

I.C. 6995

Development work comprises several adits, the longest of which is 220 feet. Underground workings total approximately 2,000 feet. The only equipment on the property consists of a 20-stamp mill from which all machinery except the stamps and crusher has been removed.

Values are in gold, which is present in oxidized material in a quartzite formation.

Rare Metals Corporation

In 1937 the Rare Metals Corporation acquired six unpatented claims owned by M. C. Bauder and associates and other property in the area.

Development comprises several shallow shafts, a number of open cuts, and several short adits, totaling in all about 700 feet of work. There is no equipment on the property.

Total production of manganese is probably about 200 tons. The manganese deposits are of unusual interest because they contain tungsten, first reported by Penrose^{9/}. The manganese occurs in thin lenses underlain by shale and overlain by a capping of soil and tufa generally not more than a few feet thick. The manganese is composed of soft sooty oxide with streaks and bunches of iron oxides along the margin. A car sample of 30 tons shipped in June 1918 gave the following analyses:

Manganese, 32.5 percent
Silica, 6.2 percent
Tungsten, 1.5 percent

Iron, 5.2 percent
Phosphorus, 0.056 percent

GOLD RUN DISTRICT

Gold Run (also known as the Adelaide) district is in southeast Humboldt County on the east slope of the Sonoma Range about 12 miles south of Golconda, a station on the Southern Pacific Railroad. The district was organized in 1866, and in 1868 an 8-stamp pan-amalgamation mill was erected in this area to treat ores from the Golconda and Hope mines. In 1889 A. S. Bates and associates made some copper matte at Adelaide which was shipped to New Jersey. In 1897 the Glasgow and Western Exploration Co., controlled by Scotch interests, acquired the principal mines in the district and constructed a 12-mile narrow-gage railroad from Adelaide to Golconda. A concentrating plant and smelter were erected at Golconda. The smelter included two Bruckner roasting furnaces and three small reverberatory smelting furnaces with a combined capacity of 90 tons per day. The smelter started to operate in 1898 and ran fairly continuously until 1905. In 1907 the concentrator was remodeled to employ the Macquisten process. This mill ran for 1 1/2 years, when operations were suspended. In 1911 the Golconda mill and smelter were scrapped.

^{9/} Penrose, R. A. F., Jr., Manganese, Its Uses, Ores, and Deposits: Arkansas Geol. Survey Ann. Rept. for 1890, vol. 1. p. 470, 1893. .
A Pleistocene Manganese Deposit near Golconda, Nev.: Jour. Geol. vol. 1, 1893, pp. 275-282.

In 1916 the Adelaide mine was purchased by the Yerington Mountain Copper Co., which operated the mine for several years during the War.

In recent years the district has been intermittently active, with a number of small company operations and by lessees. Production from the district from 1907 to 1936 is shown in table 3.

Placer gold was discovered along Gold Run Creek in 1886, and the placers were worked in a desultory manner by small-scale sluicing and rocking for a number of years. In 1901 V. L. Bliss and William Evans acquired the principal placer deposits on Gold Run Creek and built a flume and pipeline. This plant operated for several years. According to A. J. Langwith of Winnemucca, who has been familiar with mining activities in the district since 1890, the total placer production has been about \$30,000.

Adelaide Mine

The Adelaide mine comprises a group of five patented claims owned by Humboldt County. The claims were acquired by the county for non-payment of taxes. The bulk of the production in the Adelaide district was derived from this mine during the period when it was operated by the Glasgow and Western Exploration Co.

Development work consists of the main shaft, 300 feet deep, an adit 2,000 feet long, and other workings, totaling about 1 mile in length. The lower portion of the main shaft has been filled with water for a number of years. There is no equipment on the property.

The formation consists of calcareous shale with intercalated beds of limestone. The ore occurs in the limestone layers and is composed chiefly of chalcopryite, pyrrhotite, a little sphalerite, and galena disseminated in a gangue of calcite, garnet, vesuvianite, and other silicates. Several specimens of ore on the dumps near the main shaft were collected by the writer and showed a little scheelite.

Due to the presence of the heavy gangue minerals in the ore, the attempt to concentrate by gravity method in the early days was not satisfactory. Experimental tests were made also to concentrate the ore by the Blake-Morscher electrostatic process.

The Macquisten-tube process employed by the Glasgow and Western Exploration Co. is interesting in that it was among the first flotation plants to be erected in the United States. The process was patented in 1904 by A. P. S. Macquisten.

