MLA 25-85

22p = $3.30
(includes map)

UNITED STATES DEPARTMENT OF THE INTERIOR
(BUREAU OF MINES)

MINERAL RESOURCES OF THE MT. STIRLING WILDERNESS STUDY AREA (BLM NO. 050-0401), NYE AND CLARK COUNTIES, NEVADA

By
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MLA 25-85
1985

This open-file report presents the results of a Bureau of Mines wilderness study, parts of which will be incorporated in a joint report with the U.S. Geological Survey. This report is preliminary and has not been edited or reviewed for conformity with the U.S. Bureau of Mines standards and nomenclature. Work on this study was conducted by personnel from Western Field Operations Center, East 360 Third Avenue, Spokane, Washington 99202

PREFACE

The Federal Land Policy and Management Act (Public Law 94-579, October 21, 1976) requires the U.S. Geological Survey and U.S. Bureau of Mines to conduct mineral surveys on U.S. Bureau of Land Management (BLM) administered land designated as Wilderness Study Areas (WSA) "...to determine the mineral values, if any, that may be present...". Results must be made available to the public and submitted to the President and the Congress. This report presents the results of a Bureau of Mines mineral survey of the Mt. Stirling Wilderness Study Area (BLM No. 050-0401), Nye and Clark Counties, Nevada.

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UNIT OF MEASURE ABBREVIATIONS USED IN THIS REPORT

ft	foot
oz	troy ounce
%	percent
lb	pound

MINERAL RESOURCES OF THE MT STIRLING WILDERNESS STUDY AREA (BLM NO. 050-0401), NYE AND CLARK COUNTIES, NEVADA

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ABSTRACT

A 1984 Bureau of Mines investigation identified no mineral resources in the Wilderness Study Area (WSA). However, four prospects in the WSA contain anomalous amounts of copper and silver minerals; one had traces of gold. Stratabound copper-silver occurrences appear to be prevalent. Quartz veins in the WSA locally contain trace gold, and one mine adjacent to the area produced some gold in the late 1800's.

The WSA is underlain principally by Precambrian and early to middle Paleozoic quartzites, argillites, dolomites and limestones that have been complicated by faulting, generally tilted northeastward, and thrust southeastward over sequences of late Paleozoic sedimentary rocks. The stratabound copper-silver occurrences and gold-quartz veins are in Precambrian and Cambrian rocks in the western part of the WSA, as are similar deposits regionally. Sand and gravel, and limestone are abundant, but plentiful resources of these commodities are nearer established markets.

In November 1983 there were 5 small groups of current claims on the WSA boundary; none are patented claims. Probably less than 35 claims have been located within the WSA, mostly in the northwestern portion; but over 100 claims have been located outside, near the northwestern boundary. Oil and gas leases nearly surround the boundary and 6 extend up to 1 mile into the study area.

There has been no recorded mineral production from within the WSA. From 3 to 5 miles to the west, several lode mines in the Johnnie district have produced several million dollars worth of gold from quartz veins, and some silver and lead from galena-calcite veins. These veins generally trend northeasterly and dip northwesterly and probably do not extend into the study area.

INTRODUCTION

Mineral land assessment studies provide information to the President and Congress, other government agencies, and the public about mineral resources on public land that is being considered for wilderness designation.

The Mt. Stirling Wilderness Study Area (WSA) contains 69,650 acres. However, boundary adjustments by the Bureau of Land Management (BLM) during the course of this study resulted in 40,275 acres being recommended as suitable for wilderness. The Recommended Suitable Area is referred to as RSA in this report.

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Prepared by the Bureau of Mines Western Field Operations Center, Spokane, Washington, this report supplements a literature-research GEM (geology, energy, minerals) report for which no field work was conducted. The GEM report was prepared by a contractor (Great Basin GEM Joint Venture, 1983) for the Bureau of Land Management.

Geographic Setting

The 69,650-acre WSA is about 40 air-miles northwest of Las Vegas, Nevada, and is nearly bisected by the Nye County-Clark County line (fig. 1). Access to the north and east sides is by dirt roads and jeep trails from U.S. highway 95. The south and west sides are reached by dirt roads and jeep trails from near Johnnie and Pahrump, Nevada, off State Highway 160. The WSA is at the northwestern end of the Spring Mountains and includes mountainous terrain ranging in elevation from about 4,750 ft at the southwestern corner to 9,168 ft at Wheeler Peak in the northeastern part. Local relief averages about 1,100 ft. The area is moderately covered with desert vegetation, junipers, and pinon pine. The climate is hot and dry; consequently there are no permanant streams in the study area and in June 1984 all the ephemeral streams were dry.

