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UNITED STATES DEPARTMENT OF THE INTERIOR  
(BUREAU OF MINES)

SUMMARY REPORT

MINERAL INVESTIGATION OF THE JERRY PEAK, JERRY PEAK WEST, AND  
BOULDER CREEK WILDERNESS STUDY AREAS  
(BLM NOS. ID-46-14, ID-46-14A, AND ID-46-13)  
CUSTER COUNTY, IDAHO

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This open file report summarizes the results of a Bureau of Mines wilderness study and will be incorporated in a joint report with the U.S. Geological Survey. The 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 their mineral resources and potential. Results must be made available to the public and be submitted to the President and the Congress. This report summarizes the results of a Bureau of Mines mineral survey of the Jerry Peak, Jerry Peak West and Boulder Creek Wilderness Study Areas, Custer County, Idaho.

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## SUMMARY STATEMENT

The Jerry Peak, Jerry Peak West, and Boulder Creek Wilderness Study Areas contain no identified mineral resources. Two workings, a 20-ft-long adit and a pit, were found in Paleozoic, brecciated, limonitic jasperoid in the east part of the Jerry Peak Wilderness Study Area (WSA), but no significant metallic mineral values were noted.

Lenses and pods of quartz containing copper minerals occur in Paleozoic sedimentary rocks 1/2 mi north of the Jerry Peak West WSA. Similar rocks crop out along Pine Creek in that study area but no copper-bearing quartz lenses were found.

Volcaniclastic rocks, exposed in and near the Jerry Peak and Jerry Peak West WSA's were sampled and analyzed for zeolites. Three samples contained zeolite minerals (clinoptilolite, analcime, and mordenite), but their concentrations are substantially lower than in deposits being mined today for use in catalysts, lightweight aggregate, purification of fluids, and agricultural supplements.

Sand and gravel and stone deposits are abundant in the study areas, but similar deposits occur outside the WSA's, closer to markets. No coal, oil, or gas deposits have been identified in the study areas although most of the Jerry Peak area and the east part of the Jerry Peak West WSA have been leased for oil and gas exploration.

## INTRODUCTION

The U.S. Bureau of Mines and U.S. Geological Survey conducted a mineral survey of the Jerry Peak, Jerry Peak West, and Boulder Creek Wilderness Study Areas to determine mineral resources and potential as required by the Federal Land Policy and Management Act (Public Law 94-579, October 21, 1976). The Bureau of Mines was responsible for determining the minerals present in known prospects and mineralized areas; the Geological Survey was responsible for geological, geochemical and geophysical investigations. Reports on these surveys provide the President, Congress, and the general public with information essential for determining the suitability of land for inclusion in the National Wilderness Preservation System.

The Jerry Peak, Jerry Peak West, and Boulder Creek WSA's cover 46,150, 13,530 and 2,573 acres, respectively, in Custer County, Idaho (fig. 1). The study areas are about 26 air miles south of Challis, Idaho, and are accessible by a paved road along the East Fork Salmon River and dirt and gravel roads along Boulder, Herd, Lake Road, and Sage Creeks. Numerous jeep roads crisscross the Jerry Peak Wilderness Study Area.

The topography in the study areas is moderately rugged. The Jerry Peak WSA has the most relief with elevations ranging from 5,700 ft along the east Fork Salmon River to 10,010 ft at the summit of Jerry Peak.

Several geologic studies, covering portions of the three wilderness study areas, have previously been completed. A masters thesis by Motzer (1978) discusses the volcanic stratigraphy between Germania Creek and Red Ridge, an area which borders the Boulder Creek WSA on the southwest. Another masters thesis by Yokley (1974) discusses the geology of the Horse Basin and Jerry Peak quadrangles which include the east portion of the Jerry Peak WSA. The geology of all three wilderness study areas is described in a report by Ross (1937).

During the summer of 1982 and 1983, Bureau of Mines field investigations of the three WSA's were conducted by Western Field Operations Center personnel. All available information on geology, mining, and exploration in the area, including county mining claim records, was reviewed prior to field work. Nineteen man-days were spent traversing the area and nineteen samples were taken. Sample localities are shown on figure 1. All samples were crushed, pulverized, mixed and split, and checked for radioactive and fluorescent minerals. Those samples thought to contain metallic minerals were fire-assayed for gold and silver, and selected samples were analyzed semi-quantitatively by emission spectrography. Quantitative values of elements visually or spectrographically suspected to contain anomolous values were determined by atomic absorption, colorimetric, or x-ray fluorescent methods. Those samples thought to contain zeolites were analysed by x-ray diffraction methods. A scintillometer was carried on each traverse, but no significant anomalous gamma radiation was detected to indicate the presence of uranium or thorium minerals.

