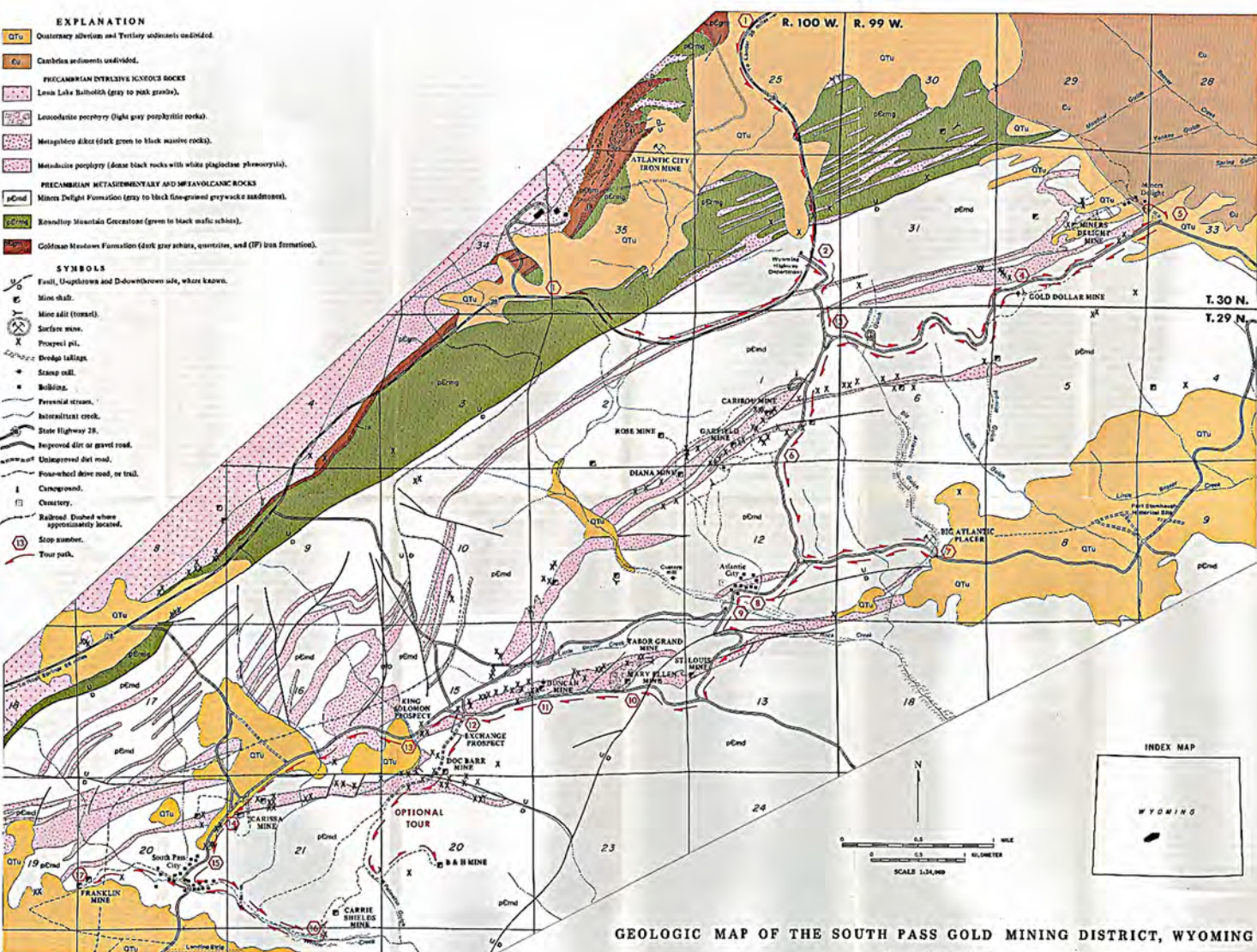


EXPLANATION

- QTu** Quaternary alluvium and Tertiary volcanics undivided.
Cu Cambrian sediments undivided.
PRECAMBRIAN INTERLAYERED IGNEOUS ROCKS
 Lense Lake Bulbolith (gray to pink granites).
 Leucocratic porphyry (light gray porphyritic rocks).
 Metagabbro dike (dark green to black massive rocks).
 Metadiorite porphyry (dense black rocks with white plagioclase phenocrysts).
PRECAMBRIAN METASEDIMENTARY AND METAVOLCANIC ROCKS
 Miners Delight Formation (gray to black fine-grained graywacke sandstones).
 Brecciated Mountain Gneiss (green to black mafic schists).
 Golden Meadow Formation (dark gray schists, quartzites, and (IF) iron formations).