Previous Studies

The earliest geological work in the Spring Mountains was by G. K. Gilbert, who served as a geologic assistant for the Wheeler expeditions of 1871-1872. In 1919, C. R. Longwell began mapping in southeastern Nevada and his work, along with others, led to the first regional map of southeastern Nevada and of the Spring Mountains (Burchfiel and others, 1974, p. 1013).

The earliest geological work specifically in the WSA was done by T. B. Nolan in 1924 for his PhD. dissertation. Until that time only small parts of the area had been included in large-area reconnaissance reports such as those by Spurr (1903) and Ball (1906). Other older reports on nearby mines and mining districts that included little, if any, of the study area were done by Higgins (1909), Gregory (1910), Heikes (1916), Hale (1918), Labbe (1921), Lincoln (1923), Smith and Vanderburg (1932), Vanderburg (1936, 1937), and Kral (1951). In recent years the geology of the general region has been reported by Secor (1962), Stewart (1970, 1974), Woodward (1972), Burchfiel, Fleck, Secor, Vincelette, and Davis (1974), Cameron (1977), Carr (1977, 1979, 1983), Burchfiel, Willemin, Carr, Cameron, Axen, and Davis (1981), and Burchfiel (1982). Mineral deposits near the area have also been covered in more recent mineral reports by Bonham (1967), Garside (1973), Johnson (1973), Ivosevic (1976, 1978), and Garside and Schilling (1979), and in county reports by Longwell, Pampeyan, Bowyer, and Roberts (1965) and Cornwall (1972). The most recent work thoroughly covering the Mt. Stirling WSA was a structural geology report of the Mt. Stirling quadrangle written as a PhD dissertation by Vincelette (1964).

