Letter a

MINING
MINERALS
URANIUM
METALLIC AND NON METALLIC

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April 15,1965

Philip M. King,
509 Madison Ave.
New York, N.Y.

Dear Phil:

Herewith you have condensed sheets to complete the Preliminary Report.

I have prepared a possible outcome of the ore values. This has been shortened repeatedly and edited, so I hope it will be understandable to everyone concerned.

The present Buffalo Boy workings as embraced in the Metzer sampled area, lies 1050 feet along the vein and has an average depth of 675 feet above the proposed tunnel. It would be an area of about 708,750 square feet. The vein area between the Oyama tunnel and the crest of the divide north of the Buffalo Boy workings could amount to 4,809,000 square feet above the proposed tunnel elevation. The Metzer area therefore is only 14.3% of this huge area. It should be noted that the Buffalo Boy claims extend northwesterly another 6000 feet toward the Ridgeway mine.

It is reasonable to assume that this tremendous area outside the metzer area would yield by exploration and development several, if not many, other ore bodies.

Kindest Regards

Very Truly Yours

Warren C. Prosser

WCP-hs

Warren C. Prosser

Preliminary Evaluation of the Buffalo Boy Group of Lode Mining Claims Animas Mining District San Juan County Colorado

Warren C. Prosser

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Preliminary Evaluation of the Buffalo Boy Group of Lode Mining Claims Animas Mining District. San Juan County Colorado

INTRODUCTION

This preliminary evaluation of the Buffalo Boy property was undertaken for the purpose of determining its metallic mineral potential.

It was begun at the request of Philip M. King of New York. It consists of reviews, research and development of personal surveys and examinations, made on many occasions over a long period of time. It involves the application of well known geological principles and those developed and reported in great detail in more recent times. The effect of present economy is considered.

Residents of Silverton as well as Colorado and Official Government Agencies were consulted as to the property and its history.

LOCATION

The mining claims that constitute these groups are situated in the basins and upon the slopes of surrounding ridges, at the head of Rocky and Stony Gulches, in San Juan County, Colorado. The surface of the claims is at 12,000 to 13,000 feet elevation above sea level. The Continental Divide on the Rocky Mountains of Colorado is one mile to the east.

The Latitude is 37° 47' N and the Longitude 107° 33' W of the New Mexico Principal Meridian. The Public Survey and Land subdivision has been suspended in this Mountainous area.

LOGISTICS

Silverton, Colorado is seven and one half miles to the west at an altitude of 9300 feet and is the commercial center of the region. It is on improved Colorado State highway No. 550. It is the terminus of the narrow gauge branch of the Denver and Rio Grand railway, which at present carries only passengers during the tourist season.

A good grade gravel surfaced road runs from Silverton, past the Standard Metals and Pride of the West Mills to the foot of Stony Pass in Cunningham Gulch, about five miles distant, at 9600 feet elevation. From here a winding mountain truck road has been built up Rocky Gulch to the Garry Owen tunnel. From about three quarters of a mile up this road and at an altitude of 10,800 feet, an unimproved mountain road winds up Stony Gulch and Basin for two miles to the south end of this property.

A wagon trail extends from near the Garry Owen tunnel, in Rocky Gulch to the portal of the Buffalo Boy tunnel.

PROPERTY COMPOSITION

The Buffalo Boy property consists of the following lode mining claims, all patented. They belong to [redacted] THE [redacted] STONE SILVER CORP. OF NEW YORK.

CLAIM	MINING DISTRICT	PATENT SURV. NO.
Buffalo Boy	Animas	19397
June Bug	"	19397
August	"	19397
Arrow Head	"	20329
Faust (or Forest)	"	20329
Fortuna	"	20329
Golden Fleece	"	19397
Inter-Ocean	"	20329
Illiad	"	20329
? I. X. L.	"	11319 ?
Kansas Kansan Girl	"	20329
Lizzie D.	"	19397
Lachesis	"	20329
La Nieve	"	20329
Mithra	"	20329
Mt. Canby	"	20329
? No Name	"	11319 ?
Ned	"	20329
Niflhein	"	20329
Old Abe	" 0329	20329
O. K.	"	20329
Oyama	"	20328
Posiedon	"	20329
Quail	"	19397
Roosevelt	"	19397
? Silver Tape	"	11319 ?
Silver Bell	"	19397
Smuggler Union	"	19397
Silent Friend No. 1	"	20329
Silent Friend No. 2	"	20329
Silent Friend No. 3	"	20329
Surya	"	20329
Storm King	"	20328
Tenderfoot	"	20329
Ymir	"	20329
? Niegold Townsite	"	17287 ?
Townsite	"	17287

NATURE OF ENVIRONMENT

The mountain ridges and basins upon which this property is imposed, have moderate slopes, covered with grass and shrubs, indigenous to the flora of that elevation. Timber line is about 11,500 feet elevation in the San Juan mountains.

In the late spring, summer and fall months the area is a beautiful upland playground, where cattle and sheep grazing is customary. In the winter, sometimes under sub-arctic conditions, severe cold stormy weather occurs, making travel and industrial activity difficult. There are no serious snow slides on this property, but they do run from the mountain slopes into Rocky and Cunningham gulches and sometimes over run the road to Silverton. Mining and mountain people have learned to accomodate themselves to them. Efficient snow removal equipment is used by State and County road crews. Slides are often forced to run by shooting them down with howitzer shots, from safe distances, and the roads are soon restored to travel.

HISTORY

Discovery and location of the Buffalo Boy claims was begun in the 1890's by Matt Salmhofer and Louis Braunsworth. A. A. Brown became an early associate with George Jackson, locator of the Old Abe group. Eventually the Continental Mining Co. was organized with Jos. Bordeleau, a Silverton hardware dealer, Jack Slattery, Wm. Way, an Attorney, among others, participating.

A crosscut was driven to cut the Buffalo Boy Vein, which had been discovered in shallow surface workings, and development was carried along on it consistently. By 1913 over 1000 feet of drift on the vein had been driven, usually by contract, and several hundred feet of raises, one to surface, and winzes had been added.

Tonopah Mining Co. became interested in 1913, with the purchase of A.A.Brown's minority stock and held an option on the Jos. Bordleau controlling stock. They purchased a half interest in the Old Abe group and several surrounding groups of claims as the Silent Friend and Interocean. In the period 1916 to 1918 the workings were cleaned up and several hundred feet of additional drift was driven on the vein.

