

REPORT
On The
AETHA LINE
ACCOMPANIED BY A STATEMENT CONCERNING
THE ADJOINING AZTEC AND REPUBLIC CLAIMS
LA PLATA COUNTY 1905
BY
THOMAS M. TRIPPE

Report furnished by R. F. Corcoran

The Aetna Mine is situated on the North face of Bullion Mountain, near the head of Needle Creek, at an elevation of about 12,000 feet above sea level, in the Needle Mountain Mining District, La Plata County, Colorado.

It is distant about 32 miles from Durango, the County seat and principal smelting point of Southwestern Colorado.

It is reached from Durango by the Denver and Rio Grande R. R. 25 miles to Needleton, a small mining hamlet and post office on the main line of the Road: thence by a good wagon road about five miles to the foot of Bullion Mountain, and thence by an easy trail about 1 mile to the mine. Both the wagon road and the trail are traversible at all times of the year, and no interference with the operation of the Mine and Mill is to be apprehended at any season, from storms or snow slides, which often interrupt mining operations during the winter and early spring in the high mountains of Colorado.

The AETNA is one of the largest veins of the District. Its ~~general~~ strike or course, is approximately N. 20° W.: its dip, undetermined ~~to yet~~, owing to the limited development: but apparently about 85° to the Westward. The Country rock is metamorphic granite, with many intrusives dykes and sheets of andesite. The width of the vein is from 8 to 20 feet, averaging, so far as developments and the outcroppings indicate, 10 to 12 feet. The vein filling is quartz and porphyry, with many seams and masses of clay and frequent bodies of rhodocrosite which occurs scattered in irregular masses throughout the vein, and usually in proximity to the richest ore. Some fluor spar is also found.

The ore is copper pyrite, galena, iron pyrite, grey copper, zinc blende silver sulphide and bismuth sulphide. Gold accompanies all these ores, though usually in small amounts. The pyrites and galena often occur in nearly solid and continuous chutes, from 6 inches to 3 or 4 feet, in thickness, and frequently extending through many fathoms of ground. All the vein contents carries some of these minerals: but the greater bulk of the ore is concentrated in a zone or band varying from 3 to 6 feet in width, and usually found near the Western or hanging wall of the vein.

The development of the AETNA vein consists of a tunnel starting from a point about 100 feet South of the North end line of the claim, and extending throughout the entire length of the South end line. For about 800 feet, this tunnel follows the lode: it then leaves the vein to the right, and to the Southern end line is in country rock. At this point it is about 550 feet below the surface. This tunnel was driven by the owners of the Aztec claim, contiguous to the AETNA on the South as a working adit for both mines and by permission of the owners of the AETNA. Unfortunately, the tunnel has not followed the pay streak of the vein, being sometimes on one wall and sometimes on the other, and for the last 400 feet entirely off the lode. Nevertheless without much additional expense, it can be made to answer for the purpose of working out the entire block of ground, from its level to the surface.

At a point about 750 feet from the entrance, a small block of ground has been stoped, an all about 30 fathoms. From this stoppe several small shipments of ore have been made. A lot of 10.9 tons gave 188.80 oz. silver per ton, and of 4.6% copper, with a net return of \$1107.25 for the lot. Another of 5.4 tons gave 159.62 oz. silver per ton and 2.95% copper, yielding a total value net of \$393.04. In another lot of 8 tons the net return was \$252.56: and a little less than a ton of selected ore yielded 569.5 oz. of silver and 0.10 oz. in gold per ton, with 13.1% copper, a net value of \$315.93. In all, from this stoppe, has been shipped about 24 tons of ore, of an average net value of about \$84.00 per ton. This is an average net value of about \$69.00 per fathom ground not including a very considerable quantity of milling ore, the gross value of which, would probably be about the same amount. From a series of careful tests and measurements, I estimate that the average pay streak of the AETNA vein will not be less than 4 feet: and that the average yield will be between 8 and 10 tons of ore per fathom: and that the average value of this ore will be between \$10.00 and \$12.00 per ton. This, for the entire block of ground, between the tunnel level and the surface: and I anticipate that the total yield will be rather above than below this estimate: for while there will undoubtedly occur narrow and barren places in the vein, yet in many others the average will be far above the estimate, as in the few fathoms already mined.

The block of ground lying between the tunnel and the surface contains approximately 9450 fathoms of ground. This, I estimate, should contain 3000 tons of first class ore, or shipping ore, of the value of \$80.00 per ton or upwards, and 80,000 tons of milling ore to the value of \$10.00 or \$12.00 per ton, a total gross value in the block of \$1,170,000. (One Million One Hundred and Seventy Thousand Dollars.)