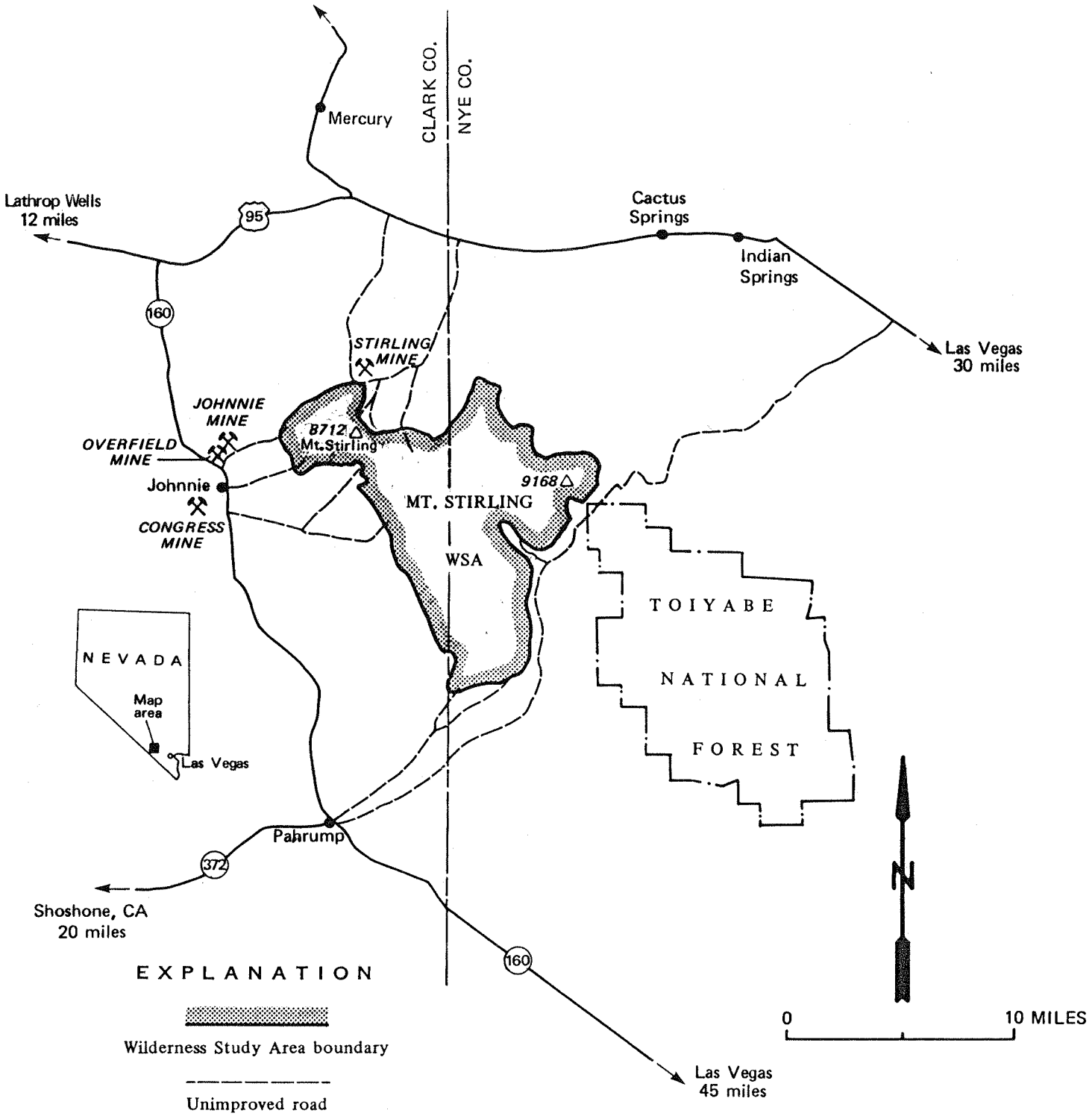

FIGURE 1. – Mt. Stirling Wilderness Study Area (BLM No. 050-0401) and Vicinity

Present Studies

A library search identified known mineral occurrences within and adjacent to the WSA. A partial examination of courthouse records of Clark and Nye Counties, Nevada, was done to determine mining claim locations. Claim owners were notified of the study, and permission to examine their claims was requested. Bureau files were checked for information on known mines and prospects, and regional offices of the Bureau of Land Management were contacted to determine if any current claims or mineral and fuel leases were within the study area.

Field work was conducted in May and June 1984. Work consisted of searching for mines, prospects, and claims that library and courthouse research indicated were within or near the WSA. All mineralized outcrops and workings found were sampled, and mapped where warranted.

Types of samples collected for this study are as follows:
Chip.--A series of rock chips across a vein, structure, or exposure.
Random Chip.--Chips from rock exposures which appear to be homogenous.
Grab.--An unselected assortment of rock pieces from a stockpile or dump.
Select.--An intentionally biased sample, often of the highest grade rock available.

A total of 73 rock samples were taken for this study; analytical results are summarized on table 1. The samples were crushed, pulverized, and split, then routinely examined for radioactive and fluorescent minerals. All samples were analyzed for gold and silver by fire-assay methods. When required, quantitative values of other elements were measured by atomic absorption analysis, colorimetry, fluorimetry, cold-vapor atomic absorption , or inductively coupled argon spectrometry. At least one sample from each mineralized feature was checked by semiquantitative emission spectroscopy for content of 40 elements 2/; anomalous contents were checked by more specific quantitative methods.

ACKNOWLEDGEMENTS

The author wishes to express appreciation to David Lipton 3/ for his able assistance in the field examinations for this study.

2/ Aluminum, antimony, arsenic, barium, beryllium, bismuth, boron, cadmium, calcium, chromium, cobalt, copper, gallium, gold, iron, lanthanum, lead, lithium, magnesium, manganese, molybdenum, nickel, niobium, palladium, phosphorus, platinum, potassium, scandium, silicon, silver, sodium, strontium, tantalum, tellurium, tin, titanium, vanadium, yttrium, zinc, and zirconium.

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GEOLOGY

The region is underlain by a sequence of Precambrian and early Paleozoic sedimentary rocks consisting principally of quartzite, argillite, dolomite, and limestone. The Precambrian Johnnie, Stirling, and Wood Canyon Formations and Cambrian Wood Canyon and Carrara Formations are the strata of principal interest because nearly every prospect visited was in these rocks. These formations trend north-northwest along the western part of the WSA and underlie about one-third of the total area.