SYMBOLS

- E, U, Upthrown and D, Downthrown side, where known.
 Mine shaft.
 Mine adit (tunnel).
 Surface mine.
 Prospect pit.
 Dredge tailings.
 Stamp mill.
 Building.
 Perennial stream.
 Intermittent creek.
 State Highway 28.
 Improved dirt or gravel road.
 Unimproved dirt road.
 Four-wheel drive road, or trail.
 Campground.
 Cemetery.
 Railroad. Dashed where approximately located.
 Stop symbol.
 Tour path.



GEOLOGIC MAP OF THE SOUTH PASS GOLD MINING DISTRICT, WYOMING

Compiled by W. Dan Huseul
1984

People with disabilities who require an alternative form of communication in order to use this publication should contact the Editor, Geological Survey of Wyoming.
 TDD Relay Operator: (800) 877-2075

THE SOUTH PASS DISTRICT

The South Pass District, located on the southeastern tip of the Wind River Range, includes the historic gold camps of Atlantic City, South Pass, Miners Delight and Lewisville (not shown on the map but located several miles southeast of Atlantic City). Gold was initially discovered here along the Sweetwater River in 1842. Over the next 25 years, prospecting and development were limited to a few small placer operations because of Indian hostilities. However, during the summer of 1867, placer gold was traced upstream to what was later known as the Carinae lode, near the head of Willow Creek, a discovery that led to a gold rush. Three gold camps were established -- South Pass City, Atlantic City, and Miners Delight. By 1869, hundreds of people were prospecting and mining in the district and as many as 2,000 people were living in the camps. In 1871, twelve stamp mills were operating in the district, but by 1872, South Pass City was nearly deserted.

The closure of several of the mines was apparently due not to the lack of mineralization, but to mine flooding problems, milling problems, mismanagement, inexperienced miners, stock frauds, and legal problems.

Since the early gold rush, a few attempts have been made to reopen some of the more promising mines. Gold ore has been produced sporadically since 1879, but only in limited quantities.

Although gold-bearing rock of similar tenor to that at the outcrop was reported to continue at depth, none of the mines in the district extended more than 400 feet below the surface. Essentially, only the near-surface portions of the veins have been prospected. Total gold production for the district is estimated at 325,000 ounces.

The South Pass District is underlain by Precambrian sedimentary and volcanic rocks which formed part of a widespread system of layered rocks more than three

billion years ago. Between 2.7 and 3.3 billion years ago, these rocks were intruded by granitic rocks. Prior to the intrusion by granitic magma, the early sedimentary and volcanic rocks were folded, sheared, and metamorphosed. Additional folding, faulting, and contact metamorphism occurred during the intrusion of the granitic magma.

Much later (about 100 million years ago), the Wind River Mountains were uplifted, piercing the overlying Paleozoic and Mesozoic sedimentary blanket. Later erosion stripped much of the Tertiary cover, reexposing the Precambrian rocks.

The majority of the district's mines lie in gabbro schist along a northeast trending sheared metagabbro. This trend extends from South Pass City through Atlantic City and north to Miners Delight.

A major portion of the district is underlain by the Miners Delight Formation, a layered sequence of metasedimentary and metavolcanic rocks deposited more than three billion years ago. The Miners Delight Formation is mostly feldspathic and siliceous graywacke, conglomerate, mica schist, mafic flows, and gabbroic schist. During the first-stage folding of these rocks, northeast trending shear zones developed in structurally competent metagabbro and in the less competent schist and graywacke. The shears were developed conformable to the strike of bedding and folding in the schists. Following shearing, quartz veins developed, resulting in fissure filling and replacement of some of the fractured country rock. Quartz gangue was later partially replaced by arsenopyrite and gold.

Later-stage faults acted as conduits for late-stage quartz veins containing some disseminated copper and gold, but these occurrences were of little economic interest. Ore shoots are commonly localized at vein intersections or splits, or near the crests of anticlinal folds.

