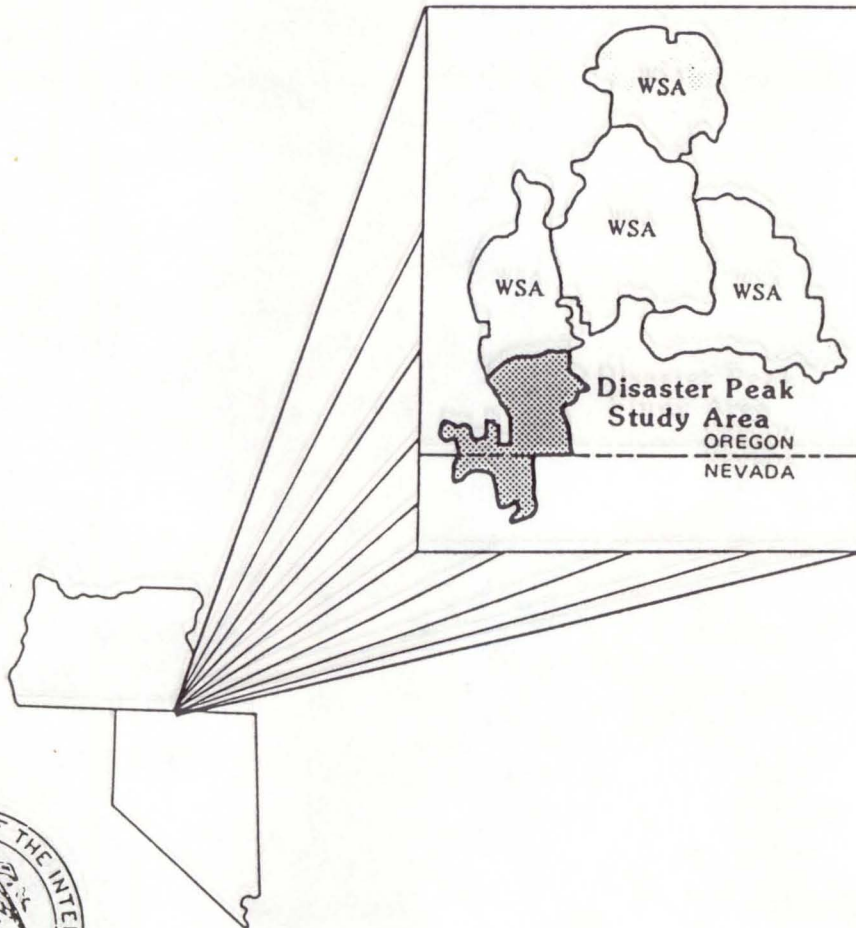




Mineral Land Assessment/1987  
Open File Report

# Mineral Resources of the Disaster Peak Study Area, Harney and Malheur Counties, Oregon and Humboldt County, Nevada



BUREAU OF MINES  
UNITED STATES DEPARTMENT OF THE INTERIOR

MINERAL RESOURCES OF THE DISASTER PEAK  
STUDY AREA, HARNEY AND MALHEUR COUNTIES, OREGON,  
AND HUMBOLDT COUNTY, NEVADA

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## 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 administered land designated as Wilderness Study Areas ". . . to determine the mineral values, if any, that may be present . . . ." Results must be made available to the public and be submitted to the President and the Congress. This report presents the results of a Bureau of Mines mineral survey of a portion of the Disaster Peak Wilderness Study Area (OR-003-153/OR-002-078D/NV-020-859), Harney and Malheur Counties, Oregon, and Humboldt County, Nevada.

This open-file report will be summarized in a joint report published by the U.S. Geological Survey. The data were gathered and interpreted by Bureau of Mines personnel from Western Field Operations Center, E. 360 Third Ave., Spokane, WA 99202. The report has been edited by members of the Branch of Resource Evaluation at the field center and reviewed at the Division of Mineral Land Assessment, Washington, DC.

## CONTENTS

	<u>Page</u>
Summary . . . . .	4
Introduction . . . . .	4
Setting . . . . .	5
Previous studies . . . . .	5
Present study . . . . .	7
Acknowledgements . . . . .	7
Geologic setting . . . . .	8
Mining history . . . . .	8
Mines, prospects, and mineralized areas . . . . .	10
Albisu prospect . . . . .	10
Au claim group . . . . .	11
Appraisal of mineral resources . . . . .	14
Recommendations for further study . . . . .	16
References . . . . .	17

## ILLUSTRATIONS

Figure 1. Location of the Disaster Peak study area, Harney and Malheur Counties, OR, and Humboldt County, NV . . . . .	6
2. Rock, alluvial, and drill hole sample sites in the Disaster Peak study area, Harney and Malheur Counties, OR, and Humboldt County, NV . . . . .	9

