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ARIZONA DEPARTMENT OF MINES AND MINERAL RESOURCES AZMILS DATA

PRIMARY NAME: RAGNOROC

ALTERNATE NAMES:

SANTA CRUZ COUNTY MILS NUMBER: 25D

LOCATION: TOWNSHIP 22 S RANGE 10 E SECTION 36 QUARTER SE
LATITUDE: N 31DEG 28MIN 10SEC LONGITUDE: W 111DEG 16MIN 43SEC
TOPO MAP NAME: ORO BLANCO - 15 MIN

CURRENT STATUS: EXP PROSPECT

COMMODITY:

GOLD
SILVER
LEAD
COPPER
ZINC

BIBLIOGRAPHY:

PRIVATE RECORDS
PATENT INFORMATION
SANTA CRUZ CO. RECORDER'S RECORDS
ADMMR RAGNOROC FILE

REFERENCES:

ABM Bull. 137, p. 188 (Ragmarole)

REPORT ON THE REGION CONTIGUOUS TO THE MONTANA MINE, RUBY,
ARIZONA, 1934. maps. In Geology files.

Thesis - Structure & Mineralization of the Oro Blanco Mining
District, Santa Cruz County, Arizona, By Dr. Louis H. Knight,
Jr. 1970 Geology File.

Mr. Stephen Monteleone
806 Security Bldg.
Los Angeles, California

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RAGNOROC Group
(file)

Dear Sir:

In compliance with your verbal request, I have made a careful investigation of the properties owned by the Oro Blanco Mining Company in Oro Blanco Mining District, Santa Cruz County, Arizona. The Company, I find, have claims located to cover a large vein which is traceable for several miles through this District, having a trend northwesterly and southeasterly. Development work on the property consists of shafts from ten to twenty feet in depth. In addition to this a tunnel has been started at the base of the mountain at the south end of this group of claims of which you have maps which also shows this work.

The tunnel has been driven with a view of intersecting the large vein referred to and which, at the surface, shows copper carbonates containing from one and one half to eight percent copper with occasional fragments of red oxide. General conditions indicate leaching of the oxidized copper-bearing sulphides and an enriched ore zone below. There are also numerous smaller veins on the property but the assay results from samples taken, which are hereto attached, show that the metal values are not sufficient to permit the ore to be mined and shipped to smelters at a profit. A number of the veins could however, be worked profitably with a modern well equipped mill operating in the district.

The property is wholly in a prospective state and from results obtained from adjoining properties, which you have under consideration, I would recommend the holding of this group of claims together as they will undoubtedly, later, on, be of large value.

As you are aware, while I was engaged on the examination of the Oro Blanco Company's property, I was very much interested with the mineral indications on the properties immediately south and adjoining this group of claims and found that this area was owned and controlled by two parties, one property known as the Ragnoroc Group consisting of three patented claims owned by a party at Buffalo, New York, and the adjoining property south of Ragnoroc Group consisting of five claims known as the Austerlitz Group. This property is owned by Dr. Noon of Nogales, Arizona.

On the Austerlitz Group a large amount of surface work has been prosecuted as well as under ground work by means of a tunnel. This work being in the oxidized zone and for some reason, probably lack of mining experience, this tunnel was driven away from the ore vein, having cut the vein at a point not heavily mineralized, they drove on not realizing that the vein had been intersected.

In 1912, Woodworth and Layne opened up a large body of sulphide ore by running a cross cut from this tunnel at the point the vein showed, and from the ore they extracted, their report to the State Commissioner showed that they shipped in 1912, 1414.5 dry tons of ore and 18.4 dry tons of concentrates for which they received \$57,224.44. What they shipped in 1913 is not known as the shipments were reverted to Selby & Company, San Francisco, California, but it is

See: ABM Bul #137 p 188
"Ragnarole"

estimated that over \$96,000.00 was shipped from this property during their term of lease, but due to the method of mining with lack of timber, etc., a cave occurred, at which time they ceased operations, and it will now require a shaft north of their workings to intersect this ore body at a lower depth. Maps accompanying this report will show the proposed shaft.

The Austerlitz and adjoining claims show an oxidized surface ore zone. The ore of which will average well in gold and silver and often run to high grade. The sulphide ores opened up at greater depth are extensive, and as shown by smelter returns, of good commercial value.