Along the west side of the study area, faults considered to be part of the Grapevine Fault system (Ivosevic, 1976, p. 59-64) have uplifted the strata and tilted them moderately east-northeastward, forming a steep mountain front. Regional thrusting from the northwest has displaced the sequence southeastward over late Paleozoic sedimentary rocks; essentially, the entire WSA lies within the Wheeler Pass thrust plate (Burchfiel, Fleck, Secor, Vincelette, and Davis, 1974, p. 1016, 1018). The trace of the thrust plate is along the southeastern edge of the study area, about 1 mile outside the boundary. The nearest known intrusive rocks are in the Oak Spring and Goodsprings mining districts, about 50 miles north and south, respectively (Ivosevic, 1976, p. 9).

There are three types of known mineral occurrences in and near the WSA. Slightly argentiferous malachite is disseminated primarily in light-gray to white, medium-grained Precambrian Stirling Quartzite (fig. 2, nos. 3, 12) both within the study area and at several sites outside the boundary to the northwest. One of these occurrences has been previously reported in a 2-ft-thick quartzite bed that can be traced for several hundred yards (Nolan, 1924, p. 112) (fig. 2, no. 3). The malachite is probably the supergene oxidation product of stratabound chalcopyrite disseminated in quartzite, similar to deposits described in the nearby Johnnie district (Ivosevic, 1976, p. 102-107). In the rock containing malachite, silver values appear correlative to the copper content at a ratio of roughly 1/2 to 1 oz silver per ton for each percent copper.

In and near the WSA, at several locations in the vicinity of Mt. Stirling, are quartz-specularite veins and gold-bearing quartz veins. At the Stirling Mine (fig. 2, no. 1) the gold-bearing quartz veins are in silicified thin-bedded quartzite breccia "ledges" in the upper part of the Wood Canyon Formation that are reportedly several miles long (Nolan, 1924, p. 114-115). These veins strike northeast, dip steeply northwest, and are probably related to those described in the Johnnie district (Ivosevic, 1976, p. 70, 88-100). The quartz-specularite veins are invariably limited to a thin shale horizon in the lower part of the Stirling Quartzite, and contain very little gold (Nolan, 1924, p. 107-108).

Masses of dark-brown to yellowish, vuggy, amorphous to crystalline hematite and limonite (gossan?) containing small amounts of zinc, lead, and copper occur in pods up to 10 ft long in limestone country rock at several prospects outside the WSA.

MINES, PROSPECTS, AND MINERALIZED AREAS

Mining History

A partial examination of county records indicates that less than 35 mining claims have been located inside the WSA, mostly in the northwestern corner. An estimated 25 of these are in the RSA. However, more than 100 have been located outside the boundary immediately to the northwest, mostly in the late 1800's and early 1900's. The earliest claim (Mountain Boy) was located September 1887 about 1/2 mile northeast of Gold Spring. A few claims have also been located within 1 mile of the WSA boundary on the east and south. The nearest patented claims are at Grapevine Springs, adjacent to, but outside the northwestern WSA boundary.

In November 1983, current claims consisted of 5 small groups, totaling 26 claims, adjacent to the WSA boundary; 2 of these groups, containing 11 claims were on the RSA boundary. The nearest mining activity was at the Overfield Mine, adjacent to the old Johnnie workings, in the Johnnie mining district about 3 miles west of the study area; one man was intermittently mining gold-bearing quartz veins. Oil and gas leases nearly surrounded the area and 6 extended up to 1 mile into the WSA.

There has been no mineral production from the study area. The site of the Stirling Mine, about 1 mile from the northwestern boundary, was worked for gold prior to 1892 by local Indians, and later by ranchers residing at Indian Springs. During approximately the same period, gold was discovered in the Johnnie district at the Congress and Johnnie Mines (Nolan, 1924, p. 105; Ivosevic, 1976, p. 73).

The Johnnie, Congress, Overfield, and other mines in the Johnnie district are estimated to have produced 91,266 oz gold valued at $1,966,049 (Ivosevic, 1976, p. 76) from quartz veins. Most gold production was prior to 1915 although small amounts were produced during the 1920's and the "Depression" (Ivosevic, 1976, p. 73-74). About 48,500 oz gold are estimated to have been produced by the Johnnie Mine alone up to 1913 (Ivosevic, 1976, p. 76). Also 3,645 oz of silver and 6,017 lb of lead were reported produced between 1908 and 1932, probably from galena-calcite veins in the Johnnie Formation (Ivosevic, 1976, p. 75).