## TABLES

Table 1. Sample descriptions and analysis for the Albisu prospect . . . . .	12
2. Sample descriptions and analysis for the Au claim group . . . . .	15

UNIT OF MEASURE ABBREVIATIONS USED IN THIS REPORT

ft	feet
in.	inch
mi	mile
oz	troy ounce
oz/ton	troy ounce per ton
ppb	part per billion
ppm	part per million
yd <sup>3</sup>	cubic yard

## SUMMARY

In 1986 at the request of the U.S. Bureau of Land Management, the U.S. Bureau of Mines studied 30,080 acres of the 32,080-acre Disaster Peak Wilderness Study Area (OR-003-153/OR-002-078D/NV-020-859) in order to evaluate its identified mineral resources. The study area is located in Harney and Malheur Counties, Oregon, and Humboldt County, Nevada, about 25 mi west of McDermitt, NV. No mineral resources were identified; however, two areas with gold-bearing structures were noted. No mines were operating in the study area, but the McDermitt Mine, 20 mi east of the study area, was producing mercury.

Volcanic and intrusive rocks dominate the area. The volcanic rocks cover most of the study area and consist of rhyolite, basalt, and tuff. A granitic complex crops out west and southwest of Disaster Peak.

Approximately 180 claims have been located in or near the study area, but only two prospects, the Au claim group and Albisu prospect, have mineral-bearing structures. The Albisu prospect, 2 1/2 mi northeast of Disaster Peak, is partly within the study area on the west rim of the extensive McDermitt caldera complex. A hydrothermally altered zone extending into the area is up to 80 ft wide and 1 mi long and contains gold-bearing sulfides as discrete grains and veinlets.

The Au claim group is 2 mi west of Disaster Peak in a granitic complex. Short discontinuous quartz veins contain gold and minor sulfide minerals. The veins crop out along two 1-mi-long linear trends. One trend is north; the other is southwest.

Both properties are being evaluated by the claimants. The Albisu prospect was the subject of an extensive soil sampling program in 1985, and rotary drilling in 1986. McDermitt Mine has an evaluation program including rotary drilling planned for 1987. At the Au claim group, more intensive study including soil sampling, geologic mapping, followed by selective diamond core drilling might reveal more extensive gold mineralization. Occurrences of sand and gravel are suitable for local use, but other occurrences of better quality and nearer to major markets make development unlikely.

## INTRODUCTION

This report describes the USBM (U.S. Bureau of Mines) portion of a cooperative study with the USGS (U.S. Geological Survey) to evaluate mineral resources and mineral potential of part of the Disaster Peak WSA (Wilderness Study Area) at the request of the BLM (U.S. Bureau of Land Management). The USBM examines individual mines, prospects, claims, and mineralized zones, and evaluates identified (known) mineral and energy resources. The USGS evaluates potential for undiscovered resources based on areal geological, geochemical, and geophysical surveys. Results of the investigations will be used to help determine the suitability of the study area for inclusion into the National Wilderness Preservation System.

Although the immediate goal of this and other USBM mineral surveys is to provide data for the President, Congress, government agencies, and the public for land-use decisions, the long-term objective is to ensure the Nation has an adequate and dependable supply of minerals at a reasonable cost.

### Setting

The Disaster Peak study area encompasses 30,080 acres of the 32,080-acre Disaster Peak WSA (OR-003-153/OR-002-078D/NV-020-859) in Harney and Malheur Counties, Oregon, and Humboldt County, Nevada. The study area is about 25 mi west of McDermitt, NV (fig. 1). Access is by a complex system of gravel and dirt roads that vary from excellent to rough 4-wheel tracks.

The study area lies in the Trout Creek Mountain Range. Elevations range from 4,880 ft on China Creek near the southern boundary to 8,506 ft at the crest of Orevada View in the south-central part. A plateau, about 8,000 ft high, dominates the southern part of the area studied and extends northward along the western boundary. In the northern part of the study area the terrain is characterized by a steep east-facing escarpment cut by several east to northeasterly flowing streams.

Climatic conditions vary dramatically during the year. The winter months are cold with freezing and frequent subzero temperatures. Summer months are hot with temperatures generally in the 90's, and readings over 100° not unusual. Precipitation occurs as snowfall during the winter months with minor precipitation occurring as thundershowers during the rest of the year. Vegetation consists of sagebrush and grasses on open slopes, with alder and cottonwood trees along streams. Upper basins contain large aspen groves.

