

Building Stone

A deposit of volcanic tuff quarried locally for building stone occurs 3 miles west of the Eastgate ranch and about 1/2 mile off the Lincoln Highway. The deposit is said to be owned by Mrs. Lucille Downing, of Vincennes, Ind. The material was first quarried in the sixties to supply construction stone for buildings at Alpine and Eastgate, and later for several buildings at Fallon.

The quarry has been opened near the crest of a small hill that rises about 100 feet above the surrounding area. The face of the quarry is 100 feet in length and averages 8 feet in height. The tuff is siliceous in character with grain size quite uniform for this class of stone. It is white, weathering to a dull gray, and rather tough, but it is easily cut with an ordinary saw. It hardens a little on exposure, but not enough to raise its compressive strength appreciably.

The rock probably is suitable for building stone when little strength is required, but because of the distance to consuming centers it is of doubtful value in competition with other materials.

FAIRVIEW DISTRICT

The Fairview district is in southeast Churchill County 42 miles by road southeast of Fallon, the nearest railroad point and supply center. The principal mine, the Nevada Hills, is on the west slope of Fairview Peak at an elevation about 5,500 feet above sea level.

The first locations in the district were made by F. O. Norton and associates in 1905. The Nevada Hills mine was located by P. Langsdon in January 1906. The discovery of rich silver-bearing float and ore in croppings created considerable excitement, and a boom ensued the following year, which gave the district a temporary population of several thousand. By 1907 the town of Fairview, laid out on the flat west of the mines, had a population of 1,000 and boasted two hotels, several restaurants, stores, and two newspapers. Daily stages and telephone lines connected Fairview with Fallon and Wonder, the latter being 18 miles north. During the first years of the camp's history, mining was in the hands of lessees and numerous wild-cat companies, most of the latter being very short lived. Until 1911, all the ores produced were shipped to smelters for reduction, and in consequence only the higher-grade ores were mined. The freight rate on ore from Fairview to Fallon in 1907 was \$12.50 per ton. In 1910 the Nevada Hills Mining Co., incorporated in 1906, acquired control of the Fairview Eagle Mines Co., a contiguous property, and the following year the company constructed a 20-stamp mill employing gravity concentration and cyanidation. Electric power was brought into the camp, and water for milling was obtained from wells in Westgate Wash, about 8 miles northeast of the mine. In 1917, after a profitable career, the Nevada Hills property closed because of depletion of the ore reserves. Production of the company from September 1911 to June 1917 is reported to have been \$2,265,000. After the property closed, the electric power line and the water line were removed, and the mill was dismantled. Since the Nevada Hills Mining Co. ceased operations, attempts

have been made by several companies to revive the mine, the most recent of which has been that of the Nevada Range Mines Co., Inc., the present owners.

In April 1939 activity in the district was confined to small leasing operations in the Nevada Hills property. Most of the patented claims in the district have been taken over by the county for nonpayment of taxes.

Production in the district from 1906 to 1937 was 287,040 tons of ore with a value of \$4,171,035, an average of \$14.53 per ton. Most of this was produced by the Nevada Hills mine. The annual production of the district is shown in table 3.

Nevada Range Mines Co., Inc.

The Nevada Range Mines Co., Inc., controlled by Reno interests, comprises 10 patented claims. The property includes the Nevada Hills mine, which has been the principal producer in the district.

The property is developed by shafts to a depth of 1,000 feet. The underground workings total about 9 miles. Equipment includes a Diesel-engine power plant, blacksmith shop, compressor, partly dismantled 25-ton cyanide mill, and a number of camp buildings.

According to Greenan,<sup>10/</sup> the prevailing rocks are dacite tuff, earlier and later andesite, and rhyolite. Strong fissuring has occurred in the earlier andesite, and along these fissure zones are prominent outcrops. The strongest mineral-bearing fissures strike northwest-southeast and dip south. The most productive vein, the Nevada Hills, ranges in width from 1 to 15 feet. The ore minerals are argentite, stephanite, ruby silver, horn silver, chalcopryrite, galena, tetrahedrite, sphalerite, silver, and gold in a gangue of quartz, calcite, and partly replaced andesite with minor amounts of pyrolusite and rhodochrosite. The average proportion of silver to gold by weight is 100 to 1; as the grade of the ore increases, this proportion decreases.

