). Small producer of ore.	133, 144
759	Travis placer	46-26-42	112-18-10	Au, Ag	Placer workings in alluvium (Qs). Small producer of gold and silver.	106
760	Uranium occurrence (name unknown)	46-29-25	112-13-35	U	Shaft along veins in shear zones in monzogranite (Kmg). Zone of high radioactivity is present. No production.	6
761	Valley Forge mine	46-29-30	112-14-25	Au, Ag, Pb, Zn, Cu, As, Mn, B, Sb	Two shafts and two adits along veins in shear zones in monzogranite (Kmg). Medium producer of ore containing gold, silver, lead, and zinc.	6, 10, 39, 72, 106
762	Wolfstone mine	46-28-47	112-14-34	Ag, Au, Pb, Zn, As	Underground workings along veins in shear zones in monzogranite (Kmg). No production.	6, 106
763	Woodrow Wilson mine	46-25-18	112-15-50	Au, Ag, Sil, Cly	Underground workings along veins in shear zones in monzogranite (Kmg). Small producer.	5, 29, 42, 133, 152

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Clancy (Lump Gulch) district						
District is entirely within Boulder batholith and is underlain by Late Cretaceous granodiorite, monzogranite, alaskite, aplite, and pegmatite. Mineral deposits include precious- and base-metal quartz veins and gold placers. The district is a large producer and principal products were gold, silver, and lead.						
764	Argonne mine	46-26-46	112-10-55	Au, U, Zn	Surface and underground workings follow veins in shear zones in monzogranite (Kmg). Production not determined.	6
765	Buffalo Creek placer (Weber placer)	46-29-40	112-07-00	Au, Ag	Sluice and dry-land dredge workings in placer deposits in alluvium (Qs). Small producer of gold and silver.	6, 90, 122
766	Brown silica deposit	46-24-04	112-02-00	Sil	Surface workings in quartz body in monzogranite (Kmg). Small producer of silica.	6, 20, 122
767	Clancy Creek placer	46-27-50	112-00-00	Au, Ag	Dry-land dredge and sluice workings in placer deposits in alluvium (Qs). Large producer of gold and silver.	6, 33, 90, 122
768	Corral Gulch mine (Leu mine)	46-28-00	112-07-42	Sil	Prospect in quartz body in monzogranite (Kmg). No production.	6, 20, 122
08 769	Forest mine (Forrest mine)	46-27-01	112-09-32	Ag, Pb, Cu, Zn, Ram	Underground workings along veins in shear zones in monzogranite (Kmg). Production not determined.	6
770	Free Coinage mine (Little Alma mine)	46-29-10	112-02-00	Ag, Pb, Zn, Au, Cu	Two shafts and about 3,300 ft of underground workings along veins in shear zones in monzogranite (Kmg). Small producer of silver, lead, zinc, gold, and copper.	6, 122
771	Frohner mine	46-26-30	112-12-25	Ag, Au, Pb, Cu, Zn, As	Adit, with greater than 2,000 ft of workings, along veins in shear zones in monzogranite (Kmg). Small producer of silver, gold, lead, copper, and zinc.	6, 122
772	G. Washington mine (Member of Presidents)	46-26-55	112-00-21	U	About 500 ft of underground workings along uranium-bearing veins in monzogranite (Kmg). Production not determined.	6, 69
773	Kain quarry	46-27-40	112-01-30	St	Rock quarry in monzogranite (Kmg). Small production.	7
774	King Solomon mine	46-28-00	112-01-51	Ag, Pb, Au, Cu, Zn, Mo, Sb, Ram	Two shafts, six levels, and about 1,000 ft of workings in veins in monzogranite (Kmg). Medium producer of silver, lead, gold, and copper.	6, 13, 54, 72, 106, 122

775	King Solomon Ridge group (Hinman mine, Forty-Niner, President group)	46-28-07	112-01-10	U, Ag, Pb	Underground workings along veins in shear zones in monzogranite (Kmg). Small producer of uranium ore.	6, 118, 122
776	Lahey Quartz deposit	46-25-10	112-04-08	Sil	Surface workings in pegmatite in monzogranite (Kmg). Small producer of silica.	20, 54
777	Little Nell mine (Little Nellie)	46-28-48	112-01-35	Ag, Pb, Zn, Cu, Au	Shaft with four working levels totaling about 500 ft along veins in shear zones in monzogranite (Kmg). Medium producer of silver, lead, zinc, copper, and gold.	6, 72, 106, 122, 144
778	Loeber mine	46-26-50	112-12-30	Ag, Pb, Au, Cu, Zn, As, Sb	Underground workings follow veins in shear zones in monzogranite (Kmg). Small producer of silver, lead, gold, copper, and zinc.	6, 122, 153, 166
779	Lump Gulch placer	46-27-35	112-06-25	Au, Ag	Surface workings in placer deposits in alluvium (Qs). Small producer of gold and silver.	6, 33, 90, 122
780	Mary Tait prospect	46-29-25	112-01-57	U, Ba	Underground workings follow uranium-bearing veins in shear zones in monzogranite (Kmg). No production.	6
781	Mineral Hill mine (Yellowstone prospect)	46-26-45	112-03-43	Cu, Ag, Zn, Pb	More than 450 ft of underground workings along veins in shear zones in monzogranite (Kmg). Production not determined.	6, 72, 106
782	Montana mine	46-27-35	112-02-52	Ag, Au	Underground workings along veins in shear zones in monzogranite (Kmg). Small producer of silver and gold.	6, 122, 144
783	Muskegon mine	46-29-00	112-02-42	Ag, Au	Underground workings, totaling 400 ft, along veins in shear zones in monzogranite (Kmg). Small producer.	6
784	Nellie Grant mine	46-26-27	112-12-05	Au, Ag, Cu, Pb, Zn, As, Sb	Underground workings along veins in shear zones in monzogranite (Kmg). Small producer of gold, silver, copper, lead, and zinc.	6, 122, 153, 166
785	Panama mine	46-25-26	112-12-09	Ag, Pb, Au, Zn	Underground workings along veins in shear zones in monzogranite (Kmg). Production not determined.	6
786	Prickly Pear Creek placer (Golconda Creek placer)	46-25-08	112-00-00	Au, Ag	Extensive ground sluicing and dredge workings in placer deposits in alluvium (Qs). Large producer of gold and silver.	6, 33, 90, 106, 117
787	Roosevelt mine	46-29-46	112-01-17	Ag, Pb, Au, Zn	Two shafts, with several hundred feet of workings, along veins in shear zones in monzogranite (Kmg). Production not determined.	6

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Clancy (Lump Gulch) district--Continued						
788	Silver mine (name unknown)	46-26-30	112-12-40	Ag, Pb, Zn	Four adits follow veins in shear zones in monzogranite (Kmg). Production not determined.	6
789	Silver mine (name unknown)	46-26-20	112-12-30	Ag, Pb, Zn, Cu	More than 200 ft of underground workings along veins in shear zones in monzogranite (Kmg). Production not determined.	6
790	Silver mine (name unknown)	46-26-19	112-09-40	Ag, Pb, Zn, Ram	Three adits along veins in shear zones in monzogranite (Kmg). Small producer of ore.	6
791	Silver mine (name unknown)	46-29-57	112-00-15	Ag, Pb, Zn, Cu	More than 200 ft of underground workings follow veins in shear zones in monzogranite (Kmg). Production not determined.	6
792	Yama group	46-24-57	112-12-25	Pb, Zn, Ag, Au	Three adits along veins in shear zones in monzogranite (Kmg). Small producer of lead-zinc ore.	6, 122
Basin (Cataract, Comet) district						
District is underlain by Late Cretaceous monzogranite of Boulder batholith and Tertiary and Cretaceous volcanic and volcanoclastic rocks. Andesitic Elkhorn Mountains Volcanics (Cretaceous) was intruded by Boulder batholith. The batholith and Elkhorn Mountains Volcanics are overlain by volcanic and volcanoclastic rocks (Tertiary). Most mineral deposits are in eastern part of area in Boulder batholith. Mineral deposits include fissure-filling quartz vein, replacement, and placer deposits. The district was very large producer and principal products were gold, silver, copper, lead, and zinc.						
793	Ada mine	46-21-45	112-15-03	Ag, Pb, Cu, Zn, Au, Sb	More than 1,000 ft of underground workings along veins in shear zones in monzogranite (Kmg). Medium producer of silver and lead, with minor copper, zinc, and gold.	133
794	Alport mine (All Port mine)	46-13-45	112-16-35	Au, Ag, Zn	Shaft and working levels totaling over 110 ft along veins in shear zones in monzogranite (Kmg). No production.	72, 106, 122
795	Apollo mine (Appollo)	46-21-05	112-13-20	Au, Ag	Mine workings in veins in monzogranite (Kmg). Small producer of gold and silver.	6, 122
796	Aurora mine	46-18-07	112-18-32	Ag, Pb, Zn, Au, Cu	Five adits, totaling about 1,100 ft, along veins in shear zones in monzogranite (Kmg). Small producer of silver, lead, zinc, gold, and copper.	122, 133, 144, 166
797	Bakama mine	46-22-15	112-10-47	Ag, Cu	Underground workings in vein and replacement deposits in andesite (Kem). Small producer of silver and copper.	6, 122
798	Basin Bell mine (Latsch mine)	46-17-09	112-16-51	Ag, Cu, Pb, Au	Two adits, totaling 1,000 ft, in veins in monzogranite (Kmg). Small producer of silver, copper, lead, and gold.	122

799	Basin Creek placer	46-16-09	112-15-36	Au, Ag, Sn	Extensive dredging in placers in alluvium (Qs). Medium producer of gold, silver, and tin.	16, 33, 90, 122, 133
800	Basin quartz quarry (Basin Blowout)	46-16-10	112-13-49	Sil	High-purity quartz produced for metallurgical use from quartz mass in monzogranite (Kmg). Workings include quarry and adit. Large producer of silica.	20, 79, 106, 122
801	Bell mine	46-22-05	112-10-32	Ag, Pb, Cu, Au	Underground workings in vein and replacement deposits in andesite (Kem). Small producer of silver, lead, copper, and gold.	6, 122
802	Black Bear mine	46-20-55	112-14-45	Ag, Au, Cu, Pb, Zn	More than 2,000 ft of underground workings along veins in shear zones in monzogranite (Kmg). Small producer of silver, gold, copper, and lead.	6, 122
803	Bonanza Jack mine	46-16-20	112-16-45	Au, Ag, Zn	Underground workings in veins in monzogranite (Kmg). Small producer of gold, silver, and zinc.	122, 133
804	Boulder Chief mine	46-19-50	112-12-34	Pb, Ag, Cu, Zn, As, U	About 1,500 ft of underground workings along veins in shear zones in monzogranite (Kmg) and andesite (Kem). Small producer of lead, silver, and copper.	4, 6, 122
805	Boulder mine	46-16-44	112-17-18	Au, Ag, Zn, Pb, Cu	Two adits, with workings totaling about 8,000 ft, follow veins in shear zones in monzogranite (Kmg). Medium producer of gold, silver, lead, zinc, and copper.	56, 122, 133
806	Boulder River placer	46-16-01	112-15-22	Au, Ag	Extensive workings in placer deposits in alluvium (Qs). Production not determined.	6, 33, 90, 122
807	Boulder Vestal mine	46-17-20	112-14-10	Ag, Au	Adit, with greater than 625 ft of workings, along veins in shear zones in monzogranite (Kmg). Small producer of silver and gold.	122
808	Buckeye mine (Boston mine)	46-23-53	112-17-40	Ag, Au, Pb, Zn, Cu, As	Underground workings, totaling greater than 200 ft, along veins in shear zones in monzogranite (Kmg). Medium producer of silver, gold, lead, zinc, and copper.	122, 133
809	Bullion mine	46-21-22	112-17-40	Ag, Cu, Pb, Au, Zn, U, Sb, As	Three adits and one shaft, totaling several thousand feet, and trenches along vein in shear zone in monzogranite (Kmg). Medium producer of silver, copper, lead, gold, and zinc.	72, 77, 106, 122, 133, 166

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Basin (Cataract, Comet) district--Continued						
810	Butte and Philadelphia Lady mine (Leith-Cady, Leith mines)	46-23-30	112-16-30	Au, Ag, Pb, Zn, Ba	More than 900 ft of underground workings along three veins in shear zone in monzogranite (Kmg). Small producer of ore.	72, 106, 122, 133
811	Cataract Creek placer	46-21-50	112-13-15	Au, Ag	Extensive hydraulic and sluice workings in alluvium (Qs). Small producer of gold and silver.	6, 33, 90, 122
812	Condor lodes (Silver Right lode)	46-18-34	112-13-50	Au	Shaft and adit in vein in monzogranite (Kmg). No production.	151
813	Copper King prospect	46-17-07	112-13-00	Ag, Au, Sil, Cu, Sb	Underground workings, totaling 155 ft, along veins in shear zones in monzogranite (Kmg). Small producer of silver-gold ore.	72, 106, 122
814	Cracker mine (Mt. Thompson)	46-19-22	112-14-11	Ag, Pb, Cu	Adit, with 1,600 ft of workings, along veins in shear zones in monzogranite (Kmg). Small producer.	6, 122
815	Crescent mine	46-25-16	112-14-42	Au, Ag, Pb, Cu, Zn, Sb	Adit, with 875 ft of workings, along several veins in shear zones in monzogranite (Kmg). Small producer of gold, silver, lead, copper, and zinc.	6, 78, 122, 166
816	Crystal mine (St. Lawrence, Sparkling Water, Jack Fraction)	46-21-00	112-15-38	Au, Ag, Cu, Pb, Zn, Sil, Sb, As	Numerous shafts, adits, and open pits with workings totaling more than 8,000 ft. During the 1970's, production was from open-pit operations. Deposits are in veins, averaging 2-5 ft in width, cutting monzogranite (Kmg). Large producer of gold, silver, copper, lead, and zinc.	10, 79, 106, 117, 122, 133, 166
817	Custer mine	46-18-15	112-13-45	Ag, Au, Pb, Zn	Underground workings, totaling about 1,650 ft, along veins in shear zones in monzogranite (Kmg). Medium producer of silver and gold.	6, 72, 106, 122
818	Daily West mine	46-17-44	112-17-43	Ag, Pb, Zn, Cu, Sb	Developed mine along veins in shear zones in volcanic rocks (Tlc). Small producer of silver, lead, zinc, and copper.	29, 77, 122, 133, 166
819	Della prospect	46-19-54	112-13-31	Ag, Au	Surface and underground workings follow veins in shear zones in monzogranite (Kmg). No production.	151
820	Doris mine	46-16-55	112-16-30	Pb, Zn, Ag, Cu, Au	Underground workings in veins in monzogranite (Kmg). Small producer of lead, zinc, silver, copper, and gold.	122, 133

821	Dumortierite deposit	46-21-55	112-18-55	Kyn	Underground workings in dumortierite-bearing zone in quartz latite tuff (Kem). Small producer of kyanite.	122, 133
822	East Katie mine (Lot 7 mine)	46-16-20	112-15-55	Au, Ag, Cu, Pb	Underground workings along veins in shear zones in monzogranite (Kmg). Small producer of gold ore.	106, 122
823	Eldorado and Plateau mine	46-24-25	112-14-10	Au, Ag, Pb	Underground workings follow veins in shear zones in monzogranite (Kmg). Small producer of ore containing gold, silver, and lead.	152
824	Enterprise mine	46-23-21	112-17-30	Au, Ag, Pb, Zn	More than 1,000 ft of underground workings on veins in shear zones in monzogranite (Kmg). Small producer of ore.	122, 133
825	Eva May mine	46-20-56	112-13-20	Ag, Pb, Cu, Au, Zn, Sb, As, Mn,	Several thousand feet of workings on eight underground levels. Deposits are veins in shear zones in monzogranite (Kmg). Large producer of silver, lead, copper, and minor gold.	6, 39, 64, 72, 106, 117, 122
826	First Shot mine	46-21-30	112-16-00	Ag, Au, Cu	Underground workings in veins in monzogranite (Kmg). Small producer of silver, gold, and copper.	122, 124
827	Grey Lead mine	46-21-31	112-14-17	Au, Pb, Ag, Cu, Zn	Two adits, totaling about 800 ft, along veins in shear zones in monzogranite (Kmg). Small producer of gold, lead, silver, copper, and zinc.	122
828	Hattie Ferguson mine	46-19-58	112-14-51	Ag, Pb, Au, Cu, Zn	More than 1,800 ft of underground workings along veins in shear zones in monzogranite (Kmg). Medium producer of silver, lead, gold, copper, and zinc.	6, 72, 106, 122
829	Hawkeye mine	46-22-30	112-17-07	Ag, Pb, Cu, As, Sb	About 400 ft of underground workings follow veins in shear zones in monzogranite (Kmg). No production.	133
830	Helper mine	46-15-42	112-15-40	Pb, Ag, Au, Cu, Zn	Underground workings along veins in shear zones in monzogranite (Kmg). Small producer of lead, silver, gold, copper, and zinc.	122, 133
831	Hiawattaha mine (Hiawatha)	46-18-22	112-13-15	Ag, Au, Pb, Cu, Zn, Sb	About 1,400 ft of underground workings follow veins in monzogranite (Kmg) and tuff (Kem). Medium producer of silver and gold.	6, 122, 153
832	Hidden Treasure mine	46-18-06	112-15-15	Ag, Cu, Pb, Zn, Au	Underground workings along veins in shear zones in monzogranite (Kmg). Small producer of silver, copper, lead, zinc, and gold.	122

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Basin (Cataract, Comet) district--Continued						
833	Ida M. mine	46-19-50	112-12-40	Ag, Pb, Zn	Adit, with about 1,000 ft of workings, in veins in andesite (Kem) and monzogranite (Kmg). Small producer.	122
834	Ida May mine	46-25-10	112-13-47	Ag, Pb, Au, Zn, Ram	Underground workings along veins in shear zones in monzogranite (Kmg). Small producer.	6, 122
835	Indian Head Rock barite deposits	46-16-05	112-18-33	Ba	Underground workings along barite veins in volcanics (Kem). No production.	32, 133
836	Jib group (Hope-Katie, Katie Extension)	46-16-15	112-16-06	Au, Ag, Cu, Pb, Zn, Te, Sb	About 15,000 ft of underground workings in vein and replacement deposits in monzogranite (Kmg). Large producer of gold, silver, copper, lead, and zinc.	77, 106, 122, 133
837	John T. mine	46-21-16	112-14-32	Ag, Pb, Au	Underground workings follow veins in shear zones in monzogranite (Kmg). Small producer of silver, lead, and gold.	6, 122
838	Josephine mine	46-24-56	112-18-44	Ag, Au, Pb, Zn, Cu, St, U, As	Several adits and shafts along veins in shear zones in monzogranite (Kmg) near rhyolite (Trv). Small producer of silver, gold, lead, zinc, copper, and decorative stone.	7, 122, 133
839	Jumbo prospect	46-20-22	112-12-38	Ag, Pb	One adit along veins in shear zones in monzogranite (Kmg) and andesite (Kem). Production not determined.	6, 122
840	Klondyke mine (Klondike)	46-20-15	112-14-45	Ag, Pb, Au, Cu, Zn	Shaft, 165 ft deep, with three working levels in veins in shear zones at contact of monzogranite (Kmg) and andesite (Kem). Small producer of silver, lead, gold, copper, and zinc.	6, 122
841	Lady Hennessey mine	46-25-06	112-16-55	Ag, Pb, Au, Zn, Ram	Two shafts, adits, and pits follow veins in shear zones in monzogranite (Kmg). Small producer of silver, lead, gold, and zinc.	122, 133
842	Last Chance mine	46-15-57	112-15-35	Ag, Cu, Au	Underground workings along veins in shear zones in monzogranite (Kmg). Small producer of silver, copper, and gold.	122, 133
343	Lizzie Osborne prospect	46-20-54	112-12-32	Ag, Pb, Zn	One 400 ft adit follows veins in shear zones in monzogranite (Kmg). Production not determined.	6, 122
844	Lotta tunnel (Lotta mine)	46-16-13	112-16-50	Au, Ag, Zn	About 800 ft of workings along veins in shear zones in monzogranite (Kmg). Medium producer of gold.	122, 133, 144