A description of this ingenious process is given by Ingalls^{10/}. No chemical or physical agents were used except ordinary crushing, and the sulphide minerals were floated on water while the quartz and other gangue minerals sank to the bottom. The weak part of the process was the difficulty encountered in recovering the minerals from the slime. The capacity of the Golconda plant was 125 tons per day.

^{10/} Ingalls, W. R., Concentration Upside Down: Eng. & Min. Jour., vol. 84, 1907, pp. 765-770.

TABLE 3. - Gold, silver, copper, lead, and zinc production from Gold Run
(Adelaide) District, Humboldt County, Nev., 1907-36 - Continued

(Compiled by Charles White Merrill, Mineral Production and Economics Division, Bureau of Mines)

Year	Lode									Average recoverable value of ore per ton ^{1/}	Total value, lode and placer
	Silver		Copper		Lead		Zinc		Total value		
	Fine ounces	Value	Pounds	Value	Pounds	Value	Pounds	Value			
1907..	1,266	\$836	-----	-----	14,143	\$750	-----	-----	\$1,627	\$36.98	\$1,627
1908..	3,297	1,747	-----	-----	35,905	1,508	-----	-----	4,660	39.49	4,660
1909..	5,886	3,061	4,485	\$583	54,000	2,322	-----	-----	25,664	13.78	25,664
1910..	926	500	-----	-----	13,233	582	-----	-----	1,131	75.40	1,131
1911..	3,256	1,726	10,209	1,276	24,727	1,113	-----	-----	6,740	44.05	6,740
1912..	491	302	-----	-----	3,376	152	-----	-----	11,908	48.39	11,908
1913..	1,877	1,134	121	19	20,870	918	-----	-----	23,080	7.03	23,080
1914..	4,629	2,560	30,861	4,105	-----	-----	-----	-----	16,405	10.40	16,508
1915..	2,720	1,379	38,416	6,723	32,584	1,531	-----	-----	12,220	16.02	12,289
1916..	4,902	3,226	107,941	26,553	22,313	1,540	-----	-----	32,576	18.60	32,620
1917..	28,331	23,345	488,760	133,431	42,725	3,674	-----	-----	163,074	22.92	163,148
1918..	4,085	4,085	64,434	15,915	-----	-----	-----	-----	20,207	28.22	20,467
1919..	1,838	2,059	7,223	1,343	34,086	1,806	-----	-----	5,349	76.41	6,254
1920..	94,109	102,579	-----	-----	-----	-----	-----	-----	207,020	14.43	207,061
1921..	2,224	2,224	-----	-----	-----	-----	-----	-----	4,022	134.07	4,524
1922..	2,941	2,941	-----	-----	3,291	181	-----	-----	3,259	59.25	3,259
1923..	2,498	2,048	85	13	11,009	771	-----	-----	3,081	36.68	3,081
1924..	865	580	-----	-----	-----	-----	-----	-----	683	8.99	1,329
1925..	89	62	-----	-----	971	84	-----	-----	154	51.33	228
1926..	2,358	1,471	-----	-----	22,026	1,762	-----	-----	3,364	76.45	3,364
1927..	214	121	-----	-----	3,753	236	-----	-----	378	75.60	515
1928..	383	224	96	14	4,378	254	1,248	\$76	632	24.31	632
1929..	2,025	1,079	-----	-----	707	45	-----	-----	1,503	22.77	1,503
1930..	152	59	5,855	761	1,900	95	-----	-----	936	24.63	936
1931..	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1932..	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	448
1933..	28	10	-----	-----	-----	-----	-----	-----	572	40.86	1,147
1934..	717	464	318	25	6,257	232	-----	-----	2,917	27.26	2,917
1935..	1,465	1,053	-----	-----	12,753	510	-----	-----	1,852	43.07	3,326
1936..	499	386	-----	-----	2,342	108	-----	-----	6,218	86.36	7,036
	174,071	161,261	758,804	190,761	367,349	20,174	1,248	76	561,232	16.06	567,402

^{1/} Not to be confused with average assay value of ore.

