

# The Sampson Company Limited.

Incorporated.

Bourne, Oregon.



New York, N. Y.

London, England.

1910

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Extracts from Reports on the Mines

of the

Cracker Creek District

Baker County, Oregon

U. S. A.

New York Office : 29 West 34th Street

March 1st, 1911

*H. E. Hendryx*

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# WHITE AND COMPANY

CONSULTING ENGINEERS

P. O. BOX 485

CHICAGO

To The Sampson Company, Limited

Bourne, Oregon.

September 1st, 1910

Gentlemen:—

We take the pleasure to present you with extracts from the reports on the Gold Mines of the Cracker-Creek District, Baker County, Oregon, which we have carefully selected from the Report made by us. We have also added extract from the 22nd annual Report of the U. S. A. Geological Survey, in which the geologist in charge, Mr. Waldemar Lindgren, gives a description of the District under the title:

“The Gold Belt of the Blue Mountains of Oregon.”

We further append extracts from the following Reports:

“Extracts from the Report by Dr. Alfred R. C. Selwyn, M.C.R., F.R.S., England’s noted geologist, whose conclusions have been amply verified during the development of this district.”

“Extract from the Report on the “North Pole” Mine, by Mr. Emil Melzer, M. E., who has been 12½ years in charge of this Mine.”

“Extract from the Report on the “Columbia” Mine, by Mr. Frank E. Baillie, M. E., operating this Mine as Manager for about 14 years.”

“Extracts from the Report on the “Golconda” Mine by the late Mr. McKenzie (formerly of Dickman, McKenzie & Potter), Consulting Engineers, Chicago.”

“Extract from the Report on the “Taber Fraction” Mine, by Mr. Alliene Case, C. E., and the Denver Ore Testing and Sampling Company.”

“Data on the “Eureka & Excelsior,” the “Cracker - Oregon,” the “Sampson,” the “Victor” and the “Cracker-Jack” properties.

We attach the following maps:—

“Vein System Map, showing the trend of the vein and the relation of the different Properties to each other.”

“Sectional Map, showing in profile the tunnels and levels on the “Mother Lode” vein, totaling about 20 miles of development work.”

“Claim Map of the District, on which is shown in red the location of the proposed drainage tunnel.”

“Photographs of the “Eureka & Excelsior,” the “North Pole,” the “Columbia,” the “Golconda” and the “Cracker-Oregon” Mills, the “Risk Tunnel” at the “Sampson” Mine and the “Sumpter Smelter.”

We complete these data by adding our summary, conclusions and Plan of Operation as requested by you, and remain,

Respectfully yours,

*White and Company.*

# The Sampson Company, Limited

Incorporated under the laws of the State of Oregon, U. S. A., and  
to be registered under the Companies act, in London, England

Organized for the purpose of conducting the Business of mining for precious metal and other ores, as set forth in its charter, copy of which is found on pages 5, 6 and 7; proposes to acquire the following mines and mining properties, located on Cracker Creek, Baker County, Oregon, or such other or additional mines, mining properties, mining claims, water rights, timber lands, or any other property whatsoever that the Corporation may desire to purchase:—

The Sampson Gold Mining Company, Inc.  
(Owning the "Sampson Mine")

The Eastern Oregon Mining Company, Inc.  
(Owning the "North Pole" Mine and Mill)

The Bourne Gold Mining Company, Inc.  
(Owning the "Eureka & Excelsior" Mine and Mill)

The Taber Fraction Gold Mines Company, Inc.  
(Owning the "Taber Fraction" Mine)

The Columbia Gold Mining Company, Inc.  
(Owning the "Columbia" Mine and Mill)

The Golconda Mine, Mill and Power Plant.

The Oregon Development Company, Inc.  
(The Cracker-Oregon Property)

The Cracker Creek Gold Mines Company, Inc.  
(The Victor Mining Property)

The Cracker-Jack Gold Mines Company, Inc.  
(The Cracker-Jack Claims and Property)

Capital Stock . . . . . \$7,000,000  
1,400,000 Shares—Par Value \$5.00

Shares issued fully paid, forever non-assessable, without personal liability.

Withdrawn from Public Issue to pay for some of these properties and as part payment on others, under contracts with the owners:—

400,000 shares . . . . . \$2,000,000  
Leaving in the Treasury of the Company  
1,000,000 shares . . . . . \$5,000,000

The entire share Capital in the Treasury of the Company, i.e., \$5,000,000, is now being subscribed to, and negotiations being entered into for underwriting same through foreign bankers and American capitalists, it being the intent to list the entire issue on the London, England, Stock Exchange, the New York and Boston Curb, Chicago Board of Trade and Salt Lake, Utah, Stock Exchange, at as early a date as conditions permit.

