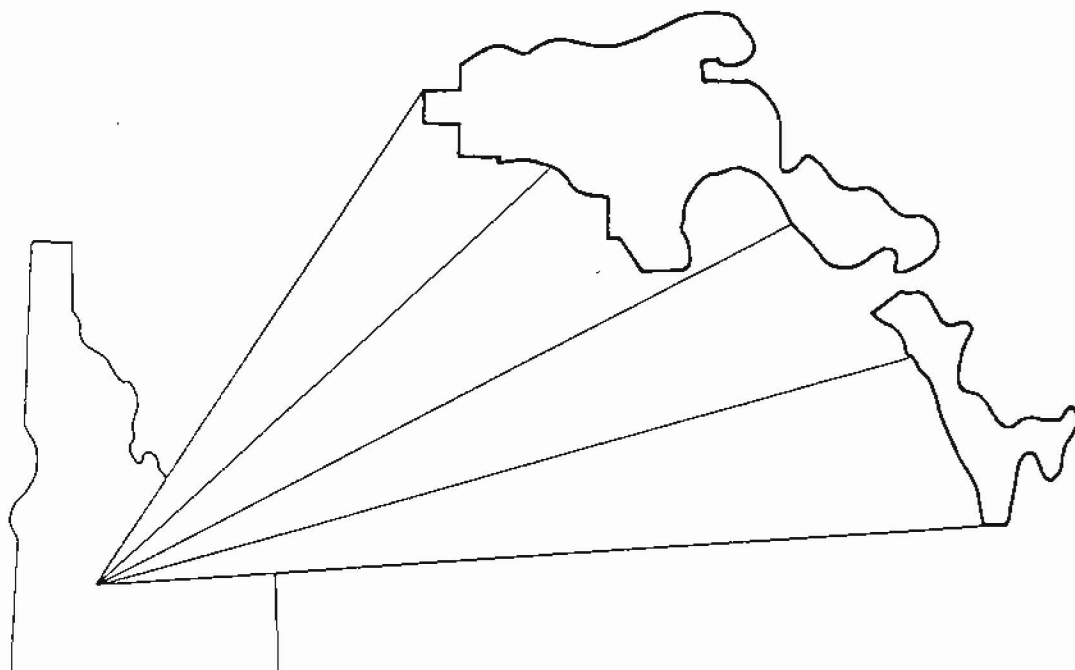


**MLA**

29-93

Mineral Land Assessment  
Open-File Report/1993

# Mineral Resources of the Danskin/South Fork Boise River Study Area, Elmore County, Idaho



UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF MINES

MINERAL RESOURCES OF THE DANSKIN/SOUTH FORK BOISE RIVER  
STUDY AREA, ELMORE COUNTY, IDAHO

By  
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MLA 29-93

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Bruce Babbitt, Secretary

BUREAU OF MINES  
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## PREFACE

The Wilderness Act (Public Law 88-577, September 3, 1964) and related acts require the U.S. Bureau of Mines and U.S. Geological Survey to survey certain areas of Federal lands ". . . 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 investigation of the Danskin/South Fork Boise River study area, Elmore County, Idaho, which includes lands recommended for Wilderness. Mining-related activities in the study area would be severely restricted under wilderness designation.

This open-file report contains data gathered and interpreted by personnel of the U.S. Bureau of Mines, Western Field Operations Center, Branch of Resource Evaluation, East 360 Third Avenue, Spokane, WA 99202. This report has not been edited or reviewed for conformity with Bureau of Mines editorial standards.

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# UNITS OF MEASURE, ABBREVIATIONS, SYMBOLS, AND CONVERSIONS USED IN THIS REPORT

To conform to the Omnibus Trade and Competitiveness Act of 1988 and Executive Order 12770, dated July 25, 1991, measurements made during this study have been converted to the metric system. Conversions have been done using Federal Standard a, May 5, 1983, preferred metric units for general use by the Federal Government, General Services Administration (GSA). Some information in the appendices, which was copied from other sources, has been left in its original measurement system. Significant precious-metals concentrations are shown in both metric and English units.

## Metric Units

°C	degrees centigrade $((^{\circ}\text{C} \times 9/5) + 32 = ^{\circ}\text{F})$
cm	centimeter ( $\text{cm} \times 0.3937 = \text{inch}$ )
m <sup>3</sup>	cubic meter ( $\text{m}^3 \times 1.3079 = \text{yd}^3$ )
g	gram ( $\text{g} \times 0.032 = \text{troy oz}$ )
ha	hectare ( $\text{ha} \times 2.471 = \text{acre}$ )
<	less than
m	meter ( $\text{m} \times 3.28 = \text{ft}$ )
t	metric ton (tonne) ( $\text{t} \times 0.9072 = \text{ton}$ )
kg	kilogram ( $\text{kg} \times 2.205 = \text{lb}$ )
km	kilometer ( $\text{km} \times 0.6214 = \text{mi}$ )
mg	milligram ( $\text{mg} \times 0.0000322 = \text{oz}$ )
oz	troy ounce ( $\text{oz} \times 31.103 = \text{g}$ )
ppb	part per billion
ppm	part per million
%	percent

## English Units

yd <sup>3</sup>	cubic yard
ft	foot
mi	mile
lb	pound
ton	short ton
oz	troy ounce
oz/ton	troy ounce per short ton

## SUMMARY

The Danskin/South Fork Boise River study area lies about 40 air km southeast of Boise, and 40 air km north of Mountain Home, Idaho (fig. 1). The 16,000-hectare study area is mainly underlain by Cretaceous-age granodiorite and an aplitic-and-pegmatitic-complex of the Idaho batholith, Miocene-age rhyolitic tuffs and lavas, and late Tertiary-age basalt flows.

One small mine, the Flat Creek, was found in the study area. It is geologically similar to deposits in the Neal mining district, adjacent to the northwest corner of the study area. At both settings, gold mineralization occurs along east-northeast-trending faults and associated quartz veins, which dip moderately to steeply southeast, and, in some places, the gold is in adjacent granitic rock. Samples indicate the Flat Creek deposit is not rich enough to mine underground, and near-surface, open-pit-mineable deposit areas could not be identified. The only workings in the study area are at the Flat Creek mine, which had minor past production. Several mines occur, however, in the Neal mining district, along the northwest boundary of the study area.

No evidence of geothermal activity was observed, but geothermal water suitable for space heating or production of electricity by the binary process may occur at depth. Rock in the area does not split into flat slabs, which could be useful as dimension stone, would require crushing to be used as aggregate, and is not convenient to markets. Alluvial concentrate (placer) samples contained little free gold, and no substantial mineralized alluvial bars were seen; deposits were too small to contain resources.

## INTRODUCTION

This report is part of the USBM (U.S. Bureau of Mines) Idaho Land Assessment Program to study the mineral resources of priority roadless areas in Idaho. The results of mineral inventories on specific study areas, such as the Danskin/South Fork Boise River, provide minerals information needed by the President, the Congress, land management agencies, and ultimately, by the public, to make wise decisions regarding future land management practices. The information also helps fulfill a long-term Bureau of Mines objective, to ensure the nation has an adequate dependable supply of minerals at a reasonable cost.

### Geographic Setting

The Danskin et al study area, encompassing about 16,000 hectares of the Boise National Forest, is in southern Idaho's Elmore County about 40 km north of Mountain Home and 40 km southeast of Boise (fig. 1). Principal road access is by U.S. Highway 20 from Mountain Home, or the Blacks Creek exit (64) on Interstate 84, a few km southeast of Boise.

The study area consists of two segments, the larger, northwest segment is approximately 12,300 hectares; the southeast segment consists of about 3,700 hectares (fig. 2). The study area segments follow the northwest-trending crest of the Danskin Mountains, but mainly encompass only the north slopes and north-flowing streams; the segments are mostly bordered on the northeast by the South Fork of the Boise River. County roads surround the study area; branch four-wheel-drive trails and Forest Service and BLM (Bureau of Land Management) roads lead to the study area; and pack and hiking trails and a few four-wheel-drive trails access the study area interior.

