2730 0005

Mining Engineer and Geologi
660 Mills Building
San Francisco

(319)
Item 5

April 8, 1926.
1926

Mr. A. A. Codd, President,
Leadville Mines Company,
Reno, Nevada

Dear Sir:

Leadville Mine
Leadville, Nevada

In compliance with your request for a report describing the Leadville mine and pointing out its possibilities for future development, I hand you the following. I spent four days at the mine and one in Reno securing the necessary data.

INCORPORATION

The Leadville Mines Company was incorporated in Nevada in 1920.

Capitalized at 1,500,000 shares.
Par value, 10 cents non-assessible.
All the stock has been issued.

OFFICERS AND BOARD OF DIRECTORS

President and General Manager: A. A. Codd, Clay Peters Building, Reno, Nevada.

Vice-President and Counsel: Wayne T. Wilson, Reno, Nevada.

Secretary-Treasurer: O. V. Ward, Reno, Nevada.

Board of Directors: A. A. Codd, Reno, Nev.
Wayne T. Wilson, Reno, Nevada.
O. V. Ward, Reno, Nevada

PROPERTY

(9)

The real property consists of nine mining claims patented, and two claims held by location. This property is free from liens or mortgage.

SITUATION

37N, R23E

The property is situated in Township 37N, R23E, M.D.M. It is 38 miles northerly from Gerlach, Washoe County, Nevada. Gerlach is a division point on the Western Pacific Railway.

ACCESSIBILITY

The property is reached by a good automobile and truck road, fairly level with no steep grades, extending from Gerlach to the mine. The travelling time by automobile is ordinarily one and one half hours. Trucks make the round trip in one day. The elevation at the mine is said to be 6000 feet, and at Gerlach 4000 feet.

WATER RIGHTS, PIPE-LINES, STORAGE

Rights on three flowing springs are held by permit from the Nevada State Engineer, and by use. The water is conducted through a 2-inch pipe to the mine. The average delivery of 30 gallons per minute has been sufficient for domestic purpose and for milling operations. Undoubtedly more water could be developed at the springs if necessary.

Water is stored at the mine in four tanks, each of 10,000 gallon capacity.

HISTORY

The mine was located in 1915 by one Cosgrove, a cowboy, who sold it to John Harman in 1915. Harman operated the mine for some time, and built a small mill, equipped with jigs and concentrating tables. One Floyd, took a lease on the easterly part of the property and drove the present main haulage tunnel in 1916 and 1917. The tunnel is about 2000 feet long.

The Leadville Mines Company bought the property from Harman in 1920. A mill was then built near the portal of the haulage tunnel and the mine has

been operated continuously since that time. The mill was lost by fire on September 2, 1925, and has not been rebuilt. Subsequent production has been by lessees.

PRODUCTION

Settlement sheets from smelters, representing all production to date, are on file at your company's office in Reno, and the following figures taken from these records were furnished by your secretary:

TOTAL PRODUCTION OF THE LEADVILLE MINE.

Year	Tons of Crude Ore Milled	Concentrates Tons of Concentrates	Gross Production Silver Oz	Lbs Lead	Copper	Zinc
1880 to 1926	47282.81	7491.80	1,022,965	3,491.154	217,139	34,328

Gross Value	Value Net Value
$1,149,713.07	$947,737.63

EQUIPMENT AND IMPROVEMENTS

Mine

At Shaft in Tunnel

Shaft; hoist compartment and manway, incline,

1 40 h.p. electric hoist motor

1 Single-drum Hendrie Bolthoff hoist

1200 ft. hoist cable, 7/8 inch dia., new.

1 1-ton skip, new in 1925.

On 800 level Station in Shaft

1 80-h.p. electric sinking hoist.

700 ft. 3/4 inch cable for same, good condition.

1 electric driven Triplex pump, 2 inch column, with 10 h.p. electric motor, on 700 level.

1 Triplex pump same size, 5 h.p. motor, on 800 level.

1600 ft. 16-lb. rails in 800 ft. shaft.

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1 Cameron No. 5 sinking pump.

1 compressed air pipe-line, 3 inch dia. from compressor to 700 ft. level and 100 ft. 3-inch pipe on hand for use from 700 to 800 level

1 air receiver at compressor

1 " " " Hoist station.

1 " " " 800 level.

Drilling equipment

7 Ingersoll Rand CC11 stopers.

5 Coshi drifting machine drills.

Full equipment of drill-steel.

15 mine cars (about)

All of this equipment is in good condition.

Mill

The mill had a rated capacity of 75 tons per 24 hours. Actually, 60 to 70 tons were milled per day. The ore, of medium soft character, was ground to 60 mesh size, by crusher and ball mills, and the metals were extracted by flotation. A tabulation of the tonnages, heads, tails, and recoveries, by months for the years 1914 and 1915 is appended to this report.