Mines in the Charleston district, about 10 miles to the southeast, produced oxidized lead-zinc ore valued at $5,000 from replacement deposits in dolomite in the late 1920's. Eleven oz of silver and 18,300 lb of lead valued at $2,574 were produced in 1953 and 1954 (Longwell and others, 1965, p. 144). There was some development work done in 1955 and 1956 at one property.

Sites Examined

Sites examined for this study are shown on fig. 2 and listed in Table 1. Of seven properties in the WSA, four are inside the RSA (fig. 2, nos. 6, 8, 11, 12). Those outside the WSA boundary were examined to determine the likelihood of deposits extending into the WSA, or similar deposits occurring there.

APPRAISAL OF MINERAL RESOURCES

No mineral resources were identified at the seven prospects (fig. 2, nos. 2, 6, 7, 8, 9, 11, 12) found inside the WSA. However, the geologic settings they represent may be significant.

Stratabound copper-silver occurrences, similar to deposits in the Johnnie district and elsewhere in the region, are at the Noonday, SMP, and Moonshine Prospects (fig. 2, nos. 6, 8, and 12) in the RSA. The host formation, the Stirling Quartzite, is extensive throughout the western edge and northwestern lobe of both the WSA and RSA.

Quartz veins at the Stirling Mine (fig. 2, no. 1) and mines of the Johnnie district locally have high gold concentrations; veins at prospects in and near the WSA contained traces of gold. The host formation, the Wood Canyon Formation, is extensively exposed throughout the WSA and RSA. These lower Cambrian carbonate rocks in the region are considered to be favorable exploration targets (Ivosevic,, 1978, p. 104).

Sand and gravel and limestone, suitable for construction materials, are abundant in the WSA. However, transportation cost is a major factor in producing these high-bulk/low-unit-value commodities. Similar materials are available closer to major markets; therefore, occurrences in the WSA are not classified as resources.

RECOMMENDATIONS FOR FURTHER WORK

Further detailed mapping, and sampling of rock, soil, and stream sediments is warranted to evaluate stratabound copper and silver occurrences in the vicinity of the Noonday, SMP, and Moonshine Prospects (fig. 2, nos. 6, 8, and 12). Test drilling would be required to confirm any anomalies. This exploration program should be designed to include evaluation of gold-bearing quartz veins and disseminated gold occurrences near prospects along the western edge of the study area in the upper Precambrian and lower Cambrian formations. Targets of highest interest are the intersections of faults with these formations.

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TABLE 1. - Mines and prospects in the Mt. Stirling Wilderness Study Area and vicinity

[Asterisk (*) indicates outside study area]