The study area is part of the northwest-trending Danskin Mountains, the

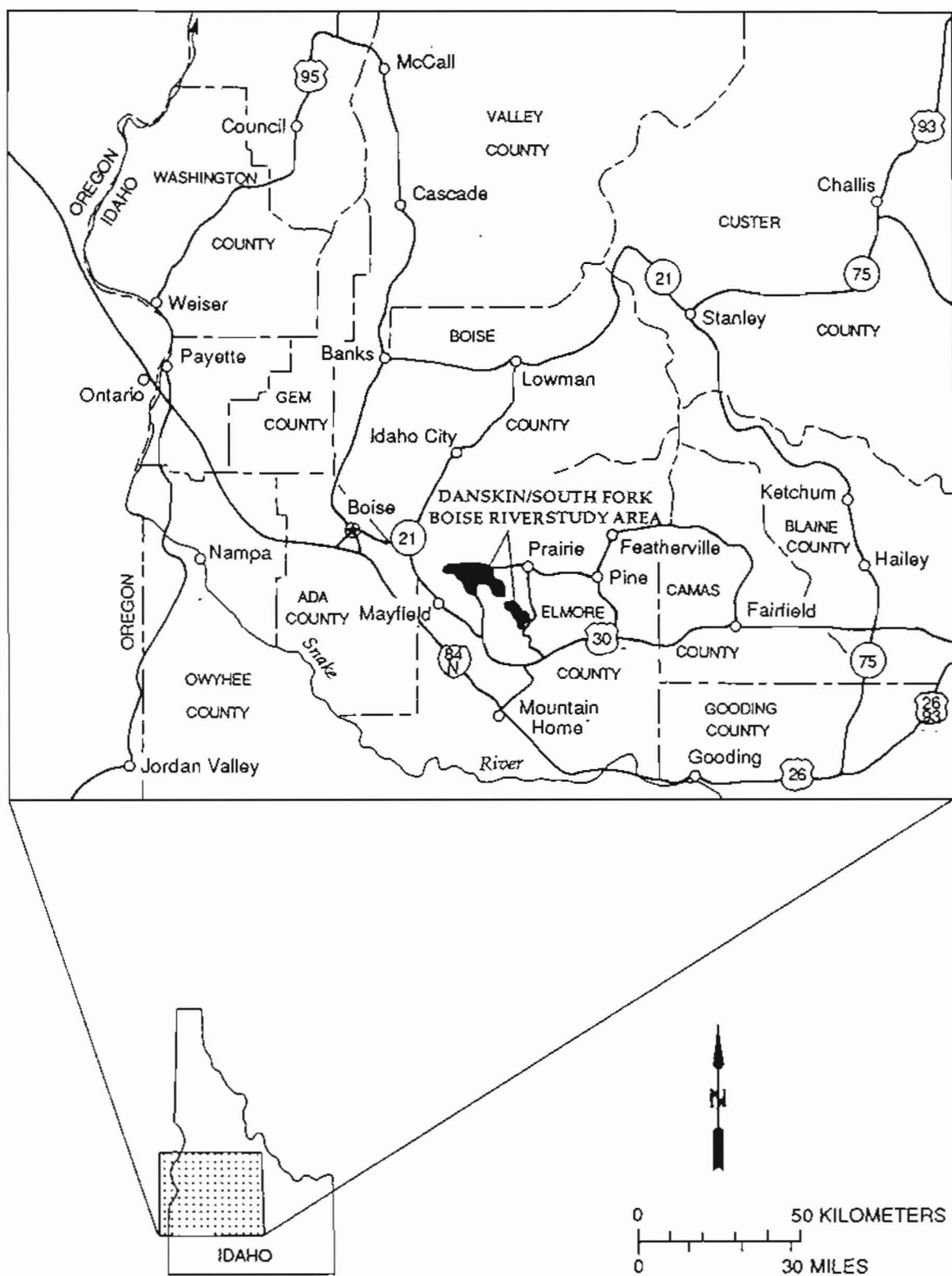


Figure 1.- Location of the Danskin/South Fork Boise River study area, Elmore County, Idaho

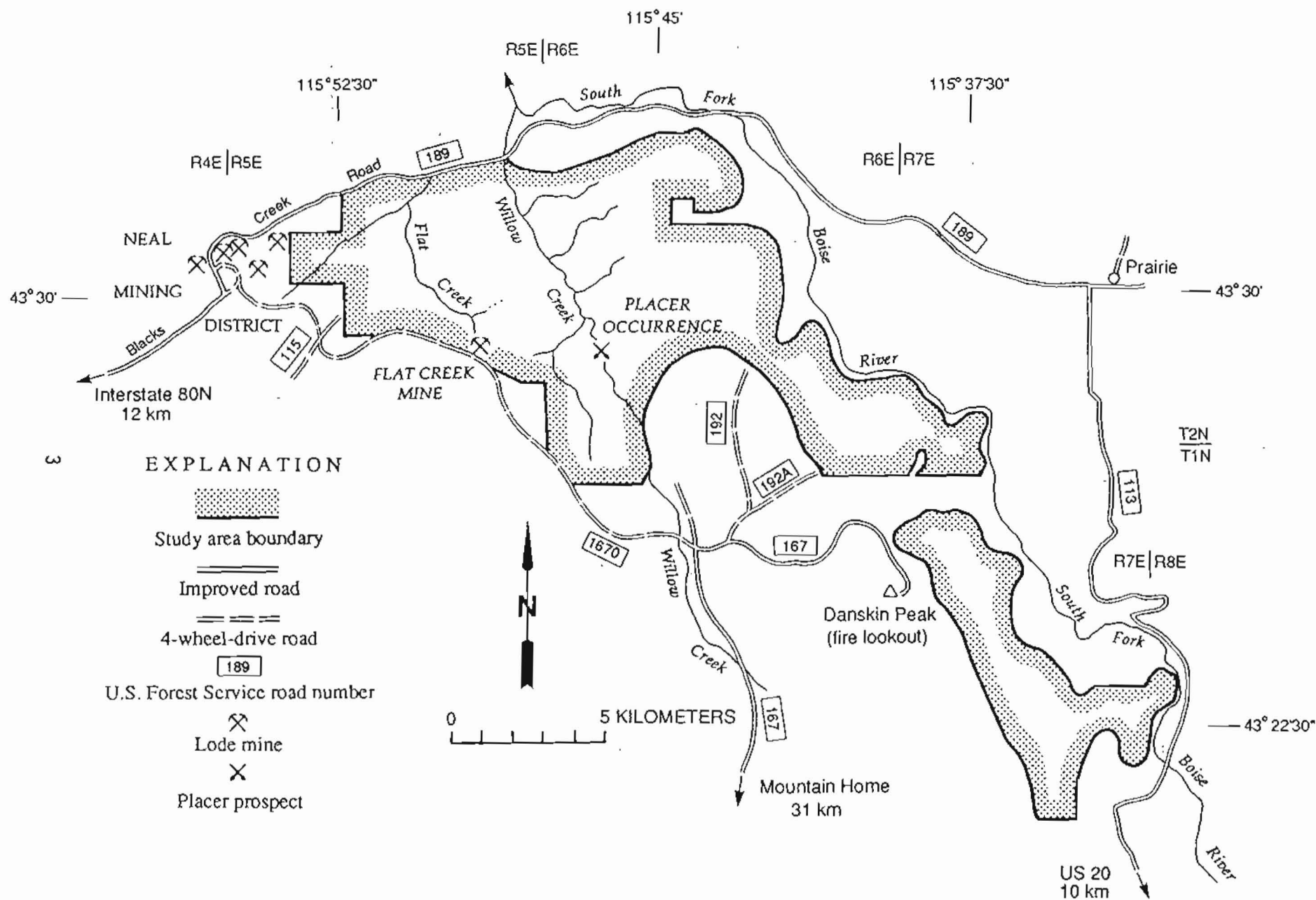


Figure 2.- Mines and prospects in the Danskin/South Fork Boise River study area and vicinity, Elmore County, Idaho

Spokane, Wash., and examined for free gold and other heavy minerals. A split of the concentrates was sent to IGAL, Inc., Analytical Services Division, Cheney, Wash., for geochemical analysis. Digestion for minor element analysis was by Aqua Regia; sample splits prepared for whole rock analysis were fused with lithium tetra and meta borate at 1000°C. Element concentrations were determined by AA (atomic absorption), except As (arsenic) and Sb (antimony) were determined by organic extraction and W (tungsten), Ba (barium) and Mo (molybdenum) were by ICP (inductively coupled plasma-emission spectroscopy). Whole rock analysis was for major elements by AA, except Ca (calcium), Mg (magnesium) and Ti (titanium) were by ICP; concentrations were converted to percent of equivalent oxide.

#### ACKNOWLEDGEMENTS

Hobb Essick, Mountain Home Ranger Station, U.S. Forest Service, provided information on prospects and helpful logistical advice. Thor H. Kiilsgaard of the U.S. Geological Survey, Spokane, Wash., and Earl H. Bennett of the Idaho Geological Survey, Moscow, Idaho, provided written information on the Neal district; much of this, and additional information on the district, is in preparation for publication as a USGS Bulletin on the geology and mineral resources of the western part of the Hailey 2° quadrangle. Allan Buehler, USBM, Spokane, Wash., ably assisted in the field.

#### MINING HISTORY

##### Regional History

Mining in the region around the Danskin/South Fork Boise River study area dates back to December, 1888, when Arthur Neal discovered mineralized float while on his way to Boise by pack train. Neal found the lode source of the float in 1889, and began development, along with his partner George House. Early miners in the district were short on capital, and water for milling (Thor H. Kiilsgaard and Earl H. Bennett, 1992, written commun.). In the early 1900's, an influx of eastern capital enabled the development of several mines, including the Daisy, Ella Hill, Golden Eagle, Hidden Treasure, Homestake, Overlook, and several smaller properties; all are outside the study area (some are shown on plate 1).

