

March 4, 1933.

Mr. E. R. Clark,
1517 Commercial Exchange,
Los Angeles,
California.

Dear Sir;

Answering your inquiry about the Townsend consolidation of mining properties located in western Hinsdale County, Colorado, I am pleased to submit the following facts.

The mining properties belonging to The Townsend Lead Zinc Company, and consisting of nineteen patented, and fifteen un-patented lode claims and one mill site of forty acres, lie about fifteen miles almost due west of the town of Lake City, in Hinsdale County, and about fourteen miles almost due east of the town of Ouray, being in the center of the most heavily mineralized section of Colorado known as the San Juan. These properties cover the greater portion of Gravel and Wood Mountains, two of the prominent peaks of this region, and are in the northeastern part of the Silverton quadrangle, on the head waters of both Hensen Creek and the Lake Fork of the Gunnison river.

The geology of this particular area is the same as that of the rest of the San Juan district and is given in detail by Whitman Cross in the Silverton Folio of the Geologic Atlas. Mr. Cross shows that this particular area is characterized by the prominent quartz veins which cross it, and that it is, perhaps, the most complicated in the Silverton quadrangle by reason of the number of faults and igneous intrusions.

Speaking of these faults Mr. Cross states; "The most important area of faulting is a zone about three miles wide which has been followed from the western side of the Animas northeastward for about seven miles into the San Christobal quadrangle. The curving fissures make a network that is complicated even when the faults alone are considered, and doubly so when all fissures are taken into account. The effect of this faulting is complex, as will appear from the details to be given. The northernmost distinct fault cuts the crest of the ridge between Cleveland Gulch and Hensen Creek and is easily identified as a fault where it lets down the shaly portion of the Burns complex for several hundred feet on the south. It undoubtedly splits into several fissures which pass into land-slide rock debris but reappear in a number of veins crossing Wood Mountain and apparently combining with the main Cinnamon fault. The fault traced for the greatest distance may be called the 'Cinnamon Fault' since it runs for a mile or more near the bed of Cinnamon Creek, being traceable without question, though not continuously, across the Animas and up a ravine to the shoulder of Treasure Mountain and into Mastodon Gulch. Near its western end, at the head of Mastodon Gulch, it divides, forming a plexus of white veins in much altered rock, and it has been represented as identical with the Sunnyside vein, which crosses into Eureka Gulch. Farther east the Cinnamon fault splits into several branches, including the Wood Mountain veins and one passing down Cleveland Gulch. Throughout its entire extent this fault is of much structural importance, the down throw on the southeast approximating 1000 feet".

Subsequent to the work done in this area by Messrs Whitman Cross; F. L. Ransome and Ernest Howe as published in the Silverton Folio of the Geologic Atlas, much work was done by Mr. C. W. Purington in mapping and describing the fault fissures of this immediate series. In his report on these immense fissures Mr. Purington states; "In their relation to the

containing rock, andesite, and in mineralogical composition the veins are alike. Their most remarkable characteristic in this area is their width. This varies greatly, but in no observed case is it less than fifty feet between walls. The Atlantic vein, as mapped by Mr. F. L. Ransome, occupies a fissure along which faulting has occurred, seven miles in length, cutting Treasure Mountain in about the median portion of its length. Farther to the southeast it is known successively as the Gold Prince and the Sunnyside. North from the Gold Prince workings, in Mastodon gulch, it crosses a high flat and cuts the shoulder of Treasure Mountain, a high solid wall of quartz varying in width from 50 to 200 feet. The outcrop may be followed along the nearly flat top of Treasure Mountain, a distance of over 2,000 feet, having a curious curve to the west going north. Breaking from the northeast slope of the mountain, the great vein may be followed down the steep slope toward the Animas river, a distance of 300 feet. At this point where the augite-andesite country of the upper mountain is underlain by the more silicious latite, the vein abruptly narrows to 10 to 15 feet in width. Now for two miles northeast on its strike, during which the out-crop descends over 1,500 feet, to the Animas Canyon and re-ascends into Gimmaman Gulch, cutting only latite and underlying rhyolite, the Atlantic vein becomes merely a narrow seam difficult to trace. Still farther northeast the vein cuts Gimmaman Pass into Cleveland Gulch in Hinsdale County, wide and prominent. It here lies again in andesite and is known as the Isolder.

The foregoing will give a much better insight into the geology of this immediate area than would any report based on a superficial examination covering a few weeks. These men spent many months in surveying and mapping this area and their work is very comprehensive. In addition there are the reports of many other engineers of note who have personally examined this territory. Among these is Mr. R. S. Brown, who just prior to his death, was resident engineer in charge for a company doing extensive development work in this immediate area. In speaking of Gravel Mountain Mr. Brown says; "This group of properties undoubtedly has the largest surface showing in this portion of the San Juan District. I can, without hesitation, recommend this from surface indications alone as the largest and best property on this side of the Divide. I have personally examined it a number of times and have no hesitancy in saying that there is no reason for not pushing the work to completion as rapidly as possible, with the expectation of making one of the largest mines in Colorado".

In the summer of 1932 the United States Geological Survey published Professional Paper Number 166, written by Wallace W. Atwood and Kirtley F. Mather, and covering the entire area of the San Juan. This Professional Paper is of paramount importance to every one operating mining properties in the area around Gravel Mountain, Weed Mountain, Engineer Mountain and Treasure Mountain. It shows that there have been three major uplifts, or periods of eruption, two of which have been eroded away and the third being in the process of erosion. However, in the triangle bounded by Treasure Mountain; Engineer Mountain; Weed Mountain and Sheep Mountain, very little erosion has taken place. This being the apex of the uplift, the point from which the glaciation started, there was practically no erosion of these mountains, consequently all three uplifts are still in place and the three periods of mineralization are intact.

As I have examined a number of properties in this immediate area I feel that I am qualified to speak on the possibilities of the territory. In my opinion, no where in the state of Colorado is there a greater opportunity to develop a paying mine than there is on Gravel Mountain. The veins are, as is shown, a continuation of the great gold bearing veins of the Gold Prince and the Sunnyside. Sufficient production has been made from the surface to prove the values. Development work on a comprehensive scale is all that is now required.

Respectfully Submitted.

*Signed 3 copies and gave to Black
3-7-33*

JHM
ME
March 4, 1935.

John H. Marks, E. M.

March 4, 1933.

Mr. E. R. Clark,
1317 Commercial Exchange Building,
Los Angeles,
California.

Dear Sir;

Answering your inquiry about the Townsend Consolidation of mining properties located on Gravel and Wood Mountains in western Hinsdale County, Colorado.

These properties are evidently a continuation of the vein systems on which are found some of the principal mines of the Silverton district, such as the Gold King, Sunnyside and the mines of Treasure Mountain and Hanson Peak. Running northeasterly from these mines is the Cinnamon Fault, one of the principal fault lines of this region. Its extension and parallel faults and veins run northeasterly through Wood and Gravel Mountains. This condition is well illustrated in maps published by the United States Geological Survey. (See Folio Number 120 as proof of these facts.)

High gold values have been found on Gravel and Wood Mountains, indicating that with development the Townsend mines may prove as productive and profitable as the mines on the lines of the same formation lying to the southwest in the Silverton district and that have profit records of many millions of dollars.

Sincerely yours,

John H. Marks.
E. M.

*Signed 3 - copies + gave to
Clark - March 7-1933*