After some delaying legal action the Tonopah Mining Co. obtained possession of the property from the estate of Jos. Bordleau. By 1926 the Vertex Mining Co. had been formed by Tonopah, the main winze was sunk to 408 feet below the main tunnel level and sub levels were run off at 97 feet, 197 feet, 297 feet and 397 feet.

By 1930 the tramway from the mill to the mine was completed, the mill in Cunningham gulch was built and run, and numerous mine buildings had been erected. The tramway and mill machinery are listed herewith.

The mine buildings were suddenly burned in 1932 or 1933, were rebuilt and burned again. The mill was also burned down in 1935. No sensible reason is advanced for this destruction.

The Old Abe tunnel had been driven over 400 feet. Jackson gave as his reason for locating the Old Abe claim, that he had discovered a huge block of vein material in the slide rock below the present site of the tunnel, broke it up and shipped it to the smelter and received returns of $65 per ton for it.

The Buffalo Boy Vein, discovered in shallow openings on the surface was found to have encouraging values. The main drift was driven 1750 feet in a northeasterly direction and 60 feet southwest. In the drift going northeasterly from the crosscut, at 140 feet a 40 ft. winze was sunk; at 440 feet a raise was put through 80 feet on the vein and 50 feet further, to surface; at 565 feet, a 65 ft. raise was driven and also a 30 ft. winze beneath it; at 850 feet a 150 ft. raise was driven on the vein, at the top of which a super drift was extended 100 feet northeast and 120 feet southwest. Other crosscuts had been driven from the main drift, ostensibly to make sure the whole vein had been opened.

Thus the mine workings were constituted in 1913 when my first examination was made of the property with the assistance of H. DeWitt Smith, J. Edward Spurr, at that time, being the Chief Geologist of the Tonopah Mining Co.

The Old Abe tunnel, at an altitude of 12,550 feet, 5 x 7 ft. in section was driven 400 feet or more along the east wall of the vein, with crosscuts at intervals, exposing the vein on both walls.

It was reported by Dr. Fred B. Peck in 1911, in a report, a copy of which was held by the owners herein, that these crosscuts revealed the vein as follows:

Feet from the Portal	Width of vein	At 1911 Prices Value Ton Gold	Silver	Total
149	8'4"	$2.40	$ .65	$ 3.05
174	5'	8.00	2.10	10.10
200	9'	1.80	.85	2.65
288	8'4"	10.80	2.95	13.75

"At 180 feet from the portal a 9 x 11 ft. winze had been sunk for 9 ft. in depth and subsequently filled with waste. A shipment of ore was made from it and from a short stope on the vein above it." He reported on a shipment of crude ore made to the Durange Smelter of the American Smelting and Refining Co. as settling for 6.39 ozs. gold and 230.26 ozs. silver per ton, the net proceeds showing as $225.25 per ton. He reported taking a sample from a pile of ore near the mouth of the tunnel which assayed Gold 13.28ozs. Silver 204.7 ozs., of value $367.95 at that time.

Besides numerous shallow open cuts and shafts above, the tunnel was constituted as shown.

TOPOGRAPHY

The property location is shown upon the Howardsville Quadrangle sheet of the U. S. Geological Survey. The Buffalo Boy crosscut portal being at 12,600 feet elevation and the Old Abe tunnel slightly lower. The Oyama tunnel is at 12,160 feet elevation and just below the Stony Pass road.

After preliminary calculations have been proven correct, it appears that a tunnel on the Oyama tunnel level, driven on a grade of one half foot to 100 feet, should pass beneath the bottom of the Buffalo Boy winze by about 20 feet.

Further development of the Buffalo Boy - Old Abe veins could be accomplished by sinking winzes below the proposed tunnel level. Ultimately another crosscut, 5,000 feet in length at an elevation of 11,000 feet, could open the Buffalo Boy vein 1,000 feet below the Oyama tunnel level. In this connection the Vertex aerial tramway might be considered from its elevation at 9,600 feet in Cunningham gulch, to a station at 11,000 feet. This tramway still stands with its ore buckets still clamped to the cables. It does not belong to the owners herein.

The drainage from the mountains in the Buffalo Boy region runs westerly through Cunningham Creek to the Animas River, which eventually empties into the San Juan river in New Mexico and thence to the Colorado River in Utah, thus being on the Pacific or Western slope of the Continental Divide.

GEOLOGY

Regional Setting and Structure.

The Silverton Volcanic Basin comprises two major structural provinces. (1) An interior downfaulted block which may be further subdivided into a hub of tilted and moderately disturbed formations, and an enclosing rim of highly faulted rocks, and (2) an exterior province of relatively undisturbed but fissured rocks.

The structural features of greatest economic importance have so far proved to be the radial systems of dikes and fissures that surround the downfaulted basin. These have been the loci of the most productive deposits of the several districts.

Two limited areas, as shown by dotted borders upon the map are credited with over four hundred million dollars production, the deposition of which is directly attributed to this Silverton Caldera volcanic structure. It is estimated by operators and geologists familiar with the region that an equal size production might follow. This possibility gains support from the operations of the Idarado and Standard Metals, Company's. Work has resumed

at the Camp Bird, Revenue, Virginias complex in favorable territory and at the Silver Wing mine on the northeast border of the Silverton block fault. The maps referred to above shows the swarms of veins in the Ouray Telluride Section and also that in the Arastra basin area east of Silverton.

The Buffalo Boy property is in the bordering area east of the Block fault and so, east of the ring fault extending from Silverton to the northeast, locally known as the Animas Valley fault system.

District Structure .

There are added features to the east wall of the Caldera, they being injections of monzonite porphyry in the form of elongated stocks at the junction of Stony and Cunningham gulches and crossing lower Maggie gulch and extending southwest to Howardsville. These bodies range in composition from Aplitic Granite, to monzonite porphyry and resemble the huge stock of monzonite porphyry at Silverton, on the south side of the block fault.

The composition of the Animas Valley fault system is described briefly as "the displacement as measured from the base of the Pyroxene Andesite on top of Little Giant mountain, to its base east of the Animas Valley and amounts to a little over 2,400 feet." The width of the fault zone west of the location of the Buffalo Boy property is about 5,000 feet.

Between Galena mountain, on the eastern extension of which the property lies, and the Animas Valley to the west, the displacement appears to be about the same, 2,400 feet.

