

4100 0005

I.C. 7022

Universal Exploration Co.

The Universal Exploration Co., a subsidiary of the United States Steel Corporation, owns 13 patented claims. About 5 years ago the company acquired an option to purchase a group of claims from the Thomas Dixon estate. The ground was prospected by churn and diamond drilling in 1933 and 1934, and the results of this work were sufficiently favorable for the company to purchase the property. Additional claims were acquired by location.

Development consists of several adits, the longest about 900 feet, and other workings totaling about 3,500 feet. There is no usable equipment on the property.

Ore consists chiefly of sphalerite, a little galena, and considerable pyrite occurring as replacement deposits in a sedimentary formation. It is said that the ore contains considerable cadmium.

Morrison Group

A group of six unpatented claims owned by Louis E. Morrison, 420 Sackett Ave., Salida, Colo., adjoins the Universal Exploration Co. property on the west and the south. Development consists of three shallow shafts, the deepest of which is about 50 feet, and other surface workings, totaling in all about 200 feet. This property is in the prospect stage of development.

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SAFFORD DISTRICT

The Safford district is in Safford Canyon on the west slope of the Cortez Range, about 10 miles by automobile road westerly from Palisade, Nev. The first discovery of mineral in this area was the West iron deposit, probably found by surveyors employed to map a railroad route from the Mississippi Valley to the Pacific coast.^{29/} This iron deposit is mentioned by geologists of the Fortieth Parallel Survey.^{30/}

The Onondaga silver mine was discovered by Benjamin Safford, after whom the district was named, in August 1881, and the Zenoli mine by Gabriel Zenoli and Francisco Thoma in 1883. From the viewpoint of past production, the foregoing properties are the principal ones in the district. From time to time a number of other claims have been located in this area, but their development never reached beyond the prospect stage.

The production of iron ore from the West mine for use as a flux in smelting operations in Salt Lake Valley has been about 300,000 tons. The production of other metals, chiefly silver, from the Onondaga and Zenoli mines has been about \$200,000. In recent years mining activity in this region has been confined to small-scale operations.

^{29/} Browne, J. Ross, Mineral Resources of the Pacific Slope: D. Appleton & Co., New York, 1869, p. 225.

^{30/} Hague, Arnold, and Emmons, S. F., Exploration of Fortieth Parallel: Vol. 2, 1877, pp. 585-586.

Zenoli Mine

The Zenoli mine was relocated in 1930 as the Morning Glory group of 9 patented claims by Nick Mondarelli and sons of Beowawe, Nev. Development comprises four adits, the longest 600 feet, a shaft 90 feet deep, and other workings, totaling 3,000 feet. The main adit is caved at a point 275 feet from the portal. There is no mining equipment on the property other than hand tools.

The prevailing formation is andesite. The main vein strikes north and south and dips to the east 20° near the surface to 45° at the adit level. A second vein (called the lead vein), in the footwall of the main vein, has a similar strike but dips eastward at a steeper angle, intersecting the main vein near the surface. The ore is in shoots ranging from 1 to 6 feet in width. The vein system is disturbed by a number of faults. Values are chiefly in silver, with subordinate amounts of copper and zinc in a gangue of quartz, calcite, and decomposed country rock. The ore in the lead vein contains considerable lead. The smelter returns on a shipment of ore made by Mondarelli on May 5, 1936, to the American Smelting & Refining Co., furnished the following data.

Metal quotations:	Gold	\$34.9125 per ounce
	Silver	\$.77 per ounce
	Copper	9.15 less 2.525 cents per pound

Settlement assay:		<u>Ounce</u>
	Gold	0.005
	Silver	21.2
	Lead	None
		<u>Percent</u>
	Copper	1.11
	Insoluble	55.8
	Zinc	2.0
	Sulphur	1.3
	Arsenic	0.9
	Iron	12.4
	Antimony	0.8
	Lime	2.0

	<u>Pounds</u>
Wet weight	42,060
Moisture 5 percent	2,103
	<hr/>
Dry weight	39,957 or 19.978 tons

Metal payment:	Silver, 95 percent at \$0.77 per ounce	\$15.51
	Copper, less 0.75 percent at \$1.325 per unit (20 lbs.)	.48

15.99

Treatment charge

3.50

Net value per ton

12.49

19.978 tons at \$12.49

\$249.53

Deductions:	Freight, at \$3.50 per ton	75.51
	Emergency freight, 7 percent	5.30
		<hr/> 80.81