845	Manhattan mine	46-17-56	112-13-45	Ag, Pb, Au, Zn, Cu	More than 640 ft of underground workings follow veins in shear zones in monzogranite (Kmg). Production not determined.	6
846	Mantle and South Mantle mine (Rock of Ages)	46-17-27	112-14-30	Au, Ag, Pb, Cu	More than 900 ft of underground workings along veins in shear zones in monzogranite (Kmg). Small producer of gold, silver, lead, and copper.	6, 122
847	Marguerita mine (Maruerita mine)	46-18-09	112-16-55	Au, Ag	More than 650 ft of underground workings along veins in shear zones in volcanics (Kem). Small producer of gold and silver.	122, 133
848	Mine (name unknown)	46-17-20	112-13-10	Ag, Pb, Au, Cu, Zn	Underground workings follow veins in shear zones in monzogranite (Kmg). Production not determined.	6
849	Minneapolis mine	46-17-53	112-14-02	Ag, Pb, Zn, Cu, Au, Sb	Underground workings, totaling about 4,000 ft, along veins in shear zones in monzogranite (Kmg). Small producer of silver, lead, zinc, copper, and gold.	6, 106, 122
850	Morning Glory mine	46-19-04	112-14-35	Au, Ag, Pb, Cu, Zn, As, Sb	Three adits, with workings totaling about 3,200 ft, along veins in shear zones in monzogranite (Kmg) and tuff (Kem). Medium producer of gold, silver, lead, copper, and zinc.	6, 122
851	Morning mine (Midnight)	46-21-55	112-16-15	Ag, Pb, Au, Zn, Cu, As, Sb	Shafts and adits, totaling over 700 ft, follow veins in shear zones in monzogranite (Kmg). Small producer of silver, lead, gold, zinc, and copper.	122, 133, 144, 166
852	Morning Star mine	46-22-05	112-21-10	Ag, Pb, Au, Cu, Zn, As, Sb	Surface and underground workings along veins in shear zones in andesite (Kem). Small producer of silver, lead, gold, copper, and zinc.	72, 106, 122, 133
853	Mt. Chief mine	46-19-00	112-13-40	Ag, Pb, Au, Zn	Underground workings in veins in shear zones in monzogranite (Kmg). Small producer of ore.	6, 53, 122
854	Mt. Thompson mine	46-18-55	112-13-07	Au, Ag, Sil, Pb	Three adits, totaling about 500 ft, follow veins in shear zones in monzogranite (Kmg). Small producer of gold-silver ore.	6, 53, 54, 122, 153
855	Obelisk mine	46-16-17	112-13-17	Ag, Pb, Zn, Au, Cu	One shaft, two adits, and 1,500 ft of underground workings in breccia pipe in monzogranite (Kmg). Small producer of silver, lead, zinc, and gold.	6, 56, 122, 153, 166
856	Red Wing mine (Red Wing group)	46-18-25	112-13-00	Ag, Pb, Au, Cu	Two adits, with greater than 475 ft of underground workings, along veins in shear zones in monzogranite (Kmg). Small producer of silver, lead, gold, and copper.	6, 106, 122

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Basin (Cataract, Comet) district--Continued						
857	Rose mine	46-17-05	112-14-50	Au, Ag, Pb, Cu	Underground workings follow veins in shear zones in monzogranite (Kmg). Small producer of gold, silver, lead, and copper.	6, 122
858	Saturday Night mine	46-18-02	112-15-12	Ag, Pb, Au, Cu, As	Adit and shaft, with workings totaling about 650 ft, along veins in shear zones in monzogranite (Kmg). Small producer of silver, lead, gold, and copper.	122, 133
859	Sirius mine (Sirius group)	46-20-10	112-14-40	Au, Ag, Pb, Cu, Zn	About 2,000 ft of underground workings along veins in shear zones in monzogranite (Kmg). Small producer of gold, silver, lead, copper, and zinc.	6, 122
860	Solar mine (Solar Pearl, Solar and Pearl)	46-24-07	112-19-00	Ag, Au, Pb, Cu, As, Sb	More than 650 ft of underground workings along veins in shear zones in monzogranite (Kmg). Small producer of silver, gold, and lead.	6, 133
861	Sylvan mine	46-18-20	112-15-30	U	Three adits in uranium-bearing veins in monzogranite (Kmg). No production.	133
862	Totten mine (Monitor mine)	46-20-45	112-11-15	Au, Ag, Cu, Pb, Bi, Zn	About 1,100 ft of underground workings along veins in shear zones in monzogranite (Kmg). Small producer of gold-silver ore.	117, 149
863	Uncle Sam mine (Jennie B.)	46-19-35	112-15-03	Ag, Pb, Zn, Au, Cu, U, Sb	More than 2,000 ft of underground workings along veins in shear zones in monzogranite (Kmg) and andesite (Kem). Medium producer of silver, lead, and zinc, with minor gold and copper.	72, 106, 122, 133
864	Venus mine	46-25-04	112-17-20	Au, As	Underground workings, totaling 1,000 ft, in a zone of disseminated ore minerals in rhyolite (Trv) and monzogranite (Kmg). Small producer of gold.	106, 133
865	Vera and Marie mine	46-19-08	112-14-08	Ag	Underground workings along veins in shear zones in monzogranite (Kmg). Small producer of silver.	13, 64
866	Vindicator mine	46-22-16	112-17-02	Ag, Au, Pb, Zn, Cu, Sb	About 1,000 ft of underground workings in veins in monzogranite (Kmg). Small producer of silver and gold.	117, 122, 133
867	Waldy mine	46-18-29	112-13-02	Ag, Pb, Zn	Underground workings follow veins in shear zones in monzogranite (Kmg). Production not determined.	6

Wickes (Colorado) district

District lies within Boulder batholith and includes large inlier that contains volcanic and volcanoclastic rocks, which consist of Cretaceous Elkhorn Mountains Volcanics and Eocene Lowland Creek Volcanics. Most mines and prospects are in Elkhorn Mountains Volcanics and monzogranite of Boulder batholith and are in rocks that are pre-Eocene. One large-tonnage, low-grade gold deposit, Montana Tunnels mine, is in Lowland Creek Volcanics and is Eocene in age. Principal ore deposits are base- and precious-metal vein and replacement bodies in monzogranite and volcanic and volcanoclastic rocks. The Montana Tunnels deposit, presently being mined, contains ore minerals of gold, silver, lead, and zinc as disseminations and veinlets in diatreme and hydrothermal breccias. A stockwork copper-molybdenum prospect in monzogranite is also in district. District is very large producer and principal products are silver, gold, lead, copper, and zinc.

868	Alta mine	46-22-20	112-05-35	Ag, Pb, Zn, Au, Cu, Sil, Sb, As	Extensive underground workings on 13 levels, totaling about 2,100 ft, and open pits. Vein and replacement deposits are in shear zones in andesite (Kem). Very large producer of silver, lead, zinc, gold, copper, and silica.	6, 39, 64, 72, 106, 122, 166
869	Ariadne mine	46-23-19	112-07-17	Ag, Au, Pb, Zn, Cu	About 1,100 ft of underground workings along vein and replacement deposits in shear zones in andesite (Kem). Small producer of silver, gold, lead, zinc, and copper.	6, 122
870	Beavertown copper- molybdenum prospect	46-20-30	112-04-45	Cu, Mo	Exploratory drill holes in porphyry or disseminated deposit and supergene-enriched zone in monzogranite (Kmg) of the Boulder batholith. No production.	39
871	Bertha mine	46-22-49	112-05-14	Cu, Ag, Au, Pb, Zn, Bi, Sb	About 1,400 ft of underground workings, including two shafts and five working levels. Deposits are in vein and replacement bodies in monzogranite (Kmg) and andesite (Kem). Large producer of copper, silver, gold, and lead.	6, 18, 72, 106, 122
872	Blackbird group (Wickes-Corben, Wickes Manganese property)	46-22-05	112-09-45	Mn, Fe	Four adits, a shaft, and extensive bulldozer cuts along manganese veins in andesite (Kem) and bog deposits. Small producer of manganese and iron.	6, 122
873	Blizzard mine	46-21-37	112-08-28	Ag, Au, Pb, Cu, Zn, As	More than 4,100 ft of underground workings on veins in shear zones in andesite (Kem). Medium producer of silver, gold, lead, copper, and zinc.	6, 72, 106, 122
874	Blue Bird mine	46-21-32	112-09-58	Au, Ag, Cu, Pb, Zn, As, Sb, B	Extensive surface and underground workings that total more than 7,500 ft of shafts, adits, and drifts on several working levels. Deposits are in veins in shear zones in tuffs (Kem) near the contact with monzogranite (Kmg). Medium producer of gold, silver, copper, and lead.	6, 39, 72, 106, 122, 144, 165, 166
875	Bluestone mine	46-21-05	112-08-51	Cu, Ag, Pb, Au, Zn, As	Two adits and shafts, with workings totaling about 500 ft, along veins in shear zones in andesite (Kem). Small producer of copper, silver, and gold.	6, 106, 122

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Wickes (Colorado) district--Continued						
876	Comet and Spring Creek placers	46-22-50	112-03-20	Au, Ag	Ground sluiced placer deposits in alluvium (Qs). Small producer of gold and silver.	6, 90, 122
877	Copper Nugget placer	46-20-35	112-03-15	Cu	More than 100 ft of underground workings, pits, and drill holes in bog copper deposit in alluvium (Qs). No production.	49, 122
878	Daily mine (Atlas, Dailey)	46-21-05	112-06-10	Ag, Cu, Pb, Au, Zn, As, Sb	Vertical shaft, 340 ft deep, with three working levels along veins in shear zones in andesite (Kem). Medium producer of silver, copper, lead, gold, and zinc.	6, 106, 122, 144
879	David Copperfield adit	46-21-30	112-06-00	Au	Underground workings follow veins in shear zones in andesite (Kem). Production not determined.	6
880	Dow Crosscut	46-22-06	112-09-04	Ag, Pb, Cu	About 1,200 ft of underground workings along veins in shear zones in andesite (Kem). Production not determined.	6
881	Edelweiss mine (Argentine)	46-23-22	112-12-10	Ag, Pb, Zn, Mn	Surface workings follow vein in shear zone in monzogranite (Kmg). No production.	77, 122
882	Elkador mine (Little Nancy)	46-21-42	112-08-20	Cu, Ag, Pb, Au, Zn, Sb	Adits and shafts in vein and replacement deposits in volcanic rocks (Kem) near monzogranite (Kmg). Small producer of copper, silver, lead, and gold.	6, 122, 144
883	General Harris prospect	46-22-12	112-08-15	Mn	Surface trenches expose manganese veins in shear zones in andesite (Kem). No production.	6
884	Glenbeg mine (Glenberg)	46-22-08	112-08-50	Ag, Cu, Au, Pb	About 700 ft of underground workings along veins in shear zones in andesite (Kem). Small producer of silver, copper, and gold.	6, 122
885	Golconda mine (Golden Assets)	46-19-55	112-00-05	Au, Ag, Pb, Cu, Zn, As	Three adits in stockwork deposit in monzogranite (Kmg). Medium producer of gold, silver, lead, copper, and zinc.	6, 79, 117, 122
886	Gregory mine	46-23-24	112-06-53	Ag, Pb, Au, Cu, Zn, As	Shaft, 730 ft deep, with 6 working levels, along veins in shear zones in andesite (Kem) and monzogranite (Kmg). Very large producer of silver, lead, gold, copper, and zinc.	6, 106, 122, 144
887	Helena-Jefferson mine	46-21-25	112-02-45	Pb, Ag, Zn, Cu, Mo	Inclined shafts as much as 550 ft deep along veins in monzogranite (Kmg). Small producer of lead, silver, zinc, and copper.	6, 106, 122

888	Horseshoe claim	46-22-57	112-05-45	Au	Underground workings along veins in shear zones in andesite (Kem) near contact with monzogranite (Kmg). No production.	72, 106, 122
889	Kady Gulch manganese deposit	46-23-05	112-09-45	Mn	Surface workings in bog manganese deposits in alluvium (Qs). Small producer of manganese.	6
890	Lone Eagle mine	46-24-28	112-09-25	U, Ag, Pb, Zn	Two adits, with workings totaling 900 ft, along veins in shear zones in monzogranite (Kmg). Small producer of uranium ore.	5, 6, 122, 144
891	Madison mine (Black Rock)	46-22-45	112-00-05	Au, Ag, Pb	Surface and underground workings in veins in monzogranite (Kmg). Production not determined.	6, 106, 122
892	Minah mine (Mina mine)	46-21-55	112-08-01	Ag, Au, Pb, Zn, Cu, As, Sb	More than 1,500 ft of underground workings follow vein in shear zones in andesite (Kem) and dacite (Tlc). Large producer of silver, gold, lead, zinc, and copper.	6, 72, 85, 88, 106, 122, 144
893	Minnesota mine	46-23-10	112-07-25	Au, Ag, Pb, Cu, Zn, As	Underground workings along veins in shear zones in monzogranite (Kmg) and andesite (Kem). Medium producer of gold, silver, lead, copper, and zinc.	6, 72, 106, 122
894	Montana Tunnels mine	46-22-17	112-07-35	Au, Ag, Zn, Pb, Cu, Mn	Open pit mine in ore body, which consists of disseminated and veinlet mineralization in diatreme breccia (Tlc). Very large producer with large reserves of ore containing gold, silver, zinc, and lead.	6, 72, 124, 125, 126, 137
895	Monte Christo adits	46-23-34	112-05-39	Ag, Pb, Zn, As	About 1,100 ft of underground workings along veins in shear zones in monzogranite (Kmg). Production not determined.	6
896	Mount Washington mine	46-21-23	112-08-37	Ag, Au, Pb, Cu, Zn, Bi, Sb, As	Main shaft, 1,000 ft deep, with 10 working levels, along veins in shear zones in tuff (Kem) and monzogranite (Kmg). Large producer of silver, gold, lead, copper, and zinc.	6, 106, 122
897	Northern Pacific mine	46-22-16	112-06-30	Ag, Pb, Au, Zn	Underground workings follow veins in shear zones in andesite (Kem). Small producer of silver, lead, and gold.	6, 72, 106, 122
898	Pen Yan mine (Penn Yan)	46-21-28	112-10-23	Au, Ag, Cu, Pb	Shaft, 215 ft deep, with five working levels, along veins in shear zones in volcanic rocks (Kem) and monzogranite (Kmg). Medium producer of gold, silver, copper, and lead.	6, 122, 149, 165
899	Polaris mine	46-21-55	112-03-35	Ag, Pb, Cu, Zn, Mo	Two adits follow veins in shear zones in monzogranite (Kmg). Production not determined.	6
900	Rarus mine (Ratus)	46-23-33	112-04-57	Ag, Zn, Pb, Cu, Au, Ba, Sb	About 300 ft of underground workings along veins in shear zones in monzogranite (Kmg). Small producer of silver, zinc, lead, copper, and gold.	6, 122

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Wickes (Colorado) district--Continued						
901	Salvail mine (Bernice)	46-21-02	112-08-38	Ag, Au, Cu, Zn, Pb, As, Sb	About 2,600 ft of underground workings along veins in shear zones in andesite (Kem). Small producer of silver, gold, and copper.	56, 106, 122
902	Silver claim mine	46-23-28	112-05-50	Ag, Pb, Zn, Au	Underground workings along veins in shear zones in andesite (Kem) and monzogranite (Kmg). Small producer of silver, lead, zinc, and gold.	122, 144
903	Silver Tip mine (Reddings mine)	46-22-05	112-00-25	Ag, Pb, Au, Zn	Three adits totaling 800 ft along veins in monzogranite (Kmg). Small producer of silver, lead, gold, and zinc.	6, 106, 122
904	Wickes-Corbin Copper Company mine (Bunker Hill, Bonanza, Dewey, and Rosalie)	46-22-20	112-09-17	Ag, Pb, Cu, Zn	About 4,000 ft of underground workings follow veins in shear zones in andesite (Kem). Production not determined.	6, 18, 106, 122
Amazon district						
Most of the district is in Late Cretaceous monzogranite, alaskite, aplite, and pegmatite of Boulder batholith; however, the northwest part of the district is underlain by Cretaceous andesitic rocks of Elkhorn Mountains Volcanics. Ore deposits are in sulfide-bearing quartz veins. The district was medium producer and principal products were silver, lead, gold, and copper.						
905	Amazon mine	46-17-11	112-07-45	Ag, Pb, Au, Cu, Zn	Underground workings along veins in shear zones in monzogranite (Kmg). Small producer of silver, lead, gold, and copper.	72, 106, 122
906	Australian mine	46-18-40	112-08-35	Ag, Pb, Cu, Au, Zn, As	Two shafts in veins in altered monzogranite (Kmg) along the Bismark-Van Armin shear zone. Small producer of silver, lead, copper, gold, and zinc.	6, 122
907	Bismarck mine	46-18-45	112-07-55	Ag, Pb, Au, Zn, Cu	Several adits, totaling more than 550 ft along three parallel veins in shear zones in monzogranite (Kmg). Small producer of silver, lead, gold, zinc, and copper.	6, 122
908	Bob Ingersol mine	46-19-28	112-06-00	Ag, Pb, Au, As	Veins in shear zone near contact of andesite (Kem) with monzogranite (Kmg). Production not determined.	6, 122
909	Cleveland mine	46-17-51	112-07-38	Ag, Pb, Cu, Zn, Au	Three shafts along a vein in shear zone in monzogranite (Kmg). Small producer of silver, lead, copper, zinc, and gold.	6, 122

910	Golden Point mine	46-17-07	112-08-04	Ag, Cu, Pb, Au	Three adits follow veins in shear zones in monzogranite (Kmg). Small producer of silver, copper, lead, and gold.	122
911	Mayflower mine	46-18-44	112-06-23	Au, Ag, Pb	Developed mine in veins in monzogranite (Kmg). Small producer of gold, silver, and lead.	6, 122, 149
912	Mono group (Mono mine, East Mono mine)	46-17-58	112-06-13	Pb, Ag, Au, Cu, Zn, Sb	Underground workings along four parallel veins in Comet-Gray Eagle shear zone in monzogranite (Kmg). Small producer of lead-silver ore.	6, 122
913	Montana mine (Hector and Victor mine)	46-18-38	112-08-09	Ag, Pb, Au	Developed mine in monzogranite (Kmg). Small producer of silver, lead, and gold.	6, 122
914	Pilot mines	46-18-22	112-06-15	Pb, Ag, Cu, Au, Zn, U	Two shafts along quartz veins in shear zones in monzogranite (Kmg). Small producer of lead, silver, copper, and gold.	6, 122
915	Robert Emmet mine	46-19-37	112-05-45	Ag, Cu, Zn, Pb, Au	Over 1,600 ft of workings along veins in shear zone in monzogranite (Kmg) near contact with andesite (Ka). Small producer of silver, copper, zinc, lead, and gold.	6, 72, 77, 106, 122
916	Uranium occurrence (name unknown)	46-18-00	112-07-35	Ram	Prospect in altered zone in monzogranite (Kmg). Dump is slightly radioactive. No production.	6
917	Van Armin mine	46-18-35	112-07-54	Pb, Ag, Cu, Zn	Over 1,050 ft of underground workings follow veins in monzogranite (Kmg) along the Bismark-Van Armin shear zone. Medium producer of ore containing lead, silver, and copper.	6
918	Virginia C. mine	46-19-29	112-06-20	Ag, Pb, Zn, As	Adit, 180 ft long, in veins along base of sill (Ka) in welded tuff (Kem). Production not determined.	6
919	Wilbur Silver mine	46-18-47	112-07-30	Ag, Pb, Au, Cu, Zn	Crosscut adit and shaft along veins in monzogranite (Kmg). Small producer of silver, lead, gold, and copper.	6, 122

Boulder (Comet) district

Most of district is in granitic rocks of Boulder batholith (Late Cretaceous). Some of north part of district is underlain by Cretaceous andesitic rocks of Elkhorn Mountains Volcanics and Eocene rhyolitic rocks of the Lowland Creek Volcanics. Most ore deposits are quartz-sulfide veins in monzogranite. Most important mine in the district is the Comet mine and, based principally on this mine, district is ranked as very large producer and principal products were silver, gold, lead, copper, and zinc.