The principal machinery was:

1 Blake Crusher (set to 1½inch size)

1 Marcy No. 54 Ball Mill.

1 Duplex Derr Classifier

3 K & K Flotation machines.

1 Wilfley table

2 12X24 ft. Dorr Thickeners for dewatering tailing

1 Oliver filter to dewater concentrate.

1 Concentrate dilier.

The principal parts of the mill that can be salvaged and used again are:

1 Blake Crusher.

1 Marcy mill, No. 54.

2 equipments for Dorr Thickeners

Foundations, pulleys, etc.

8 tons 4 inch Chrome steel balls not in fire.

1 set new ball mill liners, cost $1500 delivered at mine.

The two Dorr thickeners could be used again in their present position, but they would probably not be worth moving if a new mill site were selected.

Power Plant

1 180 h.p. Fairbanks Morse Y-type semi-Deisel engine, connected to 100 k.w. D.C. 300 volt Westinghouse generator. This unit was damaged in the fire, but has been repaired, and is now operating and furnishing power for the hoist.

1 75 h.p. same type engine, direct-connected to Sullivan L-type, 2 stage air compressor, 364 cu. ft. capacity. Not damaged by fire, now operating.

1 75 h.p. same type engine, direct connected to D. C. generator, capacity 45 k.w., 220 volts. Not overhauled since the fire, but all necessary repair parts on hand.

(These three units gave ample power for mine and mill)

Oil Storage Capacity, Cost

2 10,000 gallon tanks at the mine.

Plant used 200-250 gallons per day.

Now using 35 gallons oil per day for hoist and compressor.

Oil costs 10 cents per gallon f.o.b. mine.

Mine Haulage

2 storage battery electric locomotives, capacity, each 5 1-ton cars per trip.

1 Exide battery 3 months old, 1 Edison battery one year old. Both in good condition and now operating.

Blacksmith Shop

Equipped with forge, drill sharpener, tools etc. In good condition.

Machine Shop

Building and equipment destroyed by fire.

Trucks

Three White trucks, 5 tons capacity, in good condition. Two have steel dump-beds. These trucks were bought new three years ago.

1 Dodge delivery automobile with side screens.

1 Federal truck, 1/2 ton capacity, for use about camp.

Equipment at Gerlach

1 warehouse built on S.P.R.R. Co. platform. The building belongs to the mining company, and may be removed if desired. A rental of $20 per year for the platform space is paid to the R. R. Co.

1 garage to hold 3 trucks.

1 fuel oil tank 12,000 gallon capacity.

1 pump equipment for unloading oil from cars to tank.

Buildings at the mine

Power plant building.

Bunk houses for 75 men.

Boarding house for 75 men.

Electric refrigerating and ice plant.

8 dwelling houses for families.

Change house.

Blacksmith shop.

Timber shed with circular saw.

Large garage for autos and trucks.

Assay office.

Main office.

Snow shed over track to dump.

All these are in good condition.

WAGE SCALE

Miners	$6.00 per day
Muckers	5.50 " "
Trammers	5.50 " "
Surface men	5.00 " "
Blacksmith	6.00 " "
Hoistman	6.25 " "
Timbermen	6.00 " "
" helpers	5.50 " "
Mill engineers	6.00 " "
" ass't "	5.50 " "
Millmen	6.00 " "

NUMBER MEN EMPLOYED

Forty five to fifty men before the fire. About twenty five normally employed by lessees.

MINING OPERATIONS

The mine is operated through a tunnel about 3000 ft. long. The portal is at the millsite. A two-compartment shaft, on a 75 degree incline, extends downward in the oreshoot, from the haulage tunnel for about 800 ft. to the 800 ft. level. The outcrop of the orebody at the surface was 350 ft. above the haulage tunnel, so that, figuring only to the 700 ft. level, the oreshoot has been worked to a vertical depth of about 1250 ft.

The stope-map, Map 3 in the accompanying map folder, shows the area of the stoped-out orebody, with the exception of work done in upper levels before the present company took hold, of which no record was made.

The stopes were left open without filling, except those worked during the past two years, which were filled with waste.

The ore as mined has averaged about 21 oz. silver per ton; 3% lead; 5% zinc.

The shaft is in fairly good condition. In the lower levels, the timbers are newer and in good condition. The original timbers in the upper part of the shaft become decayed, and new cribbing has been placed as a reinforcing lining, so that the shaft is in safe condition.

The only means of ventilation in the lower levels is by natural circulation through the working shaft, reinforced by air fan-driven through a 10 inch ventilation pipe. Both for ventilating purposes and as a second exit from the mine, an air-way and man-way should be opened from the bottom to the surface. For most of the way this could be constructed through old raises and stopes, some of them now caved, using the old Harman shaft for part of the distance. At the present time the temperatures are high in the working faces, but they can be made very comfortable with adequate ventilation.