I was fortunate enough to secure a report made by Mr. F. B. Schermerhorn which I hereby attach as it is very complete in detail, he having made a thorough and exhaustive examination, as careful reading of his report will show. His examination and also that of another Mining Engineer, Percy C. Sharp, made for another party, practically correspond, and it must be noted that both these reports were made before the sulphide zone and ore at greater depth were discovered or before the operation of Woodworth and Layne who extracted the \$96,000.00 from the property.

In addition shipments made later by Dr. Noon and his son who extracted from the gold bearing oxidized zone in the Barkley tunnel, 5,300 pounds ore, sampled gold \$13.60 and silver 14 ounces per ton and from a point on the Fisher vein 5,100 pounds which ran \$38.86 gold and 18 ounces silver and from other points on the property 20,900 pounds of ore sampling gold \$30.00, silver 17 ounces.

In conclusion I will say while the Austerlitz property has considerable merit, present development work is not sufficient to place ore in sight for economical extraction, but I am led to believe, from my superficial examination and from the facts herein, that further exploration would result in the discovery of important ore bodies such as would place the property in rank with many of the large paying mines of the southwest.

There are producing properties in the district which are operating night and day running their mills to full capacity. The Montana Mine, only a short distance from the Austerlitz, and on the same ore zone, is operating a mill of 200 tons per day capacity and I am reliably informed that these properties are now paying enormous dividends.

The Montana Mine, located on the same ore zone as the Austerlitz, is situated about eight thousand feet in a southwesterly direction from the Austerlitz property, and though a large daily production of commercial ore has been maintained for past years, the workings of the property have only been prosecuted to a depth of two hundred (200) feet, thus indicating that the vein has not only maintained a good average width, but also a uniform metal value. Operations are now under way to sink the present working shaft on this property, to a depth of five hundred (500) feet. Work will then be prosecuted to block out ore for economical extraction so that the present plant may be increased to handle one thousand tons or more of ore per day.

At the Yellow Jacket Mine which is also on the same ledge as the Austerlitz property, and which lies about 15000 feet in a northwesterly direction from the Austerlitz, operations are also under way for increased production. This mine, like the Montana, has been a large producer of gold and silver ore, and considering that its deepest workings are not more than one hundred and fifty feet, this property has made an unusual showing; and taking into consideration these developed mines on both ends of the Austerlitz property and which are located on the same ore zone as the Austerlitz, in connection with the unusual returns from the limited developments the Austerlitz has received, and the large quantity of ore showing on the surface, or in the oxidized zone, and what has been mined and worked in arastras by the Indians and Mexicans, (a primitive method which is sometimes employed to-day by the Indians and Mexicans in remote districts in the Republic of Mexico), as well as the large tonnage which was bought and treated by the different small Mills operating in the earlier days in this District as shown by records, the Austerlitz Mine may be considered a proven property and not an undeveloped prospect, and will under careful management by experienced mining men, be developed into a very large and profitable producer of gold, silver and copper ores, from which large returns may be expected for many years to come, and taking into consideration the price and terms upon which this property has been acquired, I most earnestly recommend the development work as herein set forth.

Conditions as to transportation in this district have been greatly improved upon within the last year. The Montana Mining Company having completed a good auto road from the district to Nogales, a distance of only twenty-three miles.

I enclose blue prints from maps made by engineers employed by the owners of the Austerlitz group, and while I have had no opportunity to make a survey of the property, I am of the opinion, from my personal observation of the workings on the property that these maps are correct. I have added, however, a proposed shaft which you will note to be sunk to a depth of 180 feet. This should intersect the ore vein which I called to your attention during our visit to the property.

Trusting that this report will give you a clear idea of conditions and awaiting your further instructions, I am,

Respectfully submitted.

/s/ J. W. Bible

Mining Engineer.

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REPORT ON

THE AUSTERLITZ CONSOLIDATED MINING GROUP

By F. B. Schermerhorn, M. E.

HISTORICAL:

The Austerlitz group of mines is situated in the Oro Blanco Mining District, Santa Cruz County, Arizona. The early history of this district is lost in the mystic reaches of the past. It was probably placer mined by the Axtecs and later worked by the Spanish Friars. The Tumacacori Mission was established by the Spanish Friars about 1530 and is known to have been one of the wealthiest missions ever established in the present limits of the United States. They operated these mines until about 1830, when, because of differences with the Mexican Government, they dismantled and closed the mission and returned to Spain.