The tilting of the central block of the Caldera is shown by the displacement at Silverton being about 3,000 feet and at the Sunnyside mine at the north end of the block, 1,000 feet.

It is also shown, in addition to these major intrusive masses along the fault zone, that there are in and near Arastra basin, 2 miles west of the Buffalo Boy, smaller andesitic, latitic and granite dikes, striking both parallel and radially to the fault zone. Other dike bearing fissures, although but weakly mineralized themselves, were probably feeder channels, that extended from depths close to the sources of mineralizing solutions to shallower fractures in which larger ore bodies were localized.

This same geological situation is reasonably expected to exist in the area of this property under examination and accounts for the ore bodies in and around them.

It appears certain that the veins of this property are the result of dynamic action which can be ascribed to the Silverton Caldera. The Lake City Caldera, 10 miles to the northeast, may have exerted some influence on the local environment, not readily recognizable. The ore bodies of this and nearby properties are

not hap-hazard but exist in a logical geological structural environment and under the influence of its accompanying sources of metallic mineralization.

DEPTH OF ORE

It is apparent that a clear understanding of local conditions of mineralization and structure, necessitates a broad perspective view of the major structural features of the Silverton region.

The veins of Arastra gulch and Silver Lake basin have been favorably developed at depth. In Cunningham gulch ore has been found in veins in the pre-cambrian rocks, which tend to be simpler and narrower than those of the overlying volcanic rocks of later age.

The next overlying volcanic series, the San Juan tuff, was the host rock of the Pride of the West, Osceola, Green Mountain and Highland Mary mines.

The next series upward, the Eureka Rhyolite, 200 feet or more thick, rests unconformably upon the partially eroded surface of the San Juan tuff. Generally this formation is regarded as unfavorable to extensive metallic mineralization here, but this idea must be applied with caution because the New York vein and the Mayflower vein in Arastra gulch, were favorably influenced structurally by the presence of Andesite dikes, along which the veins were made.

Underneath the Buffalo Boy claims this Eureka Rhyolite may be only 200 feet thick, but it widens to 1,500 feet, four and one half miles to the north.

The next overlying volcanic formation, the Burns Latite series is the surface formation at the Buffalo Boy. It appears favorable to ore deposition.

NATURE OF THE VEINS

The Buffalo Boy is a typical quartz vein, hard and compact, frozen to the walls. Post formation movement is indicated by clay seams and some soft gouge, carrying fragments of dark colored quartz. There is a moderate dissemination of pyrite throughout the quartz. Occasionally in vugs, sectile argentite (silver sulphide) was observed. For accurate sampling the hardness of the quartz required channeling with moils and hammer.

The Old Abe vein is similar in character. It is noted by those familiar with both that these and similar veins in this area, closely resemble those of Tonopah, Nevada.

The values in the ore are believed to be principally in and with the argentite, deposited with or in the quartz gangue material,

of the vein. Ruby Silver (Proustite) has also been recognized, found in the dump and to be present in the mine, in profusion in some places. This mineral does not appear to be confined to any one location or trend in the ore body, but has been noted in workings close to the surface as well as in the other levels. In the 1930 report to the Commissioner of Mines of Colorado, the local Inspector stated of the Buffalo Boy vein, "The ore averages 6 ft. wide, is quartz with disseminated pyrite. This does not include the rich strike of Ruby Silver ore, 600 feet below the surface, 18 inches wide, disclosed for a length of 50 feet and assaying 300 ounces of silver to the ton. No production has been recorded from this area."

ORE PRODUCTION

For many years during the early development of the property ore production was limited to sorted crude ore for shipment direct to the smelter. The following taken from the Peck report shows the result of some such shipments prior to 1911.

Shipments of sorted crude ore from the Buffalo Boy Mine to the Ohio and Colorado Smelter at Salida, Colorado.

Date	Lot No.	lbs.	H_2O	Net lbs.	Gold ozs.	Silver ozs.	Treatment charge
7-25-08	1	5347	1%	5294	6.39	230.26	$11.00 ton
11-16-08	2	13669	1%	13532	4.47	185.53	11.00
7-12-09	3	25743	1%	25486	4.74	207.2	11.00
7-5-10	4	22828	1%	22600	4.20	146.18	11.00
		67587					

Early shipments from the Old Abe vein are mentioned before under "History."

In 1929 and 1930 The Colorado Commissioner of Mines Reports show the shipment of 15,122 tons of ore from the Buffalo Boy Mine to the mill. This was mined above the main tunnel level, from areas crosshatched on the stope map overlay. The concentration ratio was said to be 16 to 1. The last shipment of concentrates, according to the report ran Gold 2.2 ozs., silver 65 ozs. This probably does not represent the average grade.

The surveying and sampling of the Buffalo Boy vein which was done in 1913 by H. DeWitt Smith and myself, was subjected to extreme care, channel samples were moiled, from the relatively hard quartz vein, onto canvas.

In the drift south of the main crosscut good values were encountered indicating an extension of the main ore body in that direction. In the drift northeast, the values remained good until near sample No. 511 when they diminished preceptably. A few good samples were taken beyond that point, but it was chosen as a stopping point for our present calculations. It also marked the locus of the last stoping northward in later years.

The average width of vein sampled was 3.59 ft., the length of vein sampled was 1,140 ft. An attempt was made to extrapolate the vein widths beyond the walls to which it was sampled on one side or the other and as a result of this attempt a possible vein width of 6.03 ft. was arrived at. There was no indication that the values of the vein on either wall, where exposed, was noticeably diminished, or that the values might not extend over the 6 ft. width. The calculations are nevertheless based on the 3.59 ft. width.

The development of the Buffalo Boy vein has been tabulated previously as it existed prior to 1913. Under these early circumstances, positive, blocked out ore would be extremely limited. Probable and possible ore could be considered as being the area above the main tunnel, to within 15ft. of the surface and to 100 feet in depth below the main tunnel.

The content of the ore sampled had an aliquot average of Gold 0.347 ozs., Silver 8.241 ozs. per ton or a gross value at present of $22.10 per ton.

In 1913 the mine was sampled by several interested Companies. No records of their work are available but I believe that they all seemed to arrive at a figure of 60,000 tons of $20 per ton ore, on the basis of the metal prices, then.

