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KEY WEST MINE, CLARK COUNTY

NEVADA

Preliminary Examination Made January 23rd, 1932,

By Alfred Merritt Smith.

The examination was made in company with W. F. Darling, a rancher who lives on the Virgin River four or five miles north of the mine, and Jack Lisle, a prospector at that time living in St. Thomas.

The workings examined consisted of a tunnel about two hundred feet long, cross-cut about one hundred fifty feet direct N. 50 W. Near the mouth of the tunnel is an incline fifty-two feet long which connects with a drift running three hundred feet west, then seventy-five feet south to a new shaft with head-frame. The incline has a slope of about fifty-five degrees and also connects with the old shaft. About fifty feet in from the mouth of the tunnel is a drift running two hundred feet westerly on a vein two feet wide which splits and pinches out in the face.

The country rock is a granitic or dioritic formation. It is intruded with a black igneous

dyke apparently a peridotite formation, which has been mineralized and constitutes the ore body. The ore and dyke material contain augite, olivine, biotite and enstatite, pyrite, chalcopyrite, pyrrhotite. The dykes are of pre-Cambrian age and are older than pegmatite dykes occurring in the area, which cut through both the black ore-bearing dykes and the granitic country rock.

The new shaft on the property is about three hundred feet deep. Water now stands in it at the one hundred and forty foot level. The shaft is said to have made twelve thousand gallons per day on the three hundred foot level. The water was said to be of good quality and potable.

The area is sparsely wooded with pinon, juniper and Mountain Mahogany. The property is said to be owned by the Nevada Nickel and Copper Company, a corporation with offices at 50 Congress Street, Boston, Massachusetts. R. E. Paine, 50 Congress Street, Boston, is one of the officials known to the last operators.

The mine was last operated under lease and bond by a company represented by one Louis Thompson of Las Vegas and Los Angeles. Thompson had a lease and bond on the mine and constructed a mill at an

asserted cost of \$120,000. J. J. Jessup was construction engineer. The mill was built in 1928 and operated for a time in 1928 and 1929. It contained an ore crusher, ball mill, Dorr duplex classifier, Wilfley tables and later, Grosh flotation cells. There is no doubt but what the mill was very poorly designed and was an utter failure. None of the group had any knowledge of modern metallurgy, yet they had the temerity to attack what is probably one of the most complex and difficult ores in the country.

Thompson stated to the writer that he shipped two hundred tons of concentrate to Los Angeles and about the same amount of ore. The concentrate was no better than the ore. Eleven hundred tons of ore was shipped to the International Smelter at Tooele, Utah, a hundred tons to the American Smelter at Garfield, Utah. A ton of matte (no information as to who produced the matte) was shipped to Stauffer Chemical Company, Richmond, California, and is said to have yielded good results.

Thompson said the value of the ^{concentrate} ~~ore~~ shipped was \$119.00 per ton, some of even higher value. He stated that ^{the ore} ~~it~~ contained copper - 6%, gold - 0.02 ounces per ton, silver - 2.0 ounces per ton, platinum - .17 ounces per ton, palladium - .22 ounces per ton, nickel - 2.5 ounces per ton, cobalt - 1.5 to 4.0%, iron sulphide - 52%, silica - 12%. The ore contained no arsenic and no antimony.

Thompson organized the Key West Mining Company when he leased the property. He contracted many debts, was sued by creditors and a court judgment was obtained against him for \$6,000. The creditors removed and sold the mill.

Locally Thompson himself is said to have incurred a majority of the bills and later on to have repudiated them, stating that he was only a minor stockholder in the Company. It was said, however, that he was a principal stockholder and is quite wealthy.

Gasoline engines were used for development work and to operate the mill.

Mr. Darling stated that one of Thompson's partners was named "Scoog". The mill was removed in 1930.

The tailings pond below the mill will average three feet deep and about 50 feet in diameter. There is also a pile of about twenty tons of concentrate.

The ^{best} ore in the mine is bunchy and erratic and results from the mineralization of the black igneous dyke in which it occurs, a most unusual ore occurrence. After being extracted from the mine the ore weathers and slacks after a time. The ore dyke in the Key West roughly follows the bedding of the gneissic country rock but spreads out along fractures on both the north and the south ends, forming seams and bunches. Most of the dyke is ore ^{of low grade.} In the mine workings it appears to be from three to eight feet wide.

Prior to the operation of the mine by Thompson, it was owned by one Evans and Alfred A. Glaiser, who last worked it in 1904. The mine was discovered by a Cherokee Indian named Scott Allen about the Year 1890.

Some distance to the east and south limestone beds from 1,000 to 2,000 feet thick rise in cliffs resting unconformably upon the gneiss which is the country rock of this mine.

GREAT EASTERN MINE

About one-fourth mile northeast of the Key West Mine is located the Great Eastern Mine, which is identical in character to the Key West. The elevation by aneroid is 4280 feet. Here four or more of the black peridotite dykes from two to eight feet wide, having a general strike of N. 60 E. and almost vertical, dip, cut through the granitic country rock.

The property is developed by two tunnels driven in on the dykes at points where there is very little mineralization. The method of development is incorrect, for with a little investigation I believe spots can be located where there is more intensive mineralization which should be developed by sinking. One of the tunnels is three hundred feet long and has cross-cuts to the north and south. The cross-cut to the north cut a similar black dyke. The cross-cut to the south is barren.

This property consists of six lode claims owned by S. W. Darling and A. M. Thompson of Bunkerville, Clark County, Nevada. They have owned it since 1905. At one time the property was bonded to the Key West Mine owners, who retained the control for a year, but did no mining.

These two mines ^(Key West - Great Eastern) are extremely interesting, because of the unusual nature of the ore and the unusual and valuable metals contained therein. It seems quite probable that a satisfactory metallurgy can be worked out for the Key West ores along electrochemical and electro-metallurgical lines. Such work would be stimulated by the presence of very cheap power at nearby Boulder Dam. It is very probable that these pre-Cambrian veins are deep-seated and that the ore bodies will extend to great depth. Heretofore, of course, the difficult metallurgy and high costs for power have made their economic exploitation utterly impossible.