The Eagle vein, second in importance, roughly parallels the Nevada Hills and averages about 16 feet in width, the richest ore being close to the walls. Other parallel veins of less importance are the Dromedary, Wingfield, and Eagles's Nest.

The vein system is cut by a number of transverse faults having a general northeast-southwest trend and dipping 50° to 75° easterly or westerly. The "Big" fault, a great easterly dipping fault, strikes at right angles to the vein system. Outcrops of the veins west of this fault are prominent, but to the east the country is covered by a later flow of andesite, so that it is impossible to determine from surface observations in what direction the veins are displaced. Segments of the veins have been found on the east or hanging-wall side of the Big fault. Oxidization extends to a depth of about 300 feet.

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<sup>10/</sup> Greenan, James O., Geology of Fairview, Nev.: Eng. and Min. Jour., Vol. 97, 1914, pp. 791-793.

TABLE 3.— Gold, silver, copper, and lead production from Fairview district, Churchill County, Nev., 1906-37, in terms of recovered metal  
(Compiled by Charles White Merrill, Mineral Production and Economics Division, Bureau of Mines)

Year	Lode					
	No. of mines	Gold			Silver	
		Ore, short tons	Fine ounces	Value	Fine ounces	Value
1906..	1	479	1,548.00	\$32,000	191,045	\$128,000
1907..	1	6,543	6,884.37	142,313	640,246	422,562
1908..	4	1,521	2,117.42	43,771	183,592	97,304
1909..	5	1,204	1,706.53	35,277	139,858	72,726
1910..	8	1,153	2,058.71	42,557	160,284	86,553
1911..	6	9,597	3,425.94	70,820	283,411	150,208
1912..	7	30,016	9,694.84	200,410	959,391	590,026
1913..	8	41,952	6,092.37	125,940	674,485	407,389
1914..	8	64,588	5,703.53	117,903	623,832	344,979
1915..	6	65,503	3,981.39	82,303	438,651	222,396
1916..	9	52,688	4,475.23	92,511	356,843	234,803
1917..	4	4,702	806.43	16,670	68,818	56,706
1918..	4	54	38.44	795	2,938	2,938
1919..	2	163	104.53	2,161	6,849	7,671
1920..	1	8	7.49	155	641	699
1921..	3	19	1.31	27	313	313
1922..	3	8	25.54	528	1,621	1,621
1923..	2	107	5.29	109	2,608	2,139
1924..	3	70	6.28	130	1,931	1,294
1925..	5	1,401	120.44	2,490	59,880	41,557
1926..	5	783	93.47	1,932	23,569	14,707
1927..	4	337	35.98	744	6,350	3,601
1928..	2	409	12.72	263	1,988	1,163
1929..	2	975	13.59	281	3,132	1,669
1930..	2	47	3.13	65	1,250	481
1931..	-	-	-	-	-	-
1932..	2	20	26.65	551	533	150
1933..	3	28	27.40	700	587	205
1934..	1	1	2.10	73	1	1
1935..	3	169	97.17	3,401	8,216	5,905
1936..	13	962	511.95	17,918	40,094	31,053
1937..	6	1,533	337.00	11,795	28,949	22,392
Totals	-	287,040	49,965.24	1,046,593	4,911,906	2,953,211

TABLE 3.- Gold, silver, copper, and lead production from Fairview district, Churchill County, Nev., 1906-37, in terms of recovered metal (cont'd.)  
(Compiled by Charles White Merrill, Mineral Production and Economics Division, Bureau of Mines)