### Previous Studies

A number of studies have been completed of the geology and mineral occurrences of the part of Nevada and Oregon including the Disaster Peak study area. The geology of the mercury deposits in Nevada and Malheur County, Oregon, was examined by Benson (1956). Humboldt County, Nevada, geology and mineral deposits were described by Wilden (1959). The geology and ore deposits of the McDermitt Caldera were described by Rytuba (1976), Rytuba and Conrad (1981), and Rytuba and McKee (1984). A study of the relation of mercury, uranium, and lithium deposits to the McDermitt Caldera was published by Rytuba and Glanzman (1978). Connors and others (1982) geochemically and geostatistically evaluated wilderness study areas in the Winnemucca District. Hetherington and Cheney (1985) described the origin of the Opalite breccia at the McDermitt Mine.

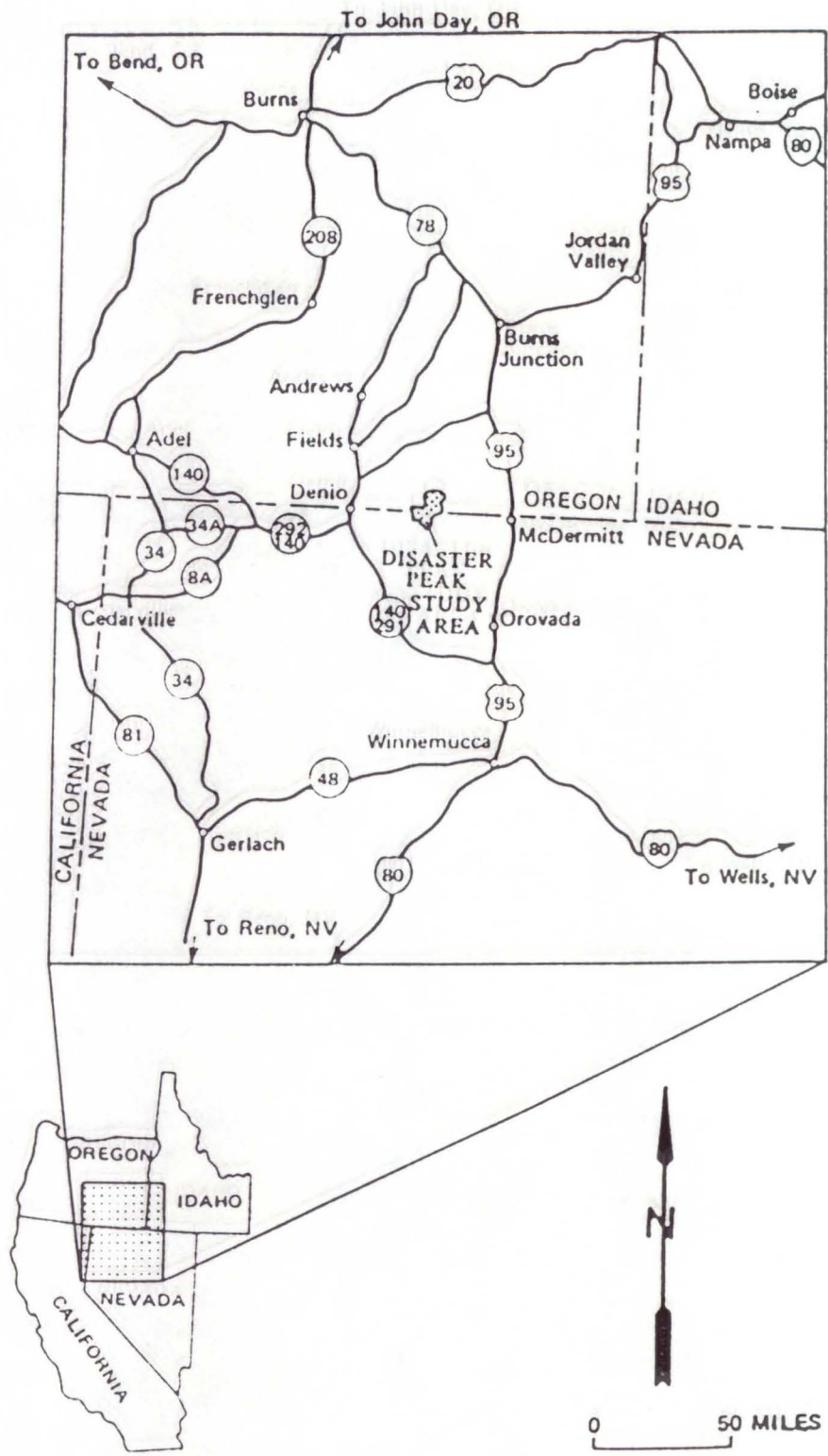


FIGURE 1.— Location of the Distaster Peak study area, Harney and Counties, OR, and Humboldt County, NV



### Present Study

Preliminary work on the study area included perusal of all pertinent literature on the geology, mines, and prospects in the vicinity of the area studied. All known federal, state, and county records were examined to ascertain the number and location of mines or mineral claims in the study area. Field investigations were conducted in July and August 1986.

