

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

**Mineral investigation of the Virgin River Wilderness
Study Area, Mohave County, Arizona**

U.S. Bureau of Mines Mineral Land Assessment
MLA 10-84
1984

By
Harris, A.D., and Ryan, G.S.

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 editorial standards. Work on this study was conducted by personnel from Intermountain Field Operations Center, Building 20, Denver Federal Center, Denver, CO 80225.

*On Copy sent to Tucson
on 11/15*
Cards made (File in geology file) under author, note on district cards
A.H. and make a card by Virgin River Wilderness Study Area.

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

MINERAL INVESTIGATION OF THE VIRGIN RIVER WILDERNESS STUDY AREA,
MOHAVE COUNTY, ARIZONA

By
Albert D. Harris and George S. Ryan

MLA 10-84
1984

This open file report summarizes the results of a Bureau of Mines wilderness study and will be incorporated in a joint report with the Geological Survey. The report is preliminary and has not been edited or reviewed for conformity with the Bureau of Mines editorial standards. Work on this study was conducted by personnel from Intermountain Field Operations Center, Building 20, Denver Federal Center, Denver, CO 80225.

STUDIES RELATED TO WILDERNESS
Bureau of Land Management Wilderness Study Area

The Federal Land Policy and Management Act (Public Law 94-579, October 21, 1976) requires the U.S. Geological Survey and the U.S. Bureau of Mines to conduct mineral surveys on certain areas to determine their mineral resource potential. Results must be made available to the public and be submitted to the President and the Congress. This report presents the results of a mineral survey of the Virgin River Wilderness Study Area (AZ-010-130), Mohave County, Arizona.

CONTENTS

	Page
Summary.....	1
Introduction.....	1
Location, size, and geographic setting.....	1
Mining activity.....	3
Mineralized areas.....	3
Conclusions.....	4
References.....	5

ILLUSTRATION

Figure 1. Index map of the Virgin River Wilderness Study Area.....	2
--	---

MINERAL INVESTIGATION OF THE VIRGIN RIVER WILDERNESS STUDY AREA,
MOHAVE COUNTY, ARIZONA

By Albert D. Harris and George S. Ryan, Bureau of Mines

SUMMARY

The Virgin River Wilderness Study Area (WSA) has no identified mineral occurrences. Over 97 percent of the Virgin River WSA is alluvial fan material. East of the Virgin River WSA within 2 mi are a shaft and three prospects apparently for copper or tungsten. There is no indication that the copper or tungsten occurrences extend into the WSA under the alluvium.

INTRODUCTION

In April 1983, personnel of the Bureau of Mines conducted an investigation of the mineral resources of the Virgin River WSA. The investigation consisted of a field examination, a review of pertinent literature, and an examination of mining claim records and current oil and gas leases from the Bureau of Land Management State Office in Phoenix, Arizona. The WSA is adjacent to the western border of the Paiute Primitive Area. Villalobos and Hamm (1980) report minor occurrences of copper, silver, and gold in the Paiute Primitive Area. During this investigation, no evidence of mineralized areas or past mineral production was observed. No mineral samples were taken.

Location, size, and geographic setting

The WSA is located in the northwest corner of Mohave County, Arizona, 3 to 4 mi southeast of U.S. Interstate 15 near Littlefield, Arizona (fig. 1). The WSA consists of four separate units contiguous to the Paiute Primitive Area's western boundary. A jeep road generally parallels the two central units' western boundaries and the Elbow Canyon Road encloses the southern unit on the south and west.

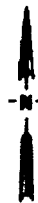
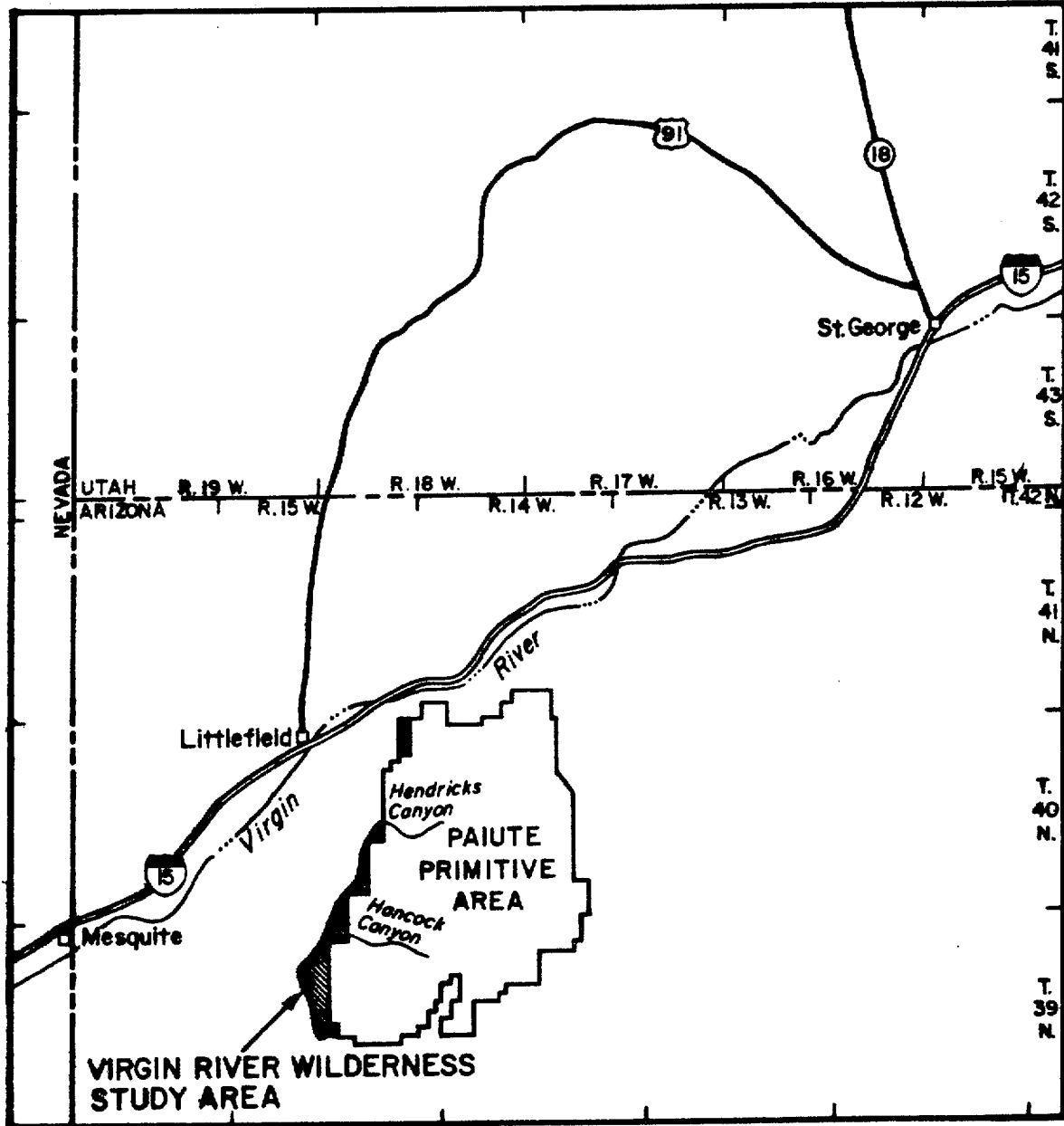