In 1902 and 1903 the Daisy, Hidden Treasure, Homestake, and Ella Hill mines were operating. At the time the Daisy had recently been purchased by a Chicago and Wisconsin interest for \$225,000, and the Homestake boasted a 60-m vertical shaft and several thousand meters of drifts. Progress continued on these properties and good ore was found in the Daisy. In 1907, the Daisy and Homestake were operated by the George F. Roth Company of Rochester, New York; the company was also known as the Homestake and Mountaineer Mining Company and employed 20 men. The Daisy, Hidden Treasure, and Homestake were connected by underground workings and referred to as the Roth property by 1911; the mine boasted a new 10-stamp mill, employed 65 men and reached a peak annual production of 17,292 short tons of ore (Thor H. Kiilsgaard, U.S. Geological Survey, and Earl H. Bennett, Idaho Geological Survey, 1993, written commun.).

Lingren (1898) estimated \$200,000 in gold was produced from the Neal district through 1897; the government-set gold price was \$20.67 per troy ounce, or \$0.66/gm, for 1000-fine gold, which suggests somewhat less than 9,675 oz (300,922 g) were produced. Table 1 summarizes gold and silver production from the Neal district between 1902 and 1991, and shows that 20,163 oz (62,713 g) were produced during the latter years.

Assuming the gold was not 1000-fine, and that some unreported gold was produced from 1898 through 1901, total production from the district may have been about 30,000 oz (93,309 g), worth \$10.5 million at a gold price of \$350 per oz.

Table 1.--Gold-Silver production from mines of the Neal mining district, 1902-1991 (modified from Thor Kiltsgaard, U.S. Geological Survey, 1993, written commun., U.S. Bureau of Mines data)

Property or Operator	Ore Short tons	Gold (oz)	Silver (oz)	Production Years
<u>Properties on the Daisy Vein</u>				
Daisy	--	--	--	1902-1906
Hidden Treasure	--	--	--	1902-1941
+High Five	- no reported production -			
Homestake	--	--	--	1902-1941
SUBTOTAL	37,532	15,082	11,479	
<u>Other Main Producers</u>				
Elmore	--	--	--	1902-1904
Golden Eagle	--	--	--	1902-1915
SUBTOTAL	12,613	4,906	3,819	
<u>Minor Producers</u>				
*Flat Creek	--	--	--	1938
+Sunbeam	--	--	--	1902
Sunset	--	--	--	1923-1939
+Sunshine	--	--	--	1902
Miscellaneous	--	--	--	1908-1939
SUBTOTAL	276	175	134	
TOTAL	50,421	20,163	*15,428	

-- Withheld

+ Within 1.6 km of the study area

\* Inside the study area

x Less than rounded subtotals

#### Study Area History

The Danskin/South Fork Boise River study area contains a paucity of known prospects, compared to the surrounding region. The only part of the study area with evidence of significant mineral exploration is the northwest corner adjacent to the Neal district and generally west of Flat Creek. These claim blocks have blanketed many hectares in recent years, and BLM records indicate these claims have been abandoned.

The only prospect with workings was found near the southern boundary of the northwestern part of the study area, in Section 26, T. 2 N., R. 5 E., at the head waters of the Flat Creek drainage. This is assumed to be the Flat Creek property listed in USBM production records, although an exact location is not recorded. It is the only known property directly associated with Flat Creek, except for prospects of the Neal

district west of the study area. The Flat Creek property was mined by Bert Benson and J. R. Compton, of Boise, in 1938. The workings consist of a trenched area and several of dozer scrapes.

Other nearby properties are on the east side of the Neal district (pl. 1 and fig. 2), outside but within 2 km of the study area (Sec. 18, T. 2 N., R. 5 E.). These are the High Five prospect and Sunshine-Sunbeam mine. Little is known of the specific history of these deposits; however, in 1989 the Sunshine was being explored by Mr. E. Loveland of Boise (Thor H. Kiilsgaard, U.S. Geological Survey, 1993, written commun.).

## GEOLOGIC SETTING

### Rock Units

The Danskin/South Fork Boise River study area was included in a geologic map of the Hailey 1° by 2° by Worl and others (1991), and also within a less detailed compilation of geologic mapping by Rember and Bennett (1979). Cretaceous biotite granodiorite (pl. 1 and tables A-1 and A-2, nos. 2, 4-12, 20-25, 31, 45 and 53) and lesser muscovite-biotite granite (tables A-1 and A-2, nos. 38 and 39) of the Idaho batholith underlie most of the study area. At the southeast corner the Cretaceous is represented by an aplite/pegmatite complex (sample localities 58 and 59), which locally contains fragments of schist, quartzite, and calc-silicate rocks; these fragments are probably the oldest rocks in the study area.

Tertiary-age rocks include quartz monzodiorite, rhyolite dikes and plugs, the Miocene Idavada volcanics, and possibly the Steamboat Rock Basalt. The basalt is considered to be of late Tertiary (Pliocene) or early Quaternary (Pleistocene) age. The quartz monzodiorite occurs as a single, east-northeast-trending, 3.2-km-long stock, which straddles the northern boundary of the southern segment of the study area (pl. 1 and tables A-1 and A-2, nos. 48 and 49). Intrusive Tertiary rhyolite occurs near the mouth of Flat Creek, in the western part of the northwest segment of the study area (sample locality 16), where it forms a wide, stock-like dike that trends several degrees west of north.

Miocene Idavada rhyolite tuff (sample localities 46 and 47) straddles the western boundary of the southeast segment of the study area, where it caps the main northwest-trending ridge of the Danskin Range and underlies Danskin Peak; the tuff also occurs as a few outliers in the south-central part of the northwest segment of the study area. The unit is greenish gray, with dark gray flow banding, and is mainly glass. The Steamboat Rock Basalt (sample locality 44) occurs in discontinuous outcrop areas, generally less than 2 km<sup>2</sup>. The basalt flows inundated an ancient South Fork Boise River canyon, and were subsequently cut by, and partially eroded away by, the river; later Pleistocene basalt flows are commonly at lower elevation in the South Fork canyon. Another late Tertiary or early Quaternary basalt, the Basalt of Smith Creek, occurs along the northeast wall of the South Fork canyon, but does not crop out in the study area.

Quaternary rocks and deposits include the Smith Prairie Basalt of Pleistocene age, the Snake River Group of Pleistocene to Holocene basalt flows, Pleistocene terrace gravel, Holocene landslide deposits and Holocene alluvium. The Smith Prairie Basalt (pl. 1 and tables A-1 and A-2, nos. 36 and 52), like the Steamboat Rock Basalt, flooded an ancient canyon of the South Fork Boise River and was subsequently eroded by the river. Although younger than the Steamboat Rock unit, the Smith Prairie Basalt commonly occurs at lower elevation, indicating significant erosion occurred in between extrusion of the two basalt units. Basalt



of the Snake River Group (sample locality 34) occurs in three small outliers in the south central part of the northwest segment of the study area. Southeast of these outliers, outside the study area, the basalt caps the Idavada Volcanics.

Pleistocene terrace gravels are represented in the study area by one 20-hectare deposit along the east boundary of the southeast study area-segment. An alluvial sample (table A-1, no. 55) did not contain valuable heavy minerals. South of the terrace gravel deposit is a large Holocene landslide deposit, of several square kilometers. There are probably other landslide deposits too small to be mapped at a regional scale. Holocene alluvium occurs in the South Fork Boise River canyon, mainly in the lowest part along the river. Alluvium is sparse along most other drainages, except for the lower reaches and the main forks of Willow Creek, where alluvium occurs as discontinuous reaches, indicating a range from youth to early maturity in the geomorphic stream cycle.

#### Structural Setting

Extensional tectonic features predominate in the study area, because they represent the most recent major structural events. Extensional structures are observable in outcrop and in their geomorphic expression, and they host, or control the occurrence of, gold mineralization. The structural dominant trend in the study area is probably N. 30° E. The trend is suggested by the trend of the Danskin Range, a fault-block range, and is reflected in the Willow Creek fault trend, which may be one of several block-marginal faults or fault splays on the southwest side of, or both sides of, the range.

A second structural trend generally strikes N. 60° E., but varies locally from less than 50° E. to more than N. 70° E. The trend is orthogonal to the block-fault trend, and dips moderately to steeply south. This trend is the most well-known host to gold-bearing quartz veins and gouge zones in the Neal district, adjacent to the study area, and at the Flat Creek mine, within the area (pl. 1 and fig. 2), and elsewhere in the southern part of the Idaho batholith, such as the Pine Grove district (Peters, 1993, p. 8). The northeast structural trend finds prominent geomorphic expression in the Flat Creek and Willow Creek drainages, where northeast and southwest flowing tributaries form trellis drainage patterns with the north-northwest-flowing main creeks. The trend may also have controlled emplacement of the northeast-trending monzodiorite stock. A third structural orientation, N. 15° E., is suggested by the trend of rhyolite dikes near the headwaters of Flat Creek.