Locally, the veins contained oxidized,

near-surface enriched areas which were somewhat leached at depth. The tenor of the veins in the district was reported to range from zero to 10.6 ounces of gold per ton and to average 0.32 to 0.80 ounce per ton.

For more information on the history and geology of this important gold district, see the references listed on the reverse.



Lense-shaped (bowlings) gold-quartz veins underground in the South Pass District. (Photo by W.D. Huseul, 1983.)

WARNING! THESE MINES ARE UNSTABLE AND DANGEROUS. YOU ARE ADVISED NOT TO TREK-PASS AND NOT TO ENTER ANY OF THESE MINES!

First printing, of 2,100 copies, by A.M. Hirschfeld Press, Denver.

Copyright 1984, The Geological Survey of Wyoming.

THE GEOLOGICAL SURVEY OF WYOMING
 Gary B. Glau, State Geologist

PUBLIC INFORMATION CIRCULAR No. 23

TOUR GUIDE
 to the
 GEOLOGY AND MINING HISTORY
 of the
 SOUTH PASS GOLD MINING DISTRICT
 FREMONT COUNTY, WYOMING
 by W. Dan Huseul



Discussion

The historic South Pass gold mining district is located on the northern tip of the Wind River Mountains, 30 miles south of Lander, 50 miles north of Farnam, and 90 miles north of Park Springs.

Driving north from Farnam or Rock Springs, the Wind River Mountains project above the horizon and become more and more majestic and rugged as they are approached along State Highway 28. From Lander to the north, these snow covered, glacier eroded peaks provide extraordinary scenery along the roadside of State Highway 28.

This road log of the South Pass mining district begins along State Highway 28 within 1.5 to 2 miles of the Atlantic City mine. Whether you are traveling north or south, waste rock (spoil piles) from the Atlantic City mine are open pit mine is visible on the northwest side of the road before the turnoff.

① Atlantic City Iron Ore Mine. The Atlantic City iron ore mine is a gigantic open pit mine surrounded by extensive waste piles. The iron ore (taconite) was mined from the open pit and hauled by truck south to the mill. At the mill, the ore was crushed, beneficiated to pellets, and shipped by rail to the Geneva Steel Works at Provo, Utah. From 1962 to 1983, this mine was operated by U.S. Steel. Gross production averaged 3 million tons of ore per year during full production. About 90 million tons were produced while the mine was in operation.

The ore occurs as a black, hard, dense, highly magnetic rock with regularly alternating iron-rich, low-sulfide and silica-rich, low-iron layers. The Atlantic City pit is located where the iron formation has been greatly thickened by complex folding and faulting. The thickness of the formation ranges from 300 to 1,200 feet at the mine site.

② Atlantic City Turnoff. The Atlantic City turnoff is a well marked, but is identified by a small sign on the east side of Highway 28 directly across from a small Wyoming Highway Department shop. The road to Atlantic City is well graded and gravelled. Turn onto the road, cross the cattle guard, and head southeast. Rocks on either side of the road are dark gray to black metagraywackes (dark mica-quartzite) of the Miners Delight Formation. One tenth to 0.3 mile from the turnoff, the road switches back to the right.

③ Turnoff to Miners Delight. At 0.5 to 0.6 mile from the Atlantic City turnoff, the road turns left (east). At 0.3 mile from the "T", a Bureau of Land Management campground lies on the left (north) side of the road. The road is 0.5 mile, to where a dirt road on the right leads to the Caribou, Diane, Garfield, and Rose mines.

④ Gold Dollar Mine. The Gold Dollar Mine was developed from a north trending fault zone in the Miners Delight Formation. The tunnel is 1,300 feet long and cuts across metagraywacke and mica-quartzite prior to intersecting sulfidated quartz veins in metagraywacke. All of the rock types intersected by the mine were immediately to the west of the mine dump. A large cement foundation of a historic stamp mill which was constructed to extract gold from the Gold Dollar quartz veins.

WARNING: DO NOT ENTER ANY OF THESE HISTORIC MINE WORKINGS AS THEY ARE UNSAFE AND FOR THE MOST PART PRIVATE PROPERTY.

Continuing east along the Miners Delight road, one mile from the Gold Dollar Mine, as the road starts to turn to the right, there is a dirt road to the left. This is where the road turns to the northwest over your shoulder. As soon as

you turn onto this road, the remains of the historic Miners Delight cemetery are visible on the left (west). Continue on this road to where it has been blocked to vehicular traffic. From here, the Miners Delight ghost town is a short walking distance down the road.