Figure 1.--Index map of the Virgin River Wilderness Study Area, Mohave County, Arizona.

16 Bentley Dist c-3 ²

Each unit is smaller than 500 acres; the entire WSA comprises 1,440 acres. Vegetation consists of cacti, grasses, sagebrush, creosote bush and other desert shrubs.

Topography is predominantly characterized by gently sloping alluvial fans adjacent to the base of the Virgin Mountains. The alluvial fans are cut by several 20- to 50-ft-deep drainage channels. About 40 acres in the southernmost unit consist of steep foothills and ridges of gneiss of Precambrian age. Maximum relief is 900 ft.

Mining activity

There is no indication of prospecting or mining in the WSA. A few claim posts are present in Elbow Canyon, some within the WSA boundary, but no prospect pits were found and the located claims are not registered with the Bureau of Land Management.

Oil and gas leases cover 1,120 acres of the WSA. A lease application has been filed on the remaining 320 acres that comprise the W1/2 sec. 16, T. 39 N., R. 15 W. No exploratory drill holes or drill sites were observed.

MINERALIZED AREAS

This investigation found no surface evidence of mineralization within the Virgin River WSA. Sand and gravel is present within the WSA as well as in most of the surrounding alluvium. A borrow pit was excavated about 1/2 mi northwest of the northernmost unit of the WSA. Material from this pit was used in the construction of Interstate 15 through the Virgin River Narrows. No exploitation of sand and gravel within the WSA has been reported.

Villalobos and Hamm (1980), discovered minor amounts (84 to 720 ppm) of copper in a shaft and three prospects north of Hendricks Canyon about 1/2 mi from the Virgin River WSA. These workings were driven into granitic gneiss and pegmatite, rock types which do not crop out in the WSA. The

gneiss and pegmatitic rocks may be truncated by a range front fault which is east of the WSA (Moore, 1972).

In Hancock Canyon one caved adit and two prospects were sampled by Villalobos and Hamm (1980). Samples from the adit and one of the prospects, located about 1 1/2 mi east of the WSA, assayed a trace to 0.2 oz silver per ton and nil to a trace gold. In the other prospect, a 200-ft-long dozer cut near the mouth of Hancock Canyon, 1/2 mi east of the WSA, granitic gneiss, amphibolite, and pegmatite veins are exposed. Villalobos and Hamm (1980) found small, spotty occurrences of scheelite in one of the pegmatite veins. Because there are no outcrops in the WSA near Hancock Canyon, these rock units and mineral occurrences could not be traced into the WSA.

No producing oil fields are present within 40 mi of the Virgin River WSA. Extensive leased acreage within and surrounding the WSA indicates some interest in oil exploration, but at present no exploratory drill holes are reported and the presence of oil and gas within the area cannot be ascertained from surface expression.

CONCLUSIONS

No known deposits of metallic or precious metals or minerals occur within the Virgin River WSA. Sand and gravel is widespread, but there is no indication of an attempt to exploit this commodity within the WSA; similar deposits are common throughout the surrounding region. Interest in oil and gas has been confined to leasing of lands in the WSA.

REFERENCES

Moore, R. T., 1972, Geology of the Virgin and Beaver Dam Mountains, Arizona: Arizona Bureau of Mines Bulletin 186, 65 p.

Villalobos, H. A., and Hamm, L. W., 1980, Summary report of the mineral resource appraisal of the Paiute Instant (Primitive) Study Area, Mohave County, Arizona: U.S. Geological Survey Open File Report 80-984, 11 p.