THE SAMPSON COMPANY, Limited, announces the completion of its organization, chartered under the laws of Oregon, U. S. A., where its properties are located.

To those familiar with the history of the Cracker Creek Mining District with its great producing Mines, very little we could add would be of interest, to those less familiar with the district the following Reports, extracts from geologic surveys, statements by eminent world renowned geologists, metalurgists, mine managers, and the report by our own Engineers, Messrs. White and Company, are issued as being the true facts, to the best knowledge and belief of the Company.

## THE SAMPSON COMPANY, Limited (Continued)

The general purpose and plans of the company are to merge under one ownership all these mines, because of the physical fact that the topographic contour of the country where they are situated makes it absolutely impossible for them to operate individually at any profit. The average gold value contained in the ore is about \$10.00 per ton, of which only a part or from 75 to 80 per cent. is now, or ever has been, recovered by the different milling plants now in existence, the pumping of the constantly increasing volume of water, the hoisting of the ores from 700 to 950 feet, their treatment in small plants located at the different mines, a treatment that is constantly becoming more and more difficult for the small mills to do satisfactorily, because of the changing character of the ore zone from an Oxidized Free Milling ore into a Refractory sulphide ore, requiring entirely different treatment, principally by concentration, and then either smelting or cyanidation.

This treatment the present Mills are in no condition to undertake, and should each Mill be changed so as to make possible this treatment, the expense of pumping millions of gallons of water from each individual mine, the expensive and wasteful cost of hoisting all the ore to the surface, the concentration in small mills, the hauling by team seven miles to Sumpter, there reloading to a narrow gauge railroad for transportation thirty miles to Baker City, to be there reloaded into standard gauge cars for a haul of over 500 miles to smelter at Tacoma, results in a total cost of more than the saved values from the ores, therefore, these mines can not possibly operate as separate units and earn profits.

Hence, consolidation is the only solution.

This we have undertaken. Our Plan, which is fully set forth under the heading of "Plan of Operation" page 3 embraces the driving of a deep-level drainage tunnel about 6000 feet long, that will encounter the main fissure vein locally known as the "Mother Lode" at right angles, at or about the end lines of the "Columbia" claim and the "Taber Fraction" claim, at a point about 1100 feet below the collar of the shaft of the E. & E. on Cracker Creek. (See sectional map).

This will make possible the drainage of these properties, and do away entirely with the expense of pumping as well as hoisting of ores, the ores coming out through the deep level drainage tunnel by gravity.

On completion of this drainage tunnel, a large 1000-2000 ton Mill to be built for the treatment of all the ores from the various mines, the old Mills to be dismantled.

The report of the United States Geologic Survey on "The Gold Belt of the Blue Mountains of Oregon" is so extensive that it would be impracticable to produce it in full; we have, therefore, made extracts of the principal clauses thereof, which we take pleasure in reproducing herewith. The original report and maps, etc., are on file at the Company's office and are open to your inspection, as are all other reports, maps and data on all the respective properties.

Following are Reports by some of the World's most eminent geologists, our Consulting Engineers' Reports, Mine Manager's Reports, statistical data as to past production, etc., etc., all of which is respectfully submitted.

THE SAMPSON COMPANY, Limited.

(Charter of the Sampson Company, Limited)

# United States of America

## STATE OF OREGON

OFFICE OF THE SECRETARY OF STATE

I, F. W. BENSON, Secretary of State of the State of Oregon, and Custodian of the Seal of said State, do hereby certify:

That I have carefully compared the annexed copy of the Certificate of Filing and Recording Articles of Incorporation of THE SAMPSON COMPANY, Limited, with the original Certificate issued to the corporation on the 13th day of July, 1910, and that the same is a full, true and correct transcript therefrom and of the whole thereof.

In Testimony Whereof, I have hereunto set my hand and affixed the seal of the State of Oregon, Done at the Capitol at Salem, Oregon, this 13th day of July, A. D., 1910.

[STATE SEAL]

F. W. BENSON,  
Secretary of State.

### ARTICLE FIRST

The name of this Company is hereby designated as THE SAMPSON COMPANY, Limited.

### ARTICLE SECOND

The principal office and place of Business of this Company is hereby located at Bourne, Baker County, State of Oregon, United States of America.