After the departure of the Spanish Fathers, the Mexicans began working in the district. There are still to be seen in a strip of territory about a mile wide and three miles long, the remains of seventy odd of the old arastras. In all this time that the district had been worked, from the time of the Axtecs down to the American occupation in 1849, nothing but the surface of the ores had been worked. No shafts had been sunk nor tunnels driven. The reason for this is that the surface ores were very rich on the divide and average about sixty feet in width. There are also two parallel ledges, one on either side, each about one hundred feet distant from the main ledge, each of these parallel ledges averaging about eight feet in width. At the time of the American occupation in 1849, the ores upon the surface still averaged about \$30.00 per ton gold and silver, but at this time the discovery of gold in California caused both the Americans and Mexicans to desert this district for the new eldorado.

About 1865 a man by the name of Clinton Thompson returned from California to the district. He located several claims, among them the Austerlitz, and began working the ores in arastras. Some two years later Thompson was killed by the Indians.

In 1869 Mr. Townsend of New York, having heard of the district from Thompson, sent a mining engineer from New York to re-locate the properties. The engineer sent out by Townsend located the Austerlitz Group and began development of the property.

Mr. Townsend for the purpose of better protecting his interests in the district, sent over from San Francisco a Doctor Noon, who is still residing in Santa Cruz County. Mr. Townsend got into financial difficulties and deeded all his right, title and interest in the Austerlitz Group to Dr. Noon, in whose possession the title has since remained. The Doctor has made several attempts to work the property, but has never made more than a trivial success of any of these attempts, because of lack of funds with which to properly equip the property as well as a lack of knowledge of mining operations. He has leased the property a number of times, as a matter of fact, all of the money that has ever been made out of the property has been made by the leasers. I succeeded in getting hold of the details of two lists of ores which were shipped to the Arivaca Mill.

southeasterly into Mexico. The width of this particular belt is about 200 feet. The length, although undeveloped to any particular extent except a short distance both northwest and southeast of the Austerlitz, is probably 40 or 50 miles. Along this gold belt it is worked for the placer gold by both Mexicans and Indians.

WOOD, WATER, ETC.

This district is well watered. There are numerous springs in the various gulches of the range of mountains from which an abundant supply of water can be obtained. The rainfall in this section, I am informed, averages 18 inches a year. Timber consists wholly of live oak. A plentiful supply for fuel purposes can be obtained in the Austerlitz Group and purchases from the reserve, but all mining timbers and lumber for other purposes must be obtained elsewhere. There is an excellent wagon road from Tucson some 80 miles northeast, to the property. There is also a very good road from Nogales, some 45 miles to the eastward, but in its present condition, heavy loads of freight could not be brought over it.

DEVELOPMENT

Most of the development of this property consists of open cuts exposing large bodies of ore lying blanket form on the eastern side of the mountain. These ore bodies are for the most part simply large fragments or bodies of ore, which have broken off from the ledges and slid down the mountain side. There is a shaft near the western side line of the Austerlitz, which has been sunk to a depth of 130 feet. The shaft was evidently for the purpose of catching various ledges from the Austerlitz-Parallel columns, this group consisting of five claims. The shaft should strike the east parallel vein at a depth of 230 feet. There is also a tunnel known as the Barkley tunnel, 461 feet in length, cutting clear through the mountain. Of this tunnel I will speak more fully later.

The silver in these ores is in the form of a chloride, and from long exposure, the dumps have been considerable leached by the action of the elements, the fine gold also being carried down to the bottom of the piles. Therefore, it is fair to conclude that all samples taken from the dumps are below the average value of the ore, the samples having been taken, in every instance, from the top of the dumps. I would expect that in these dumps the actual value recovered would be equal, if not in excess of, the values shown by the assays taken. I commenced sampling near the extreme south end of the Austerlitz Claim very near the top of the mountain.

Sample No. 1. Open cut in the blanket. Blanket about 12 feet thick, much ore exposed. Sample of ore pile of 12 tons.

Sample No. 2. Open cut in blanket. Thickness of blanket never determined. Large amount of ore in sight. Sample ore dump of 20 tons.

Sample No. 3. Opening on small spur vein. Vein 20 inches wide. Hole 4 feet square sunk to a depth of about 5 feet. No. 6 shaft 35 feet deep, sunk on across vein or spur between the main ridge and the west parallel ridge, said shaft was sunk to depth of 35 feet. Sample of this dump and second class ore taken from shaft, all the first class ore having been removed. The first class ore in this vein, was worked in an arastra and the actual value of the ore

from this shaft is unknown to the owner.