In the 1920's and 30's I visited the mine on several occasions, the last time probably 1929 or 30, I observed that they had evidently pulled the filled stopes and were attempting to mine off stulls and sprags. This was prior to the time that the boarding house at the mine was burned down. No further sampling was done by me and I was unable to visit the winze workings below the main level.

I was personally acquainted with C. H. Metzer and the Manager Charles Mayotte, who lived at Silverton at the time. A resampling of the entire workings was made by them and a copy of their stope map has come into the possession of the owners of the property. This map is I believe authentic and furnishes the basis for calculating the ore bodies of the entire developed area in the Buffalo Boy workings.

On this map are shown the outlines of the stoped areas which have been crosshatched in the overlay. They must have been of the time about 1930. In that year the Inspector for the Commissioner of Mines of Colorado reported that he was informed, they had mined and milled 15,122 tons of ore.

15,156 tons

Outside of several early lots of crude ore shipped as previously cited, this mill production by the Vertex Company, is the only known production from the mine. Earnest Hoffman of Silverton stated to me in April 1964 that he was familiar with the winze working of the Buffalo Boy Mine, had done some sampling for the Company in them. He said that to his knowledge no stoping

of ore was done by the Company in the winze workings, that the winze was a bucket hoistway and not suitable for regular production.

In order to compare our early sampling with that done by Metzer et al, a block of ground on the main tunnel level was selected for comparison in both samplings.

This resulted in the following comparison:

	Width	Gold ozs.	Silver ozs.	
1913	3.59	0.347	8.241	
1930	3.90	0.4435	11.40	under main tunnel
1930	3.83	0.394	7.32	above main tunnel

This analysis covering the sampling of the same block of ground by three separate sets of samples, check out reasonably well.

An overlay has been prepared of the assay map of Metzer and blocks of stope area have been segregated to show weighted averages of the ore value through the developed area of the mine.

A schedule of the averages in these blocks is presented.

Schedule of segregated blocks on Metzer Assay map
Buffalo Boy Mine
Blocks M and N are disregarded.

Block	Width feet	Tons	Val. Ton	Gold ozs.	Silver ozs.
A	4.8	6500	$20.59	.402	5.54
B	2.9	1716	28.69	.533	8.46
C	3.5	2538	18.87	.27	7.72
C-1	3.8	760	18.29	.245	7.97
D & E	3.22	11356	19.41	.27	8.19
F-G-H	3.16	15815.8	25.84	.329	11.73
K-A	4.27	2277.0	17.70	.29	6.27
L	4.31	3098	16.40	.247	6.40
I	3.5	6037	41.78	.64	16.00
P	3.95	5939	36.87	.395	10.75
S	3.00	2700	78.77	1.09	33.27
T	2.75	3918.7	18.86	.258	8.07
Average	3.6'	76940.5	$26.44	0.375	10.95

BLOCK "W"

A large block of vein area under the tunnel level and north of the main winze is to be considered. Sample results along the main tunnel and down the winze have been used to establish an aliquot average of the ore in this area. This Block is 470 feet long, running north from raise No. 2168 and 400 feet down the winze from the main tunnel level.

It appears that there is a definite rake of the ore body diagonally downward from south to north across this stated block of ground, but an upper border of such an ore body has not been disclosed within this block or along the main tunnel northeast. There is likewise no indication that the ore body will be cut off diagonally across this block from north to south. Therefore it is assumed that the block W can reasonably be considered as being probable ore and is so accepted in my calculations. Its validity is subject to proof by the suggested development and its extension, since the rake is away from the direction of approach of this proposed development.

This block is expected to yield tonnage and values as follows:

Block	Width Ft.	Tons	Val. Per Ton	Gold Ozs Per Ton	Silver Ozs per Ton
"W"	2.67	41850	$58.66	0.52	16.78

Blocks A. & W. combined by weighted averages.

Blocks	Width Ft.	Tons	Val Per Ton	Gold Ozs Per Ton	Silver Ozs per Ton
A to T	3.6	76940.5	$26.44	0.375	10.95
"W"	2.67	41850.	58.66	0.52	16.78
A to W	3.56	118770.5	30.46	0.418	13.00

It appears therefore that the positive and probable ore of the Buffalo Boy Workings amounts to 118,770.5 tons of ore of content Gold 0.418 ozs., Silver 13.00 ozs. per ton.

PROPOSED DEVELOPMENT PROGRAM

The Old Abe group is a prospect with considerable promise of yielding good ore values under a development program. It makes a suitable interim target for a development system, initiated at a lower location, such as the Oyama tunnel, under the Stoney Pass road. Its successful development would be in line with the exploitation of the Buffalo Boy vein at this lower elevation of 12,100.

The development of the Old Abe was by one tunnel 484 feet long at an elevation of 12,550 feet.

The workings on the Buffalo Boy Mine do present a suitable target for exploitation. They lie 2300 feet north from the north breast of the Old Abe tunnel.

These Buffalo Boy winze workings are filled with water. The winze is said to be a rough incline, used as a bucketway and not considered adequate for productive operation from the main tunnel, but useable.

The crosscut and tunnel were reported open and accessible in 1963. The buildings at its portal are in bad repair or destroyed.

To gain depth without requiring an undue amount of cross-cutting as would be the case if directed toward the Buffalo Boy it is proposed to use the Oyama tunnel as a starting point. This tunnel will require rehabilitation, a substantial portal, service road, mine building area graded and waste dump. It is under the Stony Pass road. On a course of N 25° E it should cut the Old Abe vein on its dip, within 900 feet. The grade of the tunnel should be as usual one half foot to 100 feet. The relationship between the Oyama vein and the Old Abe vein has not been determined, they may be the same. Otherwise the tunnel will be a crosscut to its intersection with the Old Abe. This crosscut would constitute the first stage of the Buffalo Boy development program.

The second stage would be to drive on or along the Old Abe vein on a straight course of N 20° E to pick up the Buffalo Boy vein and come under the main winze about 20 feet. This will require 2200 feet of driving to come under the Buffalo Boy workings. It might require 2600 feet to pick up the Buffalo Boy ore body on its northerly rake. There is of course the speculative possibility of developing enroute and projecting downward a satisfactory ore body on the Old Abe vein or on either vein between the two locations, whether they prove to be the same vein, parallel or en echelon.

THE SLIDE GROUP

The slide group consists of the following lode mining claims, all patented, as shown upon the general claim map.