#### MINES AND PROSPECTS

##### Flat Creek Mine

At the Flat Creek prospect, on the southwest border of the study area (pl. 1), highly silicified and epidotized pink granite is exposed in a single, 50-m-long trench (fig. 3). The pink color of the granite suggests a possible Tertiary age; typical Cretaceous granitic rocks of the Idaho batholith tend to be white. Local pink granite stocks within the batholith are commonly associated with metallic deposits (Bennett, 1980). The predominant structural grain, as indicated by two faults, is northeast-trending, a trend also associated with mineralization elsewhere in the batholith. Six samples were taken (table A-1, nos. 20-25); five chip samples contained detectable gold, ranging from 10 to 47 ppb. However, only one sample (no 25), comprised of specimens of selected float, and not representative of typical values, contained gold of measurable value, 1.5 g/t (0.044 oz/ton). A quartz vein was not

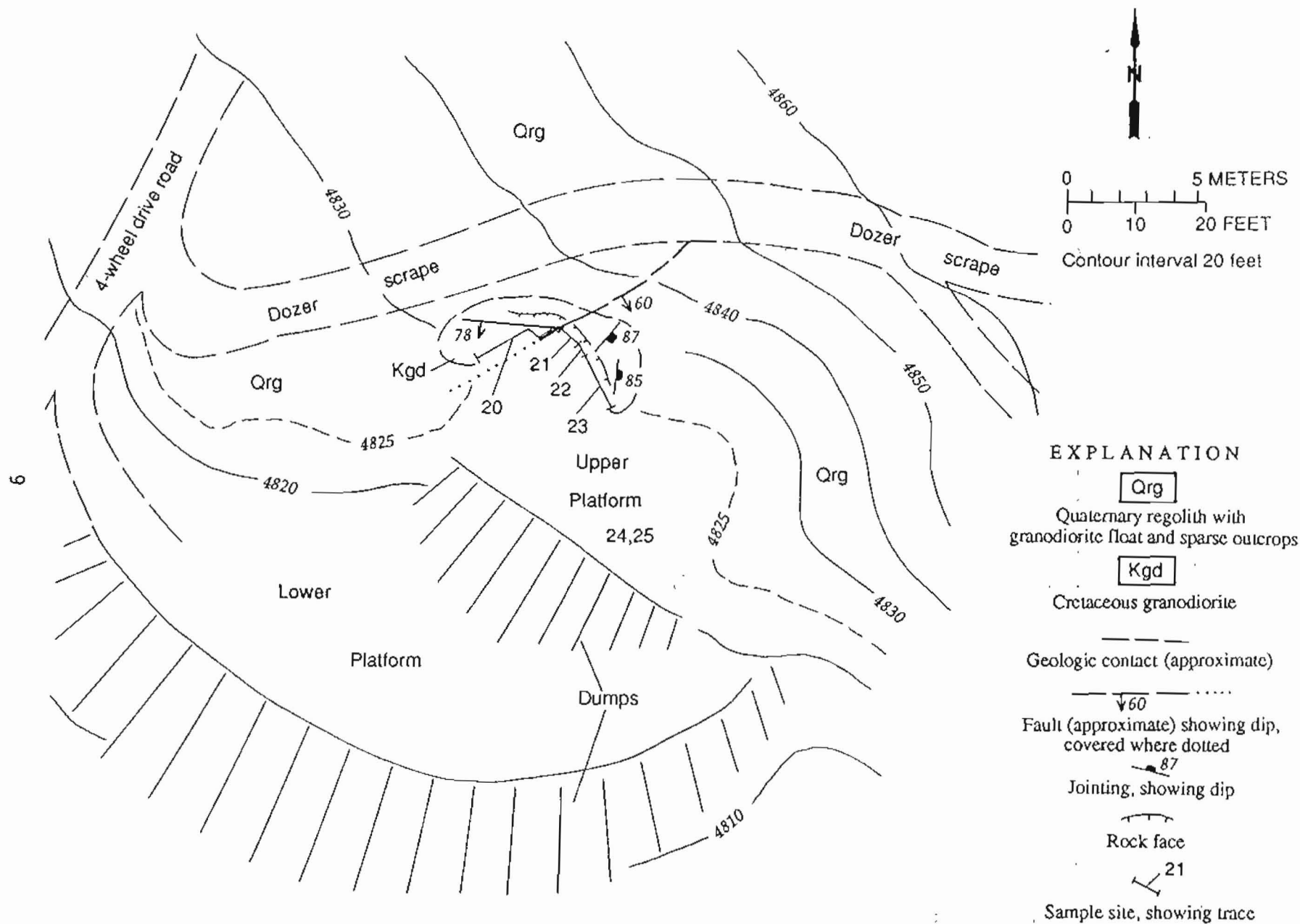


Figure 3.- Geology and sample localities at the Flat Creek mine

observed associated with faults at the site. These element concentrations are not of direct economic significance, but do indicate 1) that mineralizing processes have occurred, and 2) that higher element concentrations may occur in the vicinity. No metallic resources were identified at the prospect.

#### Neal District Mines and Prospects

Four groups of workings were examined on the east side of the Neal mining district, just outside the west boundary of the study area (pl. 1). These properties are within 1.6 km of the area boundary, and possibly were developed on geologic structures that extend into the study area; at one property, the High Five prospect, the mineralized structure almost certainly extends into the area. In addition, the gold-bearing, northeast-trending, southeast-dipping, fault gouge and quartz veins of the Neal district are similar in character and orientation to the mineralized structure at the Flat Creek mine, described previously, which is within the study area. This suggests the Flat Creek and Neal district occurrences were part of the same mineralizing event, and that undiscovered gold occurrences may occur in the 7 km study area within these localities.

#### Mountain Boy Prospect

Two samples (table A-1, nos. 1 and 2), from a dump, were taken at an apparent caved adit near the Homestake-Hidden Treasure mine workings (pl. 1). The adit extended southeast into a brush-covered hillside; no outcrop was found. Old claim maps indicate the working was probably on the Mountain Boy claim, which was located east of the Homestake claim and north of the Hidden Treasure, and was probably an attempt to intercept the prominent Daisy-Homestake vein. The only quartz found on the dump was pegmatite-associated, however, rather than true vein-quartz, and weak gold concentrations within the samples, 58 and 37 ppb, are not of direct economic importance.

#### Sunshine-Sunbeam Mine

There are two workings at the Sunshine mine, a western, partially re-excavated working that appears to be a caved adit extending southwest into the bank of a small drainage (pl. 1, fig. 4, sample localities 3-5), and an eastern caved adit that extended northeast into the opposite bank (pl. 1, sample locality 6). In addition, two samples were taken from a mine dump 0.5 km to the northeast (pl. 1, localities 7-8), which the author speculates may be the Sunbeam mine. Production from it is included with the Sunshine in historical records (table 1).

Quartz veins, were not observed at this property, and most of the workings were badly sloughed and lacked outcrop. The only shear zone seen trends northwest; however, a joint set at the west working (fig. 4) suggests a northeast structural grain. The highest-assaying sample (no. 3), a 0.7-m chip across the shear zone, contained 1.3 g/t (0.040 oz/ton) gold. No resources were identified at the property.

#### High Five Prospect

The High Five prospect appears to be on the same mineralized structure as the Daisy-Homestake-Hidden Treasure complex (Kiilsgaard, U.S. Geological Survey, 1992, oral commun.). Workings consist of two north-northwest-trending dozer cuts (pl. 1, nos. 9-12; fig. 5, nos. 9-11). A small, but diagnostic outcrop in the middle of the main trench (fig. 5) exposes the northeast-trending mineralized structure. A 1.2-m-long sample (no. 10) of decomposed granodiorite and gouge taken across the