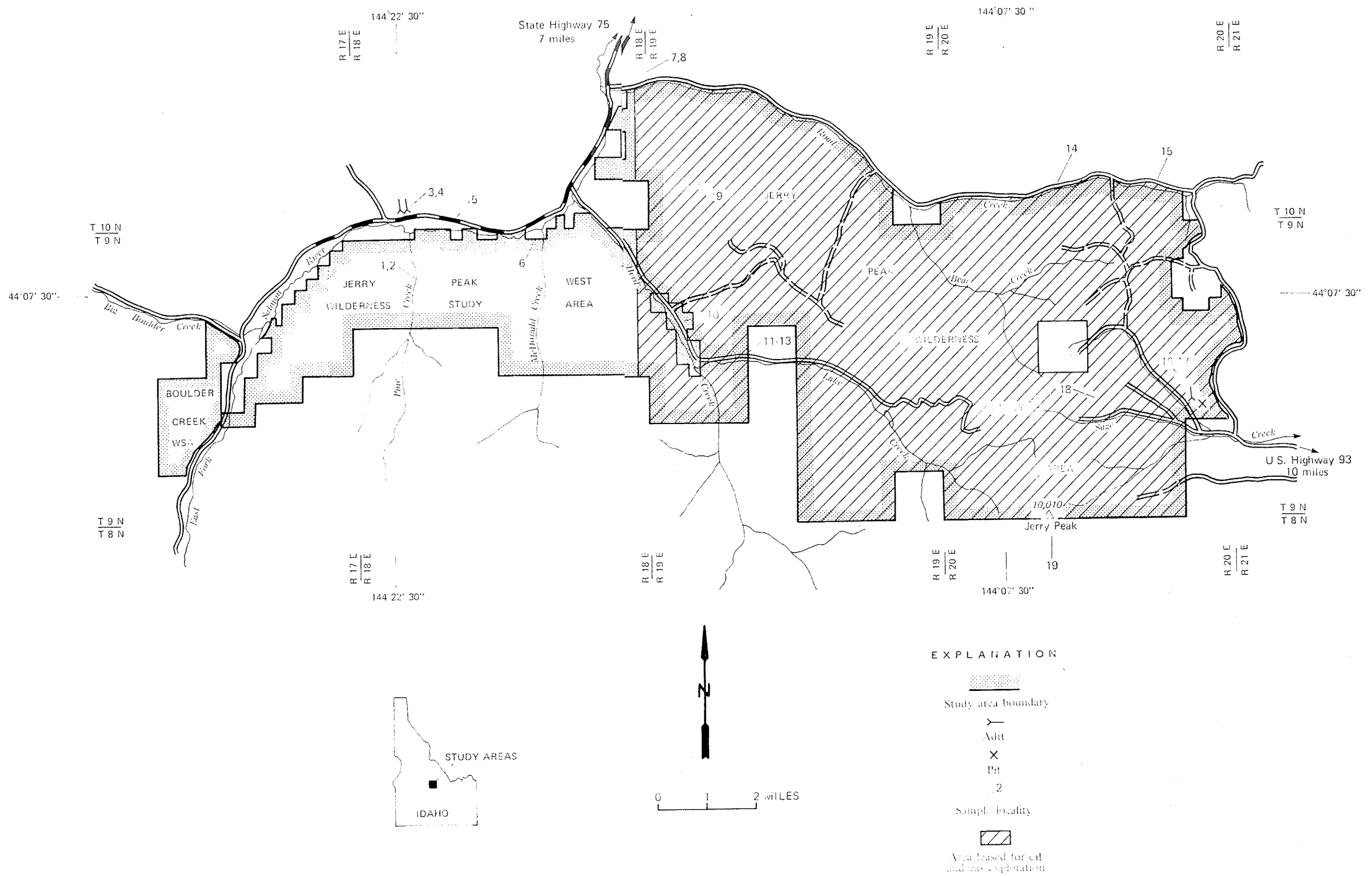


Figure 1.--Location of the Jerry Peak, Jerry Peak West and Boulder Creek Wilderness Study Areas

Figure 1. -- Location of the Jerry Peak, Jerry Peak West, and Boulder Creek Wilderness Study Areas (BLM Nos. ID-46-14, ID-46-14A, and ID-46-13)