No. 7. Over 50 feet open cut run in on the top of the ledge. Face cut 12 feet high. This cut was run so long ago that its history is not known even to the oldest inhabitant. Took grab samples of the waste piled up along the side of the cut.

No. 7A. Was taken from a small pile placed near the entrance of this cut.

No. 8. Sample across the face of this cross ledge, ledge 3 feet wide.

No. 10. Taken from same as No. 9. Over 400 tons second class ore. This ore has been carefully assorted, it is very high grade and was shipped to the smelters, some shipments running as high as \$158.00 per ton in gold and silver. Lower grade ores were shipped to Arivaca, one averaging \$26.75 gold and silver and another lot averaging \$17.67 gold and silver, received and paid for by the Arivaca Mill. This ore, I am informed, all came out of the 65 foot shaft before mentioned.

No. 11. Sample taken from an old pile of 10 tons. This place from which this ore was obtained, is unknown, but probably out of the cut before mentioned as Nos. 4 and 5.

No. 12. A sample from a dump of 20 tons, place from which it was taken is unknown. At this there place are a dozen small piles or lots of ore, which were taken at the bottom of the 65 foot shaft by the present owners, the ore being closely associated, the first class being put into these small piles and the second class being thrown over the dump.

No. 13. Open cut on blanket. Heavy body of sulphate showing underneath the ore. Sampled one pile of 35 tons of these heavy sulphates.

No. 14. Sample pile of 60 tons of unsorted ore taken out above the body of sulphates before mentioned.

No. 15. Open cut on claim known as the Addition. Goodly showing of ore. Sample 21 ton lot.

No. 16. Sampled open cut on blanket. Plenty of ore showing. Sampled pile of 10 tons.

No. 17. Open cut blanket of milky white quartz. Sampled lot of 25 tons. This work was done by Clinton Thompson. So far as the present owners know. This lot of ore has never been sampled.

No. 18. In an open cut down on the Addition claim, about 300 feet from the east side of the Austerlitz. Very large amount of ore showing. Sample lot of 100 tons of all second class ore. The ore from this cut was closely assorted, the first class ore being worked in an arastra.

No. 19. An open cut in an alluvial deposit in the bottom of a little draw. In running this cut 50 tons of ore was taken out and piled up on the dump. Considerable ore still shows on the face and sides of the cut.

No. 20. A lot of 60 tons of ore and waste was taken out at point 12 on map of the Barkley tunnel.

No. 21. Lot of 100 tons taken from point marked "Upraise" on map of Barkley tunnel.

No. 22. In the summer of 1898, Charles J. Barkley, before mentioned as having made an agreement to purchase the property, started to run a cross-cut tunnel through the mountain. This tunnel, either fortunately or unfortunately, as you may wish, as soon as he cut through the surface soil or drift, struck a northeast, southwest fault line. There was both a vertical and lateral movement along this fault line. The fault line is badly broken for a distance of 50 feet. The lateral movement along this line turned the ore from the northwest, southwest course to a southwest northeast course. The bodies along this fault line considerably mixed up, being irregular in occurrence, but as a rule, not badly shattered or leached. The throw so far as I have been able to judge from the surface, is 80 feet. The foot wall side of the fault line seemingly moved farther westward than the hanging wall side did eastward. The first ore struck in this tunnel was at a point 140 feet distant from the portal at the 249 foot station, an upraise was started.

No. 23. Just beyond the upraise a cross-cut was run, intersecting the 65 foot shaft at the bottom, 30 feet distant from the tunnel. Two drifts I understand, are run out on the ore from the bottom of this shaft. Drifts and shafts are caved in so that it was impossible to get into them to examine them. At a point on this cross-cut, 12 feet from the tunnel, another drift has been driven a distance of 135 feet. This drift is very irregular in its course, and was evidently run for the purpose of striking a 3 foot ledge, which shows on the surface spoken of under Nos. 6, 7 & 8. If it was the intention of this cross-cut, it was not run far enough by about 50 or 60 feet. The drift was run during the past winter by T. B. Wilde of Goldfield, Nevada. Coming back to the tunnel, a distance of 30 feet further along the tunnel, Charles J. Barkley ran a cross-cut in the hanging wall of the fault, cutting the top of a very large ore shute. The appearance of the ore is the same as that which appears in the upraise and is evidently a part of the same ore body and separated from it during faulting which took place along the false fissure. Sample 23 was taken 18 feet in length across the top of this ore shute.