Forty-five samples were taken including four alluvial samples and forty-one rock samples. The alluvial samples were selected from material near streams and consisted of three level 16-in. pans per sample. The samples were reduced in the field by hand-panning and then sent to the USBM Western Field Operations Center where they were concentrated on a laboratory-size Wilfley 1/ table, and inspected microscopically for gold and other valuable minerals.

The 41 rock samples were prepared for analysis at WFOC, then pulps of each sample were sent to a commercial laboratory for analysis. Each sample was analyzed for 29 elements 2/ by neutron activation. Beryllium content was determined by atomic absorption and mercury content by cold vapor atomic absorption.

All samples were checked at the field center for radioactive and fluorescent minerals. Complete results of sample analysis are available from the USBM Western Field Operations Center, E. 360 Third Ave., Spokane, WA 99202.

### ACKNOWLEDGEMENTS

The assistance and information provided by Tom Whittle and Ken Holtz of McDermitt Mine and Jim LeBret was greatly appreciated.

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1/ Reference to specific company names or products does not imply endorsement by the USBM.

2/ Antimony, arsenic, barium, beryllium, cadmium, cesium, chromium, cobalt, europium, gold, hafnium, iridium, iron, lanthanum, mercury, molybdenum, nickel, rubidium, scandium, selenium, silver, tantalum, tellurium, terbium, thorium, tungsten, uranium, ytterbium, and zinc.

## GEOLOGIC SETTING

The geology in the vicinity of the study area is dominated by Tertiary volcanic rocks composed of numerous andesite-basalt and rhyolite-dacite flows. Occurrences of ash flow tuffs and tuffaceous sedimentary rocks are common. The northern part of the study area consists of tuff of Trout Creek Mountains, an unwelded to welded rhyolite ash flow tuff, overlain by the tuff of Long Ridge, also an unwelded to densely welded tuff (Rytuba and others, 1983). The area west of Orevada View and Disaster Peak is dominated by Cretaceous granitic rocks, mostly granodiorite and quartz monzonite (Wilden, 1959, p. 132).

Structural geology is typical of the Basin and Range province with north-northwesterly linear normal faulting in the northern part of the area. The area east of Disaster Peak is affected by the McDermitt caldera complex comprised of four calderas (Rytuba, 1978). The eastern edge of the study area coincides with the western rim of the Long Ridge Caldera. Many local fractures or faults occur in the vicinity of the rim.

## MINING HISTORY

County mining records indicate more than 100 mining claims have been located in or near the study area. U.S. Bureau of Land Management records show approximately 80 additional claims have been filed recently (1986). The study area is partly within the Disaster Peak (unorganized) mining district. The earliest recorded claims were in 1892, with most of the activity in the 1900's and minor activity in the 1920's, 1930's, and 1940's. There was an increase in claim location during the 1950's, and in the past ten years with the impetus from uranium, mercury, and gold exploration.

The Opalite unorganized mining district lies 10 mi east of the study area and has four mercury mines, the Opalite, Bretz, Ruja, and Cordero, with a history of past production and one mercury mine, the McDermitt, which was a producer in 1986. It is currently (1987) on standby until the mercury market improves. Retorting facilities existed at all the mines except the Ruja. The McDermitt Mine has a modern mercury recovery facility.

Current mineral-related activity is centered on two areas (fig. 2). Two to three miles northeast of Disaster Peak, the McDermitt Mine has leased the Albisu prospect comprised of three claim blocks consisting of 69 claims partly within the study area. McDermitt Mine is evaluating gold-bearing structures here. McDermitt Mine has proposed the Albisu prospect be included in a BLM ACMP (Area of Critical Mineral Potential) classification (see fig. 2) and withdrawn from wilderness consideration. In The Granites area 1 to 1 1/2 mi west of Disaster Peak, the Au claim group has been staked for gold.