A series of careful tests and experiments have convinced me that this ore, upon being mined and milled, should concentrate about 8 or 10 tons into one, and that the saving in value should be 75% to 80%. Taking the concentration at 10 into one, and saving at 75%, with the average value of the crude ore at \$11.00 per ton, we can form the following preliminary estimates:

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| Cost of mining 100 tons of crude ore | \$200.00 |
| Cost of milling 100 tons of crude ore | 125.00 |
| Cost of transportation to Needleton | |
| 10 tons of concentrates | 50.00 |
| Cost of Smelting charges at Durango | |
| 10 tons of concentrates | 50.00 |
| Cost of R. R. Transportation to Durango | |
| 10 tons of concentrates | 20.00 |
| | <hr/> |
| | 445.00 |

Of a value, with a saving of 75%

Leaving a net profit

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|---------|
| \$25.00 |
| <hr/> |
| 380.00 |

OR

| | |
|---|--------------|
| On 80,000 tons of milling ore, a net profit of | \$304,000.00 |
| And on 3000 tons of first class ore, at \$80.00 net per ton | 180,000.00 |
| A total net profit in the block of ground of | <hr/> |
| | \$484,000.00 |

I believe this estimate is entirely justifiable from the present appearance of the mine, and I look to see the ultimate results exceed, rather than fall below these figures.

A mill site of 5 acres is owned by the Company at the base of the mountain, a little less than a mile from the Mine, in the main stream of Needle Creek. This mill site is covered with heavy timber, as is also the adjacent country, affording a cheap and abundant supply for all mine purposes.

A Mill suitable for the treatment of the ore, and having a capacity of 100 tons per day, can be erected at an approximate cost of \$40,000.00. A Bleichert Tram, with capacity of 200 tons daily, should be constructed between the Mine and Mill. This would have a length of about 4000 feet and would not cost to exceed \$15,000.00.

Needle Creek furnishes a considerable volume of water, sufficient for milling purposes at all times of the year, and would furnish sufficient Power to run the mill for some months: at other periods, steam or electricity must be depended upon.

Coal can be landed at the Mill for about \$8.00 per ton, but within a few months, the wires of the Electric Power Company at Rockwood, a few miles below Needleton, will be extended to the latter place, and thence a line can be run at a small expense to the mill, furnishing all needed power at less than half the cost of the coal.

From Needleton to the Mill the cost of transportation for supplies by wagon or pack train, will be about \$5.00 per ton, and downward from the Mill to the railroad track the concentrates can be freighted for a little less.

Besides the AETNA claim, the COMPANY owns 4 others, the VEGA, ELIA V., BLACK HORSE, JR., and BLACK HORSE, JR., EXTENSION. The value of these is as yet undetermined, though indications point to the probability of valuable ore bodies being found within the veins that traverse them. No development work has been attempted on any of them.

The AETNA, ELIA V. and VEGA claims are covered by United States Patents. Application for patent on the others have been filed and will soon be completed. The mill site is also covered by patent.

In the foregoing, I have made no mention of the possibilities of encountering large bodies of high grade ore, as the vein is extensively opened up.

It is very probable, however, that a number of such bodies will be encountered. Their discovery, however, will be entirely fortuitous, and their extent and value conjectural. They might easily double the value of any given large block of ground; and it is entirely reasonable to hope that they will materially add to the net value of the output. The development of the San Juan Mining region has been of slow growth during the past 20 years, owing to remoteness, inaccessibility and high cost of mining operations.

As the facilities of transportation have increased, the cost of mining, has been slowly lowered, and the ore production greatly enlarged, until for the past year, it has reached the respectable total of over \$11,000,000.00.

Everything now points to a more rapid increase in the near future, and I confidently expect the output to double in the next 3 or 4 years.

With sufficient capital and proper management, the AETNA should be a large and steady producer as soon as it is properly equipped, and also it should pay very satisfactory dividends to its owners.

(Signed) Thomas M. Trippe
Mining Engineer.

Dated at Howardsville, Colorado
January 10, 1906.

AZTEC AND REPUBLIC CLAIMS

The Aztec and Republic claims are located at the south end of the Aetna claims. A tunnel 1400 feet long was run by the owners of the Aztec with the permission of the Aetna owners. It was designed to serve as a working adit for both mines, and approximately 200 feet of it is on the Aztec claim.

The Republic is contiguous to the Aztec on the south, and is on the same vein. The Aztec and Republic extend 3000 feet on the Aetna vein, but it is more than 1000 feet in depth from the surface to the level of the tunnel.

Continuing on the Aetna vein there are five more patented claims: The Phoenix No. 3, Phoenix No. 2, Phoenix, Grand Prize No. 1 and Victor.

There is enough ore in all of these claims to run a 100-ton mill for 40 years. In addition to these, there are a number of other good claims in that district.

AUGUST 31, 1933

Charles H. Conroy

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| Aetna | Survey No. 2354 | Needle Mountain Mining District |
| Vega | Survey No. 13657 | Needle Mountain Mining District |
| Ella V. | Survey No. 13657 | Needle Mountain Mining District |
| Rattler | Survey No. 18768 | Needle Mountain Mining District |
| Black Horse, Jr. | Survey No. 14419 | Needle Mountain Mining District |
| Black Horse, Jr. Extension | Survey No. 14419 | Needle Mountain Mining District |
| Aztec | Survey No. 14379 | Needle Mountain Mining District |
| Republic | Survey No. 14379 | Needle Mountain Mining District |
| Victor | Survey No. 13886 | Needle Mountain Mining District |
| Grand Prize #1 | Survey No. 13886 | Needle Mountain Mining District |
| Phoenix | Survey No. 18973 | Needle Mountain Mining District |
| Phoenix #2 | Survey No. 18973 | Needle Mountain Mining District |
| Phoenix #3 | Survey No. 18973 | Needle Mountain Mining District |
| Juno | Survey No. 1809 | Needle Mountain Mining District |