No. 24. The tunnel had been driven 69 feet further at the time of Barkley's death. Later at this point a cross-cut had been run to the left into the footwall. The footwall of the fault is a dacite. Evidently the intrusion of this dacite dyke is the cause of the faulting. The width of the dacite dyke has as yet not been determined. Its presence is only indicated on the surface by boulders lying in the soil. Going back to the point at which the Barkley work on the tunnel was stopped, a turn was made at nearly right angles to the course of the drift and a point ten feet farther on the body is badly broken and mixed ore was encountered, which was continued for a distance of 11 feet. From this point, the drift is continued on as a cross-cut for 45 feet, usual signs of ore in the tunnel again appear along the cross-cut. Going back again to the station 21 feet to the right of the face of the tunnel where Barkley stopped work, the general course of the tunnel was changed somewhat and driven forward to the surface on the western side of the hill. At a point marked 12 on the map, ore was struck on the right hand side of the tunnel, a drift was run off at an acute angle to the right for a distance of 25 feet all the way through. The large sample was taken from the side and top of the ore near the middle of the drift.

No. 25. Commencing at the same point marked 12 on the plat another drift was run off at right angles from the tunnel for a distance of 15 feet, at which place

it cut completely through the ore. A large sample from sides, top and bottom was taken in this drift 6 feet back from the face.

No. 26. From point 12 on the plat the ore is exposed on the right side of the tunnel for a distance of 40 feet at a point midway between 12 on the plat and the end of the ore chute, a large sample was taken. The tunnel has been driven ahead from point 12 on a map a distance of 140 feet, to day light on the western side of the hill.

No. 27. Sampled 150 tons of ore lying on the hillside about 200 feet south of the north end land of the parallel plane.

No. 28. Sampled 50 tons of refuse or waste, lying below an open cut upon the parallel near the north end centre.

No. 29. Sampled second class ore and waste of 300 tons, taken from the open cut slightly east of the north end centre of the parallel claim.

No. 29. Sampled 400 tons of second class ore and waste taken from east of No. 29.

No. 31. Sampled 900 tons of second class ore and waste taken from an open cut about 50 feet northeast from No. 30.

No. 31. Sampled 300 tons of second class ore taken from the same open cut as No. 31.

No. 33. Sampled 8 tons of ore taken from the bed immediately under or down the side of the hill from No. 31.

No. 34. Sampled 50 tons of unassorted ore taken from the slide.

No. 35. Open cut. Large amount of ore showing, being evidently in place. One wall showing cut. Sampled 25 ton lot of ore.

No. 36. Large excavation. Thousand of tons of ore have been removed. Opened by the fathers for its rich gold and silver ores. The excavation has slid in so badly that the bottom of the work cannot be seen. There is still considerable ore left, showing above the debris which covers the bottom of this excavation. Sampled a 75 ton lot, evidently second class ore, which I found lying or piled near the outer edge of the dump.

No. 37. Sampled another 100 ton lot lying near No. 36. It is about the same character as No. 36.

No. 38. Sampled another pile of 150 tons of the same character as Nos. 36 and 37. This excavation shows the vein to be very wide, how wide, it is not possible to determine at present. Only the hanging walls is exposed, vein evidently in place.

A deep gulch separates the Austerlitz from the Ragnaroc Mining Claim, which adjoins the Austerlitz upon its northwest end.

The ore of the Ragnaroc comes down the side of the gulch nearly to the

Austerlitz and in fact the vein has been opened upon the line separating the two claims. Upon the Ragnaroc, the width and the dip of the vein can be easily taken. I found that upon the Ragnaroc the width of the vein or ledge taken at right angles to the foot wall is a little over 60 feet while the dip is about 55 degrees east.

No. 39. A cut 100 feet southeast of the large excavation before mentioned a ledge has been opened exposing a foot wall.

The ore here is apparently in place and evidently the foot wall of the ledge. Sampled lot of 25 tons.

No. 40. Sampled lot of 60 tons which was picked up out of the creek below No. 33. Nothing is known as to whom or by whom this ore was piled. It was evidently put aside for the purpose of working it through an arastra.

No. 41. Sampled 25 tons taken from an open cut below No. 40.

No. 42. Large excavation on the north bank of the gulch. Very large amount of ore shown in and around the opening. Sampled 400 ton lot second class ore.