920	Baltimore mine	46-17-13	112-08-59	Ag, Au, Pb, Zn, Cu, As	Over 3,000 ft of workings including eight mine levels along veins in shear zones in monzogranite (Kmg). Medium producer of silver, gold, lead, zinc, and copper.	6, 72, 106, 122
921	Boomerang Gulch placer	46-15-35	112-11-05	Au, Ag	Small producer of gold and silver from workings in alluvium (Qs).	90, 122

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Boulder (Comet) district--Continued						
922	Chinese Diggings placer	46-12-20	112-07-20	Au, Ag	Placer mining of 5-10-ft-thick gold-bearing gravel (Qs) using large earth-moving equipment, including scrapers and bulldozers, and by 40 by 16 ft sluice. Overburden of 40-50 ft of gravel was removed before mining. Producer of unknown quantity of gold and silver.	39
923	Comet mine	46-18-35	112-10-00	Au, Ag, Cu, Pb, Zn, U, As, Sb	About 18,000 ft of underground workings, including a 900 ft vertical shaft with nine levels, and a surface open cut in three main veins along Comet-Gray Eagle shear zone in monzogranite (Kmg). Very large producer of gold, silver, copper, lead, and zinc.	4, 6, 10, 72, 106, 122
924	Comstock group	46-16-16	112-12-30	Pb, Ag, Zn, Cu, U	Adit with 400 ft of workings follow vein in shear zone in monzogranite (Kmg). Small producer of lead-silver ore.	122
925	Free Enterprise mine (Silver Bell)	46-15-21	112-08-52	Ag, U, Pb, Cu, Zn, Mo, Ba, As, Sb	Vertical shafts and drift levels along veins in shear zones in monzogranite (Kmg). Small producer of silver-uranium ore.	6, 118, 119, 122
926	Galena Gulch placer	46-15-15	112-10-55	Au, Ag	Surface mining of placer deposits in alluvium (Qs). Small producer of gold and silver.	90, 122
927	Golden Thread mine	46-18-44	112-10-45	Ag, Pb, Cu, Zn, Au	Underground workings along veins in monzogranite (Kmg). Small producer of silver, lead, copper, zinc, and gold.	6, 122, 144
928	Gray Eagle mine	46-18-48	112-11-56	Ag, Pb, Cu, Zn, Au, U, Mo, Sb, As	Numerous adits, with workings totaling about 10,000 ft, along veins in shear zones in welded tuffs (Kem) and monzogranite (Kmg). Large producer of silver, lead, copper, zinc, and gold.	6, 72, 106, 122, 144
929	High Ore Creek placer	46-15-45	112-12-47	Au, Ag	Ground sluicing of placer deposits in alluvium (Qs). Small producer of gold and silver.	6, 90, 122
930	High Ore mine (Hi Ore, Montana Consolidated)	46-17-40	112-11-50	Ag, Pb, Zn, Au, Cu, Ram	More than 25,000 ft of underground workings on veins in shear zones in monzogranite (Kmg). Small producer of silver, lead, zinc, gold, and copper.	6, 122, 153
931	Hope and Bullion mine (Bullion)	46-18-30	112-09-30	Au, Ag, Pb, Cu, Zn, Mn	Surface and underground workings follow veins in shear zones in monzogranite (Kmg). Small producer of gold, silver, lead, copper, and zinc.	6, 122

932	King Cole mine (Boulder- California)	46-17-45	112-11-32	Ag, Au, Cu, Zn	Two adits with about 1,600 ft of workings along veins in shear zones in monzogranite (Kmg). Small producer of silver, gold, and copper.	6, 122
933	Lewis prospect	46-15-05	112-07-55	Hg	Surface workings in veins in monzogranite (Kmg). No production.	106, 122
934	Molly McGregor mine (Emma Bell, Adolphus)	46-17-37	112-08-59	Pb, Ag, Au, Cu	Five adits and five shafts along veins in shear zones in monzogranite (Kmg). Small producer of lead, silver, gold, and copper.	6, 122
935	Nickelodeon prospect	46-11-46	112-09-17	Cu, Au, Mo, W, U	Underground workings follow veins in shear zones in monzogranite (Kmg). Production not determined.	122
936	Queen of The Hills mine	46-17-00	112-12-35	Ag, Pb, Zn, Au, Cu	Underground workings follow veins in shear zones in monzogranite (Kmg). Small producer of silver, lead, zinc, gold, and copper.	6, 122
937	Reliance mine	46-16-50	112-12-00	Ag, Cu, Pb, Au	Underground workings along veins in shear zones in monzogranite (Kmg). Small producer of silver, copper, lead, and gold.	6, 122
938	Rumley mine	46-18-36	112-10-20	Ag, Pb, Au, Cu, Zn, U	Underground workings along veins in shear zones in monzogranite (Kmg). Medium producer of silver, lead, gold, and copper.	6, 122
939	Silver Hill mine	46-18-40	112-10-15	Ag, Pb, Au, Zn, Cu, Ram	Shaft, with several working levels, along 3 veins in shear zones in monzogranite (Kmg). Small producer of silver, lead, gold, zinc, and copper.	4, 6, 64, 122
940	Skookum placer	46-17-40	112-10-35	Au, Ag	Ground sluicing of placers in alluvium (Qs). Small producer of gold and silver.	78, 79
941	Virginia mine	46-17-25	112-12-30	Ag, Pb, Au, Cu	Underground workings follow veins in shear zones in monzogranite (Kmg). Small producer of silver, lead, gold, and copper.	6, 122

Emery (Zosell) district

Basaltic and andesitic flows, tuffs, and breccia flows of probable Late Cretaceous or Tertiary age underlie district. A northwest-trending normal fault cuts volcanic rocks in northern part of the district. Fissure-filling quartz veins are principal deposit type. The district was large producer and principal products were gold, silver, and lead.

942	Argus mine	46-23-30	112-34-40	Ag, Pb, Au, Cu, Zn, Ni, As	Three shafts along veins in shear zones in basalt (TKab). Small producer of silver, lead, gold, and copper.	91, 106, 120
943	Baggs Creek sapphire deposit	46-24-08	112-34-00	Cor	Prospects in sapphire-bearing placer deposits in alluvium (Qs). No production.	152
944	Bell mine	46-22-51	112-34-18	Ag, Pb, Zn, Au, As, Cd	Underground workings along veins in shear zones in andesite and basalt (TKab). Small producer of ore containing silver, lead, and zinc.	115, 120

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Emery (Zosell) district--Continued						
945	Bertha May mine	46-23-14	112-34-40	Ag, Pb, Au, Cu, Zn, Sb	Underground workings follow veins in shear zones in basalt (TKab). Small producer of silver, lead, gold, and copper.	91, 120
946	Black-Eyed May mine	46-23-12	112-34-20	Ag, Pb, Au, Zn, Cu, As, Cd	Surface and underground workings along veins in shear zones in basalt (TKab). Small producer of silver, lead, and gold.	91, 106, 120
947	Blue-Eyed Maggie mine	46-22-31	112-34-58	Ag, Au, Pb, Cu, Zn, Sb, As	Three adits, with four working levels, along veins in shear zones in basalt (TKab). Medium producer of silver, gold, lead, and copper.	91, 106, 120
948	Bonanza mine	46-22-46	112-34-12	Au, Ag, Pb, Zn, Cu, As, Sb	At least eight underground mine levels, with a total of about 4,300 ft of workings, follow veins in shear zones in basalt (TKab). Medium producer of gold, silver, lead, zinc, and copper.	29, 91, 106, 120, 141
949	Bull Moose mine	46-23-17	112-34-30	Ag, Pb, Au, Cu, Zn, As, Sb	Underground workings follow veins in shear zones in basalt (TKab). Small producer of silver, lead, gold, and copper.	91, 117, 120
950	Caroline and William Coleman mine (Colman mine)	46-22-21	112-35-06	Ag, Pb, Au, Zn, As	Underground workings follow veins in shear zones in basalt and andesite (TKab). Small producer.	91, 106, 120
951	Copper Cliff prospect	46-24-12	112-34-52	Cu	Prospect in disseminated deposit in basalt (TKab). No production.	10, 120
952	Ding Bat mine	46-22-32	112-35-02	Ag, Pb, Cu, Zn, As, Sb	More than 500 ft of underground workings along veins in shear zones in basalt (TKab). Production not determined.	91, 120
953	Emery mine (Carbonate Hill mine)	46-22-38	112-34-45	Au, Ag, Pb, Zn, Cu, As, Sb	Ten mine levels, with workings totaling about 9,000 ft, along veins in shear zones in andesite and basalt (TKab). Large producer of gold, silver, lead, zinc, and copper.	10, 38, 91, 106, 120
954	Emma Darling mine	46-23-10	112-34-02	Ag, Pb, Au, Cu, Zn, As	About 2,000 ft of underground workings follow veins in shear zones in basalt (TKab). Small producer of silver, lead, gold, and copper.	91, 106, 149
955	Hercules mine	46-23-10	112-35-00	Ag, Pb	Surface workings along veins in shear zones in basalt (TKab). Small producer of silver and lead.	91, 120

956	Hidden Hand mine	46-23-20	112-34-40	Au, Ag, Pb, Zn, Cu, Ni, As, Sb	About 2,200 ft of underground workings, and surface workings along veins in shear zones in andesite and tuff (TKab). Medium producer of gold, silver, lead, zinc, and copper.	78, 91, 106, 120, 166
957	Kirby mine	46-22-50	112-34-45	Ag, Au, Pb, Zn	350-ft shaft along veins in shear zones in andesite (TKab). Small producer.	55, 106
958	Paymaster mine	46-22-45	112-35-05	Ag, Pb, Cu, Zn, As, Sb	Two adits follow veins in shear zones in basalt (TKab). Production not determined.	120
959	Prospect (Name unknown)	46-23-18	112-35-06	Ag, Pb, Zn, As	Underground workings in veins in basalt (TKab). Production not determined.	120
960	Sabbath Day mine (Poor Man)	46-22-40	112-34-45	Ag, Pb, Au, Cu, Zn, As, Sb	500-ft shaft along veins in shear zones in basalt (TKab). Small producer of silver, lead, gold, and copper.	91, 120
961	Spring Creek and Rocker Gulch placers	46-21-55	112-35-40	Au, Ag	Ground sluicing of placer deposits in alluvium (Qs). Medium producer of gold and silver.	90, 106, 120
962	Sterrett mine	46-23-07	112-33-55	Ag, Pb, Au, Zn	Three shafts, two adits, along veins in shear zones in basalt (TKab). Small producer of silver, lead, and gold.	91, 106, 120
963	Swan mine	46-22-46	112-35-20	Ag, Pb, Au, Cu, Zn, As, Sb	Underground workings along veins in shear zones in basalt (TKab). Small producer of silver, lead, gold, and copper.	106, 120
964	Wake Up Jim mine	46-23-29	112-34-35	Ag, Pb, Ni	Three adits follow veins in shear zones in basalt (TKab). Production not determined.	120

South Boulder Mountains area

Large area in southeastern part of Butte quadrangle exclusive of the Butte, Orofino, Lowland, Big Foot, and Pipestone districts. Area includes large part of Boulder batholith. In west part of area, Lowland Creek Volcanics (Eocene) are in a northeast-trending graben within the batholith, and in southeast part of area, Cretaceous Elkhorn Mountains Volcanics are exposed along eastern border of the batholith. A stock of quartz monzonite (Cretaceous?) is along the southeastern border of area. Numerous northeasterly and north-south-trending normal faults cut rocks in area. Scattered mineral occurrences in area include quartz-sulfide veins and placers. The area was small producer and principal products were gold, silver, lead, copper, and sapphires.

965	Butte-Elk Park Extension mine (Elk Park)	46-11-00	112-22-30	Ag, Cu, Pb, Bi, As	About 1,350 ft of underground workings on veins in monzogranite (Kmg). Small producer of silver, copper, and lead.	122, 166
966	Copper prospect (name unknown)	46-12-52	112-39-35	Cu, Ag	Adit along veins in monzogranite (Kmg). Production not determined.	151

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
South Boulder Mountains area--Continued						
967	Dry Cottonwood Creek placer	46-12-15	112-38-57	Au, Ag, Cor	Extensive hydraulic and dredge workings on placer deposits in alluvium (Qs). Small producer of gold, silver, and sapphires.	90, 106, 117
968	Matchless lode	46-12-51	112-40-21	Au, Ag	Underground workings on veins in shear zones in monzogranite (Kmg). No production.	151
969	Mine (name unknown)	46-09-16	112-37-45	Au, Ag, As, Sb	Underground workings on rhyolite quartz veins along shear zone in rhyolite (Tlc). Producer of unknown quantity of ore.	39
970	Montreal Star mine	46-07-20	112-27-45	Ag, Pb, Cu, Au, Zn	A 100-ft shaft, 500-ft adit, drifts, and open cuts along veins and breccia zone in monzogranite (Kmg) and aplite (Ka). Small producer of silver, lead, copper, and gold.	151
971	Shamrock Copper prospect	46-15-20	112-29-40	Cu	Underground workings in vein in andesite (Kem). No production.	133
972	Silver Bell mine	46-02-30	112-12-46	Ag, Pb, Au	Three adits and a shaft, totaling greater than 525 ft, along veins in shear zones in monzogranite (Kmg). No production.	122
973	Silver mine (name unknown)	46-12-08	112-38-22	Ag, Zn, As, Cr	Four adits in vein in monzogranite (Kmg). Production not determined.	151
974	Silver mine (name unknown)	46-12-14	112-38-07	Ag, Cr	Shaft in vein in rhyolite tuff (Kem). Production not determined.	151
975	Silver mine (name unknown)	46-12-30	112-38-22	Ag, As	Two shafts in veins in monzogranite (Kmg). Production not determined.	151
976	Silver mine (name unknown)	46-13-30	112-37-35	Ag, As	Two adits in veins in monzogranite (Kmg). Production not determined.	151
977	Tuxedo mine	46-04-15	112-42-55	Au, Ag, Sil	Shaft, underground workings, and open pits follow quartz veins and silicified zone in altered welded tuff (Tlc). Medium producer of gold, silver, and silica (for smelter flux).	39
978	Wilson Creek placer	46-09-44	112-12-40	Au, Ag	Ground sluicing and dredge mining of placers in alluvium (Qs). Small producer of gold and silver.	90

Oro Fino district

District is on western margin of Boulder batholith (Cretaceous). Predominant rock type is monzogranite but small areas of Tertiary rhyolitic rocks also are present. Two types of deposits are present: placer gold deposits and base- and precious-metal-bearing vein deposits. The district was large producer and principal products were silver, gold, and copper.

979	Champion silver mine	46-13-59	112-36-36	Ag, Au, Pb, Zn, Sb, As	Adit along veins in shear zones in monzogranite (Kmg). Large producer of silver-gold ore.	39, 77, 106, 117, 153
980	Orofino Creek placer	46-14-15	112-37-15	Au, Ag	Surface workings in placer deposits in alluvium (Qs). Small producer of gold and silver.	90, 106
981	Silver mine (name unknown)	46-15-05	112-36-30	Ag, Pb, Zn, Cu, As, Cd	Adits in veins in monzogranite (Kmg). Production not determined.	151
982	Silver prospect (name unknown)	46-15-05	112-37-00	Ag, Pb, Zn, Bi	Prospect in veins in monzogranite (Kmg). No production.	151

Lowland district

District is underlain by Tertiary rhyolitic flows, welded tuff, and breccia of the Lowland Creek Volcanics. Several northeast-trending normal faults cut volcanic rocks. Principal mineral deposits are fissure veins and breccia zones in volcanic rocks. The district was a large producer and principal products were gold and silver.

983	Columbia mine	46-11-38	112-25-50	Au, Ag, Cu	Several adits along veins in shear zones in quartz latite (Tlc). Medium producer of gold, silver, and minor copper.	72, 106, 122
984	Kit Carson mine	46-12-10	112-26-58	Au, Ag, Cu	Shaft and two adits along veins in shear zones in quartz latite (Tlc). Medium producer of gold, silver, and minor copper.	72, 106, 122
985	Lowland Creek placer (Kit Carson placer)	46-14-40	112-25-25	Au, Ag, Cor	Placer deposits in alluvium (Qs) were worked by ground sluicing and by dredge. Large producer of gold and silver.	39, 90, 122, 149
986	Memphis prospect	46-11-57	112-26-40	Au, Ag	Underground workings follow veins in shear zones in rhyolite (Tlc). Production not determined.	72, 106, 122
987	Ruby mine	46-11-52	112-26-04	Au, Ag, Pb, Zn, Cu	Over 10,000 ft of underground workings along veins in shear zones in rhyolite (Tlc). Large producer of gold and silver.	72, 76, 106, 122

Big Foot (State Creek) district

District is underlain principally by Cretaceous monzogranite, alaskite, aplite, and pegmatite of Boulder batholith. Small inlier of Cretaceous volcanic rocks is in north part of area. Ore deposits are vein and replacement deposits in monzogranite and placer deposits. The district was a medium producer and principal products were silver, lead, gold, zinc, and copper.

988	Big Foot Creek placer	46-07-05	112-09-02	Au, Ag	Placer deposits in alluvium (Qs) were mined by ground sluicing. Small producer of gold and silver.	90, 122
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Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Big Foot (State Creek) district--Continued						
989	Big Four group (Includes Hoosier Boy, Big Four, Terror, Nickel Plate, Searchlight, and Ajax)	46-06-16	112-11-03	Pb, Zn, Ag, Au, Cu	Extensive underground workings include two shafts and three main levels along vein and replacement deposits in monzogranite (Kmg). Small producer of lead, zinc, silver, gold, and copper.	122, 166
990	Mine (name unknown)	46-06-40	112-10-25	Au, Pb, Ag, Zn	Shaft in quartz vein in monzogranite (Kmg). Production not determined.	39
991	Mountain Queen mine	46-04-23	112-11-30	Ag, Pb, Au, Cu, Zn, U	Underground workings follow vein in monzogranite (Kmg) of the Boulder batholith. Small producer of silver, lead, gold, copper, and zinc.	79, 122, 144
992	Silver prospect (name unknown)	46-06-45	112-10-09	Ag, Pb, Zn, Cu, As, Sb	Underground workings follow vein in shear zone in monzogranite (Kmg) of the Boulder batholith. Production not determined.	166
993	State mine (State group)	46-06-24	112-13-35	Au, Ag, Cu, Pb, As, Sb	Underground workings in replacement vein in monzogranite (Kmg) of the Boulder batholith. Small producer of gold, silver, copper, and lead.	39, 122
Butte (Summit Valley) district						
Principal rocks in Butte district are monzogranite, alaskite, aplite, and pegmatite of Cretaceous Boulder batholith. These rocks are cut by pre-mineral dikes of quartz porphyry and, in western part of area, are overlain by post-mineral rhyolitic rocks of Eocene Lowland Creek Volcanics. Western part of area has many normal faults that cut rocks of batholith and volcanic rocks. Most underground mining was conducted on thick high-grade veins that form two principal systems; (1) Anaconda or steep east-west system and (2) Blue or northwest system. Bulk mining methods, including block caving and open-pit mining, since 1940's has been conducted on lower grade zones of stockwork veins and zones of supergene enrichment. Butte district is a very large producer and principal products are copper, zinc, manganese, lead, silver, gold, and molybdenum. Other products have been cadmium, bismuth, sulfuric acid, selenium, and tellurium.						
994	Adams mine	46-00-40	112-30-42	Cu, Ag, Au	Shafts and adits along 3 veins in monzogranite (Kmg). Producer of unknown quantity of ore containing copper, silver, and gold.	161
995	Agnostic mine	46-01-15	112-35-40	Mn	Underground workings follow veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of manganese ore.	144, 161
996	Alice mine (Alice pit)	46-01-58	112-32-09	Ag, Au, Zn, Pb, Mn, Be	Extensive surface and underground workings along abundant veins in shear zones in monzogranite (Kmg). Very large producer of ore containing silver, gold, zinc, lead, and manganese.	11, 100, 107, 111, 153, 160, 161