⑤ Miners Delight Ghost Town. The town of Miners Delight consisted of the Miners Delight Mine and the Spring, Yankee, and Hound Gulch placers. According to available reports, the Miners Delight mining region was the richest in the entire South Pass District. Although no production records are available, estimates are that the Miners Delight Mine may have produced as much as 63,000 ounces of gold. The Hound Gulch, Yankee Gulch, and Spring Gulch placers were also rich and are estimated to have produced 53,000, 26,500, and 1,600 ounces of gold, respectively. The source of the placer gold is not known, but should lie not far to the northwest of the Miners Delight ghost town.

During its boom days in 1859, the town of Miners Delight consisted of some thirty or more buildings. The town was abandoned after the gold played out between 1862 and 1907. The Miners Delight mine was a headframe, not a mill, and mine waste was nearly all quartz veins within the zone of oxidation at the surface where the gold was free milling and easily recovered. The mine was operated generally at a few hundred feet depth, the gold was refractory and difficult and expensive to extract, and the mine closed down as a result. The primary vein was three to fourteen feet wide and trended to the northwest.

From Miners Delight, the tour doubles back to the Atlantic City turnoff. The Atlantic City pit is located where the iron formation has been greatly thickened by complex folding and faulting. The thickness of the formation ranges from 300 to 1,200 feet at the mine site.

⑥ Atlantic City Turnoff. The Atlantic City turnoff is a well marked, but is identified by a small sign on the east side of Highway 28 directly across from a small Wyoming Highway Department shop. The road to Atlantic City is well graded and gravelled. Turn onto the road, cross the cattle guard, and head southeast. Rocks on either side of the road are dark gray to black metagraywackes (dark mica-quartzite) of the Miners Delight Formation. One tenth to 0.3 mile from the turnoff, the road switches back to the right.

⑦ Turnoff to Miners Delight. At 0.5 to 0.6 mile from the Atlantic City turnoff, the road turns left (east). At 0.3 mile from the "T", a Bureau of Land Management campground lies on the left (north) side of the road. The road is 0.5 mile, to where a dirt road on the right leads to the Caribou, Diane, Garfield, and Rose mines.

⑧ Caribou Mine. The decaying headframe of the Caribou Mine is visible to the north, on top of the ridge in the foreground. The Caribou Mine produced an estimated 26,500 ounces of gold from quartz veins in metagraywacke and metagraywacke of the Miners Delight Formation. The tunnel is 1,300 feet long and cuts across metagraywacke and mica-quartzite prior to intersecting sulfidated quartz veins in metagraywacke. All of the rock types intersected by the mine were immediately to the west of the mine dump. A large cement foundation of a historic stamp mill which was constructed to extract gold from the Gold Dollar quartz veins.

The Garfield Mine, a few hundred yards west of the Caribou, was produced as much as 21,000 ounces of gold. It was reported in 1870 that the Garfield shaft reached a depth of 140 feet. The Diane Mine, one quarter mile west of the Garfield and not visible from the Atlantic City road, was developed on quartz veins in a graphic schist. The mine contained gold in close association with arsenopyrite (a silver, metallic, arsenic-forming mineral) and was active in 1911 when the gold ore averaged 67 ounces per ton and ran as high as three ounces of gold per ton. The mine was closed to bedrock produced only 530 ounces of gold.

The Rose Mine (also not visible from the Atlantic City road) produced an estimated 160 ounces of gold during its operation.

Continuing south on the Atlantic City road, in another three quarters of a mile, the road forms another "T". Turn left (east) along the Rose Stanchow Road, and at a distance of 0.8 to 0.9 mile, the road crosses Big Atlantic Gulch.

Continuing straight ahead (south) from the Miners Delight turn to the northwest cut into the ridge. At the top of the ridge, 0.5 mile to one mile from the Miners Delight Mine, the road splits into the right (west). In another half mile, the Mary Ellen headframe will come into view on the right (north) side of the road.

⑨ Mary Ellen Mine. The Mary Ellen mine, like most of the mines in the district, is privately owned, and trespassing is not permitted without consent of the owner. The mine was developed by a shaft at the intersection of M60'W and M60'E trending quartz veins in gray leucocratic porphyry intrusives. The gold reportedly averaged 0.4 ounce per ton on this ore shoot. Total mine production was estimated at 6,400 ounces.