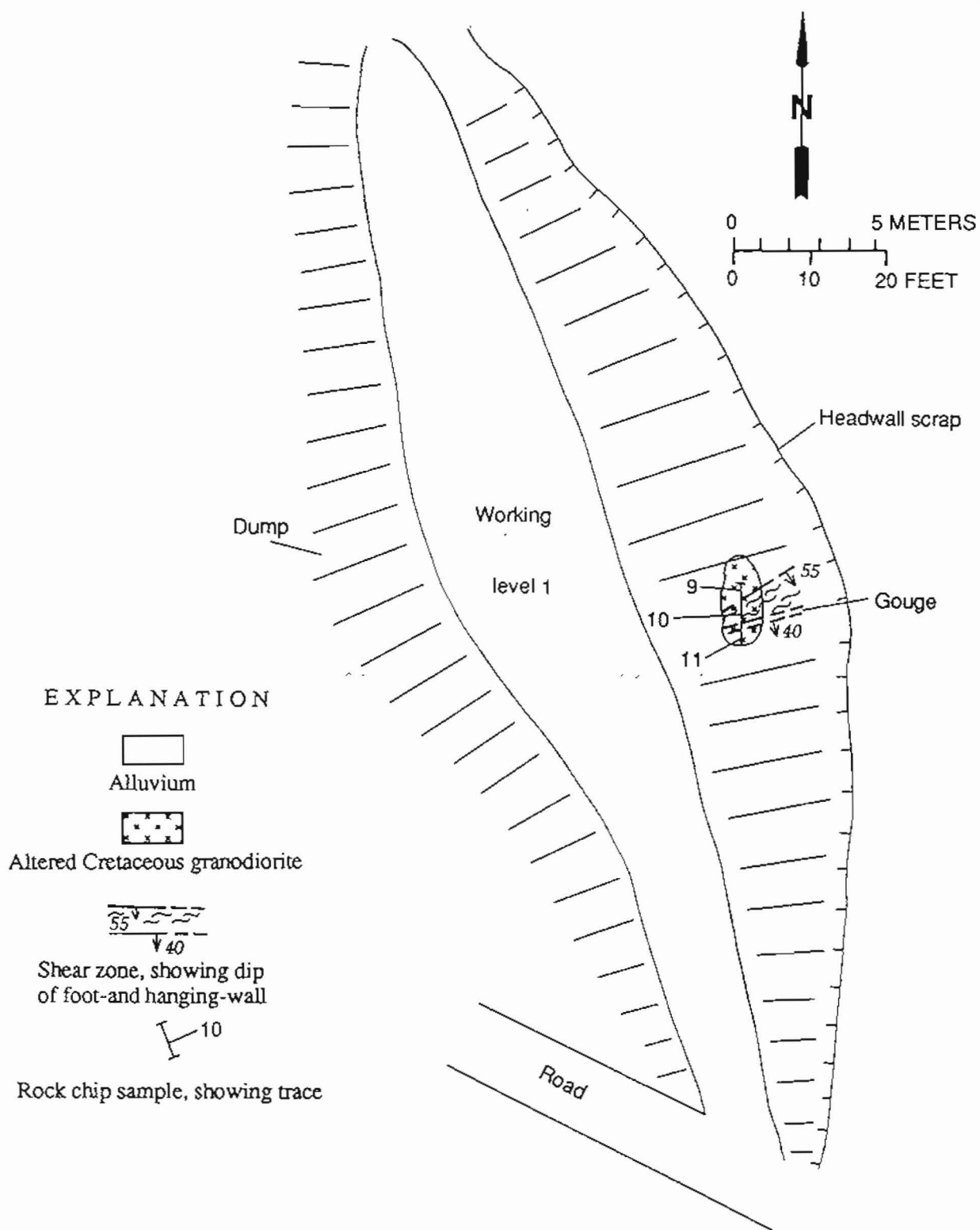


Figure 5.- Geology and sample locality at the main (west) trench, High Five prospect

shear zone contained 0.8 g/t (0.024 oz/ton) gold. This structure almost certainly extends into the study area, and similar hidden structures in the vicinity, which may also extend into the study area, are likely to occur. No resources were identified at the Five High prospect.

#### Placer Reconnaissance

Quaternary-age alluvial (placer) samples were taken from study area drainages to determine if free gold and other valuable heavy minerals were present (pl. 1 and table A-1). The samples were also examined for suite of trace elements, because high concentrations of some elements, or suites of elements, could indicate the presence of a mineral deposit. Free gold was found in study area alluvium at three sites: along Wood Creek, along the lowest tributary to Willow Creek, and along Willow Creek (pl. 1, nos. 18, 27, and 33, respectively). Gold at the Wood Creek site reflects the presence of the Neal mining district upstream; however, the source of free gold in the Willow Creek drainage is unknown.

#### Willow Creek Occurrence

Only the free gold found in a sample (no. 33) from Willow Creek is associated with a substantial accumulation of alluvium; above the sample site is a 1.6-km-long alluvial bar, which averages about 100 m wide, and was formed as a flood plain. Assuming an average depth of 4 m, approximately 640,000 m<sup>3</sup> of potentially gold-bearing gravel is present. The value of the gold in sample 33, however, is only \$0.66 per m<sup>3</sup> (\$0.50 per yd<sup>3</sup>), or about two orders of magnitude below probable mining cost (Benjamin and Gale, 1984).

#### Geochemical Anomalies

Geochemical analyses of alluvial concentrates detected additional metal concentrations and anomalies. Several gold (Au) and mercury (Hg) concentrations occur in the northwest segment of the study area (pl. 1 and table 1, nos. 18, 27-30, 37, and 40-43). Gold and mercury at sample site 18 probably result from erosion of mineralized material in the Neal mining district at the headwaters of Wood Creek.

The source of anomalies in the Willow Creek drainage, sample sites 27-30, is unknown; however, the trellis drainage pattern formed by the intersection of Willow Creek and its northeast-trending tributaries suggest the tributaries follow northeast-trending structures. The westward extensions of the traces of these structures lie between the Neal district and the Flat Creek mine, both of which contain gold mineralization controlled by structures of similar orientation. Anomalous geochemical concentrations in alluvial concentrates from the Willow Creek drainage are probably derived from undiscovered mineralization of similar origin to the Neal district and Flat Creek mine mineralization. Mercury concentrations at sites 40-43 are at present truly anomalous and may be related to a presently unknown mineralizing event.

Four weak zinc anomalies occur in the southeast segment of the study area. These concentrations may represent an elevated zinc signature for the Tertiary Idavada Volcanics, which occur in the headwaters of the sampled drainages, and probably do not indicate mineralization.

#### Geothermal

There is no evidence of geothermal activity within the study area, or in the immediate vicinity (Ross, 1971, pl. 7 and 10; Waring, 1965, fig. 4).

The nearest hot spring, Nevin Spring, is about 10 km north of the intersection of the north boundary of the study area and Willow Creek (Waring, 1965, p. 28, no. 83). Nevin Spring is the southwesternmost hot spring of about 20, which form a 45-km-long northeasterly trace up the Middle Fork Boise River. The trace is parallel to the trend of gold-bearing veins of the Neal mining district, but is offset approximately 5.6 km northwest of the Neal district trend.

A group of four hot springs, 8 to 14 km east of Mountain Home (Ross, 1971, pl. 10), appear to lie along or near an extension of the Willow Creek fault, 20 km southeast of the study area. A third group of several hot springs lie north of Boise, about 16 km northwest of the study area, along northwest-trending range-front faults (Ross, 1971, pl. 7).

Given the tectonically active setting, and occurrences of geothermal water in the region, ground water reservoirs of sufficient size, depth of circulation, and temperature for geothermal resources may occur at depth in the study area.

Dry steam, the most efficient medium for electric power generation, is not known to occur in the region; however, subsurface water temperatures may exceed the 38°C minimum for electric power generation by the binary systems process (Rinehart, 1980, p. 199). Geothermal water in the region is also adequate for space-heating for agricultural and other applications.

#### MINERAL RESOURCE EVALUATION

Samples indicate metal concentrations at the Flat Creek mine and the Willow Creek placer occurrence in the study area are too low grade to constitute resources. At the Flat Creek mine, gold worth \$17, per ton at a \$350 per ounce gold price, occurred only within a select float sample. Despite minor past production, which may have been from a small "pocket" of mineralized rock, no significant gold values were found in samples from rock outcrops which, however, are of very limited in extent.

Bedrock observed in the study area is only suitable for the most basic high bulk and low end value applications, such as crushed aggregate. Numerous sources for crushed stone occur closer to markets. The large variety of rock types present in the study area, however, suggests more-valuable occurrences of stone are possible.

The possibility of economic placer deposits is remote; these generally require millions of cubic meters of alluvium containing multiple dollars per cubic meter in gold. In the study area there are no significant alluvial deposits, except a minor gravel bar along Willow Creek.

There is no evidence of geothermal resources within the study area, and vicinity; however, hot water resources at depth can not be ruled-out.