No. 43. Ore taken from the bottom of the gulch. The recent rains have stripped the bottom of the gulch at this place immediately below No. 42, exposing the ore along the bottom of the gulch for a distance of 75 feet. How much farther down the gulch it extends cannot be determined accurately, but it is probably less than 20 feet further. Near the lower side of this exposed ore body, Charles J. Barkley sunk a hole in the ore to a depth of ten feet. This exposure at the bottom of the gulch is very important, as it is the lowest point upon the Austerlitz of the Ragnaroc that can be seen. Sampled at lot of 115 tons taken from the bottom of the gulch.

No. 45. Sampled at lot of 50 tons taken from an opening on the hillside immediately upon the line between the Austerlitz and Ragnaroc.

No. 46. Sampled lot of 500 tons taken from an opening made on the ledge upon the Austerlitz just below the line between the two claims. This was done very long time ago.

No. 47. Sampled a lot of 25 tons. This lot is a kind of land mark, it having been known to have been there at least 50 years ago. It was evidently taken out by the Spaniards who worked an arastra. The place from which it was taken is unknown but it was probably taken from an opening in No. 46.

OUNCES PER TON

VALUE PER TON OF 2000 POUNDS

	AU.	AG.	AU.	AG.	TOTAL.
1.	0.76	6.1	\$15.30	\$3.97	\$19.17
2.	0.28	5.4	5.60	3.57	9.11
3.	0.16	2.4	3.20	1.56	4.76
4.	0.18	3.3	3.60	2.80	5.40
5.	0.06	0.4	1.20	-----	1.20
6.	0.08	trace	1.60	-----	1.60
7.	1.48	7.4	29.60	4.81	34.41
8.	0.16	2.3	3.20	1.50	4.70
9.	0.08	7.5	1.60	4.88	6.48
10.	0.68	3.6	13.60	2.34	15.94
11.	0.06	1.4	1.20	.91	2.11
12.	0.28	2.1	5.60	-----	6.97
13.	0.18	3.6	3.60	2.34	5.94
14.	0.10	trace	2.00	-----	2.00
15.	0.56	6.3	11.20	4.10	15.30
16.	0.12	1.5	2.40	.98	3.38
17.	0.24	1.7	4.80	.91	5.71
18.	0.18	0.7	3.60	-----	3.60
19.	0.18	0.7	3.60	-----	3.60
20.	1.76	6.3	35.20	4.10	39.30
21.	0.44	4.0	8.80	3.25	12.05
22.	0.16	1.2	3.20	.78	3.98
23.	0.07	0.8	1.41	-----	1.41
24.	0.08	2.1	1.60	1.37	2.97
25.	0.64	11.6	12.80	7.54	20.34
26.	0.16	7.8	3.20	5.07	8.27
27.	0.38	trace	7.60	-----	7.60
28.	0.24	trace	4.80	-----	4.80
29.	0.20	trace	4.00	-----	4.00
30.	0.14	trace	2.80	-----	2.80
31.	0.04	trace	.80	-----	.80
32.	0.16	trace	3.20	-----	3.20
33.	0.16	5.8	3.77	3.77	6.97
34.	0.14	17.22	2.80	11.18	13.98
35.	0.28	3.9	5.60	2.54	8.14
36.	0.40	6.0	8.00	3.80	11.80
37.	0.32	8.4	6.40	5.46	11.86
38.	0.10	6.1	2.00	3.97	5.97
39.	0.08	2.0	1.60	1.30	2.90
40.	0.18	1.2	3.60	.72	4.38
41.	0.16	0.6	.20	-----	3.20
42.	0.14	trace	2.80	trace	2.80
43.	0.17	1.5	3.40	.98	4.38
44.	0.22	4.0	4.40	2.80	7.00
45.	0.36	4.6	7.20	2.99	10.19
46.	0.16	3.2	3.20	2.08	5.28
47.	0.16	2.5	3.20	1.63	4.83

This table was compiled from lot of ores which according to assays are unmistakably ores.