Year	Lode					
	Copper		Lead		Total value	Average recoverable value of ore per ton <sup>1</sup>
	Pounds	Value	Pounds	Value		
1906...	-	-	-	-	\$160,000	\$334.03
1907...	-	-	-	-	564,875	86.33
1908...	-	-	1,690	\$71	141,146	92.80
1909...	-	-	26,602	1,144	109,147	90.65
1910...	2,417	\$307	31,602	1,390	130,807	113.45
1911...	-	-	117	5	221,033	23.03
1912...	6,196	1,022	6,538	294	791,752	26.38
1913...	4,292	665	162	7	534,001	12.73
1914...	3,892	518	9,214	359	463,759	7.18
1915...	2,351	411	22,168	1,042	306,152	4.67
1916...	2,407	592	106	7	327,913	6.22
1917...	-	-	10,449	899	74,275	15.80
1918...	99	24	29,932	2,125	5,882	108.93
1919...	-	-	20,780	1,101	10,933	67.07
1920...	-	-	-	-	854	106.75
1921...	-	-	16,558	745	1,085	57.11
1922...	-	-	-	-	2,149	268.63
1923...	174	26	80,962	5,667	7,941	74.21
1924...	129	17	32,659	2,613	4,054	57.91
1925...	1,914	272	911,320	79,285	123,604	88.23
1926...	1,453	203	446,036	35,683	52,525	67.08
1927...	443	58	142,859	9,000	13,403	39.77
1928...	1,112	160	219,156	12,711	14,297	34.96
1929...	498	88	140,207	8,833	10,871	11.15
1930...	55	7	30,348	1,517	2,070	44.04
1931...	-	-	-	-	-	-
1932...	-	-	-	-	701	35.05
1933...	-	-	-	-	905	32.32
1934...	-	-	-	-	74	74.00
1935...	121	10	4,114	165	9,481	56.10
1936...	-	-	3,954	182	49,153	51.09
1937...	-	-	34,000	2,006	36,193	23.61
Totals	27,553	4,380	2,221,533	166,851	4,171,035	14.53

<sup>1</sup>/ Not to be confused with average assay value of ore.

The annual report of the Nevada Hills Mining Co. for 1915 contains the following statements relative to the future outlook of the company's operations:

The extensive exploration which has been carried on at the 650-foot, the 800-foot, the 900-foot, and the 1,000-foot levels has shown negative results, and roughly may be said to have prospected the ground to twice the depth of any known ore body. Deep development has therefore been stopped and the future production of the mine must, so far as known, come from the shallow workings of the Nevada Hills vein west of the "Big" fault. This remaining ore, occurring in the walls of previously worked stopes, is not measurable, but it is thought to be insufficient to supply the mill at capacity for the coming year.

A shipment of ore from the Nevada Hills vein made by Arnold Dummer, lessee, to the International Smelting & Refining co. on February 16, 1939, furnished the following data:

Metal quotations:	Silver	\$0.64125 per oz.
	Gold	35. per oz.
		<u>Oz. per ton</u>
Settlement Assay:	Gold	0.445
	Silver	37.15
		<u>Percent</u>
	Copper	0.07
	Lead	Trace
	Zinc	Nil
	Insoluble	92.4
	Iron	2.3
	Sulfur	Trace
	Lime	Nil
		<u>Pounds</u>
Wet weight:		25,100
Moisture, 2.05 percent		<u>515</u>
Dry weight		24,585 or 12.293 tons

Metal payment:	Silver, 95 percent @	
	\$0.64125 per ounce	\$22.631
	Gold, 91 percent @	
	\$35 per ounce	<u>14.173</u>
	Gross value per ton	36.804
	Treatment charge per ton	<u>4.750</u>
	Net value per ton	32.054
	12.293 tons @ \$32.054	\$394.04
Deductions:	Sampling	\$12.00
	Hauling	31.38
	Royalty, 15 percent	
	of \$305.10	<u>45.77</u>
	Freight	<u>45.56</u>
		134.71
	Net proceeds	<u>134.71</u>
		259.33

Gold Basin Mining Co.

The Gold Basin Mining Co., owned by E. S. Montgomery of Fallon, Nev., consists of five unpatented claims in the Gold Basin section of the Fairview district, several miles east of Fairview Peak and 45 miles southeast of Fallon, the nearest railroad point. The property is accessible over a fair desert road connecting with the Lincoln Highway at Westgate, which is 7 miles S. 20° W. of the mine. The property was discovered about 1924, and although considerable work has been done, the only production has been a few small shipments to the Dayton custom mill at Silver City, Nev.

Development consists of an adit 250 feet long, a winze less than 100 feet deep driven from the adit level, and subsidiary workings comprising in all about 600 feet. There is no equipment on the property except several camp buildings. In April 1939 the property was inactive.