Silver Bell, Eugenia, Ouray Chief, Le Roy, Burr Oak, Slide, Golden Age, Gold Wedge, Humboldt, Volopuk, Silent Friend, Donau, Ned, Silent Friend No. 1, Silent Friend No. 2, and Silent Friend No. 3. They lie along Galena Ridge west and northwest of the Buffalo Boy Claims.

The Slide lower tunnel is driven at about 12,200 feet elevation for 600 feet in a northeast direction. The Slide upper tunnel is driven at about 12,440 feet elevation, for 900 feet in a northeast direction. From the latter a branch drift is 200 feet long and two short crosscuts 20 ft. long each, branch off.

These tunnels develop a quartz vein similar to that of the Buffalo Boy but not as well mineralized with gold and silver. We do not have an accurate sampling of the vein, altho notations by contractors who did the development work indicate occasional footage of good ore, assays not given. The course of this vein is such that it will intersect the Buffalo Boy vein 1200 feet ahead of its present breast, on the Buffalo Boy property. Intersections here, such as this, sometimes prove interesting for ore deposition.

The course of the Slide vein is parallel to that of the Golden Fleece-Banner of Hope vein; the Tenderfoot vein of this property, and the Intersection and Ridgeway veins of Maggie Gulch. These may be a systematic series of fractures, some undoubtedly well mineralized.

OTHER DEVELOPED MINES IN THE AREA

THE RIDGEWAY MINE

This mine is located in Ridgeway Basin out of Maggie Gulch at an altitude of 12,480 feet, being above timber line. It is one and one half miles north of the Buffalo Boy Mine. Sorted ore from this mine was transported to Howardsville by pack trail for shipment to smelter. The mine is developed by two crosscut tunnels 160 feet apart vertically and the length of workings is about 2000 feet. Between 1895 and 1900 smelter settlement sheets show about 850 tons of sorted crude ore shipped, which carried Gold 1.0 oz. to 12.73 ozs., Silver 7.02 ozs. to 619.5 ozs. per ton. This mine was never provided with a mill.

THE INTERSECTION MINE

This mine is located in Maggie Gulch at an elevation of 12,000 feet. It is less than a mile east of the Buffalo Boy. It is developed by one tunnel at creek level, 1000 feet long, a two compartment shaft with two levels reaching a depth of 328 feet. It was equipped with a 10 stamp mill of 850 lbs. each. An estimated 80% of the gold and silver values were recovered by amalgamation on copper plates, fed by the stamps. A pyrite concentrate was made on Wilfley tables which carried from 1.52 ozs. to 5.19 ozs. gold per ton and 9.30 to 53.15 ozs. silver per ton. The bullion produced and sold to the United States Mint showed gold 520 to 586 thousandths fine and silver 381 to 471 thousands fine. The mine operated continuously for several years with a small select crew of mine and mill men. The ore of the mine consisted of argentite disseminated through a quartz vein with sparce distribution of pyrite. While the daily production was limited to 35 tons the mine produced $235,000 in bullion in three and one half years. Gold price was $19 per oz., silver 55 to 76¢ per oz.

THE OLD HUNDRED MINE

The Old Hundred Mine is located on Galena Mountain at an elevation of 12,400 feet, 1.85 miles west of the Buffalo Boy Mine. Its Veta Madre vein was rich in free gold ore occuring in a quartz vein. The ore was treated in a stamp mill having 40 Boss Stamps of 1350 lbs. each, considered a very heavy stamp. The final concentration was carried on by Card concentrating tables. For some time I was foreman of the concentrator, lived with the Assayer and assisted him in melting bullion. My recollection is that the output in gold bullion for a long period was $40,000 per month. In the lower levels it encountered some sulphide ore but these workings may have encountered the Eureka Rhyolite, which was 900 feet thick under the Burns Latite in Galena mountain.

THE OSCEOLA, GREEN, MOUNTAIN, AND PRIDE OF THE WEST MINES

were in Cunningham Gulch at elevations of 10,400 to 11,600 feet elevation, and less than half a mile west of the Buffalo Boy Mine. They were made in the San Juan andesite and up through only a thin sheet of Eureka Rhyolite into the Burns Latite, the host rock of the Buffalo Boy workings. The ore production of these mines has been intermittent through the years, sometimes steady and large. The Pride of the West mill at Howardsville was built to treat the ores of that mine. There was a mill in Cunningham Gulch for the Green Mountain Mine and the Osceola Mine used the Lacawana mill near Silverton, later shipping its concentrating ores to the Pride of the West mill for some time. The ore was sulphide in character, was moderated grade in the Osceola but in the Pride of the West, as shown in an assay plan of 1950 showed a width of 5.0 ft., gold 0.06 oz. to 5.28 ozs.; silver 8.14 ozs. to 185 ozs. per ton, an ore highly recoverable by flotation. This is an indicator of what the ore occuring in the San Juan andesite may be.

THE HIGHLAND MARY MINE

is located at the head of Cunningham Gulch at an elevation of 10,600 to 11,000 feet. Its Mountaineer vein is the southeast extension of the Mayflower, North Star, Shenendoah Dives vein, which has been highly productive for many years, sometimes at the rate of production of 600 tons per day.

Here at the Highland Mary the production has reached several million dollars in sulphide ore carrying important amounts of gray copper ore (tetrahedrite or brittle silver). The ore shipped carried 0.05 oz. to 0.13ozs. gold, 124 to 634 ozs. silver, with sometimes as much as 7% lead and 2.3% to 4.8% copper, per ton. The Highland Mary vein, worked later, produced some bonanza gold ore, which according to Jos. Bradley netted over $1,250,000 more. The values were principally in the San Juan andesite, and when the vein was followed into the Eureka Rhyolite, the results were disastrous. The Highland Mary Mine is two and one half miles southwest of the Buffalo Boy Mine.

These several examples of ore deposits on all sides of the Buffalo Boy property, show that it is not the case of an isolated ore deposit in the envelope of the Silverton Caldera, but rather one element of a wide and extensive regional structural development.

The so called dry siliceous ores in its upper levels may change to ores carrying also sulphides of copper lead and zinc, when pursued downward into other favorable formations. It should also be noted that many of the highly productive mines in the nearby Arastra basin section, such as the Silver Lake, Iowa, Melville, Whale, North Star and Mayflower, carried very high grade gold and silver ores in their upper zones above timber line. Some of these veins, as the Little Giant and Peerless properties carried obvious amounts of free gold in their quartz matrix, at low altitudes in Arastra Gulch, close to the Animas Fault System of the Silverton Caldera.