<u>NO.</u>	<u>AMOUNT</u>	<u>VALUE PER TON</u>	<u>TOTAL VALUE</u>
1.	12	\$19.17	\$230.04
2.	20	9.11	182.20
4.	75	5.40	405.00
7.	50	34.41	1720.50
7A	150	4.70	705.00
9.	50	15.94	797.00
11.	10	6.97	69.70
12.	20	5.94	118.80
14.	40	15.30	612.00
15.	20	3.38	67.60
16.	50	5.71	285.16
17.	25	3.60	90.00
18.	100	3.60	360.00
19.	50	39.30	1965.00
20.	60	12.05	732.00
21.	100	3.98	398.00
27.	150	8.60	1140.00
28.	50	4.80	240.00
29.	300	4.00	1200.00
32.	300	3.20	960.00
33.	8	6.97	56.76
34.	150	13.98	2097.00
35.	25	8.14	203.50
37.	100	11.86	1186.00
38.	150	5.97	895.50
40.	60	4.38	262.80
41.	25	3.20	80.00
43.	115	4.38	503.70
44.	252	7.00	175.00
45.	50	10.19	509.50
46.	500	5.28	2640.00
47.	<u>25</u>	4.83	<u>120.75</u>

An average value per ton of ore on dumps ready for milling \$7.45.

Average of assays per ton, \$8.28 Lots Nos. 1, 7, 14, 19, 20, and 34, were unassorted ore. Average value per ton \$9.28 Lots of these unassorted ores \$20.32.

In case of lots Nos. 5 and 6, I was informed that the waste had been piled upon a lot of good ore. No. 31 is as shown by the assays, to be the only real waste dump of the property. Nos. 10, 13, 23, 30, 39 and 42, should be resampled, as I am of the opinion that they are real ores.

The showing made is really a remarkable one when we take into consideration the fact that with the exception of six lots, viz. Nos. 1, 7, 14, 19, 20 and 34 every lot sampled were thrown out for waste. Further you must remember that with the exception of the lots of unassorted ore, these dumps

have been exposed to the elements for many years, some of them for more than half a century. From the creek bottom ten thousand or more tons (how much more cannot be determined just at present) that will according to the assay average over \$5.00 per ton. At least seven thousand tons of ore of an average value of \$4.00 per ton can be taken out from the above tunnel. On the eastern side of the hill some ten thousand or more tons of ore can be gotten off the surface that should average above \$10.00 per ton. Exploration alone can determine the tonnage to be gotten off from this property. Exploration will also show the real value of these ores, which will probably average considerably higher than the average shown by the samples which I have taken. Mr. Barkley who had the best opportunity to determine the true value of the property, as he spent a great deal more time taking his measurements to make his estimate of the tonnage and spent several months in sampling and testing the ores from the various showings placed the surface tonnage approximately at one hundred thousand tons, with the average of \$7.50. I am inclined to accept his estimate as being more nearly accurate than my own.

In regard to the handling of this property, the deal for the property having been closed upon receipt of analysis and assays, depends a great deal upon the scale upon which it is desired to operate the property. It will take at least \$5000.00 to put the property in good working condition. It will take \$7500.00 more to put a 10 stamp mill upon the property. Would advise as soon as convenient to do so, the erection of a small cyanide plant for the purpose of handling the large amount of ores exposed at the bottom of gulch. This will cost about \$5000.00 or more. At least \$7500.00 more should be set aside as a kind of emergency fund. This amount \$25,000.00, I believe to be amply sufficient with which to commence operation. The entire plant should be enlarged owing to the profits obtained from the property. A deep tunnel should be commenced at a low point as practicable which will be down near the forks of the creek. A tunnel started at this point will encounter the eastern ledge at about one hundred and fifty feet distant from the portal.

The tunnel should be continued not only on to the main ledge, but to the western parallel ledge. It should also turn and follow the main ledge into the hill. A tunnel such as I have outlined, fifteen hundred feet in length would give vertical depth from the ledge of some five hundred feet. It would also have the advantage of being driven for at least 1200 feet of its length upon the main ledge. Such a tunnel would make it possible to handle all ores cheaply and rapidly. It would also develop the character of the ores upon depth and would decide the kind of a plant necessary to operate the property on a large scale. Of course if it should be desired to work this property upon a larger scale, these estimates would have to be proportionately increased. The deepest working is upon Tres Amigos or OLD ORO BLANCO property. A depth of 265 feet has been attained upon that property and the ores at the bottom of the shaft are still free milling and higher values than were obtained anywhere else on the property.

The ledge is also quite as strong upon the Oro Blanco as upon the Austerlitz.

With careful and intelligent management, the Austerlitz will make one of the large gold mines in the United States.

Signed F. B. Schermerborn, M.E.

El Paso, Texas
Sept. 10th 1907.