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# IMLAY DISTRICT

## LOCATION

The Imlay district is located in the north end of the Humboldt Range in T31 and 32N,R33 and 34E and is entirely within Pershing County. The mines in the district are accessible from Interstate 80 by dirt roads.

## HISTORY

The Imlay district is a combination of three older districts, Humboldt, Prince Royal and Eldorado which were organized in the 1860's. Although numerous claims were recorded and explored, there apparently was little production from the area prior to 1907. Renewed activity in the area commenced with the discovery of the Black Jack mercury mine in 1906-1907. The mercury mine produced 752 flasks in 1913-14. The Imlay Mine was worked between 1907 and 1918 and the Star Peak Mine produced $130,000 in gold and silver during 1914-16. Renewed activity in the area commenced in the 1930's with production of gold, silver, mercury, tungsten, and fluorite continuing intermittently until 1965. The main producer in the district during this period was the Standard Mine which produced over $1,000,000 in gold in the periods 1939-42 and 1946-49 from two open pits. The Valerie fluorspar mine produced 723 tons of 44 percent $CaF_2$ during this period. The Black Jack Mine again produced mercury from 1954-65. Total recorded production from the district is over $1,700,000 and includes 48,000 oz Au and 151,249 oz Ag as well as mercury, tungsten, and minor copper and lead.

## GEOLOGIC SETTING

Rocks of Triassic age, which form the western limb of a highly faulted anticline, comprise the bedrock exposures in the Imlay district. The oldest rocks are rhyolite intrusives, flows and tuffs of the Koipato Group. The rhyolites are overlain unconformably by sandstone, shale, and limestone of the Prida Formation. The Prida Formation is overlain by limestone of the Natchez Pass Formation, which is overlain by shales of the Grass Valley Formation. Rocks of the Grass Valley Formation and the upper member of the Natchez Pass Formation are thrust over the Prida Formation and the Koipato Group along the Humboldt City fault. Numerous diabasic dikes and sills intrude the Triassic rocks. The geology of the Imlay Quadrangle has been mapped by Silberling and Wallace (1967).

## ORE DEPOSITS

Although there are numerous mines and prospects in the Imlay district the main activity in 1984 during my examination of the district was an extensive drilling project by Pegasus Gold Corp. concentrated in the Florida Canyon area and a small placer operation in Imlay Canyon and vicinity.



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The Florida Canyon area has been the site of intensive exploration for sediment-hosted, disseminated gold mineralization for several years by a succession of companies. No official reserve figures have been released, but estimated reserves are 22 million tons at 0.022 oz/ton Au. The disseminated gold mineralization occurs predominantly in silicified shale and phyllite of the Grass Valley Formation. Minor amounts of gold mineralization occur in jasperoid in the Natchez Pass Formation and in silicified breccias in the Prida Formation. The gold mineralization is not stratiform, it is associated with northeast-trending faults. There is high degree of correlation between silicification and gold mineralization although some areas of silicification are barren.

The most significant past gold producer in the Imlay district is the Standard Mine. The Standard mine area was intensively drilled in 1980-82 by Cordex. Apparently, no minable gold deposit was found by the exploration program. There are two main open pits at the Standard Mine, the north pit and the south pit. The mineralized zone at the south pit is developed along a northeast-trending thrust contact between Grass Valley phyllite and brecciated carbonate rock of the Prida Formation. The ore zone is about 10 meters wide. The mineralized rock was silicified, brecciated, thin-bedded limestone.

At the north pit, a north-trending high-angle fault, cutting limestones of the Natchez Pass Formation which are overlain by phyllite of the Grass Valley Formation, appears to have controlled the gold mineralization. There is abundant brecciated jasperoid present in the pit area. There was no activity in the Standard mine area at the time of my visit in August 1984.

The Imlay placer deposit was active in August 1984. It was being worked by Global Resources Inc. of Houston, Texas. The productive gravels are 1-2 meters thick and rest unconformably upon older gravels which are partially cemented by iron oxides and caliche. The placer deposit contains scheelite and cinnabar in addition to gold.

There are two mines in the area which mined scheelite from pegmatitic quartz veins, the Lakeview and the Starlight open pit. The quartz veins contain scheelite, fluorite, beryl, muscovite, tourmaline and minor sulfides. The veins occur, in both mines, at the contact between rhyolite of the Koipato Group and the basal clastic and carbonate unit of the Prida Formation.

Two small fluorite mines are also present in the Imlay district, the Valerie Mine and the Piedmont Mine. Fluorite at the Valerie deposit, occurs in limestone of the Prida Formation just beneath a thrust contact with massive limestone of the Natchez Pass Formation. The area was drilled in 1984 for potential disseminated gold mineralization. At the Piedmont Mine, a banded quartz-fluorite vein occurs in rhyolite porphyry of the Koipato Group. The property was idle in 1984.

The Imlay Mine explored gold-bearing quartz veins and stockworks in phyllite of the Grass Valley Formation. The main vein, worked in the early 1900's, is about 0.3 meters wide. The I-M claims, about one mile south of the Imlay Mine, explore narrow quartz veins in phyllite and quartzite of the Grass Valley Formation. The veins contain pyrite, tetrahedrite and jamesonite(?), and their oxidized products.