## REFERENCES

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## APPENDICES

TABLE A-1. -- Trace element analyses of samples from the Danskin/South Fork Boise River study area, Elmore County, Idaho

[ppb - parts per billion, m - meters, m<sup>3</sup> - cubic meters, cm - centimeter, mm - millimeter, bld - boulders, cbl - cobbles, pbl - pebbles, sd - sand, silt - silt, cly - clay, org - organics; pk - pink, wt - white, blt - basalt, grn - granite, peg - pegmatite, qtz - quartz, rhy - rhyolite, < - less than, > - larger than, Fe stns - iron stains, Do... - ditto, alluvial samples 0.006 m<sup>3</sup>]

Sample no. (pl. 1)	Description	Sample type and length; gold value at \$11.25/g	In parts per million, except as noted											
			Au (ppb)	Ag	Cu	Pb	Zn	As	Sb	W	Mn	Bi	Mo	Hg (ppb)
Part I, Rock Samples:														
Mountain Boy prospect														
1	Qtz peg; 20X pk feldspar crystals, 2X phlogopite mica; from dump.	Grab	58	0.2	2	35	10	8	<5	<10	36	<5	1	15
2	Medium- to coarse-grained, foliated biotite granodiorite, minor Fe stns after biotite.	Do..	37	<.2	1	18	38	<5	<5	<10	198	<5	2	25
Sunshine mine														
3	Kaolinized and goethitic shear zone, minor qtz, strikes N. 50° W., dips 47° SW.; joints, 5 to 30 cm apart, strike N. 45° E., dip 89° SW.	Chip 0.7 m \$15/tonne	1375 [0.040 oz/ton]	5.7	4	575	84	90	<5	<10	45	5	2	135
4	Highly kaolinized, friable granodiorite; moderately Fe stained, top 0.4 m is in shear zone.	Do..	105 64	.2	2	47	19	20	<5	<10	48	<5	1	20
5	Medium- to coarse-grained, Fe-stained granodiorite.	Select	28	<.2	2	45	40	10	<5	<10	192	<5	2	10
6	Granodiorite, moderately Fe stained.	Grab \$4/tonne	340 [0.010 oz/ton]	.5	5	220	408	52	<5	<10	380	<5	2	10
Sunbeam (?) mine														
7	Wt granodiorite gneiss taken from several localities on mine dump at a depth of about 20 cm; dump large enough for as much as 300 m of workings.	Do..	28	<.2	4	96	102	36	<5	<10	368	<5	2	55
8	Wt foliate biotite granodiorite rock pieces; from same dump as sample 7.	Do..	8	<.2	2	152	153	15	<5	<10	240	<5	1	<10
High Five prospect														
9	Biotite granodiorite; moderately Fe stained and silicified, and slightly propylitized. Sampled chips extend orthogonally from footwall of N. 60° E.-striking, 55° SE.-dipping, fault zone into the footwall block.	Chip 0.6 m	70	<.2	2	12	45	5	<5	<10	402	<5	1	10
10	Partially to completely decomposed granodiorite from 1.2-m-thick Fe oxide-stained fault zone; top 25 cm is wt gouge, fault strikes N. 57° E., dips 55° S.	Chip 1.2 m \$9/tonne	825 [0.024 oz/ton]	.2	4	195	98	45	<5	<10	263	<5	2	25

TABLE A-1. -- Trace element analyses of samples from the Danskin/South Fork Boise River study area, Elmore County, Idaho -- continued

Sample no. (pl. 1)	Description	Sample type and length; gold value at \$11.25/g	In parts per million, except as noted											
			Au (ppb)	Ag	Cu	Pb	Zn	As	Sb	W	Mn	Ba	Mo	Hg (ppb)
Part 1. Rock Samples -- continued:														
High Five mine -- continued														
11	Wt granodiorite; moderately, but pervasively Fe stained, barely friable. Sampled chips extend orthogonally from the N. 70° E.-striking, 40° SE.-dipping hanging wall into the hanging wall block.	Chip 2.5 cm	53	<0.2	2	14	42	<5	<5	<10	295	<5	1	10
12	Highly fractured, moderately Fe stained and kaolinized wt granodiorite; from upper dozer cut.	Chip 2.0 m \$6/tonne	510 [0.015 oz/ton]	<.2	2	9	22	5	<5	<10	240	<5	2	15
14	Wt coarse- to medium-grained biotite granodiorite, relatively unweathered; jointing strikes S. 58° W., dips 88° NW., subparallel to foliation.	Random chip	<5	<.2	2	4	34	<5	<5	<10	340	<5	2	10
16	Pinkish gray rhyolite dike; potassium feldspar, qtz, plagioclase, and biotite phenocrysts.	Do..	<5	<.2	5	4	41	<5	<5	<10	76	<5	2	10
17	Wt coarse- to medium-grained subfoliate biotite granodiorite, unweathered; jointing strikes N. 30° E., dips 52° NW., and N. 81° W., dips 50° SW.	Do..	<5	<.2	3	7	38	<5	<5	<10	320	<5	1	<10
Flat Creek mine														
20	Wt coarse- to medium-grained subfoliate biotite granodiorite; propylitized and locally silicified; jointing strikes and N. 80° E., dips 60° SE.	Chip 4.8 m	38	<.2	1	10	10	160	<5	<10	120	<5	2	15
21	Wt coarse- to medium-grained subfoliate biotite granodiorite; kaolinized and Fe-stained; sample from footwall block of fault, strike N. 80° E., dip 60° SE.	Chip 0.8 m	47	<.2	2	19	31	152	<5	<10	225	<5	1	25
22	Wt coarse- to medium-grained subfoliate biotite granodiorite; silicified, with numerous 0.6-mm qtz stringers.	Chip 36.6 cm	18	<.2	2	17	21	18	<5	<10	288	<5	<1	15
23	Wt coarse- to medium-grained subfoliate biotite granodiorite; kaolinized and Fe-stained.	Chip 3.0 m	15	<.2	2	10	20	12	<5	<10	290	<5	1	10
24	Wt coarse- to medium-grained subfoliate biotite granodiorite; moderate to heavy Fe-stained.	Grab	10	<.2	3	14	21	45	<5	<10	76	<5	2	10
25	Highly silicified and Fe stained (after pyrite crystals to 6 mm across) granodiorite; gold-colored phlogopite mica.	Select \$17/tonne	1520 [0.044 oz/ton]	.7	4	42	26	2350	<5	<10	40	<5	4	40

TABLE A-1. -- Trace element analyses of samples from the Danskin/South Fork Boise River study area, Elmore County, Idaho -- continued

Sample no. (pl. 1)	Description	Sample type and length; gold value at \$11.25/g	In parts per million, except as noted											
			Au (ppb)	Ag	Cu	Pb	Zn	As	Sb	H	Mn	Bi	Mo	Hg (ppb)
Part I. Rock Samples -- continued:														
31	Wt coarse- to medium-grained subfoliate biotite qtz monzonite; jointing strikes N. 18° E., dips 44° NW.	Random chip	<5	<0.2	1	5	27	<5	<5	<10	302	<5	1	<10
34	Medium- to dark-gray Snake River Basalt; 1- by 0.5-mm plagioclase laths; vesicles, irregular in distribution and size, are partially calcite-filled.	Grab	5	<.2	29	2	113	<5	<5	<10	815	<5	3	10
38	Smith Prairie Basalt; charcoal to hematite gray; scoriaceous, possible flow top; 40% vesicles of varied size.	Do..	<5	<.2	34	2	77	<5	<5	<10	495	<5	2	10
38	Medium- to fine-grained two mica grn; muscovite > biotite (15%); qtz (35%), potassium feldspar > plagioclase (15%); leucocratic, 5-10% peg, 2 mm biotite commonly altered to chlorite.	Do..	<5	<.2	1	2	26	<5	<5	<10	240	<5	<1	15
39	Medium- to fine-grained two mica grn; muscovite (10%) > biotite; qtz (40%), potassium feldspar (35%), plagioclase (15%); leucocratic, 5-10% peg, biotite commonly altered to chlorite.	Do..	<5	<.2	1	3	5	<5	<5	<10	223	<5	<1	15
42	Blue-gray basalt; 15% pin-hole vesicles; 10-mm-long by 0.05- to 3 mm-wide irregular plagioclase phenocrysts.	Random chip	<5	<.2	31	4	99	<5	<5	<10	885	<5	5	10
44	Blue-gray Steamboat Rock Basalt; 5-10% vesicles, commonly 0.6-cm across and larger; sampled rock may be boulders or outcrop.	Grab/ random chip	<5	<.2	20	8	104	<5	<5	<10	695	<5	3	20
45	Wt coarse-grained biotite granodiorite; subfoliate parallel to jointing strikes N. 44° E., dips 72° NW.	Random chip	<5	<.2	2	5	37	<5	<5	<10	230	<5	<1	<10
46	Gray porphyritic silicic tuff; 40%, 0.6-2.5-cm dark gray; 60% light flow bands; cream-colored feldspar phenocrysts.	Chip 0.9 m	<5	<.2	6	8	58	<5	<5	<10	172	<5	<1	<10
47	Idavada Volcanics (Miocene). Greenish gray flow-banded glassy tuff; bright red Fe-stns on weathered surfaces.	Random chip	<5	<.2	7	4	55	<5	<5	<10	178	<5	1	<10
48	Wt coarse-grained subfoliate qtz monzoniorite, locally pegmatitic.	Do..	<5	<.2	2	5	40	<5	<5	<10	347	<5	1	<10
49	Similar to sample 48.	Do..	<5	<.2	2	5	33	<5	<5	<10	193	<5	<1	<10
52	Smith Prairie Basalt; charcoal gray, weathers dark brown, blocky, vesicles 10-15%, varied size and shape.	Random chip	<5	<.2	39	8	69	<5	<5	<10	825	<5	2	15
53	Wt coarse-grained biotite granodiorite; fresh; jointing strikes N. 45° E., dips 72° NW.	Do..	<5	<.2	2	6	40	<5	<5	<10	293	<5	3	<10
58	Aplite with subordinate peg (40%); perthitic intergrowths of qtz and potassium feldspar, 10% perthite; few mafic minerals, uncommon coarse biotite augen; foliation strikes N. 70° E., dips 20° SE.	Do..	<5	<.2	7	10	7	<5	<5	<10	58	<5	1	<10