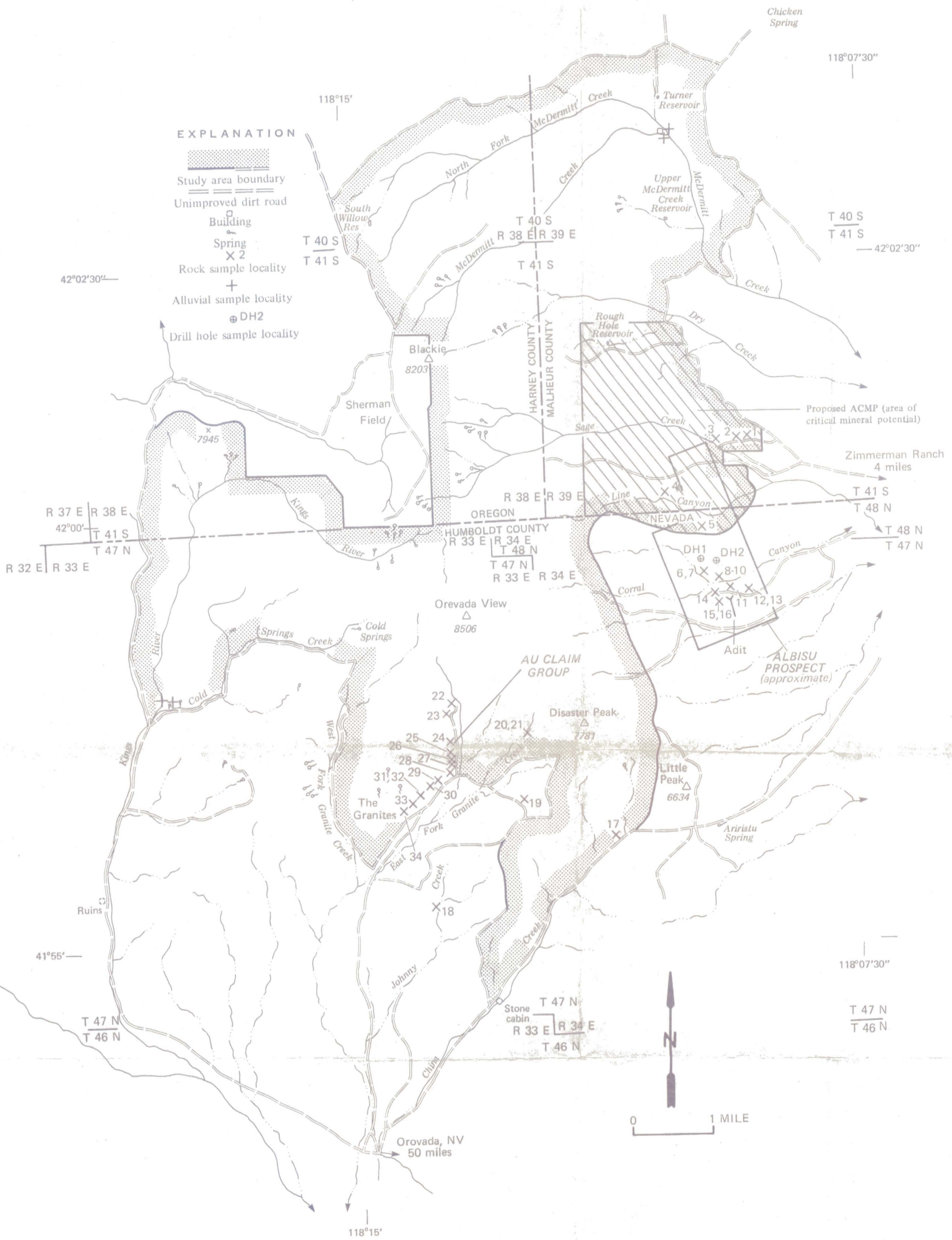


FIGURE 2.— Rock, alluvial, and drill hole sample sites in the Disaster Peak study area, Harney and Malheur Counties, OR and Humboldt County, NV

## MINES, PROSPECTS, AND MINERALIZED AREAS

### Abisu Prospect

The Abisu prospect (Lost Bucket, Sagehen, and Capulio claim groups) is currently leased by McDermitt Mine, McDermitt, NV. The prospect, partly in the study area, is in sections 17, 20, and 21 in T. 41 S. and R. 39 E., sections 33 and 34 in T. 48 N. and R. 34 E. and sections 3, 4, 9, and 10 in T. 47 N., R. 34 E. Elevations range from 5,520 ft to 6,240 ft. Access is by a good gravel road from McDermitt, NV, west to the Zimmerman ranch then south and southwest by four-wheel-drive roads.

Claim notices and workings indicate the first mineral activity was about 1907. McDermitt Mine leased the Abisu prospect in 1985 and conducted an extensive soil sampling program in 1985 followed by four rotary holes in 1986. McDermitt Mine plans further extensive evaluation work, including additional drill holes (1987).

The Abisu prospect is on the perimeter of Long Ridge caldera (Rytuba, 1978). There are three rock types in the area--rhyodacite flows, rhyolite intrusives and tuffs, and tuffaceous sediments (Rytuba, 1976).

The primary mineral-bearing zone trends north-northwesterly and is probably a ring fracture related to the caldera rim. The zone has been hydrothermally altered by a low temperature (300°C or less) hydrothermal system related to post caldera collapse and subsequent rhyolite dome resurgence.

On the surface, the mineral-bearing zone is traceable for about 2 mi, and one-half of the zone is in the study area. The intensely altered portion of this zone is about 80 ft wide in a road cut near drill hole ALB-18.