FISCAL ANALYSIS:

Reference is made to the schedule of segregated blocks as shown on the overlay to the Metzer assay map of the Buffalo Boy workings. The resultant figures, Blocks a to W inclusive, constitute the basis for our calculations of the value of the ore in the Buffalo Boy workings. These samples were taken at 5 ft. regular intervals, as indicated thereon.

Blocks	Width Feet.	Tons	Val per ton	Gold ozs per ton	Silver Ozs. per ton.
A to W	3.56	118770.5	$30.46	0.418	13.00

GRADE AS PER SAMPLE:

	Width Feet.	Gold Ozs	Silver Ozs.	Val. per ton.
	3.56	0.418	13.00	$30.46
90% recoverable		0.376	11.70	27.41

The average width of samples on the main tunnel level of the Buffalo Boy workings, as taken by Smith and Prosser over the vein as exposed, was 3.59 ft. The entire vein was not exposed in the development. An attempt was made to determine its width by projecting its walls in the surrounding country rock and it was estimated to be close to 6.0 feet.

The Metzer sampling of the ore averaged in width 3.56 feet. The vein widths were not stated in that Assay map altho it could reasonably be as wide as on the tunnel level.

ECONOMICS:

Contract offer to prepare portal of Oyama tunnel, construct service road, work are and storage space	$4500.00
Drive tunnel, Company to furnish rail, splices, bolts, spikes, compressed air pipe, timber and ties, per foot	29.00
Cost of Rails pipe timber buildings etc.	8000.00

Therefore for Tunnel complete to the Buffalo Boy:

Prepare portal of Oyama tunnel, etc.	$4500.00
Drive 3300 feet @ $29 per foot	95700.00
Rails , pipe, buildings etc.	8000.00
Total	$108,200.00

ECONOMIC BREAKDOWN on ore embraced in the Metzer sampled area only (Blocks A to W)

$\frac{118770.5}{200}$ = 594 days.

Costs of	per ton
Tunnel per ton of ore	1.00
Mining	3.50
Transportation to mill	1.00
Milling (if Company owned mill	3.00
	7.50

Adjusted value per ton	$27.41
Amortized development	1.00
Mining milling, transportation	7.50
Royalty 15%, based on net smelter returns as per contract	3.31
	11.81
Net amount, taxes, profit etc.	$15.61

Available to Lessee, estimated gross amount in Metzer sampled area, based on prices of Gold $35.00 per oz. silver $1.29 per oz. $3,617,734.00

These figures represent only the present ore in the original workings of the Metzer sampled area , blocks A to W , which constitutes only fourteen percent of the surrounding Old Abe , Buffalo Boy vein series to be explored and later developed... The Slide vein system covers a further vast area and the possibility of developing other ore bodies in the great extent of these known vein systems is prominently present.

CONCLUSIONS.

The first phase of the development program may well prove up the downward projection of the Old Abe ore body and establish the character of the vein system there. A successful outcome there would relieve the financial requirements for the second phase.

In the second phase the relationship of the Old Abe and Buffalo Boy vein systems would probably be determined, whether they are the same vein, parallel or en echelon.

This property and its ore bodies have lain dormant for thirty years. The Old Abe-Buffalo Boy vein series, extends seven thousand feet in length, from the Oyama tunnel to the crest of the mountain range north of the Buffalo Boy workings. The average depth of the proposed exploration and development tunnel, below the surface in this distance is 687 feet.

The Metzer sampled area, analyzed in detail in this report is 1050 feet long with an average depth down to the proposed tunnel of 675 feet and constitutes 14% of the above stated area.

As indicated by ore occurences at the Pride of the West and Osceola mines, at lower elevations in Cunningham Gulch, this vein system could conceivably have ore down to much lower levels than the proposed development tunnel.

Consider also that the Slide vein system, which has shown good mineral potential, is 4000 feet long to its intersection with the Buffalo Boy vein on the August claim. Other claims, Silent Friend No. 4, I.X.L., Silver Tape and No Name extend northwesterly from the August claim, for 4000 feet toward the Ridgeway mine. The vein on the Tenderfoot patented claim extends northeasterly from the Old Abe area toward the Intersection mine for 2000 feet and has shown some good mineral values in shallow workings on the surface.

The surface of the property is generally covered by grassy soil and slide rock areas and the vein outcrops are scarce.

The possibility of developing other ore bodies in the great extent of these known vein systems is prominently present and other veins with hidden outcrops may be found as the exploration and development of the property proceeds.

The entire property provides an interesting mining situation, in which the limited development has been in the outcrop areas, much higher in elevation than the present working parts of some of the most productive neighboring mines, many of which in turn had their beginnings in high mountain crest outcrops.

As disclosed by present developments, the pay minerals in the ore are those of gold and silver. At $1.29 per ounce, silver is an important segment of the returns. It holds a strong position in the present metal market and the future is assuredly bright. Gold at $35 per ounce ($34 used in our calculations) with only one purchaser at present, our Federal Government, is much too low on the basis of the Wholesale Commodity Index. Gold should bring $105 per ounce, as compared to the 1929 dollar, under present conditions, in our depreciated dollars, in my opinion.

November 1,1964

Respectfully Submitted

Warren C. Prosser

Warren C. Prosser
Consulting Mining Engineer
Registered in Colorado No: 30

ILLUSTRATIONS

TO ACCOMPANY REPORT ON BUFFALO BOY MINE.

Plat No.	Subject.
1	Mining Claim Map Buffalo Boy area Scale 600' to 1"
2	Metzer assay Map, Buffalo Boy workings.
3	Overlay to Metzer assay Map by Warren C. Prosser. Blocks of assay results delineated.
4	Claim Map Buffalo Boy and Slide groups.
5	Plan and Vertical Section, Mine workings.
6	Howardsville quadrangle U.S.G.S.
7	Fracture system, Silverton quadrangle U.S.G.S.
8	Structure and Geology Silverton quadrangle U.S.G.S.
9	Sketch, Geologic section along Buffalo Boy vein,

BIBLIOGRAPHY.

U.S.G.S. Silverton Folio No. 120

U.S.Dept. Interior, Bulletin 843

Colorado Scientific Society Bulletin 13, No. 5

Colorado Scientific Society Bulletin 14, No. 5

U.S.G.S. Professional Paper No. 258

Report of Dr. Fred B. Peck, 1911

Reports of Mine Inspectore to Colorado Bureau of Mines, Colorado Mine Commissioner.

