The property is developed by a 600-foot shaft and tunnels, which with other workings total about 1 1/2 miles. Equipment includes two Chicago pnuematic compressors and rock drills.

Turquoise and Variscite

Turquoise and variscite deposits were discovered in the Candelaria Mountains in 1908 by A. L. Dees and Edward Murphy. One deposit is several miles northwest of the deserted camp of Columbus and the other is 2 miles west of Rock Hill siding on the Southern Pacific R. R. between Redlich and Coaldale. These deposits have been worked intermittently for gem material when market conditions were favorable.

The production of gem material from these deposits is not a matter of record. According to Carl Reik, who until recently held turquoise claims near Columbus, more than 1,000 pounds of turquoise has been produced by him since 1916.

The Reik group of three claims was sold in 1936 to W. F. Godber, owner of the Western Gem and Jewel Co., 1639 Wooster St. Los Angeles, Calif., wholesale dealers in turquoise. This company uses approximately 25 pounds of turquoise per day for gem stones.

According to Godber, Nevada turquoise is the finest produced in the United States, and much of the material is sold in foreign countries, including England and India, for semiprecious gems.

The turquoise occurs in limestone and shale formation, principally as veinlets along joints or fissures. The veinlets range from knife-blade thickness to a maximum of 1/2 inch. The joints or fissures are quite local and can be traced only a few feet in any direction. The turquoise is closely associated with variscite, which is sometimes mistaken for turquoise.

In October 1936, three men were employed in mining the turquoise. Considerable patience is required because explosives cannot be used and the ground is fairly hard. According to Godber, the quality of the turquoise improves with the hardness of the enclosing rocks. Mining is done mainly in open-cuts, and three men can produce about 1 pound per day.

DOUBLE SPRINGS MARSH DISTRICT

Double Springs Marsh is about 8 miles east of Schurz, a station on the Mina Hazen branch of the Southern Pacific R. R. at the north end of Walker Lake.

The only mining activity on the marsh occurred about 1898, when the Occidental Alkali Co. produced a considerable amount of high-grade soda.

Double Springs Marsh is a typical dry-lake deposit formed by the evaporation of mineral-bearing waters derived from drainage from the surrounding

mountains and probably to some extent from hot springs and water of volcanic origin. The dry lake is elliptical in outline, having a length of 4 miles and a width of 1 mile. According to Knapp,8/ the deposit comprises about 800 acres, 500 of which are covered with a deposit of salts ranging from 2 to 14 inches in thickness, averaging about 6 inches.

The average composition of the surface salts is as follows:

	Percent
Sodium carbonate	20
Sodium bicarbonate	25
Sodium sulphate	15
Sodium chloride	10
Water	15
Sand and insoluble matter	15
	100

Beneath this surface incrustation is a body of soda clay filled with soda crystals; strong soda solutions constantly rise to the surface by capillary attraction and the salts are deposited by evaporation of the water. This process is slow when the top incrustation is undisturbed, but when that is removed the accumulation of salts on the stripped portion is about 1 inch per year; hence the deposit, when worked, is constantly renewing itself.

The process employed by the Occidental Alkali Co. to produce sodium carbonate has been described by Knapp, and the following has been abstracted from his description: The crude soda stripped from the surface accumulations of salts was first dissolved in hot water in a tank agitated with a revolving arm. When the density of the solution reached about 28° B., the contents of the agitator were drawn into a covered settling tank, where the sand and silt were settled out. The clear solution was drawn off and conveyed by hose to a carbonating cylinder 18 feet long and 6 feet in diameter mounted on rollers and fitted with a 12-inch opening in the center. When the cylinder had been filled the door was sealed and connection made with a carbonic acid receiver, where the gas was stored under pressure of 30 pounds per square inch. When virtually all the carbonates were changed to bicarbonates, the cylinder was discharged, and the solution and the precipitated bicarbonate were sluiced to a cooling and precipitating vat. As the solution cooled, the bicarbonate in suspension was thrown down rapidly when the temperature fell under 70° F. The solution containing chloride and sulphate and some carbonates was drawn to waste leaving the precipitated bicarbonate in the vat. The bicarbonate was washed with cold water to dissolve any sulphate and chloride attached to the crystals of bicarbonate.

After being washed, the bicarbonate was drawn from the vat to a centrifuge, which threw out the remaining solution and left a mass of pure bicarbonate crystals. The bicarbonate was then placed in a stationary, gas-tight retort furnace equipped with stirring arms and externally fired. The gas evolved was conducted through a pipe to a cooling scrubber and thence to a compressor, which compressed and stored it in a receiver.

8/ Knapp, S. A., Occurrence and Recovery of Sodium Carbonate in the Great Basin Region: Mineral Industry, vol. 7, 1898, pages 631-634.

The gas was drawn off from the receiver for use in carbonating a fresh lot of solution. When the calcination was completed, the soda was delivered to a grinding mill, where it was ground and packed for shipment. The finished product was extremely pure anhydrous carbonate.

EAGLEVILLE DISTRICT

Eagleville, also known as the Hot Spring district, is in northeastern Mineral County 11 miles, by road, east of Rawhide. A number of gold-silver deposits in this area have been worked intermittently since the eighties, but only small amounts of shipping ore have been produced. Principal production, from the viewpoint of tonnage, has been barite from the Highland group of claims.

Highland Group

The Highland group of seven unpatented claims is owned by A. Blundell, of Sparks, Nev., and associates. In 1929 and 1930 this property was leased to the American Development Co. of San Francisco, which shipped 9,000 tons of barite to Oakland, Calif. The barite was mined on a royalty basis of $1 per ton.

Small shipments of gold-silver ore have been mined from veins at the south end of the Highland group.

Development includes three shafts and two tunnels. The deepest shaft is 200 feet. Total workings comprise about 3,500 feet.

The barite occurs in a fissure vein ranging in width from 6 inches to 8 feet. The vein is traceable on the surface for 2,700 feet. The barite is reported to average 96 percent barium sulphate. With favorable market conditions this property can produce a considerable tonnage of barite.

The haul to Fallon, the nearest shipping point, is 50 miles; 32 miles is over macadam highway and 18 miles over fair desert road.

Other Claims

The Rovada Mining Co., owned by Robert Ringling, comprises a group of 12 claims 4 miles south of Rawhide Hot Springs. In 1936 a lessee made four small shipments of gold ore from this property.

At Camp Sunnyside 12 miles northeast of Rawhide Hot Springs is a group of 11 claims owned by Tom Kenyon. Occasional shipments of gold and silver ore have been made from the property by Kenyon.

Mrs. M. R. Wedell of Rawhide Hot Springs owns six scattered claims in this area. Five of the claims have been located for gold and silver and one for molybdenum. All of these claims are in the prospect stage.