In the old worked-out parts of the mine the timbers are dry-rotting and collapsing. This happens in all mines except very dry ones, and there is no reason for going to the expense of maintaining any levels except those that will be needed for ventilation and outlet purposes. The 700 level is in good condition for its entire length. The 800 level is just being opened and, of course, is in good condition. The 600 level is open for part of its length, and higher levels are more or less inaccessible.

The andesite and diorite rock is of medium drilling character. It would not class as very hard rock. Timbering of the back of the drifts is necessary on the lower levels only where stopes are being worked.

The mine makes only a small amount of water. It has never caused any trouble and is easily taken care of by the equipment on hand.

The average cost of mining and milling is reported as having been fairly uniform, as follows:

Mining	$7.80 per ton
Milling	2.80 " "
General	.82 " "
Total	$11.22

It is possible that under company manage-ment the mine might be operated more profitably, by following the method used by the leasers instead of putting all the ore through a mill. That would mean to mine the ore as cleanly as possible, shipping the higher grade ore without milling, and saving the lower grade ore for milling. It might be possible to operate in this way and run the mill only 8 hrs. per day. It would be more difficult to get men to mine clean ore on company account than for lessees, but it might be accomplished. This is a possibility that should be fully considered.

LEASE NOW IN FORCE

After the mill was burned, the mine was leased to Gus Bac Klund, the former superintendent. Under his operation the attempt was made, unsuccessfully, to mine the ore free from waste and to ship it directly to the smelter. In this way 299 tons of ore have been shipped that assayed 90.59 oz. silver per ton, 11.45 percent lead, and 21.73% zinc. Photographs of the smelter settlement sheets for this ore are appended. The mine is now being worked under the lease.

TERMS OF LEASE

Granted November 1, 1925.

Expires November 1, 1926.

Royalties:

15% up to net smelter return of $100 per ton.

20% up to net smelter return over $100 per ton.

The company furnishes the use of the plant and machinery. The lessees pay the company $10 per ton for hauling ore and freight.

The lessees normally employ 25 men but the number is less at the present time.

SMELTER CONTRACT

A contract now in force with the United States Smelting, Refining and Mining Company expires on December 12, 1926, or may be cancelled at once if the property should be sold. The principal terms are:

Metal payments:

Gold. 90% @ $19.00 per oz. No payment if less than .01 oz per ton.

Silver. 90% @ N. Y. quotation, less 8½ cents per oz.

Lead and Copper: Pay for 70% of lead and copper combined at average New York quotation for week previous to receipt of ore, less 3½ cents per lb. No payment if less than 3%.

Zinc: Pay for 60% of zinc 45% of East St. Louis price. No payment if less than 4%. For each % zinc in excess of 18% add 1% to % zinc paid for but in no event shall the % of zinc paid for exceed 70%. For each % zinc in excess of 18% add to payment for zinc .05 cents per lb. but not to exceed ½ cent per lb.

Treatment charge $4.50 per ton.

GEOLOGY

The geology of the district is fairly simple. The general country rock is andesite, intruded by larger dikes of diorite porphyry.

The andesite is part of a series of extensive flows, which can be seen as far as the eye can reach. The type of andesite that is encountered in the mine will be here called the Leadville andesite for convenience. This type was overlaid by beds of andesite tuffs and breccia for a thickness of about 1000 feet, above which was a series of contorted glassy and flow-lined andesite flows.

The Leadville andesite forms the hills for miles south of the mine. The tuffs and breccia, with probably considerable intermingled normal andesite, are exposed on the mountainside north of the Leadville mine, where they form the slope leading to the crest of the high ridge. Owing to the ease with which they suffered decomposition, they have been entirely eroded south of the mine. The glassy andesite is exposed at the crest of the ridge north of the mine, where it forms a capping that overlies the tuffs and breccias. It forms the surface of an extensive table-land north of the ridge.

The position of the diorite dikes is marked on the surface by craggy buttes which have resisted erosion more than the surrounding andesite. These dikes have a northwesterly course. Roughly these dikes are about 80 ft. thick, but the width is different in different places. Two of these dikes, about 600 ft. apart, approach the Leadville orebody from the southeast, then bend along the vein to the west, and crossing the vein, continue in a northwesterly direction.

The diorite is found both as even-grained, typical diorite; and as a porphyritic variety, consisting of an even-grained groundmass surrounding larger crystals of feldspar ½ inch long. These larger feldspar crystals weather to a chalky white color and the resulting spotted white appearance gives the rock its local name of "birdseye porphyry". This diorite porphyry is also seen underground in the vicinity of the oreshoot. This general outline of the geology is based on reconnaissance work. I did not do any accurate detail mapping of rocks or dikes.