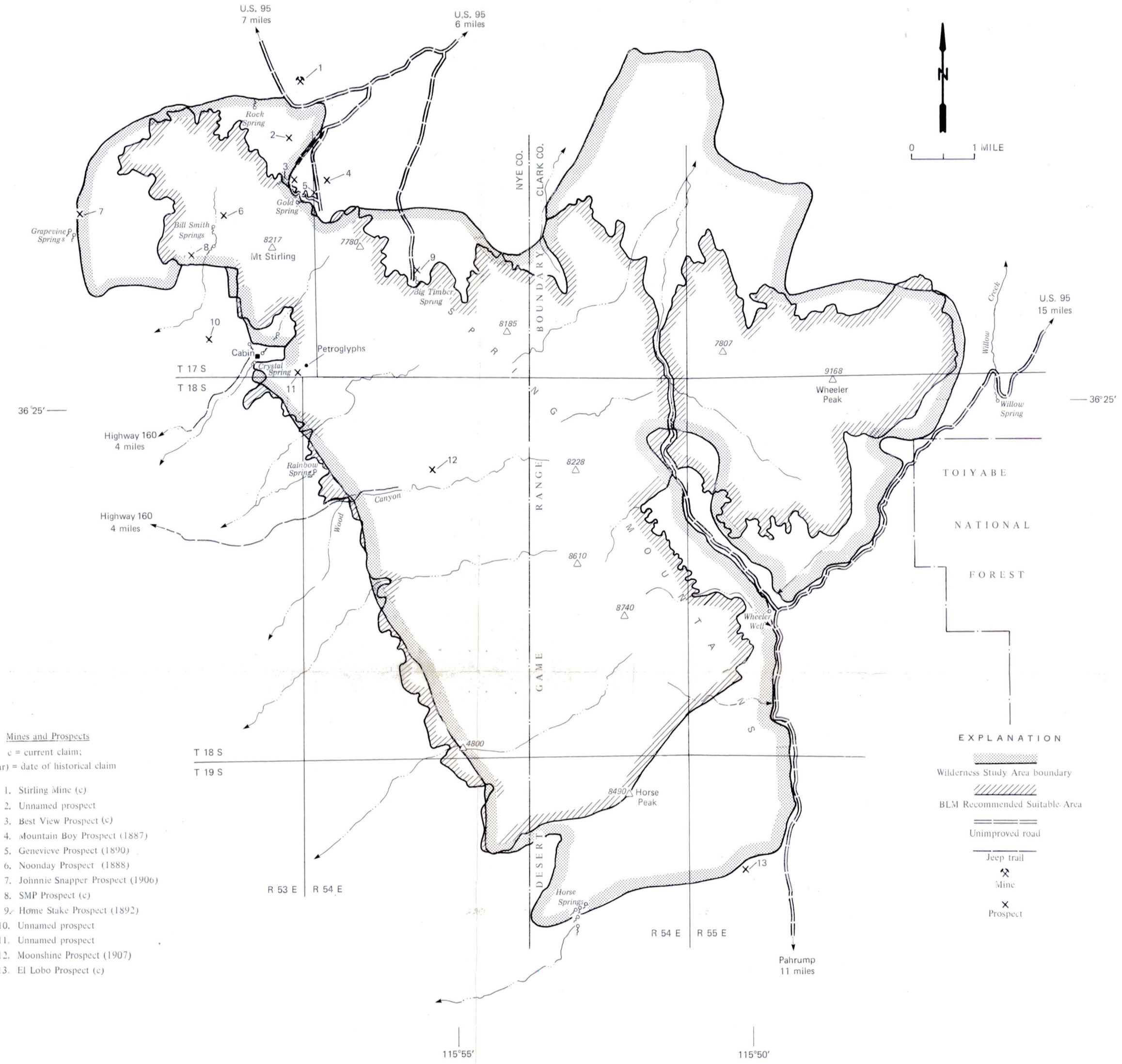
Map no. (fig. 2)	Name (commodity)	Summary	Workings and production	Sample and resource data
1	Stirling Mine* (gold).	At least two main quartz veins up to 10 ft thick strike northeast, have various dips, and are traceable for at least 1,000 ft in metasedimentary rocks, probably of the Cambrian Wood Canyon Formation. The quartz veins are parallel and about 800 ft apart. The quartz is locally brecciated, iron-oxide-stained, and contains traces of malachite, chalcopyrite, and galena. Nolan (1924) stated that the main quartz vein is traceable for several miles.	The main workings, at the eastern end of the southern vein, include a 23-ft-long adit in quartz and a 58-ft-deep shaft. The shaft was inaccessible but appeared to have drifts at two levels. Also on the southern vein are 16 small surface pits. Two shafts, 13 and 28 ft deep, and 11 small pits are on the northern vein. Stockpiles of a few hundred pounds of quartz are near most of the pits.	A total of 38 samples were taken; 35 were from small stockpiles and from veins exposed in pits, and 3 were from the adit. All samples were of either massive or brecciated vein quartz with iron- and manganese-oxide stains. The three chip samples of vein quartz from the adit contained trace, 0.01, and 0.09 oz/ton gold. Four select samples contained: 0.05 oz/ton gold with 0.1 oz/ton silver, 0.08 oz/ton gold with 0.5 oz/ton silver, 0.18 oz/ton gold with 0.3 oz/ton silver, and 0.10 oz/ton gold. A trace of gold was found in 17 other samples and a trace of silver was found in two samples. Eleven samples assayed for copper, lead, and zinc contained from trace to 0.29% copper, trace to 0.26% lead, and trace to 0.02% zinc. Nine samples had no significant mineral values.
2	Unnamed prospect (copper).	Iron-oxide-stained argillite and phyllite country rock has traces of malachite, siderite, and calcite.	A 10-ft diameter pit 2 ft deep is in an area of malachite-stained argillite. A small stockpile has phyllite containing siderite and calcite.	A select sample of malachite-stained argillite contained trace gold and silver and 0.77% copper; a select sample of phyllite with calcite and siderite from the small stockpile contained no significant mineral values.
3	Best View Prospect* (copper-silver).	Light-gray to white quartzite layer of the Stirling Quartzite contains iron-oxide stains and malachite. Malachite is disseminated throughout the rock and also occurs as radiating crystals along fractures.	Workings consist of an upper bulldozer scraping about 85 ft in diameter. About 400 ft downslope north-northeast is another bulldozer cut about 70 ft long and 10 ft wide, a pit 15 ft long and 7 ft deep, and a 23-ft-long adit. All surface workings are in white quartzite with disseminated malachite; no malachite was noted in the adit.	Four select samples and three chip samples were taken. A select sample of white quartzite with disseminated malachite at the south pit contained 0.01 oz/ton gold, 6.8 oz/ton silver, and 7.5% copper. Three samples (two select, one chip) of white quartzite with disseminated malachite and veinlets of iron oxides from the north pit assayed 2.2 oz/ton silver with 3.7% copper, 0.5 oz/ton silver with 1.48% copper, and 4.9 oz/ton silver with 4.0% copper. Of the two chip samples taken from the adit, one along the north rib in quartzite contained 0.1 oz/ton silver. A select sample of quartzite with disseminated malachite from the dump contained 9.6 oz/ton silver and 9.9% copper.
4	Mountain Boy Prospect* (iron).	Irregular pods 10 ft long of vuggy, hard, dark-brown to yellow, iron-rich rock highly altered to limonite is in limestone country rock striking N. 10° E. and dipping 33° E.	A 4-ft-deep pit has a 10-ft-long extension at the bottom. About 300 ft north is another pit 8 ft deep, 9 ft long, and 5 ft wide, with a 100-lb stockpile.	One chip and two select samples of the iron-rich rock were taken. The three samples contained from 44% to 51% iron, 0.018% to 0.049% copper, 0.058% to 0.135% lead, and 0.064% to 1.3% zinc.