(BLM Nos. ID-46-14, ID-46-14A, and ID-46-13)

## GEOLOGY

The Jerry Peak, Jerry Peak West, and Boulder Creek WSA's are generally underlain by Tertiary lavas and volcanoclastic rocks and Paleozoic sedimentary rocks (Ross, 1937). The largest area of Paleozoic rocks, mostly limestone, occurs in the east portion of the Jerry Peak WSA. A much smaller zone of Paleozoic siltstone, sandstone, and conglomerate is exposed near the confluence of Lake Creek with Herd Creek, also in the Jerry Peak WSA. The remaining Paleozoic sedimentary rocks, mainly siltstone, argillite, and shale are exposed along Pine Creek in the Jerry Peak West WSA.

## MINING DISTRICTS AND MINERALIZATION

Only a few claims, probably less than ten, have been located in the Jerry Peak, Jerry Peak West, and Boulder Creek WSA's. One 20-ft-long adit and one pit were found and examined in the east part of the Jerry Peak study area (fig. 1, nos. 16 and 17). The workings explore Paleozoic, brecciated, limonitic jasperoid; no significant metallic mineral values were noted. Lenses and pods of malachite-stained quartz containing chalcopyrite occur in Paleozoic sedimentary rock exposed 1/2 mi north of the Jerry Peak West WSA (fig. 1, nos. 3 and 4). Similar rocks are exposed inside that WSA along Pine Creek, but no copper-bearing quartz lenses were found there. Six samples were analyzed for metallic mineral content; none from the WSA's had significant mineral values. Results are listed in table 1.



Table 1.--Analyses for metallic elements, Jerry Peak, Jerry Peak West,  
and Boulder Creek Wilderness Study Areas

Sample locations are shown on figure 1.

[N, none detected; N.d., not determined]

No.	Type	Sample		Gold (ounce per ton)	Silver (ounce per ton)	Copper (percent)	Lead (percent)	Zinc (percent)
		Length (feet)	Description					
1	Grab	--	Fissile, limonite-stained sandstone containing disseminated pyrite-----	N	0.2	N.d.	N.d.	N.d.
2	do---	--	Hematite- and limonite-stained siltstone forming prominent red cliffs on east side of Pine Creek-----	N	.2	N.d.	N.d.	N.d.
3	Chip	1.5	Across malachite-stained quartz pod-----	N	N	0.0014	N.d.	N.d.
4	Select	--	Malachite-stained quartz containing chalcopyrite, sphalerite, and limonite- stained calcite from adit dump-----	N	.2	.038	N	0.207
16	Chip	9.0	Across feldspathic vein striking N. 70° E. and dipping vertically-----	N	.1	N.d.	N.d.	N.d.
17	do---	5.0	Across heavily limonite-stained jasperoid	N	.2	N.d.	N.d.	N.d.

Thirteen samples of volcanoclastic rocks, exposed in both the Jerry Peak and Jerry Peak West WSA's, were analyzed for zeolites. One volcanoclastic sample taken near the Herd Lake Road in the Jerry Peak study area contained 20 percent clinoptilolite (fig. 1, no. 10). A second sample taken from the west part of the Jerry Peak study area contained 3 percent clinoptilolite and 5 percent analcime (fig. 1, no. 9), and another from the east part of the same study area contained from 20 to 40 percent mordenite (fig. 1, no. 14). Ten samples contained no zeolites (fig. 1, nos. 5-8, 11-13, 15, 18-19). Zeolites are industrial minerals used for catalysts (in hydrocarbon separation), purification of fluids, plant nutrient additives, lightweight aggregate, and for several other uses.

Sand and gravel and stone are abundant in the study areas, but transportation costs to major markets far exceed value of these materials. Similar deposits occur outside the WSA's, closer to markets. No coal, oil, or gas deposits have been identified in the study areas although most of the Jerry Peak WSA and some of the Jerry Peak West WSA have been leased for oil and gas exploration.

#### REFERENCES

- Motzer, W. E., 1978, Volcanic stratigraphy of an area east of the White Cloud Peaks, Sawtooth National Recreation Area, Custer County, Idaho: University of Idaho Graduate School masters thesis, 100 p., 3 pl.
- Ross, C. P., 1937, Geology and ore deposits of the Bayhorse region, Custer County, Idaho: U.S. Geological Survey Bulletin 877, 161 p., 18 pl.
- Yokley, J. W., 1974, Geology of the Horse Basin and Jerry Peak quadrangles, Custer County, Idaho: Milwaukee, University of Wisconsin masters thesis, 56 p.