80.81

168.72

Onondaga Mine

The Onondaga property is several hundred yards southeast of the Zenoli mine. The principal production was made from 1881 to 1890. In 1921, the property was relocated by Charles W. Pratt of Palisade, and in 1935 a group of 12 unpatented claims, including the Onondaga mine, was taken over by Salt Lake interests under the name of the Silver Bromide Mining Co., A. E. Tourseen, secretary. In 1937, this company leased the property to H. G. Brown, P. R. Jones, and L. W. Vernom, who drove an adit about 100 feet long but made no production. Development consists of several adits, the longest 700 feet, a shaft 100 feet deep, and other workings, totaling about 2,000 feet. At the time of the writer's visit, the only equipment on the property was a small gasoline-driven compressor.

Formation is chiefly andesite. The ore occurs as shoots in two veins, the principal one striking northwest and southeast, with a steep dip to the southwest. The values are mainly in silver associated with insignificant amounts of lead, copper, and a little gold. The last shipment was made by Charles W. Pratt on September 4, 1933, to the Mammoth Smelter of the U. S. Smelting, Refining, & Mining Co., at Kennett, Calif. The smelter returns on this shipment were as follows:

Metal quotation:	Silver	\$0.685 per ounce	
		<u>Ounces per ton</u>	
Settlement assay:	Silver	45.54	
	Gold	0.005	
		<u>Percent</u>	
	Copper	0.6	
	Silica	44.4	
	Iron	19.3	
	Alumina	6.0	
	Lime	0.5	
		<u>Pounds</u>	
Wet weight		38,040	
Moisture, 1 percent		380	

Dry weight		37,660	or 18.83 tons
Metal payment:	Silver, 95 percent at \$0.685 less		
	\$0.03 per ounce		\$28.34
	Treatment charge		6.50
	Net value per ton		----- 21.84
	18.83 tons at \$21.84		\$411.25
Deductions:	Freight, from Palisade \$6.20 per ton		117.92
	Net proceeds		----- 293.33

West Iron Mine

The West iron deposit is on section 7, T. 31 N., R. 51 E., M. D. M. and B., at the junction of Safford and Palisade Canyons several hundred yards south of the main lines of the Southern Pacific and Western Pacific Railroads, which pass through Palisade Canyon. It is owned by the Southern Pacific Land Co. From 1907 to 1915, the deposit was worked by the American Smelting, Refining & Mining Co. for fluxing material. After this company relinquished its lease, the property remained idle.

Former operations were confined largely to an open pit approximately 200 feet in diameter and 80 feet deep, which is now filled with water. Below the bottom of the pit is an inclined shaft 180 feet deep, from which two levels, spaced 50 feet apart vertically, have been driven. There is no usable equipment on the property.

According to Jones,^{31/} the iron occurs probably as a replacement deposit from 60 to 150 feet thick, dipping 40° to the north and east. The country rock is an andesite. The ore is massive and compact hematite, with probably a little magnetite, and contains minor quantities of quartz, fluorapatite, and phlogopite. The following analyses,^{32/} made by Prof. Walter S. Palmer of the Mackay School of Mines, indicate that the ore is of a uniformly high non-Bessemer quality.

	Upper level	Intermediate level	Lower level
	Percent	Percent	Percent
Insoluble	1.98	1.80	0.45
Ferric oxide (Fe ₂ O ₃)	95.15	89.19	98.44
Ferrous oxide (FeO)	None	None	None
Alumina (Al ₂ O ₃)	1.35	3.52	1.16
Cupric oxide (CuO)	0.43	1.94	Trace
Phosphorous pentoxide (P ₂ O ₅)	Not det.	0.69	Not det.
Ignition loss	0.44	2.53	0.05
Total	99.85	99.67	100.10
Total iron (Fe)	66.54	62.37	68.84

The precious metals contained in the ore are virtually negligible.

SCHROEDER DISTRICT

The Schroeder, also known as the Maggie Creek district, is in the Independence Range, a short distance west of Maggie Canyon and 11 miles northwest of Carlin, Elko County, Nev. The first prospecting was done here in the '70s, but since no important discoveries were made it never became prominent. The Nevada Star Mining Co. operated in this area from 1906 to 1909, but only a small amount of ore was shipped. The total production of metals, chiefly gold and silver with a little lead and copper, has been obtained wholly from shipping ores produced largely by lessees; the value has been about \$50,000.

^{31/} Jones, J. Claude, The Barth Iron Ore Deposit: Econ. Geol., vol. 8, 1913, pp. 247-263.

^{32/} Jones, J. Claude, work cited, p. 257.