Sulfides in the zone consist of marcasite, pyrite, and arsenopyrite as disseminated grains and veinlets less than 1/16 in. thick. There appears to be two stages of mineral deposition indicated by: 1) rhyolite fragments in a breccia containing sulfides as discrete grains and masses, and 2) a siliceous matrix in the breccia containing sulfides as discrete grains, masses and thin veinlets.

Numerous widely scattered trenches and pits are in sections 20, 21, T. 41 S., R. 39 E., sections 33 and 34, T. 48 N., R. 34 E., and sections 3 and 4, T. 47 N., R. 34 E. There are two old adits, one 130-ft-long adit in NE1/4 SE1/4 section 4, T. 47 N., R. 34 E. and a 16-ft-long decline in SW1/4 NE1/4 section 4, T. 47 N., R. 34 E. The 130-ft adit is in intensely altered sulfide-bearing rhyolite while the decline is on a mercury-bearing shear zone in rhyolite.

In 1986, four rotary drill holes were driven to depths of 450 to 480 ft to test for mineral-bearing zones.

Bureau of Mines personnel took 18 samples (fig. 2, nos. 1-16 and DH-1 and DH-2) from the Albisu property, but only five are inside the study area (fig. 2, nos. 1-5); results are listed in table 1. Most of the samples were taken from leached surface rocks expected to contain low elemental concentrations. Samples that contain gold (fig. 2, nos. 5, 8, 9, 10, 11, DH-1, and DH-2) are from fresh rock exposed in new bulldozer cuts or on drill pads. Only one of these gold-bearing samples (fig. 2, no. 5) was inside the study area. Samples DH-1 and DH-2 are of drill cuttings from drill holes ALB 15 and 17. Sample 11 is from the dump of an old pit.

McDermitt Mine took 80 soil samples and, on the basis of the assay data, drilled four rotary holes which were sampled in 5-ft intervals. The assay data for the soil samples and drill hole samples, including a fifth hole drilled in 1981, were made available to the U.S. Bureau of Mines as company confidential information.

Data from Bureau surface samples replicated results from the McDermitt Mine soil sampling program. Subsurface company confidential data indicates gold concentrations which warrant further evaluation. The proximity of the Albisu prospect area to a caldera complex indicates a permissive environment for an epithermal gold deposit i.e., 1) proximity to a ring fracture zone providing channelways for hydrothermal fluids, 2) alteration of rhyolite by hydrothermal fluids generated by post caldera collapse is visible in numerous workings; 3) visible sulfides in hand specimens taken from rocks exposed in the area; 4) assay results indicate anomalous amounts of gold associated with the sulfides. Evaluation of this property for subsurface gold deposits is continuing and is reasonable considering current information.

#### Au Claim Group

The Au claim group (Au 1-10, Brown Clay 1-2, and Stans Discovery), claimed by Jim LeBret, Box 104, Orovada, NV, and Stanley Barnes, Imlay, NV, are located in the E1/2 section 14 and NW1/4 sections 23 of T. 47 N., R. 33 E. Elevations range from 5,600 to 6,400 ft. Access is by a paved road west from Orovada to Kings River Valley and then north and northwest on gravel and dirt roads to the Granite Creek area.

Humboldt County records indicate that about 50 claims were staked in this general area from 1906 to 1910. Additional claims were staked in 1938 and 1948. No production is known from these claims, but the remains of two small mills indicate a small amount of ore was processed.

The primary mineral of interest is gold, followed by silver, galena, chalcopyrite, bornite, malachite, and azurite. The gold occurs in quartz veins in quartz monzonite. No continuous veins are visible in the numerous pits and trenches; therefore, information was gleaned from the quartz stockpiles near the pits. The intermittent veins appear to be 1.5 ft thick or less, strike N. 20° to 40° E., and dip 20° to 30° NW. Sporadic surface exposures in trenches indicate the veins can be extrapolated to have a strike length of less than 100 ft and extend down dip less than 50 ft. The vuggy coarsely crystalline quartz appears to be fissure fillings.