997	Altona mine	46-00-15	112-28-35	Cu, Ag, Mo	Shaft with several working levels along veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of ore containing copper and silver.	161
998	Amy Silversmith mine	46-01-56	112-32-36	Ag, Pb, Zn, Mn	Underground workings follow three veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of ore containing silver, lead, zinc, and manganese.	153, 161
999	Anaconda, Neversweat, St. Lawrence group	46-01-02	112-31-30	Cu, Ag, Au, Zn, As	Extensive underground workings along four veins in shear zones in monzogranite (Kmg). Now part of Berkeley Pit. Very large producer of copper, silver, gold, and zinc.	111, 136, 153, 161
1000	Anderson mine	46-00-35	112-31-13	Cu	More than 1,000 ft of underground workings on veins in monzogranite (Kmg). Producer of unknown quantity of ore.	161
1001	Anselmo mine	46-01-02	112-32-48	Ag, Pb, Zn, Cu, Au, As	Shaft, more than 400 ft deep, and underground workings along three veins in shear zones in monzogranite (Kmg). Very large producer of ore containing silver, lead, zinc, copper, and gold.	53, 57, 95, 144, 153, 161
1002	Atlantic mine	46-01-44	112-29-34	Ag, Cu	Shaft 600 ft deep on veins in monzogranite (Kmg). Producer of unknown quantity of ore.	161
1003	Badger mine	46-01-41	112-31-08	Cu, Zn, Ag, Pb, Au	Shaft, more than 400 ft deep, and underground workings along veins in shear zones in monzogranite (Kmg). Very large producer of copper, zinc, silver, lead, and gold.	53, 56, 95
1004	Belmont mine	46-00-41	112-31-17	Cu, Ag, Pb, Zn, Au, As	Shaft and underground workings along veins in shear zones in monzogranite (Kmg). Very large producer of ore containing copper, silver, lead, zinc, and gold.	57, 144, 153, 161
1005	Berkeley pit	46-00-56	112-30-33	Cu, Zn, Pb, Au, Ag	Major open pit mine in vein deposits and supergene enriched zone in monzogranite (Kmg). Workings include areas which were previously mined by underground methods. Very large producer of copper, zinc, lead, gold, and silver.	96
1006	Bertha group	46-00-30	112-28-50	Cu, Ag	Underground workings follow veins in shear zones in monzogranite (Kmg). Small producer of copper ore.	153, 161
1007	Birdie mine	46-00-50	112-27-30	Ag, W, Cu, Sb	About 1,100 ft of underground workings along brecciated quartz vein in a shear zone in monzogranite (Kmg). Medium producer of silver and tungsten ore.	150, 156, 161

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Butte (Summit Valley) district--Continued						
1008	Black Warrior group	46-00-55	112-35-40	Mn, Ag	Underground workings along veins in shear zones in monzogranite (Kmg). Small producer of manganese-silver ore.	161
1009	Blue Bird mine (Bluebird)	46-00-40	112-35-39	Ag, Zn, Mn, Au	About 20,000 ft of underground workings follow veins in shear zones in monzogranite (Kmg). Large producer of silver ore.	161
1010	Brilliant mine	46-01-17	112-35-08	Ag, Mn	Underground workings follow veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of silver and manganese ore.	144, 153, 161
1011	Brown's Gulch placer	46-00-08	112-42-05	Au, Ag	Placers along Brown's Gulch and its tributaries were mined by ground sluicing and dredge. Producer of unknown quantity of gold and silver.	33, 90
1012	Burlington mine	46-00-48	112-35-14	Mn, Ag	Underground workings follow veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of manganese and silver ore.	161
1013	Cambers mine	46-00-45	112-31-16	Cu, Ag, Zn	Shaft with extensive underground workings along veins in shear zones in monzogranite (Kmg). Large producer of copper-silver ore.	57, 161
1014	Clear Grit mine	46-01-12	112-32-03	Ag, Cu, Pb, Zn	Several mine levels on major vein along fault zone in monzogranite (Kmg). Large producer of silver-copper ore.	57, 136, 161
1015	Colusa mine (East Colusa pit)	46-01-18	112-30-36	Cu, Ag	Surface and underground workings (now part of Berkeley Pit) along veins in shear zones in monzogranite (Kmg). Very large producer of copper-silver ore.	57, 136, 144, 153, 161
1016	Continental deposit	46-00-37	112-28-50	Cu, Mo	Open pits in area of mineralized rock that consists of copper oxide minerals, supergene copper minerals, and hypogene copper and molybdenum minerals in disseminated and vein deposits in monzogranite (Kmg). Very large producer of copper and molybdenum.	96
1017	Copper Czar mine	46-00-40	112-27-22	Cu, Ag, Au	Underground workings along veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of ore.	149
1018	Corra mine	46-01-37	112-31-34	Cu, Ag, Zn	Underground workings follow veins in shear zones in monzogranite (Kmg). Large producer of copper-silver ore.	57, 161

1019	Creole mine	46-00-54	112-34-45	Mn	Underground workings follow veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of manganese ore.	144, 161
1020	Cumberland mine	46-01-12	112-35-13	Mn	Underground workings along veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of manganese ore.	144
1021	Czarina mine (Tzarina)	46-00-13	112-33-34	Ag, Mn, Pb, Zn	About 2,000 ft of underground workings follow veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of ore.	30
1022	Diamond-Bell mine	46-01-29	112-31-16	Cu, Ag, Au, As	Extensive underground workings along veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of ore.	144, 153, 161
1023	Eagle Bird mine	46-00-04	112-34-08	Mn	Underground workings along veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of manganese ore.	144, 161
1024	East Continental deposit	46-00-30	112-27-49	Cu, Mo	Mineralized area that consists of supergene copper minerals in monzogranite (Kmg). Production not determined.	96
1025	East Grey Rock mine	46-01-30	112-31-24	Cu, Ag, Zn, As	Underground workings along veins in shear zones in monzogranite (Kmg). Very large producer of copper-silver ore.	57, 161
1026	Easter mine	46-00-29	112-34-30	Mn	Underground workings follow veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of manganese ore.	144, 161
1027	Elba mine (Elbe)	46-00-23	112-34-02	Mn, Ag	Underground workings follow veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of manganese-silver ore.	153
1028	Ella mine	46-01-24	112-30-09	Ag, Mn, Cu, Au	Underground workings along veins in shear zones in monzogranite (Kmg). Small producer of silver ore.	57, 161
1029	Elm Orlu mine	46-01-58	112-31-09	Zn, Ag, Cu	Underground workings on veins in monzogranite (Kmg). Very large producer of zinc-silver-copper ore.	57, 161
1030	Emma mine (Ancient, Black Chief)	46-00-35	112-32-10	Mn, Zn, Pb, Ag, Au	Shaft more than 200 ft deep and numerous adits and working levels along veins in shear zones in monzogranite (Kmg). Very large producer of ore containing manganese, zinc, lead, and silver.	95, 153, 161
1031	Fairview mine	46-00-52	112-35-55	Mn	Underground workings along veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of manganese ore.	144

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Butte (Summit Valley) district--Continued						
1032	Fredonia mine	46-00-41	112-35-15	Ag, Mn	Underground workings along two veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of silver-manganese ore.	144, 153, 161
1033	Gagnon mine	46-01-02	112-32-31	Cu, Ag, Au, Zn, As	Underground workings follow veins in shear zones in monzogranite (Kmg). Very large producer of copper-silver ore.	57, 73, 108, 111, 136, 144, 153, 161
1034	Garibaldi mine	46-00-28	112-34-49	Ag, Mn	Underground workings follow veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of silver-manganese ore.	153, 161
1035	Geneva mine	46-00-09	112-33-09	Mn, Ag	Underground workings along veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of manganese-silver ore.	161
1036	Glengarry mine	46-00-35	112-30-40	Ag, Cu, Zn	Underground workings follow veins in shear zones in monzogranite (Kmg). Large producer of silver ore.	57, 153, 161
1037	Gold Hill mine	46-00-57	112-32-02	Zn, Cu, Pb	Two shafts on a vein in monzogranite (Kmg). Producer of unknown quantity of ore.	161
1038	Goldsmith mine	46-02-00	112-32-43	Ag, Pb, Zn, Au, Cu	More than 5,500 ft of underground workings along veins in shear zones in monzogranite (Kmg). Large producer of silver ore.	57, 149, 153, 161
1039	Great Republic mine	46-01-00	112-35-21	Mn, Ag	Underground workings along veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of manganese-silver ore.	144, 153, 161
1040	Green Copper mine	46-00-26	112-31-02	Cu, Ag, Au, Zn, As	Underground workings along veins in shear zones in monzogranite (Kmg). Small producer of ore containing copper, silver, gold, and zinc.	153, 161
1041	Gregory mine	46-02-35	112-33-10	Ag, Pb, Zn	Underground workings along veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of silver-lead-zinc ore.	144, 153, 161
1042	Grey Eagle mine	46-00-57	112-35-55	Mn	Underground workings along veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of manganese ore.	144, 161
1043	Ground Squirrel mine	46-00-38	112-30-32	Cu, Ag, Au, As	Three shafts along veins in shear zones in monzogranite (Kmg). Large producer of ore containing copper, silver, and gold.	57, 161

1044	Hesperus mine	46-00-40	112-31-33	Ag, Cu, Zn	Underground workings along a vein in monzogranite (Kmg). Producer of unknown quantity of ore.	161
1045	Hibernia mine	46-00-52	112-34-37	Ag, Au, Pb, Zn, Mn	Underground workings follow veins in shear zones in monzogranite (Kmg). Large producer of silver, gold, lead, and zinc.	153, 161
1046	High Ore mine	46-01-19	112-31-04	Ag, Cu, Zn, Au	Shaft, 2,800 ft deep, on vein in monzogranite (Kmg). Very large producer of copper-silver-zinc ore.	57, 161
1047	Homestake mine	46-01-40	112-27-30	Ag, Au, Cu, Zn, Sb	Underground workings follow three veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of ore.	161
1048	Humbolt mine	46-00-20	112-33-47	Ag, Mn, Pb, Zn, Cu	Underground workings follow veins in shear zones in monzogranite (Kmg). Small producer of silver-manganese ore.	153, 161
1049	I.X.L. claim	46-00-47	112-35-52	Mn, Ag	Underground workings follow veins in shear zones in monzogranite (Kmg). Small producer of manganese-silver ore.	161
1050	Ida mine	46-00-10	112-28-30	Cu, Ag, Zn, Mo, Sb	Underground workings follow veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of ore.	161
1051	Iduna mine	46-00-40	112-31-04	Cu, Ag, Au, Zn, As	Underground workings along veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of ore.	161
1052	Independence mine (Independent)	46-00-50	112-35-27	Mn	Underground workings along veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of manganese ore.	144, 153
1053	Iowa mine	46-01-25	112-35-06	Ag, Cu, Mn	Underground workings follow veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of ore.	161
1054	J.I.C. mine	46-00-30	112-30-54	Cu, Ag, Au, As	Underground workings follow veins in shear zones in monzogranite (Kmg). Large producer of copper-silver ore.	57, 161
1055	Kelley mine	46-01-12	112-31-37	Cu, Au, Ag	Shaft, approximately 5,000 ft deep, and underground workings along veins in shear zones in monzogranite (Kmg). Main shaft for hoisting ore from block-caving project. Supergene enrichment was an important ore-forming process. Very large producer of copper ore.	95, 96
1056	Kit Carson mine	46-00-48	112-34-11	Ag, Au, Cu	Shaft with five working levels along five veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of ore.	161

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Butte (Summit Valley) district--Continued						
1057	Kossuth mine	46-01-32	112-35-49	Mn, Ag, Cu	Shaft, 90 ft deep, on vein in monzogranite (Kmg). Producer of unknown quantity of ore.	161
1058	Late Aquisition mine	46-01-09	112-32-16	Ag, Cu, Zn	Three shafts along veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of ore.	161
1059	Lavena mine	46-01-17	112-36-02	Ag, Mn, Au	Underground workings follow veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of silver-manganese ore.	58, 144, 153, 161
1060	Leonard mine	46-01-12	112-30-25	Cu, Ag, W	Shaft and extensive underground workings along numerous veins in monzogranite (Kmg) (now part of the Berkeley Pit). Very large producer of copper-silver ore.	37, 57, 78, 95, 96, 136, 161
1061	Lexington group (Allie Brown, Wappello, La Plata)	46-01-41	112-32-05	Ag, Zn, Au, Pb, Cu, Mn, Be	Main shaft, more than 3,000 ft deep, and underground workings along three veins in shear zones in monzogranite (Kmg). Very large producer of silver-zinc ore.	57, 95, 107, 111, 153, 161
1062	Little Annie mine	46-01-50	112-33-36	Mn	Underground workings follow veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of manganese ore.	144, 161
1063	Little Darling mine	46-00-34	112-35-43	Ag, Pb, Mn, Zn	Underground workings along veins in shear zones in monzogranite (Kmg). Small producer of silver-lead ore.	161
1064	Little Mina mine	46-01-15	112-31-39	Cu, Ag, Pb, Zn, W, As	Several levels of underground workings follow veins in shear zones in monzogranite (Kmg). Large producer of copper-silver-lead ore.	57, 161
1065	Little Sarah mine	46-01-00	112-34-57	Mn	Surface and underground workings along veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of manganese ore.	144, 161
1066	Lizzie mine (Hayes mine)	46-00-57	112-31-06	Cu, Ag, Pb, Zn, Au, As	Underground workings follow veins in shear zones in monzogranite (Kmg). Medium producer of ore containing copper, silver, lead, and zinc.	153, 161
1067	Magna Charta mine	46-02-00	112-31-55	Ag, Au, Cu, Mn, Pb, Zn, Be	Underground workings along five veins in shear zones in monzogranite (Kmg). Large producer of silver ore.	144, 153, 161

1068	Mapleton mine	46-01-05	112-35-01	Ag, Mn	Underground workings follow veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of silver-manganese ore.	144, 153, 161
1069	Marget Ann mine	46-02-16	112-32-32	Au, Ag, Cu, Pb, Zn, Mn	Underground workings along veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of ore.	144, 161, 164
1070	Marie mine	46-02-23	112-32-40	Mn, Pb, Zn	Underground workings follow veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of manganese ore.	161
1071	Mat mine (Alelaidmat mine)	46-01-35	112-30-24	Ag, Cu, Zn, Pb, Mn, Au, Sb	Underground workings along veins in shear zones in monzogranite (Kmg). Large producer of copper-silver ore.	56, 57, 153, 161
1072	Missoula Gulch placer (Summit Valley placer)	46-00-15	112-32-55	Au, Ag	Alluvium (Qs) in Missoula Gulch and tributaries was mined by ground sluicing and hydraulic mining. Large producer of gold and silver.	33, 90, 161
1073	Modoc mine	46-01-25	112-30-43	Cu, Ag, Au	Two shafts along veins in shear zones in monzogranite (Kmg). Large producer of copper-silver ore.	57, 161
1074	Montana claim	46-00-56	112-35-44	Mn	Underground workings follow veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of manganese ore.	144, 161
1075	Montgomery mine	46-00-30	112-28-45	Cu	Underground workings along veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of copper ore.	161
1076	Moody claim (Sankey mine)	46-01-30	112-35-38	Mn, Ag, Cu	Underground workings follow veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of manganese-silver-copper ore.	144, 153, 161
1077	Moose mine	46-01-54	112-31-34	Ag, Cu, Pb, Zn	Underground workings along three veins in shear in monzogranite (Kmg). Producer of unknown quantity of ore.	161
1078	Moscow mine	46-01-18	112-32-28	Cu, Ag, Zn	Underground workings on veins in monzogranite (Kmg). Producer of unknown quantity of ore.	161
1079	Moulton mine	46-02-00	112-32-23	Pb, Zn, Ag, Mn, Au	Underground workings along veins in shear zones in monzogranite (Kmg). Very large producer of lead, zinc, silver, and manganese.	57, 111, 153, 161
1080	Mount Moriah	46-01-05	112-32-38	Cu, Zn	Several shafts along veins in monzogranite (Kmg). Producer of unknown quantity of ore.	161
1081	Mountain Con mine	46-01-24	112-31-53	Cu, Ag, Au, Zn, As	Shaft, more than 5,000 ft deep, with many working levels along veins in shear zones in monzogranite (Kmg). Very large producer of copper-silver ore.	56, 57, 95, 136, 153, 161

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Butte (Summit Valley) district--Continued						
1082	Mountain View mine	46-01-09	112-31-04	Cu, Ag, Au, As	Underground workings follow veins in shear zones in monzogranite (Kmg). Now part of the Berkeley Pit. Very large producer of copper-silver ore.	57, 136, 153, 161
1083	Narrow Gage mine	46-01-35	112-35-25	Ag, Mn	Underground workings follow veins in shear zones in monzogranite (Kmg). Medium producer of silver-manganese ore.	161
1084	Nemo mine	46-01-25	112-35-28	Ag, Mn	Underground workings along veins in shear zones in monzogranite (Kmg). Medium producer of silver-manganese ore.	161
1085	Nettie mine (Nettie-Hibernia, Nettie-Hubernic)	46-00-48	112-34-38	Zn, Ag, Mn, Pb, Au	Underground workings follow veins in shear zones in monzogranite (Kmg). Very large producer of zinc-silver ore.	57, 100, 153, 161
1086	Nipper mine	46-01-08	112-31-40	Cu, Ag, Pb, Zn, W, As	Underground workings along veins in shear zones in monzogranite (Kmg). Small producer of copper-silver ore.	57, 161
1087	Northwestern mine	46-00-55	112-29-00	Cu, Ag	Underground workings along veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of copper-silver ore.	161
1088	Norwich-Plutus group	46-01-05	112-34-43	Mn, Ag, Pb, Zn, Mo, Au, Cu	Underground workings follow four veins in shear zones in monzogranite (Kmg). Small producer of manganese ore.	26, 144, 150, 153
1089	Number Three mine	46-00-44	112-30-38	Cu, Ag, Au, As	Underground workings follow veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of copper ore. Now part of the Berkeley Pit.	161
1090	Olsen Fraction mine	46-01-54	112-35-13	Mn	Underground workings along veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of manganese ore.	144, 161
1091	Original mine	46-01-02	112-32-13	Cu, Ag, Zn, F, As	Shaft, more than 3,000 ft deep, and underground workings along three veins in shear zones in monzogranite (Kmg). Very large producer of copper-silver ore.	57, 73, 95, 109, 117, 136, 161
1092	Orphan Girl mine	46-00-37	112-33-52	Ag, Pb, Zn, Mn, Cd	Shaft, more than 2,500 ft deep, and underground workings along veins in shear zones in monzogranite (Kmg). Very large producer of silver-lead-zinc ore.	57, 95, 144, 153, 161

1093	Otisco mine	46-00-31	112-31-27	Ag, Pb, Zn, Cu, Au	More than 2,600 ft of underground workings follow veins in shear zones in monzogranite (Kmg). Large producer of silver-lead-zinc ore.	153, 161
1094	Parnell mine	46-01-14	112-31-17	Cu, Ag, Au, As	Shaft, with numerous working levels, along three veins in shear zones in monzogranite (Kmg). Now part of Berkeley Pit. Medium producer of copper-silver ore.	57, 161
1095	Parrot mine	46-00-58	112-31-45	Cu, Ag, As	Shaft, 2,000 ft deep, with 12 working levels along two main veins in monzogranite (Kmg). Very large producer of copper and silver.	57, 111, 117, 136, 161
1096	Pennsylvania mine	46-00-52	112-30-48	Cu, Ag	Underground workings on veins in monzogranite (Kmg). Very large producer of copper-silver ore.	57, 161
1097	Philadelphia mine	46-00-44	112-34-51	Ag, Mn, Pb, Zn	Underground workings on veins in monzogranite (Kmg). Producer of unknown quantity of ore.	161
1098	Poulin, Stella, and Buffalo mine group	46-01-22	112-32-08	Cu, Ag, Zn, Au, As	Shaft, 1,200 ft deep, with several working levels along veins in shear zones in monzogranite (Kmg). Very large producer of copper-silver-zinc ore.	57, 161
1099	Preferencia, Green Mountain, Alliance group	46-01-25	112-31-39	Cu, Ag, Au, As	Underground workings along veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of copper ore.	161
1100	Prospector mine	46-00-38	112-34-23	Zn, Ag, Pb, Mn, Au	Underground workings follow veins in shear zones in monzogranite (Kmg). Medium producer of zinc, silver, lead, and manganese.	161
1101	Reins Copper Co. mine	46-01-16	112-30-13	Cu, Ag, Zn, Au	Shaft, greater than 800 ft deep, along veins in shear zones in monzogranite (Kmg). Medium producer of copper-silver ore.	57, 161
1102	Saint Patrick mine	46-00-30	112-34-07	Mn	Underground workings follow veins in shear zones in monzogranite (Kmg). Small producer of manganese ore.	161
1103	Scarfield mine	46-00-28	112-28-50	Cu, Ag, Mo	Underground workings follow veins in shear zones in monzogranite (Kmg). Producer of unknown quantity copper ore.	153, 161
1104	Scotia mine	46-01-30	112-34-56	Mn, Ag	Underground workings follow veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of manganese-silver ore.	144, 153, 161
1105	Self Rising mine	46-00-37	112-34-38	Mn, Ag	Underground workings follow veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of manganese-silver ore.	144, 161
1106	Silver Bow Creek placer (Clark Fork River placer)	46-00-47	112-43-35	Au, Ag	Alluvium (Qs) was mined by ground sluicing. Medium producer of gold and silver.	90