Continuing west for 0.5 to 0.6 mile and the road will be adjacent to the historic Duncan Mine and Mill.

⑩ Duncan Mine and Mill. The Duncan Mine and Mill are on the right (north) side of the road and the mill and buildings are unstable and not safe (trespassing is strictly prohibited). The mine was developed by a shaft at the intersection of M60'W and M60'E trending quartz veins in gray leucocratic porphyry intrusives. The gold reportedly averaged 0.4 ounce per ton on this ore shoot. Total mine production was estimated at 6,400 ounces.

Continuing west for 0.5 to 0.6 mile and the road will be adjacent to the historic Duncan Mine and Mill.

Continuing west for 0.5 to 0.6 mile and the road will be adjacent to the historic Duncan Mine and Mill.

⑪ Atlantic City. In 1963, Atlantic City had numerous private cabins, limited motel facilities, a bar, two cafes, a supper club, and a population of less than 100 citizens. During the gold rush in the late 1850's and early 1870's, Atlantic City blossomed into a town with many as 200 people. The town was a typical early mining camp with more saloons than eating houses. The first brewery ever built in Wyoming was constructed here in the famous "French" quarry of town, miners could purchase just about anything.

Following the gold boom, Atlantic City began to deteriorate, and was almost a ghost town until the late 1950's when U.S. Steel Corporation had begun construction of the Atlantic City iron ore mine, a mill, and a conveyor-belt-long private railroad from the mine south to the Union Pacific terminal at Winston Junction, just north of Rock Springs.

Continuing through Atlantic City, on the right (north) side of the road is the Atlantic City Mercantile, which remains pretty much the same as it was at the turn of the century. A few hundred feet north of the Mercantile, the road turns left (north), crosses Rock Creek, and splits into two roads at the Miners Delight Inn.

⑫ Rock Creek Placer. Rock Creek, which is visible from just about anywhere in Atlantic City, runs through the town and the southern end of the Duncan property. Drive west for another half mile and the road splits into three paths at the Exchange prospect (Stop 12). The road turning right (east) runs along Little Beaver Creek past the Duncan Mill and leads to an overlook of Rock Creek and a historic custom mill in Atlantic City. The jeep trail on the far left (south) leads to the Doc Barr and Bill mines and a historic custom mill in Atlantic City.

⑬ Rock Creek Placer. Rock Creek, which is visible from just about anywhere in Atlantic City, runs through the town and the southern end of the Duncan property. Drive west for another half mile and the road splits into three paths at the Exchange prospect (Stop 12). The road turning right (east) runs along Little Beaver Creek past the Duncan Mill and leads to an overlook of Rock Creek and a historic custom mill in Atlantic City. The jeep trail on the far left (south) leads to the Doc Barr and Bill mines and a historic custom mill in Atlantic City.

Some of the richest gravel occurred about one mile southeast of Atlantic City near a large fault that crosses Rock Creek.

Richer gravel was reported 3 to 3.5 miles south of Atlantic City, where a large diabase gabbro dike intersects Rock Creek. This area was mined in 1951 and the gravel reportedly averaged 55 cents a yard with some areas as high as \$1 dollar per cubic yard (gold at \$35.00 an ounce).

Continuing straight ahead (south) from the Miners Delight turn to the northwest cut into the ridge. At the top of the ridge, 0.5 mile to one mile from the Miners Delight Mine, the road splits into the right (west). In another half mile, the Mary Ellen headframe will come into view on the right (north) side of the road.

⑭ Mary Ellen Mine. The Mary Ellen mine, like most of the mines in the district, is privately owned, and trespassing is not permitted without consent of the owner. The mine was developed by a shaft at the intersection of M60'W and M60'E trending quartz veins in gray leucocratic porphyry intrusives. The gold reportedly averaged 0.4 ounce per ton on this ore shoot. Total mine production was estimated at 6,400 ounces.

Continuing west for 0.5 to 0.6 mile and the road will be adjacent to the historic Duncan Mine and Mill.

⑮ Duncan Mine and Mill. The Duncan Mine and Mill are on the right (north) side of the road and the mill and buildings are unstable and not safe (trespassing is strictly prohibited). The mine was developed by a shaft at the intersection of M60'W and M60'E trending quartz veins in gray leucocratic porphyry intrusives. The gold reportedly averaged 0.4 ounce per ton on this ore shoot. Total mine production was estimated at 6,400 ounces.