Free gold occurs along a series of fractures having a general strike of N. 30° W. with medium dips N. 60° E. in a quartz latite formation. Along the fractures is a small amount of brecciated and oxidized material that pans well in free gold, probably because of mechanical enrichment from erosion of surface material. The deposits are too small and too far separated to carry the intervening waste rock, so that the outlook for mining any appreciable tonnage of mill ore is not encouraging.

Belle Mountain Mining Co.

The Belle Mountain Mining Co., controlled by W. W. Stockton, comprises the Homestake group of eight unpatented and two patented claims on the north end of Belle Flat, 3-1/2 miles southeast of Fairview Peak and about 9 miles in an airline southwest of Westgate. The road from Westgate to the mine through Gold Basin is impassable, but the property is accessible by car via the Broken Hills road from Westgate, a distance of 30 miles. The altitude is about 6,000 feet.

Although considerable exploring has been done on the claims, there is no record of any production. Workings consist of a main adit with several raises and drifts on the vein, a number of open-cuts, and other workings totaling approximately 1,000 feet. There are three camp buildings on the property, but no mining equipment. In April 1939 the property was inactive.

The vein, consisting of calcite with a little quartz, strikes nearly east and west, with a moderate dip to the south. It is traceable on the surface by open-cuts for a considerable distance and has a maximum width of at least 30 feet. The foot wall is andesite and the hanging wall presumably rhyolite. The economic minerals are gold and silver. The best ore is reported to be along the footwall side of the vein.

Shamrock Group

The Shamrock group of eight unpatented claims, owned by Cyrus Cox of Fallon, Nev., is in a range of low hills 6 miles S. 20° W. from Westgate on the Lincoln Highway and about 2-1/2 miles due east from Fairview Peak. Placer

gold was discovered on the claims by the present owner in 1936, and the source of the gold was traced by panning. The only production has been a small amount of free gold that was mortared out of high-grade material by Cox during prospecting.

Development consists of a vertical shaft 64 feet deep, an adit 300 feet long, and minor workings, totaling about 500 feet. Equipment includes a blacksmith shop, a home-made gasoline hoist, tools for hand mining, and accommodations for a crew of several men.

Free gold occurs along fractures in altered rhyolite and rhyolite breccia stained with manganese and iron oxides. The most persistent fractures strike northwesterly and dip nearly vertical. Some of the fractures are accompanied by a gouge ranging from a few inches to over a foot in width.

#### Westgate Custom Mill

In February 1939 the Westgate Mining & Milling Co., owned by E. S. Montgomery of Fallon and associates, completed the erection of a 35-ton-daily-capacity cyanidation mill at Westgate, situated on the Lincoln Highway 46 miles southeasterly from Fallon, Nev. In April 1939 the mill was operating on custom ores, obtained chiefly from the Nevada Wonder mine with smaller tonnages from the Nevada Hills mine at Fairview, the Gold Ledge mine in the Eastgate district, and other properties within a radius of 50 miles.

The mill is equipped with a 9- by 15-inch Blake-type crusher, a set of 22- by 12-inch Denver rolls, three Snyder disk samplers, a 4- by 4-foot Eimco ball mill, a Simplex classifier, three 10- by 12-foot redwood airlift agitators, four 18- by 10-foot redwood thickeners, a 4- by 7-foot 20-leaf clarifier, a Merrill-Crowe zinc dust-precipitating unit, and auxiliary cyanidation apparatus. Other equipment includes an assay office, a melting furnace, and camp accommodations for a crew of 10 men. Power for milling is supplied by 2 D-11,000 Caterpillar Diesel engines equipped with electric generators. Water for milling is obtained from a well near the millsite.

The custom-milling charge is \$4.50 per ton, and payment is based on an average extraction of 90 percent of the gold and 85 percent of the silver contained in the ores.

#### Manganese Deposit

A bedded deposit of manganese covered by a group of unpatented claims, owned by V. S. Baxter of Fallon, occurs several miles south of the old Fairview townsite, 38 miles southeast from Fallon. It is covered with detritus to a depth of 5 to 30 feet; not enough work has been done to determine its extent. A sample of the manganese analyzed by the Nevada State Bureau of Mines showed 55.2 percent  $\text{MnO}_2$ , 15.2 percent  $\text{Fe}_2\text{O}_3$ , and 17.9 percent  $\text{SiO}_2$ .