TABLE 1. - Mines and prospects in the Mt. Stirling Wilderness Study Area and vicinity--Continued

Map no. (fig. 2)	Name (commodity)	Summary	Workings and production	Sample and resource data
5	Genevieve Prospect* (gold).	Sand and gravel fills the creek bottom.	Ten-ft diameter pit is about 6 ft deep.	One grab sample of sand and gravel taken from side of pit contained no significant mineral values.
6	Noonday Prospect (copper-silver).	White quartzite of the Stirling Quartzite strikes N. 6° W., dips 26° NE., and has some malachite stain. White quartz in randomly oriented stringers and in pods to 1 ft diameter also occurs.	Two shafts: one inclined shaft full of water is estimated to be driven 15 ft into the malachite-stained quartzite; about 1/2 mile south, a 19-ft inclined shaft driven on a shear zone in quartzite exposes numerous quartz stringers and pods.	Three select samples were taken. One of malachite-stained quartzite from the dump of the northernmost shaft contained 7.4 oz/ton silver and 0.49% copper. Two samples of quartz from the wall and portal of the 19-ft shaft contained no significant mineral values.
7	Johnnie Snapper Prospect (copper-gold).	White quartz pods with traces of hematite, malachite, azurite, and pseudomorphs of limonite after pyrite occur in phyllite and sandstone of the Johnnie Formation. Pods of quartz are up to 11 ft long and 1 to 2 ft thick.	One pit is 26 ft long, 10 ft wide, and 4 ft deep; another is 5 ft in diameter; another is 6 ft deep with a 6-ft extension at the bottom.	Three select samples were taken. One of quartz with hematite and limonite from the largest pit contained trace gold and 0.1 oz/ton silver. A quartz sample with malachite and azurite from the 6-ft-deep pit contained trace gold, 0.6 oz/ton silver, and 1.17% copper. A pod with intermixed quartz, limonite, and phyllite from the smallest pit contained trace copper and zinc.
8	SMP Prospect (copper-silver).	White quartz veins with thin stringers of specularite, and malachite and chrysocolla disseminated in quartzite occur in the Stirling Quartzite.	Two pits, 4-ft and 7-ft in diameter, are about 1/2 mile apart. A stockpile of about 300 lb of iron-oxide-stained quartz containing specularite is at the westernmost pit.	A select sample of quartzite with stringers of specularite contained trace silver and 0.016% copper. A select sample of malachite- and chrysocolla-stained quartzite from the easternmost pit contained 1.4 oz/ton silver and 1.48% copper.
9	Home Stake Prospect (gold).	Vein quartz with limonite and calcite occurs in phyllite.	One pit is 10 ft long, 4 ft wide, and 3 ft deep.	A select sample of vuggy, limonite-stained quartz float from the pit contained trace copper, lead, and zinc.
10	Unnamed prospect* (gold).	Well-fractured, heavily iron-oxide-stained quartz vein 1.7 ft thick strikes N. 20° E., and dips 26° SE. in shale of the Johnnie Formation.	One small sloughed pit and an 18-ft-long inclined shaft exist.	A select sample of quartz from the dump at the shaft and a chip across the quartz vein in the shaft contained no significant mineral values.
11	Unnamed prospect (copper-silver).	Fractured quartz pods with moderate iron-oxide stains and traces of malachite and chalcopyrite occur in limestone and phyllite country rock. In the adit, a slump block of limestone appears to have slid over the soil mantle covering phyllite bedrock.	An adit 28 ft long is along a limestone-phyllite contact. A 15-ft-long pit is nearby.	A select sample of malachite- and iron-oxide-stained quartz from the dump contained 0.1 oz/ton silver and 0.91% copper. A chip across a 5.7-ft-wide quartz pod with abundant limonite stains had 0.1 oz/ton silver and 0.018% copper.