Continuing west for 0.5 to 0.6 mile and the road will be adjacent to the historic Duncan Mine and Mill.

Continuing west for 0.5 to 0.6 mile and the road will be adjacent to the historic Duncan Mine and Mill.

⑯ Atlantic City. In 1963, Atlantic City had numerous private cabins, limited motel facilities, a bar, two cafes, a supper club, and a population of less than 100 citizens. During the gold rush in the late 1850's and early 1870's, Atlantic City blossomed into a town with many as 200 people. The town was a typical early mining camp with more saloons than eating houses. The first brewery ever built in Wyoming was constructed here in the famous "French" quarry of town, miners could purchase just about anything.

Following the gold boom, Atlantic City began to deteriorate, and was almost a ghost town until the late 1950's when U.S. Steel Corporation had begun construction of the Atlantic City iron ore mine, a mill, and a conveyor-belt-long private railroad from the mine south to the Union Pacific terminal at Winston Junction, just north of Rock Springs.

Continuing through Atlantic City, on the right (north) side of the road is the Atlantic City Mercantile, which remains pretty much the same as it was at the turn of the century. A few hundred feet north of the Mercantile, the road turns left (north), crosses Rock Creek, and splits into two roads at the Miners Delight Inn.

⑫ Rock Creek Placer. Rock Creek, which is visible from just about anywhere in Atlantic City, runs through the town and the southern end of the Duncan property. Drive west for another half mile and the road splits into three paths at the Exchange prospect (Stop 12). The road turning right (east) runs along Little Beaver Creek past the Duncan Mill and leads to an overlook of Rock Creek and a historic custom mill in Atlantic City. The jeep trail on the far left (south) leads to the Doc Barr and Bill mines and a historic custom mill in Atlantic City.

⑬ Rock Creek Placer. Rock Creek, which is visible from just about anywhere in Atlantic City, runs through the town and the southern end of the Duncan property. Drive west for another half mile and the road splits into three paths at the Exchange prospect (Stop 12). The road turning right (east) runs along Little Beaver Creek past the Duncan Mill and leads to an overlook of Rock Creek and a historic custom mill in Atlantic City. The jeep trail on the far left (south) leads to the Doc Barr and Bill mines and a historic custom mill in Atlantic City.

gradually turns left (west) heads to South Pass City.



Custom stamp mill along Rock Creek north-west of Atlantic City. The piles of gravel tailings in the foreground along Rock Creek were produced during a 1933 to 1941 gold dredging operation. (Photo by W.D. Haeusel, 1983.)

Optional Tour (four-wheel-drive vehicle ONLY). The optional tour follows the dirt road to the far left (south). The Doc Barr Mine is 0.3 to 0.4 mile from the turnoff and is surrounded by several small mine dumps. The host rock is metagraywacke, and only about 900 ounces of gold were mined from this property. Continue on the jeep trail following Palmetto Gulch to the south. At 1.0 to 1.2 miles from the Doc Barr property, the trail turns hard to the left and continues another 0.5 to 0.5 mile before terminating at the Bill Mine. This property is located at the intersection of two well developed shear (fracture) zones in metagraywacke. Quartz veins follow the shear zones and intersect a few feet to the west of the shaft.

While the north-south vein contains pyrite (fool's gold) and arsenopyrite, the east-west vein was reported to be high

grade with free milling gold. The silver to gold ratio of the ore was 2-to-1, the highest in the entire district. Much of the silver probably occurs as discrete particles disseminated in arsenopyrite. Only 260 ounces of gold were mined from this property with possibly twice as much silver.

Return back to the Exchange prospect (Stop 12).

Exchange Prospect. From the Exchange prospect, turn left (west) on the graded road to South Pass City. At 0.3 to 0.3 mile, the roadcut exposes graphitic schist and several small quartz veins. On the left (south) side of the road, a portal (tunnel) was blasted into the contact

of metagabbro dike and leucocratic plug. Prior to 1900, only about 800 ounces of gold had been produced from the mine. The mine was a conveyor-belt-long private railroad between 1911 and 1951, 76 ounces in 1936, 52 ounces in 1952, and 761 ounces in 1953, giving a total of approximately 3,840 ounces of gold with some silver.