TABLE A-1. -- Trace element analyses of samples from the Danskin/South Fork Boise River study area, Elmore County, Idaho -- continued

Sample no. (pl. 1)	Description	Sample type and length; gold value at \$11.25/g	In parts per million, except as noted											
			Au (ppb)	Ag	Cu	Pb	Zn	As	Sb	H	Mn	Ba	Mo	Hg (ppb)
Part I, Rock Samples -- continued:														
59	Aplite with subordinate peg; perthitic intergrowths of qtz and potassium feldspar, 10% perthite; inclusions of qtz phlogopite chlorite gneiss, mafic xenoliths contain pyrite, foliation strikes N. 73° W., dips 20° NW.	Do.	<5	<0.2	23	10	59	<5	<5	<10	410	<5	2	10
		Free gold in g/m <sup>3</sup> ; value in \$0.00/m <sup>3</sup>												
Part II, Alluvial Concentrate Samples:														
13	Bedload 10% bld, 10% cbl, 80% matrix (sampled). Sample 15% pbl > 2.5-cm-, and 35% 1.3-0.65-cm-diameter (pea-size); 50% < pea-size (20% pbl and granules, 27% sd and slt, 3% black sd); 70% wt granodiorite (20% Fe-stained), 10% blt, 20% quartzite, 1% garnet, 1 piece of very fine gold.	--	<5	<.2	5	6	15	<5	<5	<10	1580	<5	1	20
15	Bedload 20% cbl, 10% bld, 70% matrix (sampled). Sample 30% pbl > 0.65-cm-diameter (pea-size); 70% < pea-size (30% pbl and granules, 30% sd, 10% slt, trace black sd); 70% tuff, 25% granodiorite, 3% qtz, 1% garnet to 0.3-cm-across, 1% black sd.	--	<5	<.2	5	4	28	<5	<5	<10	2805	<5	1	15
18	Bedload 15% small bld, 20% cbl, 65% matrix (sampled). Sample 20% pbl > 0.65-cm-diameter (pea-size); 80% < pea-size (35% small pbl and granules, 40% sd and slt, 4% cly and org, and 1% heavy minerals (40% red garnet and 60% black sd)); 85% granodiorite, 5% blt, 5% quartzite, and 5% andesite.	0.059 g/m <sup>3</sup> \$0.66/m <sup>3</sup> (0.351 mg free gold)	910	<.2	5	18	22	<5	<5	<10	2050	<5	1	90
19	Bedload 10% bld, 10% cbl, 80% matrix (sampled). Sample 25% pbl > 0.25-cm-diameter (pea-size); 75% < pea-size (35% pbl and granules, 25% slt, and 10% cly, 3% garnet, 1% monazite, and 1% black sd); 90% wt granodiorite, 10% basaltic andesite.	--	<5	<.2	3	2	11	<5	<5	<10	2215	<5	<1	10
27	Bedload 5% bld, 15% cbl, 80% matrix (sampled). Sample 40% pbl > 0.65-cm-diameter (pea-size); 60% < pea-size (30% pbl and granules, and 30% sd, slt, and minor cly); 85% wt grn and 15% blt.	0.040 g/m <sup>3</sup> \$0.45/m <sup>3</sup> (0.240 mg free gold)	<5	<.2	4	4	25	<5	<5	<10	466	<5	<1	825

TABLE A-1. -- Trace element analyses of samples from the Danskin/South Fork Boise River study area, Elmore County, Idaho -- continued

Sample no. (Pl. 1)	Description	Free gold in g/m <sup>3</sup> ; value in \$0.00/m <sup>3</sup>	In parts per million, except as noted											
			Au (ppb)	Ag	Cu	Pb	Zn	As	Sb	W	Mn	Ba	Mo	Hg (ppb)
Part II, Alluvial Concentrate Samples -- continued:														
28	Bedload 35% large bld (> 30 cm), 20% small bld, and 20% cbl, and 25% matrix (sampled). Sample 20% pbl > 0.65-cm-diameter (pea-size); 80% < pea-size (20% pbl, 20% granules, 40% sd, slt, and minor cly); 85% wt grn and 15% blt.	--	105	<0.2	8	210	30	5	<5	<10	2610	<5	1	1240
29	Bedload 5% bld, 15% cbl, 80% matrix (sampled). Sample 25% pbl > 0.65-cm-diameter (pea-size); 75% < pea-size (40% small pbl and granules, 35% sd and slt); 40% rhy, 30% pk grn, 10% wt grn, 10% dacite, 5% blt, 5% limestone.	--	1510	<.2	26	14	29	<5	<5	<10	3630	<5	1	25
30	Bedload 20% bld, 20% cbl, 60% matrix (sampled). Sample 15% pbl > 2.5-cm-, and 15% 1.3-0.65-cm-diameter (pea-size); 70% < pea-size (35% pbl and granules, 25% sd, 10% slt, trace garnet); 95% granodiorite, 5% peg and qtz.	--	25	<.2	9	9	19	8	<5	<10	2520	<5	1	1705
32	Bedload 15% cbl, 85% matrix (sampled). Sample 20% pbl > 0.65-cm-diameter (pea-size); 80% < pea-size (30% pbl, 20% granules, 15% sd, 10% slt, and 5% heavy minerals (4% garnet and 1% black sd)). 80% granodiorite, 10% blt, and 10% qtz.	--	<5	<.2	6	10	58	<5	<5	<10	3210	<5	<1	15
33	Bedload 30% bld, 20% cbl, 50% matrix (sampled). Sample 20% pbl > 0.65-cm-diameter (pea-size); 80% < pea-size (20% pbl, 20% granules, 20% sd, 20% slt (2% garnet) and cly); 50% granodiorite, 30% blt, and 20% peg.	0.056 g/m <sup>3</sup> \$0.63/m <sup>3</sup> (0.334 mg free gold)	<5	<.2	8	8	24	<5	<5	<10	3370	<5	1	10
35	Bedload 20% huge bld, 20% large bld, 20% cbl, 40% matrix (sampled). Sample 40% pbl > 0.65-cm-diameter (pea-size); 60% < pea-size (30% small pbl and granules, 25% sd and slt, 5% cly); 30% wt grn, 20% blt, 20% porphyritic andesite, 20% dark gray silicic tuff, 10 % qtz.	--	8	<.2	8	3	25	<5	<5	<10	2430	<5	<1	
37	Bedload 40% cbl, 60% matrix (sampled). Sample 35% pbl > 0.65-cm-diameter (pea-size); 65% < pea-size (30% small pbl and granules, 30% sd and slt, 5% cly); 95% wt grn, 5% blt.	--	<5	<.2	5	8	26	<5	<5	<10	4875	<5	1	875
40	Bedload 10% cbl, 90% matrix (sampled). Sample 30% pbl > 0.65-cm-diameter (pea-size); 70% < pea-size (15% small pbl and granules, 20% sd, 20% slt, 15% gray cly); 65% granodiorite, 15% cream-colored peg, 10% porphyritic andesite, and 10% qtz.	--	12	<.2	50	3	15	<5	<5	<10	3260	<5	1	1450

TABLE A-1. -- Trace element analyses of samples from the Danskin/South Fork Boise River study area, Elmore County, Idaho -- continued