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

Site No.	Site Name (Alternate names)	Latitude North	Longitude West	Commodities Present	Description of Site	Sources of Data
Butte (Summit Valley) district--Continued						
1107	Silver Bow deposits (Bull Moose, Merrimac, Wrong Font, Eva, Superior, Delia, Little Jack)	46-00-20	112-39-05	F, Au, Ag, Ba	Pits and trenches in vein and replacement fluorite deposits in monzogranite (Kmg). Small producer of fluorite.	128, 135
1108	Silver Bow mine	46-00-46	112-30-39	Cu, Ag, Au, As	1,000-ft shaft along veins in shear zones in monzogranite (Kmg). Now part of the Berkeley Pit. Very large producer of copper-silver ore.	57, 161
1109	Silver Cleft mine	46-00-39	112-34-36	Mn	Underground workings follow veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of manganese ore.	144, 161
1110	Silver King mine	46-00-58	112-32-25	Ag, Au, Pb, Zn	Underground workings follow veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of silver-gold ore.	161
1111	Silver Lick mine	46-02-12	112-32-35	Ag, Au, Pb, Be	Shaft along veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of ore.	107, 161
1112	Snowdrift mine	46-02-18	112-32-51	Ag, Mn, Au, Sb	Underground workings along veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of silver-manganese ore.	144, 153, 161
1113	Speculator mine	46-01-33	112-31-07	Cu, Ag	Underground workings on veins in monzogranite (Kmg). Very large producer of copper-silver ore.	57, 161
1114	Springfield mine	46-02-43	112-32-54	Ag, Cu, Au, Pb, Zn, As, Sb	Shaft along veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of ore	161
1115	Stanislas mine	46-00-40	112-32-20	Au, Ag, Mn	Underground workings follow veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of ore.	152
1116	Steward mine	46-01-07	112-32-04	Cu, Ag, Au, Zn, Ba, As, F	Shaft, more than 4,600 ft deep, with many underground levels along veins in shear zones in monzogranite (Kmg). Very large producer of copper ore.	78, 96, 136, 161
1117	Sunset mine	46-02-32	112-27-32	Au, Ag, Pb, Cu	Underground workings follow veins in shear zones in monzogranite (Kmg). Small producer of gold, silver, lead, and copper.	122

1118	Travona mine	46-00-18	112-32-41	Ag, Mn, Zn, Pb, Cu, Au	Underground workings follow veins in shear zones in monzogranite (Kmg). Large producer of silver ore.	57, 100, 117, 144, 153, 161
1119	Unita mine	46-00-36	112-35-13	Mn	Underground workings along veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of manganese ore.	144, 153
1120	Valdemere mine	46-01-57	112-31-42	Ag, Au, Mn, Pb, Zn	Underground workings along veins in shear zones in monzogranite (Kmg). Large producer of silver ore.	57, 100, 144, 153, 161
1121	Wabash mine	46-02-38	112-32-54	Ag	Underground workings on veins in monzogranite (Kmg). Producer of unknown quantity of ore.	161
1122	Wake Up Jim mine	46-01-27	112-31-26	Cu, Ag, Au	Shaft, 1,000 ft deep, with several working levels along veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of copper-silver-gold ore.	161
1123	West Grey Rock mine	46-01-32	112-31-35	Ag, Cu, Zn, As	Underground workings along 5 veins in shear zones in monzogranite (Kmg). Very large producer of silver-copper ore.	57, 136, 161
1124	West Mapleton mine	46-01-03	112-35-12	Mn	Underground workings follow veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of manganese ore.	144
1125	West Nettie mine	46-00-47	112-34-59	Au, Ag	Underground workings along veins in shear zones in monzogranite (Kmg). Producer of unknown quantity of gold-silver ore.	144, 161
1126	Yankee Doodle Creek placer	46-02-56	112-30-12	Au, Ag	Placers in alluvium (Qs) were mined by ground sluicing. Small producer of gold and silver.	33, 90

Pipestone district

Northern part of this district is in Butte quadrangle and the southern part is in Dillon quadrangle. District is underlain by plutonic rocks of Late Cretaceous Boulder batholith which include monzogranite, aplite, alaskite, and pegmatite. Several northeast-trending normal faults are in district. Mineral deposits are in sulfide-bearing quartz veins, in scheelite- and molybdenite-bearing veins, and in shear zones. Mine in northern part of the district was a small producer of silver, gold, and lead.

1127	Nellie mine (Mascot)	46-02-02	112-24-22	Ag, Au, Pb	Six adits and two shafts, with workings totaling greater than 5,700 ft, along veins in shear zones in monzogranite (Kmg). Small producer of silver, gold, and lead.	122
1128	Niki mine (Lonnie Stevens)	46-01-05	112-24-37	Au, W, Mo	Several adits and pits along veins in shear zones that contain disseminated scheelite and molybdenite in monzogranite (Kmg). Production not determined.	144, 156

Table 1.--Location and description of mines and prospects, Butte 1°x2° quadrangle, Montana (continued)

CODES USED IN TABLE 1

LIST OF COMMODITIES

Code	Commodity	Code	Commodity	Code	Commodity	Code	Commodity
Ag	SILVER	Cor	CORUNDUM (GEM SAPPHIRE)	Nb	NIOBIUM	St	BUILDING STONE
Al	ALUMINUM	Cr	CHROMIUM	P	PHOSPHATE	Ta	TANTALUM
As	ARSENIC	Cu	COPPER	Pb	LEAD	Te	TELLURIUM
Au	GOLD	F	FLUORINE	Pgm	PLATINUM GROUP MINERALS	Th	THORIUM
B	BORON	Fe	IRON	Ram	RADIOACTIVE MINERALS	U	URANIUM
Ba	BARIUM	Hg	MERCURY	Ree	RARE-EARTH ELEMENTS	Vm	VERMICULITE
Be	BERYLLIUM	Kyn	KYANITE	Sb	ANTIMONY	W	TUNGSTEN
Bi	BISMUTH	La	LANTHANUM	Sil	SILICA (INCLUDES INDUSTRIAL SILICA, QUARTZ CRYSTAL, AND SMELTER FLUX)	Y	YTTRIUM
Cd	CADMIUM	Ls	LIMESTONE	Sn	TIN	Zn	ZINC
Cly	CLAY MINERALS	Mn	MANGANESE			Zr	ZIRCONIUM
Co	COBALT	Mo	MOLYBDENUM				

FORMATION SYMBOLS

SEDIMENTARY AND VOLCANIC ROCKS	
Symbol	Age and description
	<u>Quaternary</u>
Qs	Surficial deposits
	<u>Tertiary</u>
Ts	Sedimentary deposits and rocks
Trv	Rhyolitic volcanic rocks; includes rhyolitic, quartz latitic, and andesitic volcanic rocks, plugs, and dikes
Tab	Andesitic and basaltic volcanic rocks
Tlc	Lowland Creek Volcanics
	<u>Tertiary or Cretaceous</u>
TKab	Andesitic and basaltic volcanic rocks
	<u>Cretaceous</u>
Kem	Elkhorn Mountains Volcanics
Ks	Sedimentary rocks, undivided
Kb	Blackleaf Formation
Kk	Kootenai Formation
	<u>Jurassic</u>
Js	Sedimentary rocks, undivided
Je	Ellis Group; includes Swift, Reiridon, and Sawtooth Formations
	<u>Permian</u>
Pp	Phosphoria Formation
	<u>Pennsylvanian</u>
IPq	Quadrant Quartzite
	<u>Permian, Pennsylvanian, Mississippian, and Devonian</u>
PDs	Sedimentary rocks, undivided
	<u>Pennsylvanian and Mississippian</u>
IPMs	Snowcrest Range Group
	<u>Mississippian</u>
Mm	Madison Group: includes Mission Canyon Limestone and Lodgepole Limestone
	<u>Devonian</u>
Dj	Jefferson Formation
Dm	Maywood Formation
	<u>Cambrian</u>
Es	Sedimentary rocks, undivided
Erl	Red Lion Formation
Eh	Haskmark Formation
Em	Meagher Limestone
Esh	Silver Hill Formation
Ef	Flathead Quartzite

SEDIMENTARY AND VOLCANIC ROCKS (continued)	
Symbol	Age and description
	<u>Middle Proterozoic</u>
Ymi	Missoula Group: includes Pilcher Quartzite; Garnet Range and McNamara Formations; Bonner Quartzite; Mount Shields, Shepard, and Snowslip Formations
Ypi	Pilcher Quartzite
Ygr	Garnet Range Formation
Ybo	Bonner Quartzite
Yms	Mount Shields Formation
Ysn	Snowslip Formation
Yc	Middle Belt carbonate: includes Wallace and Helena Formations
Yh	Helena Formation
Yw	Wallace Formation
Yra	Ravalli Group: includes Empire, Spokane, and Greyson Formations
Ye	Empire Formation
Ys	Spokane Formation
Yg	Greyson Formation

INTRUSIVE ROCKS

Symbol	Age and description
	<u>Tertiary</u>
Td	Dacite
Tmg	Granitic rocks: includes Lost Creek and Hearst Lake stocks and Pintlar Creek batholith
	<u>Tertiary or Cretaceous</u>
TKmg	Granitic rocks: includes Welcome Creek stock
TKgd	Granodioritic rocks: includes Gird Point, Maloney Basin, Wallace Creek, and Beaverhead Mountain stocks
TKgb	Gabbroic and dioritic rocks
TKa	Alkalic rocks: includes Cretaceous Skalkaho Mountain stock
	<u>Cretaceous</u>
Ka	Aplite, alaskite, and pegmatite
Kmg	Granitic rocks: includes La Marche Creek, Mill Creek, and Broadwater stocks; Butte Quartz Monzonite and other units of the Boulder batholith; units of the Idaho and Sapphire batholiths and the Big Spring Creek stock; and the Mount Powell batholith
Kgd	Granodioritic rocks: includes units of the Boulder, Idaho, and Sapphire batholiths; Philipsburg batholith; Short Peak, Royal, Marysville, Granite Butte, Dalton Mountain, Ogden Mountain, Mineral Hill, Blackfoot City, Garnet, Henderson Creek, Cable, and Miners Gulch stocks
Kd	Diorite and diorite porphyry; andesite and andesite porphyry
Kmd	Monzodioritic and monzonitic rocks: includes Storm Lake and Racetrack Creek intrusives and Scratchgravel Hills stock
	<u>Late or Middle Proterozoic</u>
ZYg	Gabbroic and dioritic rocks

Table 2.--Production data for mining districts and geographic areas, Butte 1°x2° quadrangle, Montana

[Dashes (---) indicate no data available]

NAME OF DISTRICT OR AREA	Au (X1000 oz)	Ag (X1000 oz)	Cu (X1000 lb)	PRODUCTION		Value (X\$1000) ^{1/}	Years	Accuracy	SOURCES OF DATA	TOTAL VALUE (X\$1000)
				Pb (X1000 lb)	Zn (X1000 lb)					
Alps district	0.75	0.36	1.00	0.80	0.70	26.2	1932-1951	Recorded	153	26.20
Amazon district	1.04	70.60	49.45	493.95	22.54	119.9	1902-1957	Recorded	122	119.86
Anaconda Range area	0.01	---	---	---	---	0.4	1934	Recorded	90	0.35
Austin district	---	---	---	---	---	327.0	Pre-1928	Estimated	106	338.73
	0.44	0.44	0.26	7.73	---	11.7	1928-1944	Recorded	90, 153	
Basin district	---	---	---	---	---	8,000.0	Pre-1902	Estimated	106	15,609.65
	88.14	2,426.52	2,001.85	6,758.47	3,715.16	7,609.6	1902-1957	Recorded	122	
Bear Creek area	430.00	---	---	---	---	10,000.0	1865-1950	Estimated	35, 90, 102	10,000.00
Big Blackfoot district	4.45	2.57	0.40	13.94	0.40	133.5	1902-1962	Recorded	90, 91	133.48
Big Foot district	0.70	12.86	12.75	320.83	137.96	67.4	1920-1957	Recorded	122	67.41
Black Pine district	2.82	2,433.60	479.93	262.89	27.92	2,094.3	1888-1964	Recorded ^{2/}	44, 83	22,094.33
	---	---	---	---	---	20,000.0	1974-1983	Estimated	153	
Blackfoot River area	0.78	0.29	0.09	12.10	---	26.9	1910-1946	Recorded	90, 91	26.94
Blue-Eyed Nellie district	---	600.00	---	9,000.00	---	1,000.0	1890-1906	Estimated	36	1,000.00
Boulder district	---	---	---	---	---	12,794.0	Pre-1902	Estimated	72	17,449.58
	46.04	3,531.59	2,604.01	30,481.57	23,897.30	4,655.6	1902-1957	Recorded ^{3/}	122	
Butte district	72.57	---	---	---	---	1,500.0	1864-1867	Estimated	96	>6,001,500.00
	2,779.20	679,068.10	18,402,980.00	854,797.00	4,909,202.00	>6,000,000.0	1875-1973	Recorded ^{4/}	96	
Clancy district	---	---	---	---	---	500.0	1865-1907	Estimated ^{5/}	106	2,787.70
	60.31	235.24	11.46	473.10	180.74	2,287.7	1902-1957	Recorded	90, 122	
Clinton district	---	---	---	---	---	185.0	Pre-1934	Estimated	98, 134	248.23
	0.21	31.77	226.55	36.64	3.20	63.2	1934-1955	Recorded	134	
Coloma district	22.29	21.95	13.50	18.86	0.80	545.4	1897-1956	Recorded	35, 90, 134	645.43
	---	---	---	---	---	100.0	1956	Recorded ^{6/}	153	
Copper Cliff district	0.26	0.57	110.90	---	---	20.2	1891-1945	Recorded	35	20.24

Table 2.--Production data for mining districts and geographic areas, Butte 1"x2" quadrangle, Montana (continued)

NAME OF DISTRICT OR AREA	PRODUCTION					Value (X\$1000) ^{1/}	Years	Accuracy	SOURCES OF DATA	TOTAL VALUE (X\$1000)
	Au (X1000 oz)	Ag (X1000 oz)	Cu (X1000 lb)	Pb (X1000 lb)	Zn (X1000 lb)					
Deer Lodge Valley area	4.00	---	---	---	---	80.0	1867-1869	Estimated	90	80.00
Dog Creek area	4.61	0.03	0.16	---	---	95.2	1911-1936	Recorded ^{7/}	90, 91, 114	95.19
Douglas Creek area	---	---	---	---	---	695.0	1930-1951	Recorded ^{8/}	153	695.00
Dunkleberg district	---	---	---	---	---	200.0	Pre-1917	Estimated ^{9/}	99	
	0.20	199.89	221.01	3,571.72	5,148.10	950.0	1912-1957	Recorded	113, 153	1,150.00
Elk Creek area	75.00	---	---	---	---	2,600.0	1886-1966	Estimated ^{10/}	90, 98, 153	2,600.00
Elliston district	---	---	---	---	---	2,550.0	Pre-1909	Estimated	106	
	9.70	175.94	103.33	1,914.08	251.53	608.8	1909-1968	Recorded	91	3,158.80
Emery district	4.29	---	---	---	---	75.0	1872-1892	Estimated	106	
	31.38	865.98	42.97	2,389.75	693.95	1,884.3	1902-1966	Recorded	91	1,959.30
Finn district	85.00	---	---	---	---	1,500.0	1865-1869	Estimated	90	
	10.12	1.02	---	---	---	294.5	1903-1957	Recorded	91	1,794.50
Flint Creek Range area	5.70	---	---	---	---	100.0	Unknown	Estimated	90, 47	
	0.54	0.26	0.17	---	---	12.3	1926-1937	Recorded ^{11/}	90, 91	112.28
Frog Pond Basin district	1.10	4.35	2.41	83.72	22.40	31.1	1907-1937	Recorded	157	31.08
Garnet district	43.66	---	---	---	---	1,400.0	Pre-1917	Estimated ^{12/}	98	
	49.26	46.06	100.67	11.74	1.74	1,654.9	1917-1952	Recorded	153	3,054.85
Garnet Range area	---	---	---	---	---	50.0	Unknown	Estimated ^{5/,13/}	20, 98, 144	
	0.01	6.49	1.30	3,336.17	26.70	675.7	1932-1956	Recorded ^{14/}	35, 54, 152 90, 134	725.66
Garrison district	---	---	---	---	---	30,000.0	1929-1961	Estimated ^{15/}	114	30,000.00
Georgetown district	493.30	592.69	1,042.62	---	---	11,630.6	1865-1968	Estimated	36, 44	11,630.60
Helena district	1,131.28	65.00	25.00	1,120.00	20.00	23,500.0	1864-1928	Estimated	106	
	147.59	46.52	21.83	515.16	161.20	5,211.6	1931-1953	Recorded	153	28,711.57
Henderson Creek area	56.91	---	---	---	---	1,176.3	1866-1912	Estimated	26, 44	
	22.38	10.00	352.90	0.35	---	1,052.1	1913-1949	Recorded ^{18/}	26, 155	2,228.39

Table 2.--Production data for mining districts and geographic areas, Butte 1°x2° quadrangle, Montana (continued)

NAME OF DISTRICT OR AREA	Au (X1000 oz)	Ag (X1000 oz)	PRODUCTION			Value (X\$1000) ^{1/}	Years	Accuracy	SOURCES OF DATA	TOTAL VALUE (X\$1000)
			Cu (X1000 lb)	Pb (X1000 lb)	Zn (X1000 lb)					
John Long Mountains area	5.00	---	---	---	---	100.0	Unknown	Estimated ^{5/17/}	44, 86, 90, 155	100.00
Johnson Basin district	---	15.00	---	---	---	9.0	Pre-1906	Estimated	36	468.00
	---	---	---	---	---	459.0	1954-1956	Recorded ^{18/}	155	
Lincoln Gulch area	368.42	---	---	---	---	7,000.0	Pre-1900	Estimated	106	7,123.78
	4.04	0.85	0.31	2.00	---	123.8	1909-1951	Recorded	153	
Little Prickly Pear area	33.38	---	---	---	---	690.0	Pre-1927	Estimated	90	694.96
	0.15	---	---	---	---	5.0	1931-1941	Recorded	90	
Lost Creek district	1.99	8.93	0.50	2.00	---	47.1	1865-1968	Estimated	36	47.10
Lowland district	31.42	655.62	---	---	---	1,024.0	Pre-1906	Estimated ^{5/}	72, 122	1,680.25
	20.00	202.06	0.55	---	---	656.3	1906-1941	Recorded	90, 122	
Marysville district	---	---	---	---	---	30,000.0	Pre-1912	Estimated	72, 159	40,407.64
	154.80	---	---	---	---	3,200.0	Pre-1921	Estimated ^{19/}	90	
	262.06	844.08	264.60	3,083.71	406.85	7,207.6	1909-1956	Recorded	90, 153	
Maxville area	---	---	---	---	---	75.0	Pre-1911	Estimated	44	127.08
	0.59	47.07	20.73	63.71	0.40	52.1	1926-1948	Recorded ^{20/}	153	
McClellan Gulch district	340.00	---	---	---	---	7,000.0	1864-1875	Estimated	106	7,000.00
Moose Lake district	1.98	6.02	20.98	0.39	---	111.9	1931-1970's	Estimated ^{5/}	40, 153, 157	111.91
North Boulder Mountains area	0.01	2.98	0.27	78.03	1.28	7.7	1908-1950	Recorded	91, 122	7.70
Olson Gulch district	2.18	38.41	4.00	---	---	83.6	1865-1968	Estimated ^{21/}	36, 44, 155	83.59
Ophir district	169.30	---	---	---	---	3,500.0	Pre-1900	Estimated	106	4,171.88
	15.38	189.76	591.78	197.40	2.77	671.9	1902-1968	Recorded ^{22/}	91, 156	
Oro Fino district	---	---	---	---	---	350.0	Pre-1933	Estimated	106	350.00
Philipsburg district	188.68	39,000.00	---	---	---	39,000.0	Pre-1910	Estimated	44	91,019.64
	70.48	17,386.18	3,700.87	18,059.94	54,366.43	52,019.6	1910-1960	Recorded ^{23/}	153	