The Duncan gold-bearing vein varied from 18 inches to five feet wide, and occupied shaft zones. The primary vein was a 265'W trend and was characterized by a 345'E vertical crosscutting vein. This vein intersection, or ore shoot, was developed to a 750-foot depth and was 100 feet of drifts, crosscuts, and open stopes. An excellent view of the Duncan Mine is available along the Little Beaver Creek road north of the Duncan property. Drive west for another half mile and the road splits into three paths at the Exchange prospect (Stop 12). The road turning right (east) runs along Little Beaver Creek past the Duncan Mill and leads to an overlook of Rock Creek and a historic custom mill in Atlantic City. The jeep trail on the far left (south) leads to the Doc Barr and Bill mines and a historic custom mill in Atlantic City.

SW shore near. The individual in the photo is standing directly on a fracture. (Photo by W.D. Haeusel, 1983.)

of graphitic schist and metagabbro. This adit is part of the King Solomon prospect; it runs back into the hillside for a very short distance and intersects a shallow vein (shaft). On the right side of the road, a large, rounded, reddish, hematite-stained (goose) boulder lies adjacent to a prospect pit on top of the roadcut.

⑯ Doc Barr Mine. At 0.3 to 0.4 mile from the Exchange prospect and immediately after passing the King Solomon prospect, the road crosses Big Herman Gulch. Some of the outcrops along the Doc Barr Mine are visible at the base of the ridge in the foreground to the south.

⑰ Carissa Mine and Mill. Continue on the road. In another 1.5 miles, the Carissa Mine and Mill will come into view on the left side of the road. This was one of the two leading gold producers in the district and produced an estimated 53,000 ounces of gold during the late 1860's to early 1870's.

Optional Tour (four-wheel-drive vehicle ONLY). The optional tour follows the dirt road to the far left (south). The Doc Barr Mine is 0.3 to 0.4 mile from the turnoff and is surrounded by several small mine dumps. The host rock is metagraywacke, and only about 900 ounces of gold were mined from this property. Continue on the jeep trail following Palmetto Gulch to the south. At 1.0 to 1.2 miles from the Doc Barr property, the trail turns hard to the left and continues another 0.5 to 0.5 mile before terminating at the Bill Mine. This property is located at the intersection of two well developed shear (fracture) zones in metagraywacke. Quartz veins follow the shear zones and intersect a few feet to the west of the shaft.

While the north-south vein contains pyrite (fool's gold) and arsenopyrite, the east-west vein was reported to be high grade with free milling gold. The silver to gold ratio of the ore was 2-to-1, the highest in the entire district. Much of the silver probably occurs as discrete particles disseminated in arsenopyrite. Only 260 ounces of gold were mined from this property with possibly twice as much silver.

Return back to the Exchange prospect (Stop 12).

Exchange Prospect. From the Exchange prospect, turn left (west) on the graded road to South Pass City. At 0.3 to 0.3 mile, the roadcut exposes graphitic schist and several small quartz veins. On the left (south) side of the road, a portal (tunnel) was blasted into the contact

of metagabbro dike and leucocratic plug. Prior to 1900, only about 800 ounces of gold had been produced from the mine. The mine was a conveyor-belt-long private railroad between 1911 and 1951, 76 ounces in 1936, 52 ounces in 1952, and 761 ounces in 1953, giving a total of approximately 3,840 ounces of gold with some silver.

The Duncan gold-bearing vein varied from 18 inches to five feet wide, and occupied shaft zones. The primary vein was a 265'W trend and was characterized by a 345'E vertical crosscutting vein. This vein intersection, or ore shoot, was developed to a 750-foot depth and was 100 feet of drifts, crosscuts, and open stopes. An excellent view of the Duncan Mine is available along the Little Beaver Creek road north of the Duncan property. Drive west for another half mile and the road splits into three paths at the Exchange prospect (Stop 12). The road turning right (east) runs along Little Beaver Creek past the Duncan Mill and leads to an overlook of Rock Creek and a historic custom mill in Atlantic City. The jeep trail on the far left (south) leads to the Doc Barr and Bill mines and a historic custom mill in Atlantic City.

SW shore near. The individual in the photo is standing directly on a fracture. (Photo by W.D. Haeusel, 1983.)

South Pass City with Carissa Mine and Mill in background. (Photo by W.D. Haeusel, 1983.)

the constant rumbling of these steep mills, which echoed throughout the camps and towns.