EXCERPTS FROM REPORTS OF MINE INSPECTOR TO COLORADO STATE BUREAU OF MINES-MINE COMMISSIONER.

A

November 28,1916
Buffalo Boy owned by Jos. Bordeleau in Continental Mining Co.
Arthur Landry killed by fall of rock in the mine. stooped over to pick up something, fall of rock flattened him. 300 ft. of drift driven in 1916 and 1917.

1917 and 1918
Unwatered and cleanup. 2910 shifts worked.

December 1920 1920
Continental Mining Co. Silverton
B.B.Allen, President; J.H.Slattery Vice President.
Frank B. Brown, M.J.Heller, New York Directors.

July 5,1925
24 men employed. 16 of these employed on the Oyama tunnel 140 ft. of workings made. no production.
December 8,1925 24 men employed.

Mgch 21,1926
22 men employed.

1928
20 men employed
Vein over 6 ft. wide for 1000 feet. Drifted on for 1600ft. Crosscut to vein 200 feet. At 440 feet from the intersection upraise to surface 165 feet. At 700 feet from the intersection upraise 4 x 6 ft. up 60 feet.
At 325 feet 5 x 7 ft. winze sunk 75 feet.From bottom of this winze a drift 200 feet driven, At 700 feet a 6 x 12 ft. winze sunk 360 feet

1929 Owned by Vertex Mining Co. Walter N. Haenlein, Sec'y Treas. P.S.Beckmore, 570 Bullitt Bldg. Philadelphia, Pa.
Charles Mayotte, Manager, Silverton, Colorado.
105 men employed, underground 6 men. Erecting mill, tramway and packing supplies to the mine. Winze is sunk to 400 feet below the tunnel, drifts 350 feet each way. At present Oct. 26th winze is full of water. At 330 feet in the main tunnel crosscut 50 feet long.
Blacksmith shop and Compressor chamber.
A 20 x 20 ft. chamber, cut out for blacksmith shop, a 30 x 30 ft. compressor room, connected with it. Rock is firm and tight. From the blacksmith shop a 4 x 6 ft. vertical raise to surface. Through this raise a heavy lead conduit carries electricity from the transformers on the surface. Plans next month to sink a new winze 8 x 16 x 40 feet and to stope above the main tunnel 1500 feet in from the portal. At present retimbering the main tunnel. Since last report a building 28 x 70 feet with basement, heating plant and storage space, main floor offices and recreation room; upper floor bunk house. This new building is 30 feet south of the boarding house, 28 x 50 feet which is 100 feet south of the main tunnel portal.

REPORT OF MINE INSPECTOR TO COMMISSIONER OF MINES.

Equipment at the Mine.

1. Ingersoll Rand, Imperial Type 10 Compressor 14 x 2, by 7½ x 2--60 h.p.Westinghouse motor.
1 Air received 8 x 48 ins.
1 No. 6 Cameron sinking pump.
1 Krogh pump, 1 30 h.p.Westinghouse motor.
1 Denver Engineering Hoist, 2 ton capacity.
1 30" sheave, 600 ft. new 3/4 in. non twist cable.
1 ore bucket 8 cu. ft. capacity.
1 Electric pump.
Gallows frame 8 x 8" and 10 x 10" timbers.
2 drifters.
2 jackhammers.
Blacksmith shop equipment, carpenter tools, hammers picks shovels.

In 1928 Robert Innis, Mine Inspector reported of the Buffalo Mine--"This is the cleanest ore body of gold and silver ore I have seen in many years. Ore reserves in sight in this mine at present estimated to be $2,000,000.

Buffalo Boy Mill equipment.
Tramway 8740 feet long Mine Portal to Mill.
10 towers besides upper and lower terminals.
1 double tension station.
3 vertical curve rail stations.
2-3bent supports.
Stationery cable 1¼ in. and 1 inch in dia.
Traction cable 7/8 in.
40 tram buckets of 9 cu. ft.capacity.

Machinery Mill flow sheet.
Mill Bins.
1 10 x 16 Stearns Roger Blake type jaw crusher.
1 4 x6 ft. Leahy screen.
1 Symons cone crusher, No. 2121
1 conveyor belt 118 ft. long 18 ins. wide.
1 steel bin 20 ft. high, 25 ft. diameter.
1 No. 65 Marcy Mill.
1 Dorr classifier 48 x 18 ins.
1 14 cell Minerals Separation Flotation machine.
3-2in.Wilfley sand pumps.
2 Root Acme blowers No. 4½
1 Wilfley concentrating table.
2 Buffalo pumps.
1 6 ft. x 2 ft. Dorr filter.
1 9 x 6 in. Chalmers pressure compressor.
1 4 ft. x 8 ft. concentrate bin.
Motors of following h.p. 1x 100, 1 x 50, 1 x 30, 1 x 10, 2 x 5, 17 x 3 h.p. All G.E. and Westinghouse.
1 Massco Vertical type boiler, heat distributed to radiators throughout the mill.
in S.W.Corner complete assay office, with oil fired Denver Fire Clay furnace. Fire protection hydrant and fire extinguishers. Power transformer station 100 =ft. north of mill, with 3 x 100 KVA transformers.
Rheostats, switches, compensators, Elec wire,rubber covered, porcelain knobs, cleats and conduits.

The tramway terminal is 89.6 ft. long, 18 feet wide at the tramway entrance, 24 feet wide at the center and 28 feet wide at the rear.

Ore bin capacity is 100 tons.

Length of tramway 8740 feet.

58 men employed, 12 underground, 46 on excavation work, bunk house and office buildings.

July 22,1930 Buffalo Boy Mine.

William A. MacDonald, Supt. Production averages 30 tons conc. daily, ratio conc. 16 to 1. Last shipment 2.2 ozs. gold, 65 ozs. silver at A.S.& R.Co. Durango.

Development- on 200 ft. level 800 feet southerly.

on 300 ft. level, advanced south 260 feet from the winze.

on 400 ft. level advanced 200 feet south at the breast.

On 200 ft. level, 200 ft. south from the winze drove incline up 40 ft. farther to connect to the main tunnel.

Stoping from above the main level done from a point 800 ft. to 1200 feet in from the portal.