TABLE 1. - Mines and prospects in the Mt. Stirling Wilderness Study Area and vicinity--Continued

Map no. (fig. 2)	Name (commodity)	Summary	Workings and production	Sample and resource data
12	Moonshine Prospect (copper-silver).	Light-gray quartzite unit of the Stirling Quartzite is 9 ft thick and contains disseminated chalcopyrite with some malachite along fractures. Quartzite is bounded above and below by red siltite, strikes N. 10° W., dips 55° E., and is mineralized for 185 ft along strike.	A water-filled inclined shaft estimated to be 15 ft deep, and three pits about 5 ft in diameter are on the unit.	A chip across the malachite-stained quartzite at the inclined shaft contained 0.3 oz/ton silver and 0.88% copper. Two select samples of malachite-stained quartzite from the pits contained 4.3% copper with 0.7 oz/ton silver, and 2.23% copper with 0.3 oz/ton silver and trace gold.
13	El Lobo Prospect* (gold).	Gray quartzite country rock contains a white quartz vein up to 20 ft thick exposed for 300 ft. Prospect is along trace of Wheeler Pass Thrust Fault.	A trench 5 ft deep and 15 ft long, and a 6-ft diameter shallow pit are in quartzite country rock. Four pits, the largest 15 ft wide, 25 ft long, and 6 ft deep, are in or near the 20-ft-thick quartz vein. A caved 300-ft adit reportedly on the property was not found. A 300 lb stockpile of iron-oxide-stained quartz and quartzite are near a pit.	Two select samples were taken of vein quartz and quartzite from the pits in the country rock; one sample contained 0.1 oz/ton silver. Three select samples of quartz were taken from the 20-ft-thick quartz vein. One contained a trace of gold and 0.1 oz/ton silver; another contained 0.1 oz/ton silver.



Mines and Prospects

c = current claim;
(year) = date of historical claim

1. Stirling Mine (c)
2. Unnamed prospect
3. Best View Prospect (c)
4. Mountain Boy Prospect (1887)
5. Genevieve Prospect (1890)
6. Noonday Prospect (1888)
7. Johnnie Snapper Prospect (1906)
8. SMP Prospect (c)
9. Home Stake Prospect (1892)
10. Unnamed prospect
11. Unnamed prospect
12. Moonshine Prospect (1907)
13. El Lobo Prospect (c)

FIGURE 2. – Mines and Prospects in the Mt. Stirling Wilderness Study Area (BLM No. 050-0401) and Vicinity