Table 2.--Production data for mining districts and geographic areas, Butte 1"x2" quadrangle, Montana (continued)

NAME OF DISTRICT OR AREA	Au (X1000 oz)	Ag (X1000 oz)	Cu (X1000 lb)	PRODUCTION Pb (X1000 lb)	Zn (X1000 lb)	Value (X\$1000) ^{1/}	Years	Accuracy	SOURCES OF DATA	TOTAL VALUE (X\$1000)
Pioneer district	216.20 65.52	---	---	---	---	4,000.0 2,051.6	Pre-1897 1902-1968	Estimated Recorded	105 91	6,051.62
Pipestone district	0.05	8.05	0.18	---	---	5.0	1911-1940	Recorded	122	5.00
Princeton district	50.00 11.69	---	---	---	---	1,250.0 620.0	Pre-1909 1909-1953	Estimated Recorded ^{24/}	44 114, 153	1,870.00
Racetrack district	3.67	0.45	0.08	---	---	75.8	1902-1968	Recorded	91	75.75
Red Lion district	24.85	12.23	1.49	---	---	841.2	1865-1981	Estimated	36, 39	841.15
Rimini district	9.98 50.00	515.62 ---	121.79 ---	5,836.01 ---	965.71 ---	6,416.0 1,372.2 20,000.0	Pre-1909 1909-1957 1987-1989	Estimated Recorded Estimated	106 153 81, 93	27,788.20
Rock Creek area	3.16	0.71	0.13	---	---	101.4	1914-1942	Recorded ^{25/}	21, 153	101.39
Rose Mountain district	4.65	0.68	0.10	3.00	---	114.0	1896-1951	Estimated	90, 153	114.00
Sapphire Mountains area	0.11	5.97	0.20	2.16	---	15,000.0	Unknown	Estimated ^{8/28/}	153, 157	15,000.00
Scratchgravel Hills area	---	---	---	---	---	500.0 972.5	Pre-1914 1914-1955	Estimated ^{8/} Recorded	106 153	1,472.49
Sevemile Creek area	58.06	---	---	---	---	1,200.0	Pre-1933	Estimated	106	1,200.00
Seven-Up Pete Gulch area	---	---	---	---	---	25.0	1920-1940	Estimated ^{8/}	92, 106	25.00
Silver Lake district	0.13	50.00	2.50	95.00	55.00	477.1	1884-1974	Estimated ^{27/}	36, 39, 44, 155	477.06
South Boulder Mountains area	1.05	22.00	2.80	5.52	---	47.5	Unknown	Estimated ^{8/28/}	39, 90, 122	47.50
Stemple-Gould district	---	---	---	---	---	2,920.0 2,364.2	1884-1914 1917-1948	Estimated Recorded	106 92	5,284.20
Stemwinder Hill area	1.21	65.06	---	1,265.71	43.40	118.0	1895-1920	Estimated	106	118.00
Top O'Deep district	---	---	---	---	---	50.0	Pre-1917	Estimated	98	50.00

Table 2.--Production data for mining districts and geographic areas, Butte 1°x2° quadrangle, Montana (continued)

NAME OF DISTRICT OR AREA	PRODUCTION					Value (X\$1000) ^{1/}	Years	Accuracy	SOURCES OF DATA	TOTAL VALUE (X\$1000)
	Au (X1000 oz)	Ag (X1000 oz)	Cu (X1000 lb)	Pb (X1000 lb)	Zn (X1000 lb)					
Welcome Creek district	1.47	---	---	---	---	30.5	1890-1941	Estimated	82, 90	30.50
Wickes district	---	---	---	---	---	42,646.0	1866-1901	Estimated ^{2/}	72, 106	
	30.73	3,472.68	4,880.71	27,254.78	9,717.80	7,495.5	1902-1957	Recorded ^{29/}	122	
	172.20	2,500.00	---	40,000.00	70,400.00	75,000.0	1987-1989	Estimated	124, 125, 126	125,141.47
Wolf Creek district	---	---	---	---	---	50.0	1890-1933	Estimated	106	
	0.01	0.48	2.29	1.83	---	4.3	1934-1948	Recorded	153	54.25
TOTALS	8,161.51	756,308.95	18,420,667.26	1,013,045.18	5,079,488.43	>6,497,736.4				>6,497,736.45

^{1/} Actual recorded value at time of production or estimated value calculated from recorded or estimated quantity of metal produced and average metal prices during the years of production.

^{2/} Minor amount of tungsten also produced.

^{3/} Includes production of 150 tons of uranium-silver ore.

^{4/} Value includes production of 3,702,787,341 lb manganese; 4,306,156 lb cadmium; 4,042,663 lb bismuth; 316,855 lb selenium; 237,256 lb tellurium; and 9,456,105 dry tons sulfuric acid.

^{5/} Estimated by authors based on best available data. Other estimates are from sources of data listed.

^{6/} Includes production of 10,000 tons barite.

^{7/} Minor amounts of phosphate ore and limestone also produced.

^{8/} Value of phosphate ore produced.

^{9/} Value based on an estimated production of silver-lead ore.

^{10/} Includes an estimated production of 100,000 tons barite.

^{11/} Minor quantities of manganese, tungsten, and silica also produced.

^{12/} Value based on estimated production of gold-silver-copper ore.

^{13/} Value based on estimated small production of gold, silver, lead, copper, and limestone.

^{14/} Includes production of 2,532 tons manganese ore.

^{15/} Value based on an estimated 7.84 million tons phosphate ore.

^{16/} Includes production of 141,884 lb contained tungsten.

^{17/} Includes small production of silver, copper, and tungsten.

^{18/} Includes production of 121,329 lb contained tungsten.

^{19/} Placer production only.

^{20/} Includes production of 1,320 tons phosphate ore.

^{21/} Includes small production of iron and tungsten.

^{22/} Includes production of 1,760 lb contained tungsten.

^{23/} Includes production of 976,595 tons manganese ore.

^{24/} Includes production of 6,259 tons phosphate ore.

^{25/} Large quantities of sapphires of unknown value have also been produced. Clabaugh (1952) estimated that more than \$1 million in sapphires were produced during 1893-1943.

^{26/} Includes an estimated very large production of fluorite.

^{27/} Includes production of 91,766 lb contained tungsten.

^{28/} Small quantities of sapphires also produced.

^{29/} Includes small production of manganese and uranium.

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Table 3.--Mineral deposit types and frequency of each type,
Butte 1°x2° quadrangle, Montana

Deposit type	Number of sites
1. Vein and replacement base and precious metals	792
2. Placer gold/tungsten/sapphire	142
3. Porphyry or stockwork copper/molybdenum/tungsten	9
4. Skarn tungsten/gold/copper	41
5. Stockwork or disseminated gold/silver	5
6. Stratabound copper/silver	9
7. Vein and replacement manganese	42
8. Vein and replacement tungsten	17
9. Stratabound phosphate	21
10. Vein barite	10
11. Vein and replacement fluorite	4
12. Miscellaneous nonmetallic deposits--limestone, dolomite, silica, clay, vermiculite	23
13. Miscellaneous metallic deposits--vein uranium, bog copper/manganese, vein and pegmatite beryllium	13
TOTALS-----	1128

Table 4.--Alphabetical index of site names, Butte 1°x2° quadrangle, Montana

SITE NAME	SITE NUMBER
ADA MINE	793
ADALINE MINE	15
ADAMS MINE	995
AGNOSTIC MINE	996
AJAX MINE (OPHIR DISTRICT)	581
AJAX MINE (SCRATCHGRAVEL HILLS AREA)	634
ALABAMA MINE	41
ALADDIN MINE	16
ALBION MINE	272
ALDER GULCH PLACER	146
ALICE LODE	721
ALICE MINE	997
ALLEY MINE	722
ALPORT MINE	794
ALPS MINE	171
ALTA MINE	868
ALTONA MINE	998
AMAZON MINE (RACETRACK DISTRICT)	323
AMAZON MINE (AMAZON DISTRICT)	905
AMBROSE CREEK PEGMATITES	88
AMERICAN BEAUTY PROSPECT	184
AMERICAN FLAG MINE	723
AMERICAN GULCH PLACER	530
AMSELEY MINE	147
AMY SILVERSMITH MINE	999
ANACONDA, NEVERSWEAT, ST. LAWRENCE GROUP	1000
ANDERSON MINE (BROCK MINE, WARM SPRINGS, OPEN-CUT MINES)	82
ANDERSON MINE	1001
ANDERSON PROSPECT (FROG POND BASIN DISTRICT)	122
ANDERSON PROSPECT (STEMWINDER HILL AREA)	665
ANNA R. AND HATTIE M. MINE	693
ANNIE CLAIM	148
ANNIE MARONY MINE (CLIMAX MINE, MARONY MINE)	328
ANSELMO MINE	1002
APOLLO MINE (APPOLLO)	795
ARGO MINE	172
ARGONNE MINE	764
ARGUS MINE	943
ARIADENE CLAIM	633
ARIADNE MINE	869
ARKANSAW MINE	42
ARMADA PROSPECT	43
ARMSTRONG MINE	724

ARNOLD MINE (BIELLENBERG, BOULDER ORES, STRATEGIC, SNOWSHOE)	582
ARROWHEAD AND SOUTH AMERICA PROSPECT	185
ATLANTIC MINE	1003
AURORA MINE	796
AUSTRALIAN MINE	906
BADGER MINE	1004
BAGGS CREEK SAPPHIRE DEPOSIT	944
BAKAMA MINE	797
BAKER AND SULLIVAN MINE	4
BALD BUTTE MINE	557
BALDY SMITH MINE	624
BALLARD HILL PLACERS (BALLARD MINE, JOB'S POINT)	242
BALTIMORE MINE	920
BANKER MINE (BRYAN AND BANKER CLAIM)	273
BANNER MINE	136
BARBARA ANN CLAIM	137
BARNES MINE (NELLY CLAIMS, COPPER QUEEN, SNOW STORM, BLACK BEAR)	306
BASIN BELL MINE (LATSCH MINE)	798
BASIN CREEK PLACER	799
BASIN MINE	329
BASIN AND QUARTZ CREEK PLACERS	121
BASIN QUARTZ QUARRY (BASIN BLOWOUT)	800
BATTERTON BAR PLACER	243
BEAR CREEK PLACERS	81
BEAR AND FLOAT PROSPECT	174
BEATRICE MINE	725
BEAVERTOWN COPPER-MOLYBDENUM PROSPECT	870
BEE BEE NO. 1 PROSPECT	89
BELL BOY MINE	558
BELL MINE (BASIN DISTRICT)	801
BELL MINE (EMERY DISTRICT)	945
BELLAIRE MINE	219
BELLEVIEW MINE	17
BELMONT MINE (MARYSVILLE DISTRICT)	559
BELMONT MINE (BUTTE DISTRICT)	1005
BEN G. PROSPECT	424
BENTZ MINE	90
BERKELEY PIT	1006
BERNARD MINE	330
BERTHA GROUP	1007
BERTHA MAY MINE	946
BERTHA MINE	871
BET CLAIMS	116
BETSY ROSS MINE (1900 GROUP)	726
BIG BEAR PROSPECT	411
BIG DICK MINE (EVENING STAR)	694
BIG FOOT CREEK PLACER	989

BIG FOUR GROUP (INCLUDES HOOSIER BOY, BIG FOUR, TERROR, NICKEL PLATE, SEARCHLIGHT, AND AJAX)	990
BIG HORN CALCIUM QUARRY	5
BIG INDIAN MINE	674
BIG OX MINE	537
BIG SIX PROSPECT (ST. TUNG)	470
BIG SPRINGS CREEK PLACER	91
BILK AND WEASEL GULCH PLACERS	72
BILLIE GOAT MINE	187
BIRDIE MINE	1008
BISMARCK MINE	907
BISSONETTE MINE (CHAMPION, LIBERTY)	553
BLACK BEAR MINE	802
BLACK CHIEF IRON MINE	412
BLACK JACK MINE	695
BLACK MOON CLAIM	434
BLACK PINE MINE (COMBINATION MINE)	175
BLACK TRAIL PROSPECT	188
BLACK WARRIOR GROUP	1009
BLACK-EYED MAY MINE	947
BLACKBIRD GROUP (WICKES-CORBEN, WICKES MANGANESE PROPERTY)	872
BLACKBIRD MINE	684
BLACKFEET NOS. 1 AND 3 CLAIMS	696
BLACKFOOT MINE (BLACKFOOT GOLD MINE)	493
BLACKFOOT MINE (BIG BLACKFOOT MINE)	512
BLACKMAIL MINE	331
BLACKSHIRT PROSPECT	
BLACKTAIL MINE (LINTON MINE)	6
BLIZZARD MINE	873
BLOOMINGTON MINE	274
BLUE BELL MINE (LEONARD MINE) (COPPER CLIFF DISTRICT)	32
BLUE BELL MINE (DOUGLAS CREEK AREA)	307
BLUE BELL MINE (DOG CREEK AREA)	613
BLUE BIRD COPPER AND SILVER MINING CO. MINE	635
BLUE BIRD MINE (PRINCETON DISTRICT)	275
BLUE BIRD MINE (SCRATCHGRAVEL HILLS AREA)	636
BLUE BIRD MINE (WICKES DISTRICT)	874
BLUE BIRD MINE (BLUEBIRD) (BUTTE DISTRICT)	1010
BLUE BOTTLE PROSPECT	400
BLUE CLOUD MINING CO. PLACER	667
BLUE CLOUD PROSPECT	666
BLUE JAY MINE (RED BIRD MINE)	625
BLUE MOON PROSPECT	44
BLUE STREAK NO. 2 PROSPECT	257
BLUE-EYED MAGGIE MINE	948
BLUE-EYED NELLIE CREEK QUARRY	407
BLUE-EYED NELLIE MINE	408
BLUEBIRD CLAIM	189
BLUEBIRD MINE	697

BLUEBIRD PROSPECT	138
BLUESTONE MINE	875
BM-COR PROSPECT (TOLEAN PROSPECT)	186
BOB INGERSOL MINE	908
BOEING PROSPECT	
BOHRER MINE	7
BONANZA JACK MINE	803
BONANZA MINE (SCRATCHGRAVEL HILLS AREA)	637
BONANZA MINE (EMERY DISTRICT)	949
BOOMERANG GULCH PLACER	921
BOSTON MINE (HARTFORD AND GOLDEN ANGEL (KLONDIKE) CLAIMS)	73
BOULDER CHIEF MINE	804
BOULDER MINE	805
BOULDER RIVER PLACER	806
BOULDER VESTAL MINE	807
BOUVARD LODGE CLAIM	220
BRESNAHAN AND FENNER PROSPECT	413
BREWSTER CREEK PLACER	149
BRILLIANT MINE	1011
BROKEN BOTTLE PROSPECT (CONGDON MINE)	92
BRONZE LODGE	377
BROOKLYN MINE (PIERRE MINE, S. BROOKLYN MINE) (PRINCETON DISTRICT)	276
BROOKLYN MINE (ELLISTON DISTRICT)	698
BROWN SILICA DEPOSIT	766
BROWN'S GULCH PLACER	1012
BROWN'S QUARRY	409
BRYANT MINE (LADY BRYANT, SEAL ROCK)	332
BUCKEYE MINE (BOSTON MINE)	808
BUFFALO CREEK PLACER (WEBER PLACER)	765
BUFFALO GULCH PLACER	531
BULL MOOSE MINE	950
BULLION MINE (ELLISTON DISTRICT)	699
BULLION MINE (BASIN DISTRICT)	809
BUMBLE BEE MINE (MORNING STAR)	583
BUNKER HILL MINE (HENDERSON CREEK AREA)	177
BUNKER HILL MINE (RIMINI DISTRICT)	727
BURLINGTON MINE	1013
BUTCHERKNIFE CREEK PLACER	638
BUTTE-ELK PARK EXTENSION MINE (ELK PARK)	966
BUTTE AND PHILADELPHIA LADY MINE (LEITH-CADY, LEITH MINES)	810
BUTTERFLY PROSPECT	584
BUTTERFLY QUARTZ LODGE	482
C.D. HURD PLACER	494
CABLE CREEK PLACER (PAREGON, BOCA)	437
CABLE MINE	435
CABLE PLACER	436
CADGIE TAYLOR MINE	333
CALUMET MINE	560

CAMBERS MINE	1014
CAMERON MINE	414
CANYON CREEK COPPER PROSPECT	538
CANYON CREEK GOLD PROSPECT	539
CANYON CREEK PLACER	540
CAPE NOME MINE (BULLION, MOOSE)	18
CARBONATE KING MINE	685
CARBONATOR PROSPECT	415
CARIBOU CREEK PLACER	481
CARLSON MINE	728
CARLSON PROSPECT (JEFFERSON PROSPECT)	686
CARLSON QUARTZ PROSPECT	687
CAROLINE AND IRON MOUNTAIN CLAIMS	277
CAROLINE AND WILLIAM COLEMAN MINE (COLMAN MINE)	951
CARP MINE (CARPP MINE)	139
CARPENTER CREEK PLACER	585
CASCADE MINE	45
CATARACT CREEK PLACER	811
CHAMPAIGN LODE CLAIM	438
CHAMPION SILVER MINE	980
CHARCOAL MINE (SHAWBUT MINE)	19
CHARTER OAK MINE	700
CHICAGO MINE	334
CHICKEN CREEK PLACER	495
CHIMNEY CREEK PLACER	496
CHINESE DIGGINGS PLACER	
CHLORIDE MINE	8
CLANCY CREEK PLACER	767
CLAREMONT MINE	93
CLARK MINE	701
CLEAR GRIT MINE	1015
CLEVELAND MINE	115
CLEVELAND MINE	909
CLEVELAND SPRING PROSPECT	117
CLIFF MINE	335
CLIFF PROSPECT	425
COLOMA BARITE MINE	34
COLUMBIA MINE (SEVEN-UP PETE GULCH AREA)	516
COLUMBIA MINE (LOWLAND DISTRICT)	984
COLUSA MINE (EAST COLUSA PIT)	1016
COMANCHE MINE (COMANCHE EXTENSION)	336
COME AGAIN MINE	639
COMET MINE	923
COMET PROSPECT	258
COMET AND SPRING CREEK PLACERS	876
COMSTOCK GROUP	924
CONDOR LODES (SILVER RIGHT LODE)	812
CONTINENTAL DEPOSIT	1017
COOK PROSPECT (ARROWHEAD LEASE)	9