The Blackjack Mine, in the Eldorado Canyon area, is a mercury deposit in thin-bedded limestone of the Prida Formation. Cinnabar was the only ore mineral. Areas of jasperoid and gossan also occur in the mine area, but

apparently did not contain cinnabar. The area has been drilled recently as a disseminated gold prospect.

The Star Peak Mine, located on the north flank of Star Peak, produced gold from a quartz vein in the period between 1913-16. The quartz vein 0.5 to 1 meter wide, trends N50E, dips 40°NW and cuts arkose and argillite of the Prida Formation and rhyolite porphyry of the Koipato Group. The vein quartz contains pyrite, sphalerite and covellite.

The Star Mine produced scheelite and stibnite from a quartz vein in limestone of the Natchez Pass Formation. The vein trends N60-70W and dips steeply to the NE. It is up to 5 meters wide. Stibnite, sphalerite, scheelite, pyrite, and tetrahedrite occur in the vein quartz.

There are a number of other small mines and prospects in the Imlay district with little to no production. The future production from the district will probably depend upon the success or failure of the exploration project in the Florida Canyon area.

## Humboldt Range Districts

Information on the history and production of districts in the Humboldt Range is summarized from Johnson (1977).

## GEOCHEMISTRY

A sample (#2506) from a vein adjacent to the Nevada Humboldt deposit is anomalous in silver, arsenic, boron, beryllium, lead, antimony, and zinc. It contained 0.05 ppm gold. A sample of ore from the Starlight Mine is highly anomalous in silver, boron, bismuth, beryllium, lead, and tungsten and anomalous in antimony, manganese, and tin. Similar ore from the Lakeview Mine is also highly anomalous in boron, beryllium, tungsten, and tin but only weakly anomalous in silver and lead. It also contains anomalous barium, manganese, and chromium.

A sample of quartz vein material from the Nevada Humboldt group is anomalous in silver, arsenic, boron, beryllium (1000 ppm), lead, tungsten, and zinc. It also contains weakly anomalous copper and less than 0.05 ppm gold. A sample of jasperoid from the property is anomalous in silver, boron, bismuth, copper, and lead. It contained less than 0.05 ppm gold.

Sample 2513 from quartz veins on the PQX claim group, is anomalous in silver, arsenic, boron, bismuth, chrome, lead, antimony, and zinc. It contained 0.30 ppm gold.

Samples of fluorite are from the Piedmont Mine, are weakly anomalous in boron, copper, vanadium, and zinc. One sample contained anomalous arsenic and 6.3 ppm gold. A fluorite-rich sample contained 1.2 ppm gold.

Samples of carbonaceous, shaly limestone from the basal member of the Prida Formation taken from rotary drill cuttings in the area south of Florida Canyon, are weakly anomalous in silver, barium, chromium, molybdenum, arsenic, and vanadium. Two samples contained 0.05 ppm gold.

Samples of fluorite from the Valerie fluorspar mine are anomalous in silver, arsenic, chromium, molybdenum, nickel, vanadium, and zinc. One sample contained 0.15 ppm gold and weakly anomalous antimony.

Two samples were obtained from the Blackjack mercury mine, one of cinnabar ore, the other of jasperoid. The jasperoid sample is anomalous in arsenic, barium, chromium, copper, molybdenum, vanadium, antimony, and

zinc. It contains 0.05 ppm gold. The sample of mercury ore is anomalous in zinc strontium and vanadium, and weakly anomalous in antimony.

Two samples were also collected at the Star Peak Mine, one of mineralized vein quartz, the other of jasperoid and argillite. The vein sample is anomalous in silver, arsenic, antimony, copper, molybdenum, lead, and zinc. It also contains 6.8 ppm gold. The jasperoid-argillite sample is anomalous in arsenic, boron, barium, chromium, copper, molybdenum, lead, antimony, vanadium, and zinc. It contained less than 0.05 ppm gold.

A sample of the heavy mineral concentrate from the Imlay placer mine is anomalous in manganese, arsenic, boron, barium, cobalt, chromium, copper, molybdenum, nickel, lead, vanadium, tungsten, antimony, zinc, and zirconium. It contains 0.2 ppm gold. Cinnabar occurs in the concentrates.

Several samples were taken at the Imlay Mine of stockworks quartz vein mineralization. Two samples are anomalous in manganese, all are weakly anomalous in silver, and antimony. All are anomalous in arsenic, boron, and barium, two are anomalous in copper and lead, all are weakly anomalous in vanadium. One sample is anomalous in zinc. Two samples contained 0.05 ppm gold, one 0.10 ppm gold.

A sample of quartz vein matter from the I-M claims is anomalous in silver, arsenic, antimony, boron, copper, lead, zinc, and contained 0.40 ppm gold.

Two samples from the Star Mine are anomalous in silver, antimony, copper, and lead. One sample is anomalous in tungsten, the other in zinc. One sample contained .05 ppm gold, the other 0.15 ppm gold.

Two samples were taken from the south pit at the Standard Mine and two from the north pit. The south pit samples are anomalous in silver, arsenic, strongly anomalous in antimony, anomalous in copper and lead. One sample was anomalous in chromium, molybdenum, and vanadium. One sample contained 0.90 ppm gold, the other 0.45 ppm gold. The north pit samples are anomalous in silver, antimony, arsenic, chromium, copper, lead, and vanadium. One sample contained anomalous tungsten. The samples contained 0.45 ppm and 0.80 ppm gold.

## SELECTED REFERENCES

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