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TABLE 3. - Gold, silver, copper, lead, and zinc production from Gold Run
(Adelaide) District, Humboldt County, Nev., 1907-36

(Compiled by Charles White Merrill, Mineral Production and Economics Division, Bureau of Mines)

Year	Placer						Lode			
	No. of mines	Gold		Silver		Total value	No. of mines	Ore	Gold	
		Fine ounces	Value	Fine ounces	Value			Short tons	Fine ounces	Value
1907...	---	---	---	---	---	---	---	44	1.98	\$41
1908...	---	---	---	---	---	---	3	118	67.96	1,405
1909...	---	---	---	---	---	---	10	1,863	952.89	19,698
1910...	---	---	---	---	---	---	2	15	2.37	49
1911...	---	---	---	---	---	---	8	153	126.99	2,625
1912...	---	---	---	---	---	---	2	2,461	554.10	11,454
1913...	---	---	---	---	---	---	5	3,282	1,016.30	21,009
1914...	1	5.00	\$103	---	---	\$103	2	1,577	471.16	9,740
1915...	1	3.31	68	1	\$1	69	12	763	125.13	2,587
1916...	1	2.09	43	1	1	44	12	1,751	60.80	1,257
1917...	1	3.60	74	---	---	74	17	7,116	126.92	2,624
1918...	1	12.50	258	2	2	260	3	716	10.03	207
1919...	1	43.34	896	8	9	905	4	70	6.81	141
1920...	1	2.00	41	---	---	41	5	14,347	5,052.35	104,441
1921...	1	24.08	498	4	4	502	2	30	87.00	1,798
1922...	---	---	---	---	---	---	3	55	6.64	137
1923...	---	---	---	---	---	---	6	84	12.04	249
1924...	2	31.19	645	2	1	646	2	76	4.96	103
1925...	1	3.52	73	1	1	74	1	3	.40	8
1926...	---	---	---	---	---	---	4	44	6.33	131
1927...	1	6.64	137	---	---	137	2	5	1.03	21
1928...	---	---	---	---	---	---	2	26	3.11	64
1929...	---	---	---	---	---	---	3	66	18.32	379
1930...	---	---	---	---	---	---	2	38	1.00	21
1931...	---	---	---	---	---	---	---	---	---	---
1932...	2	21.63	447	3	1	448	---	---	---	---
1933...	1	22.44	574	4	1	575	1	14	22.00	562
1934...	---	---	---	---	---	---	3	107	62.84	2,196
1935...	6	41.99	1,470	6	4	1,474	3	43	8.26	289
1936...	2	23.32	816	3	2	818	5	72	163.55	5,724
	---	246.65	6,143	35	27	6,170	---	34,939	8,973.27	188,960

Crown Mine Group

The Crown Mine group of 16 unpatented claims is on the east slope of the Sonoma Range, about 12 miles south of Golconda, Nev. Although this property was located many years ago, little work was done until 1920, when it was acquired by the W. P. Hammon interests of California, who carried on an extensive development campaign for several years but made no production. In 1925 the property was acquired by E. F. Knudsen on a labor lien, and in 1933 it was acquired by a Reno group. In June 1937 the property was inactive.

Development consists of several shafts, the deepest of which is 430 feet; several adits, the longest of which is 600 feet; and other workings, totaling approximately 8,000 feet. All the workings are in the oxidized zone. Equipment includes an Ingersoll-Rand drill sharpener, a Sullivan compressor (16 by 9 3/4 by 12 inches) belt-connected to 50-horsepower motor, a Venn-Severin oil engine belt-connected to an alternating-current generator, and mining tools. There are camp buildings on the property sufficient to house a crew of 30 men.

The formation consists of quartzite, shale, and schist. Several veins occur on the property, the principal one being known as the Crown vein. This vein has a strike of nearly north and south, a dip of 70° westerly, and a width ranging from 10 to 80 feet. Values are in gold and silver in a brecciated quartz gangue stained with iron and manganese oxides. Several ore bodies have been developed on the Crown vein and, according to the sampling results of several engineers, at least 200,000 tons of ore averaging between \$4 and \$5 per ton (present metal prices) have been blocked out.

Metallurgical tests show that the ore is amenable to the cyanide process. Water for milling is available from the mine workings. According to the reports of former operations, the mine flow amounted to 300 gallons per minute.

HARMONY DISTRICT

The Harmony district is in Harmony Canyon in the north end of the Sonoma Range, 5 miles southeast of Winnemucca. According to Stretch^{11/}, the first locations were made in this area in 1863 by M. Milleeson and party, but there is no record of any production. The Wolverine-Red Rose group of claims in this area was owned formerly by the Nevada Harmony Mines Co. This company did considerable development work in 1918 but made no production. The only production from the district has been 3 1/2 carloads, averaging \$23 per ton, of copper ore carrying gold and silver values, shipped by Wolverine Copper Company in 1915.

^{11/} Stretch, Richard H., Annual Report of the State Mineralogist of the State of Nevada for 1866: Carson City, 1867, p. 54.