Sample no. (pl. 1)	Description	Free gold in g/m <sup>3</sup> ; value in \$0.00/m <sup>3</sup>	In parts per million, except as noted											
			Au (ppb)	Ag	Cu	Pb	Zn	As	Sb	H	Mn	Ba	Mo	Hg (ppb)
Part II, Alluvial Concentrate Samples -- continued:														
41	No bld or cbl. Sample 20% wt grn pbl > 0.65-cm-diameter (pea-size); 80% < pea-size (30% small pbl and granules, 25% sd, 15% silt, and 10% cly).	--	5	<0.2	5	7	28	<5	<5	<10	2460	<5	1	700
43	Bedload 5% bld, 15% cbl, 80% matrix (sampled). Sample 15% pbl > 0.65-cm-diameter (pea-size); 85% < pea-size (20% small pbl and granules, 30% sd, 35% sloughed silt and cly regolith; wt, coarse-grained qtz monzonite.	--	10	<.2	6	4	21	<5	<5	<10	1850	<5	<1	905
50	Bedload 30% bld, 20% cbl, 50% matrix (sampled). Sample 20% pbl > 0.65-cm-diameter, 80% < pea-size (30% pbl and granules, 50 % sd and silt); 75% wt subfoliate grn and 25% blt.	--	<5	<.2	5	8	60	<5	<5	<10	1105	<5	2	15
51	Bedload 15% bld, 25% cbl, 60% matrix (sampled). Sample 25% pbl > 0.65-cm-diameter, 70% < pea-size (35% small pbl and granules, 40% sd and silt); 60% wt subfoliate grn, 10% pk grn, 10% quartzite, 10% andesite, 10% blt.	--	<5	<.2	5	17	79	<5	<5	<10	1275	<5	1	15
54	Bedload 40% bld, 20% cbl, 40% matrix (sampled). Sample 20% pbl > 0.65-cm-diameter, 80% < pea-size (30% small pbl and granules, 50% sd and silt); 60% wt subfoliate grn, 10% pk grn, 10% quartzite, 10% andesite, 10% blt.	--	<5	<.2	17	24	147	5	<5	<10	1055	<5	2	45
55	Sample taken of matrix between large bld, and beneath flowing rivulet; 5% small cbl and 15% pbl > 0.65-cm-diameter, 80% < pea-size (10% small pbl, 10% granules, 20% sd, 15% silt, 25% cly); 35% wt grn, 30% porphyritic andesite, 15% pk grn, 15% blt, and 5% qtz.	--	<5	<.2	4	22	164	<5	<5	<10	1240	<5	1	50
56	Bedload 15% bld, 20% cbl, and 65% matrix (sampled). Sample 20% pbl > 0.65-cm-diameter, 80% < pea-size (20% pbl, 15% granules, 20% sd, 15% silt, 10% cly); 55% wt grn gneiss, 20% quartzite, 15% blt, 10 % qtz.	--	80	<.2	8	12	102	5	<5	<10	695	<5	1	55
57	Bedload 30% bld, 15% cbl, and 55% matrix (sampled). Sample 20% pbl > 0.65-cm-diameter, 80% < pea-size (15% pbl, 20% granules, 35% sd, 10% cly); 55% wt grn gneiss, 20% quartzite, 15% blt, 10% qtz.	--	8	<.2	8	4	52	<5	<5	<10	250	<5	1	35

Table A-2.--Whole rock analyses of samples from the Danskin/South Fork Boise River study area, Elmore County, Idaho  
[Analyses by plasma emission spectroscopy, except LOI (loss on ignition) by gravimetric analysis]

Map no. (pl. 1)	Summary description	Sample type	In percent											Totals
			Al <sub>2</sub> O <sub>3</sub>	CaO	Fe <sub>2</sub> O <sub>3</sub>	K <sub>2</sub> O	MgO	MnO	Na <sub>2</sub> O	P <sub>2</sub> O <sub>5</sub>	SiO <sub>2</sub>	TiO <sub>2</sub>	LOI	
1	Quartz pegmatite	Grab	5.12	0.24	0.87	1.50	<0.01	0.023	1.55	<0.01	90.18	0.02	0.19	99.49
2	Biotite granodiorite	Do..	15.23	1.32	.98	3.04	.15	.038	4.72	<.01	71.45	.08	1.63	98.84
3	Kaolinite/goethite shear zone	Chip 0.7 m	14.15	.15	4.55	3.75	.25	.011	2.92	.01	72.15	.09	2.03	100.06
4	Kaolinized granodiorite	Do..	14.32	.23	1.05	3.95	.18	.008	3.22	<.01	74.50	.08	1.65	99.19
5	Iron-stained granodiorite	Select grab	14.10	1.25	1.38	2.67	.13	.018	4.25	<.01	74.22	.09	.72	98.83
6	Granodiorite	Grab	13.22	.21	3.65	2.80	.16	.048	3.68	<.01	73.80	.07	1.72	99.36
7	Granodiorite gneiss	Do..	15.25	2.01	1.88	3.01	.56	.056	4.21	.01	70.18	.21	2.62	100.00
8	Biotite granodiorite	Do..	15.03	1.40	.93	3.18	.27	.041	4.72	<.01	72.85	.07	.56	99.05
9	Biotite granodiorite	Chip 0.6 m	15.27	.75	1.68	3.18	.30	.045	5.12	<.01	71.87	.16	1.52	99.90
10	Decomposed granodiorite	Chip 1.2 m	13.35	.23	3.50	2.91	.25	.036	5.45	.02	72.05	.12	1.98	99.90
11	White granodiorite	Chip 2.52 cm	15.83	.82	1.10	2.65	.18	.038	5.10	<.01	73.10	.11	1.27	100.40
12	Iron-stained granodiorite	Chip 2.0 m	15.95	.41	1.82	3.12	.25	.037	4.56	<.01	70.83	.15	2.52	99.45
14	White biotite granodiorite	Random chip	14.73	1.83	1.12	3.12	.26	.040	5.50	.02	73.10	.09	.53	99.4
16	Pinkish gray rhyolite dike	Do..	13.45	.64	1.97	5.80	.18	.008	3.65	<.01	72.25	.34	1.92	100.21
17	White biotite granodiorite	Do..	14.28	1.81	1.68	2.88	.53	.049	4.60	.04	72.50	.21	.81	99.40
20	Do.....	Chip 4.6 m	13.28	.06	.85	3.37	.21	.018	3.42	<.01	75.80	.06	1.53	98.60
21	Do.....	Chip 0.8 m	15.60	.37	.97	3.71	.21	.029	3.80	<.01	74.05	.08	1.92	100.74
22	Silicified biotite granodiorite	Chip 36.6 cm	14.32	.19	.86	3.35	.20	.038	3.63	<.01	74.80	.09	1.68	99.16
23	White biotite granodiorite	Chip 3.0 m	14.10	.54	.93	3.28	.18	.037	3.87	<.01	74.52	.08	1.33	98.87
24	Do.....	Grab	13.82	.18	.98	3.68	.17	.011	4.38	<.01	73.82	.10	1.20	98.14
25	Silicified phlogopite granodiorite	Select grab	8.08	.07	7.58	1.51	.17	.012	.58	<.01	82.05	.03	2.05	100.13
31	White biotite quartz monzonite	Random chip	14.21	1.20	.88	3.61	.22	.039	5.13	<.01	74.13	.07	.65	100.14
34	Snake River Basalt	Grab	15.60	9.93	15.28	.63	6.72	.210	2.58	.75	46.18	2.70	.05	98.99
36	Smith Prairie Basalt	Random chip	16.47	7.20	9.80	1.98	5.32	.160	2.95	.38	52.63	1.55	.93	97.9
38	Muscovite biotite granite	Grab	14.18	1.06	.90	4.10	.08	.095	4.38	<.01	74.65	.04	.61	100.10



Table A-2.--Whole rock analyses of samples from the Danskin/South Fork Boise River study area, Elmore County, Idaho -- continued

Map no. (pl. 1)	Summary description	Sample type	In percent											Totals
			Al <sub>2</sub> O <sub>3</sub>	CaO	Fe <sub>2</sub> O <sub>3</sub>	K <sub>2</sub> O	MgO	MnO	Na <sub>2</sub> O	P <sub>2</sub> O <sub>5</sub>	SiO <sub>2</sub>	TiO <sub>2</sub>	LOI	
39	Muscovite biotite granite	Grab	14.15	0.45	0.78	4.25	0.04	0.220	4.60	0.03	75.10	0.01	0.55	99.96
42	Blue-gray vesicular basalt	Random chip	15.53	10.05	15.30	.62	3.02	.230	2.63	.64	47.65	2.85	.85	97.03
44	Steamboat Rock Basalt	Grab/ random chip	13.48	7.15	11.50	2.09	4.82	.140	2.70	.85	54.25	2.13	.42	98.12
45	White biotite granodiorite	Random chip	13.76	.92	.81	3.78	.10	.053	4.45	.01	74.15	.06	.83	98.90
46	Porphyritic silicic tuff	Chip 0.9 m	15.68	1.33	2.73	4.91	.18	.044	3.42	.04	71.82	.47	1.15	101.77
47	Idavada banded glassy tuff	Random chip	12.85	1.02	3.17	5.01	.25	.029	2.97	.13	71.55	.46	1.52	98.98
48	White biotite quartz monzonite	Do..	14.35	1.35	1.08	3.82	.16	.033	5.13	<.01	73.70	.09	.56	100.27
49	Do.....	Do..	14.17	1.27	1.18	3.98	.15	.072	4.52	<.01	73.40	.09	.39	99.22
52	Smith Prairie Basalt	Do..	15.92	9.42	10.25	1.52	7.35	.150	3.18	.38	49.52	1.95	.25	99.11
53	White biotite granodiorite	Do..	12.72	1.48	1.17	4.12	.16	.029	5.81	<.01	74.03	.09	.42	100.01
	Aplite with lesser pegmatite	Do..	12.85	.70	.88	5.23	.10	.008	5.42	.02	74.18	.05	.35	99.59
59	Do.....	Do..	14.58	2.53	4.82	2.48	1.87	.058	4.41	.13	67.40	.7	1.53	100.49