TABLE 1.--Sample descriptions and analysis for the Albus prospect 1/

(&lt;, less than; Au in ppb)

Sample no.	Sample description	Cs (ppm)	Cr (ppm)	Fe (%)	As (ppm)	Mo (ppm)	Sb (ppm)	Ba (ppm)	La (ppm)	Hf (ppm)	Ta (ppm)	W (ppm)	Au (ppb)	Th (ppm)	U (ppm)	Kb (ppm)	Sc (ppm)	Tb (ppm)	Yb (ppm)	Be (ppm)
1	Grab of flow banded rhyolite---	4	50	3.20	6.0	<2.0	0.80	1200	81	8	1.0	<3.0	<5	10.0	5.8	130	7.5	4	9	4.0
2	Grab of brecciated rhyolite----	19	<50	.60	12.0	24.0	17.0	500	19	5	<1.0	<2.0	<5	3.6	1.6	190	.7	<1	<5	2.0
3	Random chip of leached flow banded rhyolite with sulfides and iron oxide-----	3	400	.60	16.0	29.0	8.10	<100	10	13	2.0	<2.0	<5	9.0	6.5	34	1.8	<1	<5	<.5
4	Random chip of flow banded rhyolite with light green chalcedony-----	25	70	2.60	18.0	<2.0	5.80	560	36	7	1.0	<3.0	<5	13.0	4.5	210	4.0	2	7	3.0
5	Random chip of silicified locally brecciated rhyolite-----	5	110	1.60	128.0	17.0	23.80	350	32	11	1.0	17.0	43	15.0	9.2	250	4.5	2	13	3.0
6	Random chip from altered flow banded rhyolite-----	26	<50	2.60	152.0	3.0	11.0	410	39	8	1.0	<3.0	<6	14.0	11.0	220	4.6	2	12	5.0
7	Select grab of hydrothermally altered rhyolite with minor (1%) cinnabar-----	3	230	<.50	35.0	18.0	12.0	290	14	8	<1.0	7.0	<5	3.7	12.0	130	3.5	2	10	1.0
8	Random chip of silicified sulfide-bearing rhyolite-----	3	130	3.30	2270.0	13.0	58.4	750	13	<2	<1.0	7.0	220	3.8	5.3	180	12.3	<1	14	1.5
9	Select grab from bluish gray silicified rhyolite, minor sulfides (1%)-----	4	300	2.00	454.0	38.0	78.1	270	11	10	1.0	13.0	14	12.0	53.0	32	7.3	1	12	3.0
10	Random chip across 80-ft zone. Hydrothermally altered rhyolite with minor sulfides (1%)-----	5	77	5.20	410.0	<2.0	16.0	770	22	6	<1.0	3.0	44	5.9	5.3	160	16.0	<1	<5	3.0
11	Grab of rhyolite-----	48	150	1.20	219.0	21.0	12.0	420	16	5	<1.0	7.0	30	11.0	42.0	100	3.1	1	9	1.0
12	Select grab of gray siliceous brecciated rhyolite-----	2	310	<0.50	22.0	55.0	27.2	220	<5	22	3.0	14.0	48	16.0	146.0	<10	10.0	2	18	2.0
13	Grab of rhyolite-----	8	100	.90	16.0	5.0	6.4	40	34	8	1.0	4.0	<5	15.0	12.0	180	4.0	2	11	2.0
14	Select grab of banded rhyolite with minor quartz veinlets----	6	85	.60	11.0	3.0	7.4	330	34	10	1.0	6.0	<5	17.0	16.0	210	4.4	3	16	1.0
15	Select grab of leached rhyolite	194	<50	.90	26.0	5.0	13.0	1200	25	<2	<1.0	7.0	<9	11.0	17.0	120	3.8	<1	6	<.5

TABLE 1.--Sample descriptions and analysis for the Albisu prospect 1/--Continued

Sample no.	Sample description	Cs (ppm)	Cr (ppm)	Fe (%)	As (ppm)	Mo (ppm)	Sb (ppm)	Ba (ppm)	La (ppm)	Hf (ppm)	Ta (ppm)	W (ppm)	Au (ppb)	Tl (ppm)	U (ppm)	Rb (ppm)	Sc (ppm)	Tb (ppm)	Yb (ppm)	Be (ppm)
16	Random chip of siliceous rhyolite-----	3	280	<0.50	8.0	2910	19.0	<100	13	10	1.0	4.0	<5	7.9	29.0	34	2.2	1	8	0.5
DH-1	Select grab of sulfide-bearing drilling cuttings. Gray vuggy rhyolite-----	9	220	2.60	640.0	32.0	41.2	170	22	5	<1.0	8.0	380	7.9	5.7	190	4.3	1	7	4.0
DH-2	do-----	19	<50	5.20	318.0	3.0	27.3	810	23	3	<1.0	7.0	43	4.7	6.9	260	13.0	<1	<5	4.0

1/ Analyses were below detection limits on all samples for: cobalt except no. 10 (16 ppm) and DH-2 (14 ppm); zinc except no. 6 (400 ppm); cadmium except no. 8 (13 ppm); europium except no. 1 (3 ppm); mercury was analyzed for only no. 7 (5 ppm).

There are approximately two dozen pits and trenches on these claims. The trenches are up to 80 ft long, but most are less than 20 ft and all are less than 5 ft deep. The pits are less than 10 ft long and 4 ft deep. There are the remains of two small mills, one in NE1/4 SE1/4 SE1/4 section 14 and the other in NE1/4 NE1/4 section 14, T. 47 N., R. 33.