No. 2300 stope carried up 60 feet above the tunnel.

No. 2400 stope carried up 25 feet above the tunnel.

No. 2495 stope carried up 30 feet above the tunnel.

The ore is dry, 3 to 12 feet wide. Gangue is quartz and iron pyrite, contans values as shown by recent samples $4 to$10 in gold and silver.

Vertex Mining Co. Patented claims. Sur. No.11319 -Silver Tape, IXL, and No. Name; Sur. 19397- Buffalo Boy, Roosevelt, Lizzie D. August, Smuggler, Quail, Silver Bell, Golden Fleece and June Bug. 80.6109 acres.

Cash expense Dec. 31-1929 $264,703.31

Add for 1930--- expenditures-

Underground power plant	47.39
Mine buildings	186.31
Equipment	6,093.06
Tramway	22.00
Mill	146.25
Power lines	5.00
	6,450.01
	$271,207.83

	Expenditures
Development	29,084.80
Raise 310'	13.218.95
Portal & winze	4,759.56
Chutes	1,475.51

Milled 15,122 tons of ore.

200 ft. north and 200 feet south driven 100 feet below tunnel. At 300 feet below tunnel drove 50 ft. north and 50 ft. south. In 1100 feet on the main tunnel 2 winzes and 2 upraises on the Buffalo Boy Smuggler vein.

Ore averages 6 ft. wide, is quartz with disseminated pyrite $10 to $12 per ton. This does not include the rich streak of ruby silver at 600 feet below the surface, 18 ins. wide, disclosed for 50 feet and said to assay 14 ozs. gold and 300 ozs. silver. No production.

PRELIMINARY REPORT OF THE BUFFALO BOY MINE.

INDEX.

Subject	Page
Introduction	1
Location	1
Logistics	1
Property Composition	2
Nature of Environment	3
History	3
Topography	5
Geology, Regional Setting	5
Geology, District setting	6
Depth or ore	7
Nature of Veins	7
Ore Production	8
Block assay samples and analysis	10
Proposed Development program	11
Slide Group of Claims	12
Other developed mines in the area	
Ridgeway Mine	13
Intersection Mine	13
Old Hundred Mine	14
Osceola Mine	14
Pride of the West Mine	14
Highland Mary Mine	14
Fiscal Analysis	15
Economic breakdown	16
Conclusions	17
Excerpts from Mine Inspectors Reports	A, B, C
Illustrations	18

SUPPLEMENTAL REPORT

BUFFALO BOY GROUP OF LODE MINING CLAIMS

IN ANIMAS MINING DISTRICT, SAN JUAN CO. COLORADO.

To Philip M.King
509 Madison Avenue,
New York, N.Y.

This property, described in my preliminary Report, is without milling facilities. The aerial tramway still stands altho the condition at the upper end may be poor.

The Pride of the West Mill, 125 tons per day capacity, at Howardsville and the Standard Metals mill, 600 ton capacity, 2 miles northeast of Silverton, present possibilities for Custom milling.

The mill sites of the Buffalo Boy property, in Cunningham Gulch, are held herein.

The construction of a mill to treat the ores of the Buffalo Boy property has been freely discussed among interested parties. The availability of used machinery and equipment has been considered. The application, in conjunction with a Flotation mill similar to the original Buffalo Boy Mill, of amalgamation; the use of cyclone classifiers and spirals; hammer mills; has been given some thought. The establishment of a Heavy Media plant at the mine to eliminate some of the waste product of the ore has not been overlooked.

However, the driving of the development tunnel to the Buffalo Boy workings has naturally been given precedence.

The following reduction will illustrate the possible recovery and distribution of the values as shown by the Metzer Assay plan, supported by the Prosser-Smith Assay plan.

In the preliminary report on the property, the grade of ore as calculated from the Metzer assay plan, compiled from samplings and analyses in the period 1928 to 1930, is calculated to be:

Blocks A to W. inclusive

Average Width of samples, feet	Est. tons	Val per ton	Gold oz.	Silver Oz.
5.56	118770.5	$50.46	0.418	13.00
90% recoverable		27.41	0.376	11.70
Loss in mill tailings, Av. of several area mills			0.025	0.42
		Recoverable values	0.358	11.28

The ratio of concentration reported by the mine examiner of the Colorado State Bureau of Mines in his report of 7/22/1932 was stated as 16 into 1, in the then existing and operating Buffalo Boy Mill, at Niegoldstown in Cunningham Gulch.

AMALGAMATION

Several years experience at the Intersection Mine in Maggie Gulch, on the same type of ore showed that the value of

gold and silver recovered by amalgamation, was 60% of the returns, leaving 40% of the values recovered in pyritic concentrates. The concentrates there averaged Gold 2.28 ozs., silver 27.22 ozs per ton.

In the absence of other pertinent data regarding the mill treatment of the Buffalo Boy ore, the recovery of 60% of the value by amalgamation and 40% by concentration is considered applicable and reasonably correct.

90% recoverable, less tailings loss being

	Gold ozs.	Silver ozs.
	0.356	11.28
60% recoverable by amalgamation	0.214	6.77
40% by concentration	0.142	4.50

Values to be recovered.

By amalgamation Gold 0.214 ozs. @ $34.9129 $7.471
Silver 6.77 ozs. @ $1.29 8.733
$16.204

Retorting of amalgam and express charges to the mint to be included in milling cost.

By concentration per ton of concentrate
Gold 2.27 ozs. @ $32.81775 74.50
Silver 72.14 ozs. @ $1.245 89.51
$164.01

Smelter deductions	per ton	
Trucking, Silverton to Ridgeway	4.50	
Freight, Redgeway to Midvale	10.40	
Smelter Treatment charge	6.90	
	21.80	21.80
net per ton.		142.21

$\frac{142.21}{16}$ = $8.88 per ton.

Sponge bullion		16.20
concentrates		8.88
		25.08
Royalty 15% of net		3.76
		21.32
Estimated		
Cost of Mining	3.50	
Transportation to mill	.75	
Milling cost	3.00	
	7.25	7.25
net balance		$14.07 per ton.

The hypothetical net proceeds, as indicated should suffice to provide for amortization of the tunnel construction costs, and the establishment of a concentrating mill and leave a satisfactory margin for overhead and profit.

Respectfully submitted

April 14,1965

Warren C. Rosser
Consulting Mining Engineer
Registered in Colorado No: 30