COON'S PROSPECT	586
COPPER BELL MINE	20
COPPER CLIFF MINE	33
COPPER CLIFF PROSPECT	952
COPPER CREEK PROSPECT	150
COPPER CZAR MINE	1018
COPPER HILL MINE	627
COPPER JACK MINE	337
COPPER KING PROSPECT	813
COPPER LODGE	278
COPPER LODGE PROSPECT (BONANZA PROSPECT, MANLEY CLAIMS)	190
COPPER NUGGET PLACER	877
COPPER STATE MINE (HOFFMAN PROPERTY)	312
CORRA MINE	1019
CORRAL GULCH MINE (LEU MINE)	768
COTTONWOOD CREEK AND GRAVEL RANGE PLACERS	541
COYLE MINE (JOHN COYLE AND TORRIT CLAIMS)	338
CRACKER MINE (MT. THOMPSON)	814
CREOLE MINE	1020
CRESCENT MINE	815
CROWN MINE	519
CRUSE MINE (BALD MOUNTAIN MINE)	561
CRYSTAL MINE (ST. LAWRENCE, SPARKLING WATER, JACK FRACTION)	816
CRYSTAL MOUNTAIN FLUORSPAR MINE (RETIREMENT GROUP, LUMBERJACK OUTCROPS)	94
CULVER MINE	221
CUMBERLAND MINE	1021
CUSTER MINE	817
CYCLONE MINE (WHIRLWIND)	587
CZARINA MINE (TZARINA)	1022
DAILY MINE (ATLAS, DAILEY)	878
DAILY WEST MINE	818
DAISY MINE	21
DANDY MINE (BIG SIX PROPERTY)	46
DANIEL STANTON MINE (STANTON MINE)	729
DARK HORSE MINE	324
DAVID COPPERFIELD ADIT	879
DEADWOOD GULCH PLACER	588
DECEIVER PROSPECT	191
DEER CREEK MINE	497
DEER CREEK PLACER	498
DEER HUNTER PROSPECT	178
DEERLODGE BASIN PROSPECT	279
DELAWARE MINE	280
DELLA PROSPECT	819
DELTA LODGE CLAIM	378
DENVER MINE	589
DEWEY MINE	47
DG PROSPECTS (DG 1-11 CLAIMS)	281

DIAMOND-BELL MINE	1023
DING BAT MINE	953
DISSETT MINE (RED HILL)	339
DIXIE GROUP	35
DOG CREEK PHOSPHATE	615
DOG CREEK AND TRIBUTARIES PLACER (UNCLE BEN GULCH)	614
DORIS MINE	820
DOUBLE EAGLE PROSPECT	176
DOUGLAS CREEK MINE (NORTHWEST IMPROVEMENT CO. MINE)	308
DOUGLAS MINE	151
DOW CROSSCUT	880
DRUMHELLER MINE (ASTER, HOWARD)	640
DRUMLUMMON MINE	562
DRUMMOND QUARRY (SPRING GULCH MINE)	10
DRY COTTONWOOD CREEK PLACER	968
DRY GULCH PLACER (DRY CREEK, MODESTY CREEK) (FLINT CREEK RANGE AREA)	192
DRY GULCH PLACER (PIONEER DISTRICT)	244
DUMORTIERITE DEPOSIT	821
DURAND MINE	313
DUTRO MINE (OLD DOMINION)	668
E. G. PROSPECT (EAST GOAT MOUNTAIN)	193
EAGLE BIRD MINE	1024
EAGLE CLAIM	314
EARTHQUAKE MINE	563
EAST CONTINENTAL DEPOSIT	1025
EAST GREY ROCK MINE	1026
EAST KATIE MINE (LOT 7 MINE)	822
EASTER MINE	1027
EDELWEISS MINE (ARGENTINE)	881
EDGAR MINE (OMER EDGAR MINE)	309
EIGHT MILE CREEK PLACER	95
ELBA MINE (ELBE)	1028
ELDORADO CLAIM	194
ELDORADO MINE	590
ELDORADO AND PLATEAU MINE	823
ELIZABETH MINE	641
ELK CREEK BARITE MINE (GREENOUGH MINE)	78
ELK CREEK PLACER (ELK CREEK, HYDRAULIC, WARNER, DAVEY, MCKEVITT AND IVERSON PLACERS)	79
ELKADOR MINE (LITTLE NANCY)	882
ELLA MINE (SCRATCHGRAVEL HILLS AREA)	642
ELLA MINE (BUTTE DISTRICT)	1029
ELLISTON PHOSPHATE MINE (LITTLE BLACKFOOT RIVER MINE)	616
ELLISTON QUARRY	617
ELM ORLU MINE	1030
EMERY MINE (CARBONATE HILL MINE)	954
EMMA DARLING MINE	955
EMMA MINE (ANCIENT, BLACK CHIEF)	1031

EMPIRE CREEK PLACER (LOST HORSE CREEK)	564
EMPIRE MINE	565
ENTERPRISE MINE	824
ESMERALDA MINE	591
EUREKA GULCH PLACER	592
EUREKA MINE	730
EVA MAY MINE	825
EVERGREEN MINE	731
FAIRVIEW CLAIM	643
FAIRVIEW MINE (GARNET DISTRICT)	48
FAIRVIEW MINE (COULSON MINE) (OPHIR DISTRICT)	593
FAIRVIEW MINE (BUTTE DISTRICT)	1032
FIELD'S PROSPECT (FIELD'S TUNNEL)	315
FINLEY BASIN PROSPECT	282
FIRST SHOT MINE	826
FLAGSTAFF HILL PROSPECT	340
FLAGSTAFF MINE	594
FLINT CREEK MINE (ALLIANCE MINE)	379
FLINT CREEK PLACER	152
FLORA MINE	702
FOREST MINE (FORREST MINE)	769
FOREST ROSE MINE (SIMMER JACK)	222
FOURTH OF JULY MINE	49
FOX PROSPECT	426
FRANKLIN MINE (SAM GATY, DOCTOR STEELE)	644
FRANZ PROSPECT	153
FREDONIA MINE	1033
FREE COINAGE MINE (LITTLE ALMA MINE)	770
FREE ENTERPRISE MINE (SILVER BELL)	925
FREE SPEECH MINE (FREE SPEECH NO. 1 MINE)	732
FRENCH GULCH PLACER	245
FRENCHMAN'S PROSPECT	1
FROHNER MINE	771
G. M. PROSPECT	195
G. WASHINGTON MINE (MEMBER OF PRESIDENTS)	772
GAGNON MINE	1034
GALENA GULCH PLACER	926
GARIBALDI MINE	1035
GEM MOUNTAIN SAPPHIRE MINE (CHAUSSEE SAPPHIRE MINE)	120
GENERAL HARRIS PROSPECT	883
GENERAL HARRISON MINE	645
GENERAL WASHINGTON PLACER	179
GENEVA MINE	1036
GEORGE MINE	401
GEORGETOWN PLACERS	439
GIMLET MINE	83
GIRD CREEK PROSPECT	310
GLENBEG MINE (GLENBERG)	884
GLENGARRY MINE	1037

GOAT MOUNTAIN VEIN	283
GOLCONDA MINE (GOLDEN ASSETS)	885
GOLD CANYON CREEK PLACER	618
GOLD COIN MINE	440
GOLD CREEK PLACER	259
GOLD CREEK PLACER (BLUE JAY)	520
GOLD DOLLAR MINE	483
GOLD HILL MINE (PRINCETON DISTRICT)	284
GOLD HILL MINE (BUTTE DISTRICT)	1038
GOLD LEAF MINE	74
GOLD REEF MINE	285
GOLDEN ANCHOR MINE	703
GOLDEN CROWN MINE	646
GOLDEN EAGLE MINE	380
GOLDEN JUBILEE MINE	381
GOLDEN POINT MINE	910
GOLDEN THREAD MINE	927
GOLDSMITH MINE	1039
GOPHER MINE	688
GOULD-CORRY LODGE	382
GOULD CREEK PLACER (BLUE STAR)	521
GOWRIE MINE	22
GRANITE BELLE CLAIM	342
GRANITE-BIMETALLIC MINE (BLAINE SHAFT, RUBY SHAFT, GRANITE MOUNTAIN)	341
GRANITE CREEK PROSPECT	286
GRANT AND HARTFORD MINE	50
GRAVELY MINE	84
GRAY EAGLE MINE	928
GREAT EASTERN MINE (CONTACT LODGE, DIAMOND PLACER)	402
GREAT REPUBLIC MINE	1040
GREATER NEW YORK MINE	383
GREEN COPPER MINE	1041
GREEN GOOSE-MOLY HOGAN PROSPECT	96
GREENHORN AND SKELLY CREEK PLACERS (EVANS-JONES PLACER)	628
GREGORY MINE (WICKES DISTRICT)	886
GREGORY MINE (BUTTE DISTRICT)	1042
GREY EAGLE MINE	1043
GREY LEAD MINE	827
GREY ROCK CLAIM (BUNG YOUR EYE)	416
GROUND SQUIRREL MINE	1044
GRUBSTAKE MINE	384
GUERIN LODGE	566
GUY MINE	647
H. L. M. PROSPECT	452
HAMILTON VERMICULITE DEPOSIT (GIRD CREEK PROSPECT)	97
HAMLET MINE	733
HANNAH MINE	385
HAPARANDA MINE (APARANDA)	51

HARD LUCK MINES	704
HARVEY CREEK PLACER	154
HATTA MINE (MAGNET MINE)	223
HATTIE FERGUSON MINE	828
HAWKEYE MINE (JOHN LONG MOUNTAINS AREA)	155
HAWKEYE MINE (BASIN DISTRICT)	829
HAWKEYE, FLORENCE AND JOSEPHINE PROSPECT	260
HEADLIGHT MINE (MOONLIGHT GROUP)	343
HEANEY MINE (FROG POND LODGE)	123
HELENA-JEFFERSON MINE	887
HELENA LIMESTONE MINE	675
HELENA MINE	669
HELENA PLACER	676
HELPER MINE	830
HENDERSON GULCH PLACER	181
HENDERSON GULCH TUNGSTEN PROSPECT	180
HENRY LODGE CLAIM	224
HERCULES MINE	956
HERZER AND GREEN PROPERTY	52
HESPERUS MINE	1045
HIAWATTAHA MINE (HIAWATHA)	831
HIBERNIA MINE	1046
HIDDEN HAND MINE	957
HIDDEN LAKE MINE	386
HIDDEN TREASURE GROUP	23
HIDDEN TREASURE MINE (ALPS DISTRICT)	173
HIDDEN TREASURE MINE (BASIN DISTRICT)	832
HIDDEN TREASURE-RAMONA PROSPECT	196
HIGGINS MINE	499
HIGH ORE CREEK PLACER	929
HIGH ORE MINE (BUTTE DISTRICT)	1047
HIGH ORE MINE (HI ORE, MONTANA CONSOLIDATED) (BOULDER DISTRICT)	930
HITCHCOCK QUARRY	11
HOBBY HORSE MINE	500
HOBO CLAIM (BLUE GROUSE)	24
HOBO MINE (NORTH GRANITE)	344
HOLD FAST-SHORT SHIFT-GOLDENWEDGE MINES	441
HOLIDAY CLAIM	2
HOLMES GULCH PLACER	
HOMER CLAIM	316
HOMESTAKE MINE (DUNKLEBERG DISTRICT)	225
HOMESTAKE MINE (STEMPLE-GOULD DISTRICT)	522
HOMESTAKE MINE (BUTTE DISTRICT)	1048
HOMESTEAD PROPERTY	619
HOPE AND BULLION MINE (BULLION)	931
HOPE GROUP (POTOSI, PORTER, TAKE ALL, FIELD, PRINCE, IMPERIAL, LITTLE EMMA, COMANCHE, CUNO SHAFT, JUBILEE, SHAPLEIGH MINE)	345

HOPEFUL MINE	648
HORSEFLY MINE	734
HORSESHOE CLAIM	888
HORTON MINE (HORSESHOW)	346
HUB CAMP GROUP	705
HUBBARD MINE (MILL TUNNEL)	523
HUDSON GROUP (MONTREAL, HUDSON, AND HONEYCOMB)	554
HUMBOLT MINE	1049
HUMDINGER MINE	532
HUNTER MINE	501
I.X.L. CLAIM	1050
IDA M. MINE	833
IDA MAY MINE	834
IDA MINE	1051
IDAHO MINE	53
IDUNA MINE	1052
ILLINOIS GULCH PLACER	595
INDEPENDENT PROSPECT	678
INDEPENDENCE MINE (FLINT CREEK RANGE AREA)	197
INDEPENDENCE MINE (INDEPENDENT) (BUTTE DISTRICT)	1053
INDEPENDENCE PROSPECT	54
INDIAN HEAD ROCK BARITE DEPOSITS	835
INDIAN MEADOWS PROSPECT	198
INTERNATIONAL MINE	55
IOWA GULCH PLACER	649
IOWA MINE	1054
IRIDESCENT CLAIM	650
IRON CAP MINE	98
IRON MOUNTAIN IRON DEPOSIT	689
ISABELLE QUEEN PROSPECT	347
J.I.C. MINE	1055
JACK PINE MINE (TROUT CREEK, SENECA)	596
JACK POT MINE	25
JACKIE MARIE MINE (SPOKANE MINE)	56
JACKSON MINE	226
JAY GOULD MINE	524
JEFFERSON CREEK PLACER	533
JEFFERSON MINE	287
JETTY MINE (BALKAN LODGE)	471
JIB GROUP (HOPE-KATIE, KATIE EXTENSION)	836
JOHN G. CARLISLE MINE	261
JOHN T. MINE	837
JOHNSON CLAIM	317
JOHNY MINE (JOHNNIE)	735
JOKER PROSPECT	124
JOSEPHINE MINE	838
JULIA MINE (SCRATCHGRAVEL HILLS AREA)	651
JULIA MINE (ELLISTON DISTRICT)	706
JUMBO PROSPECT	839

JUSTICE MINE (CLEMENTHA, CLEMENTH)	736
KADY GULCH MANGANESE DEPOSIT	889
KAIN QUARRY	773
KATIE ALLEN MINE	597
KATY MINE	652
KEEP COOL CREEK PLACER	484
KELLEY MINE	1056
KENT MINE	99
KIMBALL MINES	707
KING COLE MINE (BOULDER-CALIFORNIA)	932
KING SOLOMON MINE	774
KING SOLOMON RIDGE GROUP (HINMAN MINE, FOURTY-NINER, PRESIDENT GROUP)	775
KING TUT MINE	629
KIRBY MINE	958
KIRKENDAL MINE	227
KIT CARSON MINE (LOWLAND DISTRICT)	985
KIT CARSON MINE (BUTTE DISTRICT)	1057
KLONDYKE MINE (KLONDIKE)	840
KOSKI MINE (LOWER KIRKENDAL ADIT)	228
KOSSUTH MINE	1058
KRASNY GULCH PLACER	542
KURT PEAK OCCURRENCE	472
LADY HENNESSEY MINE	841
LADYSMITH MINE	598
LAHEY QUARTZ DEPOSIT	776
LANCASTER PROSPECT	262
LAST CHANCE CLAIM	199
LAST CHANCE GULCH PLACER (ORO FINO, DRY AND GRIZZLY GULCHES)	679
LAST CHANCE MINE (JOHN LONG MOUNTAINS AREA)	156
LAST CHANCE MINE (CHRISTINE MINE) (BIG BLACKFOOT DISTRICT)	502
LAST CHANCE MINE (SEVEN-UP PETE GULCH AREA)	517
LAST CHANCE MINE (BASIN DISTRICT)	842
LAST CHANCE PROSPECT	100
LATE AQUISITION MINE	1059
LAVENA MINE	1060
LEADVILLE MINE	690
LEE MOUNTAIN MINE	737
LEONARD MINE	1061
LETUS NO. 1 LODE CLAIM	387
LEVI BURR MINE	348
LEWIS PROSPECT	933
LEXINGTON GROUP (ALLIE BROWN, WAPPELLO, LA PLATA)	1062
LEXINGTON MINE (SCRATCHGRAVEL HILLS AREA)	653
LEXINGTON MINE (RIMINI DISTRICT)	738
LILA DIXON AND AMERICAN FLAG LODS	388
LILLY-ORPHAN BOY GROUP (LILY-ORPHAN BOY GROUP)	708
LIMESTONE MINE	12
LINCOLN GULCH PLACER	511

LITTLE ANNIE MINE	1063
LITTLE BLACKFOOT RIVER PLACER	620
LITTLE CREEK PLACER	555
LITTLE DAISY MINE (ORIENT, MAGGIE, ALICE)	599
LITTLE DARLING MINE	1064
LITTLE EMMA MINE	349
LITTLE GOLD CREEK PLACER	288
LITTLE LILLY GROUP	739
LITTLE MINA MINE	1065
LITTLE NELL MINE (LITTLE NELLIE)	777
LITTLE OX MINE	567
LITTLE SAMPSON MINE	740
LITTLE SARAH MINE	1066
LITTLE WONDER PROSPECT	101
LIVERPOOL CREEK PLACER	485
LIZZIE MINE (HAYES MINE)	1067
LIZZIE OSBORNE PROSPECT	843
LOEBER MINE	778
LOG CABIN PROSPECT	125
LONDONDERRY MINE (GOLDONNA MINE)	318
LONE EAGLE MINE	890
LOOBY MINE	670
LOST CREEK PLACER (ANTELOPE AND SPRING CREEKS)	403
LOST ONE PROSPECT (CLEAR GRIT)	263
LOTTA TUNNEL (LOTTA MINE)	844
LOWER GOLD CREEK PLACER (CHINA BAR)	246
LOWER PIONEER GULCH PLACER	247
LOWERY MINE	57
LOWLAND CREEK PLACER (KIT CARSON PLACER)	986
LUCKY JOE MINE	741
LUCKY SEVEN CLAIMS	140
LUCKY STAR CLAIM	118
LUKE MINE (MINERAL HILL)	85
LUKE QUARRY	410
LUMP GULCH PLACER	779
LUTZ CREEK PLACER (GOLD BAR, AGNES, TOWNSEND PLACER)	126
LUTZ MINE (GOLD LEAF MINE)	127
LUXEMBURG MINE	442
LYNX MINE	58
M AND L MINE	568
M AND T MINE	141
MADISON GULCH PLACER	534
MADISON MINE (BLACK ROCK)	891
MAGNA CHARTA MINE	1068
MAGONE AND ANDERSON MINE	59
MAGPIE GROUP	654

MAIN FORK OF PIONEER GULCH PLACER (INCLUDES K AND K BAR, KOHRS AND BIELENBERG MINE, AND 1916 PIT)	248
MAIN RANGE BERYL OCCURRENCE	473
MAMMOTH CLAIM	569
MAMMOTH MINE (COLOMA DISTRICT)	36
MAMMOTH MINE (BLACKFOOT RIVER AREA)	486
MAMMOTH MINE (RIMINI DISTRICT)	742
MANHATTAN MINE	845
MANTLE AND SOUTH MANTLE MINE (ROCK OF AGES)	846
MAPLETON MINE	1069
MARCUM HILL MINES	487
MARGARET AND LAKE VIEW PLACERS	474
MARGET ANN MINE	1070
MARGUERITA MINE (MARUERITA MINE)	847
MARIE MINE (PHILIPSBURG DISTRICT)	350
MARIE MINE (BUTTE DISTRICT)	1071
MARY TAIT PROSPECT	780
MASCULINE MINE	60
MASTER PLACER MINE (MCFARLAND)	265
MAT MINE (ALELAIDMAT MINE)	1072
MATCHLESS LODE	969
MAYFLOWER CLAIM (GOLD CROWN LODE)	417
MAYFLOWER MINE	911
MAYFLOWER VEIN	289
MCCABE PROSPECT	453
MCCACRAN MINE	503
MCCAUBER MINE (M'CAWBBER)	743
MCCLELLAN GULCH PLACER	514
MCDONALD MINE	102
MCGINNIS AND WASHOE CREEK PLACER	37
MCKAY MINE	600
MEMPHIS PROSPECT	987
MEXICAN GULCH PLACER	601
MICKEY MINE (GARRETT MINE)	389
MIDNIGHT MINE (IMPERIAL)	351
MIKE HANNON MINE (HANNON MINE, MCMASTERS SHAFT)	427
MIKE RENIG GULCH PLACER (MIKE RIENIG GULCH PLACER)	691
MILL AND CLEAR CREEK PLACERS	475
MILL CREEK BERYL OCCURRENCE	476
MILLERS MINE	128
MINAH MINE (MINA MINE)	892
MINERAL HILL MINE (YELLOWSTONE PROSPECT)	781
MINERS GULCH-COWAN GULCH PLACERS	159
MINNEAPOLIS MINE	849
MINNESOTA MINE	893
MINNIE LEE PROSPECT (BLACK TAIL NO. 1, MINNIE LEE 1 AND 2 MINES, LUCKY SEVEN)	456
MISSOULA BARITE DEPOSIT	103
MISSOULA GULCH PLACER (SUMMIT VALLEY PLACER)	1073