Sixteen samples were taken from claims in this group (fig. 2 and table 2, nos. 18, 20-34). Samples 17 and 19 (fig. 2, table 2) are chip samples of quartz from granitic rock in the vicinity of the claim group. All the samples were grab samples of stockpiled material near works except 20 and 21, which were chip samples across a mudstone outcrop. All samples were assayed for 29 elements, but only 6 elements occurred in significant amounts (see table 2).

Gold-bearing quartz veins occur sporadically over about a square mile area. However, the minimal exposure in outcrop and the obvious limited extent of the veins horizontally and vertically make evaluation difficult. Assay results from 7 grab samples of stockpiled quartz at widely separated locations show the presence of gold concentrations. Since no continuous quartz veins were observed, no resource can be calculated, but extensive evaluation work is recommended. Recommended work includes soil sampling, detailed geologic mapping, followed by diamond core drilling.

#### APPRAISAL OF MINERAL RESOURCES

No mineral resources were identified within the Disaster Peak study area. One site within and one site partially within the study area have gold-bearing structures that warrant further study.

East of Disaster Peak and partly in the study area, the Albisu prospect has gold-bearing sulfides in a rhyolite flow. The mineral-bearing structure is about 2 mi long and 80 ft wide; part of the structure lies within the area studied. Company confidential assay data from McDermitt Mine indicates gold-bearing structures which was confirmed by USBM studies. Seven of eighteen USBM's samples contained gold ranging from 30 to 380 ppb. Only one of the gold-bearing samples is in the study area; however, the hydrothermally altered gold-bearing structure extending into this study area is currently being evaluated by McDermitt Mine.

The Au group of claims in The Granites area west of Disaster Peak has several discontinuous quartz veins in quartz monzonite that have been explored by present and previous claimants. The discontinuous veins do not extrapolate to have a strike length of more than 100 ft and do not extend downdip more than 50 ft. Fire assay results from seven grab samples of stockpiled quartz contained from 0.107 to 1.120 oz/ton gold. The quartz veins occur intermittently and discontinuously over a distance of about 1 mi in a north and southwest direction. Granitic rocks that host these gold-bearing veins occupy about 6 square mi of the study area southwest of Orevada view.



TABLE 2.--Sample descriptions and analysis for the Au claim group 1/

(--, analysis below detection limit)

Sample no.	Element concentrations and detection limits <u>2/</u>					
	Molybdenum 2.0	Silver 5	Antimony 0.20	Tungsten 2.0	Gold 5	Tellurium 0.02
17 <u>3/</u>	24	--	0.30	--	--	--
18	25	--	12.0	--	1020	0.13
19	27	--	7.7	--	240	.55
20	--	--	--	--	--	--
21	--	--	--	--	--	--
22	27	15	4.0	11.0	3580*	8.0
23 <u>3/</u>	29	33	82.5	50.0	5620*	12.0
24	20	27	3.3	7.0	7710*	17.0
25	20	83	4.8	13.0	22600*	39.0
26	36	12	230	12.0	10200*	9.2
27	22	--	5.9	--	1710	5.3
28	22	94	3.8	130	26200*	>400
29	27	--	--	--	1210	2.0
30	21	--	--	--	44	--
31	22	--	18.0	--	5010*	1.4
32	29	--	7.1	8.0	920	.25
33	24	9	--	--	1730	8.0
34	23	--	--	--	--	--

1/ Samples, with the exception of sample nos. 17, 19, 20, and 21, were grab samples of stockpiled quartz by workings. Sample nos. 17 and 19 are chip samples from nearby quartz outcrops; sample no. 18 was a grab sample of quartz from a weathered outcrop in a road cut, and sample nos. 20 and 21 were chip samples from an outcrop of mudstone.

2/ Lower detection limits shown under the element are in parts per million except for gold which is in parts per billion.

3/ Sample no. 17 contained 2 ppm arsenic and sample no. 23 had 3 ppm uranium.

\*Fire assay results in oz per ton. Sample (no. 22) 0.107, (no. 23) 0.215, (no. 24) 0.290, (no. 25) 0.976, (no. 26) 0.156, (no. 28) 1.120, and (no. 31) 0.171.

## RECOMMENDATIONS FOR FURTHER STUDY

The Albisu prospect and Au claim group areas warrant further study based on areal extent of the mineral bearing-structures and the presence of gold in some sample analyses. McDermitt Mine is continuing with their evaluation program at the Albisu prospect and plan to drill more rotary holes to further delineate the extent and depth of the structure containing gold-bearing sulfides. At the Au claim group detailed geologic mapping and soil sampling would locate sites for drilling which might disclose identified resources.

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