A battery of ten stamps south of South Pass City. Historic mine on the south bank of Willow Creek. Many early prospectors wrote about the constant thunder vibrating through the gold camps as these rock crushers pulverized gold ore. (Photo by W.D. Haeusel, 1983.)

Optional Tour (footpath along Willow Creek). Follow the trail which parallels the north bank of Willow Creek. After walking 0.5 mile, you will see large tailing piles in Willow Creek adjacent to the beaver ponds. At one mile from South Pass City, a jeep trail goes up the valley on the left. This trail is just east of a tiny cabin located across Willow Creek. A few feet from your present position is a cave adit. Follow up the hillside adjacent to the jeep trail there is a large mine dump at the mouth of a partially caved adit known as the Carissa Shields Mine.

⑰ Carissa Shields Mine. These workings are badly caved and unsafe. The Carissa Shields adit follows a M60'W trending vein in metagraywacke for 100 feet, then crosscuts 25 feet to the southeast and intersects a narrow quartz vein one to two feet wide. From that intersection, the drift follows the vein on the M60'E trend for at least another 150 feet. The vein along this drift was stopped to the surface. Trenching indicated that 1550 ounces of gold were extracted from this vein.

Above the adit, at the top of the hill, there is a ventilation shaft for the Carissa Shields Mine. This shaft is covered by the decayed remains of a cabin with an entrance (drag-wood mine) used in the construction of the gold. Return back to South Pass City.

SW shore near. The individual in the photo is standing directly on a fracture. (Photo by W.D. Haeusel, 1983.)

South Pass City with Carissa Mine and Mill in background. (Photo by W.D. Haeusel, 1983.)

Drive back through South Pass City, and continue straight through the intersection, paralleling Willow Creek. At about 0.4 mile from the intersection, pack your vehicle, cross Willow Creek, and walk up the hillside to the west. After crossing the railroad tracks (once the rounded reddish iron-stained patches covering the cross-ties - these are iron ore veins from the Atlantic City iron ore mine), you will see a group of shafts and mine dumps. This is the Franklin Mine.

⑱ Franklin Mine. The Franklin Mine produced 15,840 ounces of gold from quartz veins in metagraywacke. The mine area has been extensively invaded by pinkish granite dike and pegmatites. A sample of quartz veins material from the mine dump recently assayed one half ounce per ton. Careful examination of quartz vein samples is sometimes rewarded by finding visible gold.

This ends the tour of the South Pass gold mining district. After you have visited the district, if you have any questions or wish samples that you would like examined, please feel welcome to write to:

The Geological Survey of Wyoming
Box 2008, University Station
Laramie, Wyoming 82001

or stop by and see us on the University of Wyoming campus in Laramie.

SUGGESTED READING
Beyler, R.W., Proctor, P.D., and Condie, K.C., 1973, Geology of the South Pass Area, Fremont County, Wyoming: U.S. Geological Survey Professional Paper 793, 39 p.

Blackstone, D.L., Jr., 1971, Travelers' guide to the geology of Wyoming: Geological Survey of Wyoming Bulletin 55, 90 p.

Haeusel, W.D., 1980, Gold districts of Wyoming: Geological Survey of Wyoming Report of Investigations 23, 71 p.

Haeusel, W.D., 1982, Ore deposits of Wyoming: Geological Survey of Wyoming Technical Report 19.

Haeusel, W.D., Glass, G.B., Lagason, D., Ver Pong, A.J., and De Bruin, R.H., 1979, Wyoming mines and minerals map: Geological Survey of Wyoming MS-3, scale 1:500,000.

Haeusel, W.D., and Harris, R.E., 1983, Metallurgy of some Wyoming deposits: Colorado Mining Association Yearbook, p. A8-A9. (Reprinted 1983). Geological Survey of Wyoming Reprint 44, 18 p.

Homer, L.M. (editor), 1960, South Pass, 1868, James H. Hinkle's Journal of the Wyoming gold rush. University of Nebraska Press, 106 p.

Root, F.K., 1977, Minerals and rocks of Wyoming: Geological Survey of Wyoming Bulletin 56, 84 p.

Wyoming Recreation Commission, 1976, Wyoming - a guide to the state. Wyoming State Historic Rock Company, 327 p.



Sketches by Robert C. Odell, Consulting Geologist, Casper, Wyoming.