MITCHELL COPPER PROSPECT	13
MITCHELL MINE	352
MODOC LODE	390
MODOC MINE	1074
MOLLY MCGREGOR MINE (EMMA BELL, ADOLPHUS)	934
MONARCH MINE	229
MONARCH MINE	709
MONGAR MINE	26
MONITOR MINE	230
MONK CLAIM	457
MONO GROUP (MONO MINE, EAST MONO MINE)	912
MONTANA CLAIM (MONTANA MINE, DEER LODGE) (GEORGETOWN DISTRICT)	473
MONTANA CLAIM (BUTTE DISTRICT)	1075
MONTANA MINE (RED LION DISTRICT)	391
MONTANA MINE (CLANCY DISTRICT)	782
MONTANA MINE (HECTOR AND VICTOR MINE)	913
MONTANA PRINCE CLAIM GROUP	129
MONTANA TUNNELS MINE	894
MONTE CHRISTO ADITS	895
MONTE CRISTO MINE	745
MONTGOMERY MINE	1076
MONTPARK MINE (GYPSY QUEEN, PITMAN)	200
MONTREAL STAR MINE	971
MOODY CLAIM (SANKEY MINE)	1077
MOONLIGHT MINE (SUNLIGHT MINE) (PRINCETON DISTRICT)	290
MOONLIGHT MINE (SCRATCHGRAVEL HILLS AREA)	655
MOONLIGHT PROSPECT	429
MOOSE CREEK PLACER	488
MOOSE MINE	1078
MORNING GLORY MINE	850
MORNING MINE (MIDNIGHT)	851
MORNING STAR MINE	852
MORSE AND KENNEDY MINE	80
MOSCOW MINE	1079
MOTHER VEIN CLAIM	319
MOULTON MINE	1080
MOUNT MORIAH	1081
MOUNT WASHINGTON MINE	896
MOUNTAIN CHIEF MINE	231
MOUNTAIN CON MINE	1082
MOUNTAIN LION MINE	291
MOUNTAIN MINE	75
MOUNTAIN QUEEN MINE	992
MOUNTAIN RAM MINE	160
MOUNTAIN TOP PROSPECT	201
MOUNTAIN VIEW MINE (GARNET DISTRICT)	61
MOUNTAIN VIEW MINE (BUTTE DISTRICT)	1083
MT. CHIEF MINE	853
MT. THOMPSON MINE	854

MUDHOLE PROSPECT	264
MULLIN CLAIM	656
MULONEY BASIN PROSPECT	142
MULONEY MINE	143
MURPHY MINE	353
MUSKEGON MINE	783
MYSTERY MINE	354
N. G. GROUP (MOUNTAIN VIEW, MANGANESE FRACTION)	355
NAKOMA MINE (GOLCONDA MINE)	525
NANCY HANKS MINE (MINNIE PALMER)	62
NANCY HELEN MINE	603
NANCY LEE PROSPECT	130
NARROW GAGE MINE	1084
NEGROS MINE	710
NELLIE GRANT MINE	784
NELLIE MINE (CLINTON DISTRICT)	27
NELLIE MINE (MASCOT) (PIPESTONE DISTRICT)	1128
NELSON GULCH PLACER	680
NEMO MINE	1085
NETTIE MINE (SCRATCHGRAVEL HILLS AREA)	657
NETTIE MINE (NETTIE-HIBERNIA, NETTIE-HUBERNIC) (BUTTE DISTRICT)	1086
NEVADA CREEK PLACER	504
NEVERSWAT PROSPECT	266
NEW HOPE LODGE	458
NEW PROGRESS AND OLD TIMER PROSPECTS (WESTERN MINES)	505
NEW SEATTLE MINE (DOLLY QUARTZ MINE)	320
NEW YORK PROSPECT	202
NEWMAN BROTHERS	621
NICKELODEON PROSPECT	935
NIKI MINE (LONNIE STEVENS)	1129
NILE MINE	570
NILES GULCH PLACER	161
NINETEEN HUNDRED MINE	392
NIPPER MINE	1087
NONPAREIL MINE	292
NORA DARLING MINE	604
NORTH BOULDER MINE	692
NORTH FORK OF FLINT CREEK PLACERS (AUTUMN, LITTLE GEORGE, WILLOW CLAIMS)	393
NORTH FORK GRANITE CREEK PROSPECTS	293
NORTH PACIFIC MINE	746
NORTH STAR CLAIM	658
NORTH STAR MINE (FLINT CREEK RANGE AREA)	203
NORTH STAR MINE (PHILIPSBURG DISTRICT)	356
NORTHERN CROSS MINE (ANNA, MAUDE, CALEDONIA CLAIMS)	204
NORTHERN PACIFIC MINE	897
NORTHWESTERN MINE	1088
NORWICH-PLUTUS GROUP	1089

NUGGET GULCH PLACER	605
NUGGET PROSPECT	205
NUMBER THREE MINE	1090
O.H. BASSETT MINE	747
OBELISK MINE	855
O'BRIEN PROSPECTS (HIDDEN LEAD)	131
OHIO AND BUCKEYE MINE	63
OHIO AND SPECULATOR PROSPECT	711
OKOREKA MINE	459
OLD DOMINION MINE	144
OLSEN FRACTION MINE	1091
OLYMPIAD MINE (COMET MINE)	38
ONE HUNDRED ACRE MEADOW PROSPECT	477
ONTARIO CREEK PLACER (EDDY CLAIM)	712
ONTARIO MINE (GEORGETOWN DISTRICT)	444
ONTARIO MINE (ELLISTON DISTRICT)	713
OPHIR CREEK PLACER	606
OPHIR MINE (RESERVOIR)	607
OPSATA MINE	608
ORIGINAL MINE	1092
OROFINO CREEK PLACER	981
ORPHAN BOY-OROFINO MINE	445
ORPHAN BOY PLACER MINE	249
ORPHAN GIRL MINE	1093
OSAGE CHIEF MINE (CRISSMAN MINE)	630
OTISCO MINE	1094
OTTAWA MINE (PRENTICE PROPERTY)	571
PACK HORSE LODGE	489
PANAMA MINE	785
PARNELL MINE	1095
PARROT MINE	1096
PAUPERS DREAM MINE (BASIN CREEK)	748
PAY DAY MINE	418
PAYMASTER MINE	959
PEACOCK MINE	162
PEARL MINE (TOP O'DEEP DISTRICT)	76
PEARL MINE (DUNKLEBERG DISTRICT)	232
PEARL MINE (PHILIPSBURG DISTRICT)	357
PEERLESS JENNIE MINE (PEERLESS JENNY, PEARLESS)	749
PEN YAN MINE (PENN YAN)	898
PENNSYLVANIA MINE	1097
PENOBSCOT MINE	572
PERRY CLAIMS (FAIRVIEW CLAIMS)	671
PHILADELPHIA MINE	1098
PHOSPHATE PROSPECT AT ALBICAULIS LAKE	206
PIEGAN-GLOSTER MINE	573
PIEGAN GULCH PLACER	547
PIKES PEAK CREEK PLACER	250
PILGRIM BAR PLACER	251

PILOT MINES	914
PINEAU PLACER MINE (FRIDAY MINE)	267
PIONEER BAR PLACER	252
PLUTARC MINE (SNOWFLAKE MINE)	506
POLARIS MINE	899
POORMAN CREEK PLACER	490
PORPHYRY DIKE MINE	750
PORTER MINE	394
POTOSI MINE	268
POULIN, STELLA, AND BUFFALO MINE GROUP	1099
POWELL MINE (MOUNT POWELL MINES)	294
POWERS PLACER MINE	64
PREFERENCIA, GREEN MOUNTAIN, ALLIANCE GROUP	1100
PRICE CLAIMS	609
PRICKLY PEAR CREEK PLACER (GOLCONDA CREEK PLACER)	786
PRINCETON GULCH PLACER (MAYWOOD, SUMMIT)	295
PRINCETON MINE	296
PRIZE MINE	526
PROSPECTOR MINE	1101
PURITAN MINE	358
PYRENEES MINE	446
QUEEN MARY COPPER PROSPECT (NORTHERN SPY, WISCONSIN)	28
QUEEN MINE (PIKES PEAK)	269
QUEEN OF THE HILLS MINE	936
QUEEN OF THE VALLEY CLAIM	659
RACETRACK CREEK PLACER	325
RADAR LODE	395
RAINBOW PASS OCCURRENCE	478
RAINBOW PROSPECT	145
RAMBLER MINE	419
RAMBLER MINE GROUP (VALLEY, CRYSTAL SPRINGS, CLEMANTHA, CATO)	39
RAMONA CREEK PROSPECT	166
RARUS MINE (RATUS)	
RATTLESNAKE BARITE PROSPECT	3
RED CLOUD GROUP (RED CLOUD, CRESCENT, LEAD KING MINES)	65
RED LION MINE	396
RED MOUNTAIN TUNNEL (MONTANA LEAD CROSSCUT TUNNEL NO. 1)	751
RED ROCK MINE	77
RED WING MINE (RED WING GROUP)	856
REDEMPTION IRON MINE (IRON AGE)	359
REGINA CLAIM	660
REINS COPPER CO. MINE	1102
RELIANCE MINE (GEORGETOWN DISTRICT)	447
RELIANCE MINE (BOULDER DISTRICT)	937
RELYEA MINE	86
RESERVOIR GULCH PLACER	253
REVENUE MINE	448
RICHMOND MINE (ONTARIO MINE)	430
ROBERT EMMET MINE (GARNET DISTRICT)	66

ROBERT EMMET MINE (AMAZON DISTRICT)	915
ROBINSON MINE (BLUE-EYED ANNIE)	397
ROCK CREEK PROSPECT	207
ROCK ROSE MINE (DANDY MINE)	672
ROMBAUER MINE	297
ROOSEVELT MINE	787
ROOSTER BILL CREEK PLACER (MARGARET)	527
ROSE MINE	857
ROSELLE MINE	507
ROVER MINE	518
ROYAL METALS TUNNEL	360
ROYAL MINE (PORT ROYAL)	298
RUBY MINE	988
RUMLEY MINE	938
RUSSEL MINE (96 MINE)	752
RYAN MINE	208
S.P. BASSETT MINE	753
SABBATH DAY MINE (POOR MAN)	961
SADIE MINE	714
SAGER-MURPHY PROSPECT	420
SAINT PATRICK MINE	1103
SALLIE MELLEN CLAIM	167
SALMON MINE	361
SALVAIL MINE (BERNICE)	901
SAMUEL LODE CLAIM	234
SAN FRANCISCO MINE	362
SAND BASIN PLACER (COFFEE POT, CUB, ELKHORN, FRED, WANDA, LITTLE JIM, LUCKY, MOOSE, PEANUTS, RANGER)	105
SANDERS MINE (SAUNDERS MINE)	363
SARANAC MINE	299
SATURDAY NIGHT MINE	858
SAUERKRAUT GULCH PLACER	491
SAWMILL GULCH PHOSPHATE MINE	622
SAWPIT GULCH PLACER	168
SCARFIELD MINE	1104
SCHRAMM PROSPECT	209
SCOTIA MINE	1105
SCRATCH AWL MINE	364
SCRATCH GRAVEL MINE	661
SELF RISING MINE	1106
SENATE MINE	29
SENECAL INCLINE	623
SEPTEMBER SNOW PROSPECT	270
SEVENMILE CREEK PLACER	664
SHAKESPEARE MINE	169
SHAKOPEE MINE	574
SHAMROCK COPPER PROSPECT	972
SHAMROCK MINE (GARNET DISTRICT)	67
SHAMROCK MINE (DUNKLEBERG DISTRICT)	235

SHANNON MINE	575
SHARKTOWN MINE	365
SHEEP CREEK GROUP	556
SHEILA PROSPECT	460
SIEBEN RANCH QUARRY (PICTURE STONE NO. 1)	551
SIERRA MINE	68
SILVER BELL MINE (SWANSEA MINE) (STEMPLE-GOULD DISTRICT)	528
SILVER BELL MINE (SOUTH BOULDER MOUNTAINS AREA)	973
SILVER BOW CREEK PLACER (CLARK FORK RIVER PLACER)	1107
SILVER BOW DEPOSITS (BULL MOOSE, MERRIMAC, WRONG FONT, EVA, SUPERIOR, DELIA, LITTLE JACK)	1108
SILVER BOW MINE	1109
SILVER CHAIN-ANTELOPE MINE	421
SILVER CHIEF MINE	366
SILVER CLAIM MINE	902
SILVER CLEFT MINE	1110
SILVER COIN MINE	673
SILVER CORD MINE	754
SILVER CREEK PLACER	576
SILVER HILL MINE (SILVER LAKE DISTRICT)	461
SILVER HILL MINE (BOULDER DISTRICT)	939
SILVER KING MINE (JOHN LONG MOUNTAINS AREA)	170
SILVER KING MINE (LOST CREEK DISTRICT)	404
SILVER KING MINE (BUTTE DISTRICT)	1111
SILVER LICK MINE	1112
SILVER LODGE IRON MINE (KENTUCKY)	367
SILVER MOSS MINE (HANSEN-MELOY PROSPECT)	462
SILVER QUEEN MINE	406
SILVER REEF MINE (SILVER FLEET MINE)	463
SILVER TIP MINE (REDDINGS MINE)	903
SIRIUS MINE (SIRIUS GROUP)	859
SIXTEEN-TO-ONE CLAIM	300
SKEELS MINE (WASHINGTON PHOSPHATE AND SILVER CO.)	321
SKOOKUM PLACER	940
SLEEPING CHILD "A" PROSPECT	106
SLOCUM GULCH BARITE DEPOSIT	107
SMITH-JONES MINE	508
SMITH PROSPECT	422
SNOW BUNNY PROSPECT (MAJESTIC CLAIM)	271
SNOWDRIFT MINE	1113
SNOWHOME MINE	236
SNOWSHOE CREEK PLACERS	610
SNOW WHITE SILICA MINE	210
SOLAR MINE (SOLAR PEARL, SOLAR AND PEARL)	860
SOUTH PACIFIC MINE	755
SOUTHERN CROSS MINE	449
SPECULATOR MINE	1114
SPRING CREEK AND ROCKER GULCH PLACERS	962
SPRINGFIELD MINE	1115

SPRING HILL MINE	681
SQUAW GULCH PLACERS (SQUAW GULCH AND KELLY AND IRVINE PITS)	254
ST. THOMAS MINE	398
STANISLAS MINE	1116
STAPLES MINE	577
STARLIGHT QUARTZ LODGE CLAIM	301
STATE MINE (STATE GROUP)	994
STERRETT MINE	963
STEVENS RANCH PLACER MINE	108
STEVENSVILLE BARITE DEPOSIT	109
STEWART MINE	1117
STINKWATER CREEK BARITE DEPOSIT	40
STONE PLACER MINE	69
STONEWALL CREEK PLACER	492
STORM LAKE TUNGSTEN	464
STORMWAY-MORGAN EVANS MINE	423
STRAWBERRY MINE	631
STRAW HAT PROSPECT	431
SUMMIT MINE	237
SUMPTER MINE (BLACK HAWK)	30
SUN MINE	238
SUNDAY MINE	302
SUNRISE MINE (QUEEN MINE)	183
SUNSET MINE (DUNKLEBERG DISTRICT)	239
SUNSET MINE (BUTTE DISTRICT)	1118
SUNSHINE MINE (TARLACH MINE, TUNGSTAR MINE)	465
SURETHING MINE (O'KEEFE)	715
SWAN MINE	964
SWEET HOME MINE	368
SYLVAN MINE	861
T. M. T. PROSPECT	110
TANGELFOOT MINE	240
TEAL LAKE MINE	756
TELEGRAPH CREEK PLACER	716
TELEGRAPH MINE	717
TENMILE CREEK PLACER (GOULD PLACER; MONITOR, TUCKER, AND MINNEHAHA CREEKS)	757
TERRID MINE	369
THE SHORT STUFF PROSPECT	466
THIRD TERM MINE	718
THOMPSON LAKE PROSPECT	211
THREE METALS AND SALT HILL TUNNEL	370
THREE MILE CREEK PLACER (SAPPHIRE MOUNTAINS AREA)	111
THREE MILE CREEK PLACER (NEVADA CREEK AREA)	529
TIBBETS MINE (POKER CHIP)	212
TIGER GULCH PLACER	611
TIGER MINE	70
TIP TOP MINE (ABBOT, BRETZ, FARMERS MINE, NEW YEAR, EMMA)	432
TODD PROSPECT	112

TOMMY PROSPECT	467
TOTTEN MINE (MONITOR MINE)	862
TOWNSEND PROSPECT	134
TOWSLEY MINE	578
TRANSIT MINES	758
TRAVIS PLACER	759
TRAVONA MINE	1119
TRAVONIA CLAIM	303
TREADWATER BAR, WILSON BAR, AND WOOD'S FLAT PLACERS	255
TRIANGLE AND GRASS WINDOW MINES (MORNING MINE)	31
TRIGGER MINE	468
TRINITY GULCH PLACER	579
TROUT MINE GROUP (POCAHONTAS, SPECKLED TROUT, GEM, ALGONQUIN GROUP)	371
TRUE FISSURE MINE	372
TUNGSTEN MINES (ENTREPRENEUR NATIONAL SILVER AND TUNGSTEN CO. MINE)	213
TUSCARORA PROSPECT	135
TUSSLE MINE	304
TUXEDO MINE	978
TWILIGHT MINE	450
TWIN BUTTES CLAIM	322
TWIN PEAKS MINE	214
TWO PERCENT MINE	373
UNCLE SAM MINE (JENNIE B.)	863
UNITA MINE	1120
UPPER GRANITE PROSPECT	305
VALDEMERE MINE	1121
VALLEY FORGE MINE	761
VALLEY VIEW MINE (NO. 4)	327
VAN ARMIN MINE	917
VENUS MINE	864
VERA AND MARIE MINE	865
VICTORY MINE	612
VIKING MINE	719
VINDICATOR MINE	866
VIRGINIA C. MINE	918
VIRGINIA CREEK PLACER (TARHEAD, LOPEAR, AND SPECIMEN CREEKS)	552
VIRGINIA MINE	941
WABASH MINE	1122
WAKE UP JIM MINE (EMERY DISTRICT)	965
WAKE UP JIM MINE (BUTTE DISTRICT)	1123
WALDY MINE	867
WAR EAGLE CLAIM (WAR EAGLE MINE)	469
WAR EAGLE MINE	632
WARM SPRING CREEK PLACER	215
WARM SPRINGS CREEK QUARRY	87
WASA MINE	241
WASHINGTON CREEK PLACER	536

WASSON CREEK PLACER	509
WAYSIDE MINE	662
WEATHERVANE HILL PROSPECT	480
WELCOME CREEK AND CINNABAR CREEK PLACERS	119
WELCOME MINE	433
WENGER NO. 2 MINE (WEGNER NO. 2)	374
WEST FORK OF INDEPENDENCE CREEK PLACER (INCLUDES WINDY HILL)	256
WEST GREY ROCK MINE	1124
WEST MAPLETON MINE	1125
WEST NETTIE MINE	1126
WHALEY MINING CLAIMS	113
WHITE CLOUD MINE	114
WHITE HORSE MINE	375
WHITLATCH-UNION MINE (OWYHEE AND MCINTYRE INCLINES)	682
WICKES-CORBIN COPPER COMPANY MINE (BUNKER HILL, BONANZA, DEWEY, AND ROSALIE)	904
WIGGINS MINE	515
WIGHT MANGANESE MINE	216
WILBUR SILVER MINE	919
WILLIE MINE	71
WILLOW CREEK PLACER	217
WILSON CREEK PLACER (KILBURN, RALEIGH) (BIG BLACKFOOT DISTRICT)	510
WILSON CREEK PLACER (SOUTH BOULDER MOUNTAINS AREA)	979
WINCHELL PLACER (KOLBECK)	218
WINDY RIDGE PROSPECTS	580
WOLFTONE MINE	762
WOLVERINE MINE	720
WOODROW WILSON MINE	763
YAMA GROUP	792
YANKEE DOODLE CREEK PLACER	1127
YELLOWJACKET MINE	683
YELLOW METAL MINE	399
YELLOWSTONE CLAIM	663
YOUNG AMERICA CLAIM	376
YOURNAME CREEK PLACER (INCLUDES DEER GULCH)	14