### ARTICLE THIRD

The Capital Stock of this Company is hereby fixed at Seven Million Dollars, and is hereby divided into One Million Four Hundred Thousand shares of the par value of Five Dollars each.

### ARTICLE FOURTH

The objects and purposes of this Company:—

- (A) To acquire and take over the property or capital stock of
- The Columbia Gold Mining Company
  - The Bourne Gold Mining Company
  - The Eastern Oregon Mining Company
  - The Taber Fraction Mines Company
  - The Oregon Development Company
  - The Golconda Property
  - The Sampson Gold Mining Company

Any or all, or none of said companies' capital stock, or property as to this Company may seem best, or any other companies' capital stock, or any part thereof, or any property owned by any other company or any other property now owned by any person or persons whatsoever, together with all or any of the assets and liabilities connected with such business, and with a view thereto to enter into the agreement referred to in the entire Fourth Article of this Company's charter, and to carry the same into effect with or without modification.

(B) To have the power to conduct the business of Mining, Smelting, Refining, to locate, hold, buy, own Mines, Smelters, and Mining property, and to deal in and with all sorts of ores, metals, minerals and the prospecting, locating, opening, operating and developing of mines, oil wells, quarries, and mineral deposits of all or any kind or description.

(C) To search for, get, work, raise, make merchantable, sell and deal in gold, silver, copper, iron, zinc, bismuth, cobalt, coal, ironstone, brickearth, bricks and any other metals, minerals and substances, and to manufacture and sell fuel of every description.

(D) To carry on the business of electricians, mechanical engineers, and manufacturers of and dealers in all apparatus and things required for or capable of being used in connection with the general distribution, supply and accumulation and employment of electricity.

(E) To manufacture or produce, whether for sale or otherwise, any articles, products, or things used in connection with any of the Company's business, and to buy, sell, supply and deal in and with the same.

## CHARTER (Continued)

(F) To acquire, make, build, construct, erect, repair, maintain, carry on, work and use any lands, houses, workmen's dwellings, factories, offices and other buildings, railways, tramways, canals, quays, slipways, wharfs, straits, docks, harbors, shipping places, gas works, water works, roads, reservoirs, telegraphs, telephone and other works and appliances, steamships or shares therein, dredgers and other vessels, engines, machinery, rolling stock and plants of all kinds necessary or convenient for the purposes of the Company, or any of them, or calculated directly or indirectly to advance the interests of the Company and to contribute to the expense of or aid in the acquisition, construction, maintenance, improvement, development or use of any such matters or things.

(G) To buy, sell, or export and deal in ore, coal, coke, timber and other merchandise or produce, and to carry on any other business (whether manufacturing or otherwise) which may seem to the Company capable of being conveniently carried on in connection with any of the before-mentioned objects, or calculated directly or indirectly to enhance the value of, or render profitable any of the Company's property or rights.

(H) To apply for, purchase or otherwise acquire any patents, licenses, concessions and the like conferring any exclusive or non-exclusive or limited right to use, or any secret or other information as to any invention or process which may seem capable of being used for any of the purposes of the Company, or the acquisition of which may seem calculated directly or indirectly to benefit this Company, and to use, exercise, develop, or grant licenses in respect of, or otherwise turn to account the property, rights, or information so acquired.

(I) To purchase, or otherwise acquire and undertake, all or any part of the business, property and liabilities of any person or company carrying on any business which this company is authorized to carry on, or possessed of property suitable for the purposes of the company.

(J) To enter into partnership, or into any arrangement for sharing profits, union of interests, reciprocal concessions, joint adventure, co-operation, or otherwise with any person or company carrying on, or engaged in or about to carry on or engage in any business which this Company is authorized to carry on, or any business or transaction capable of being conducted so as directly or indirectly to benefit this Company, and to lend money to, to guarantee the contracts of, or otherwise assist any such person or Company, and to take or otherwise acquire and hold shares or stock in, or securities of, and to subsidize or assist such company and to sell, hold, re-issue with or without guarantee or otherwise deal with such shares or securities.

(K) Generally to purchase, take on lease or in exchange, hire or otherwise acquire, any real or personal property, or any equity of redemption or other estate or interest therein, and any rights or privileges which the company may think necessary or convenient with reference to any of these objects, or capable of being properly dealt with in connection with any of the Company's property or rights, for the time being and in particular any land, mines, buildings, docks, wharfs, business, easements, licenses, concessions, patents, machinery, ships, barges, boats, or other crafts, rolling stock, plant and stock-in-trade, and to pay for the same either in cash, or in shares, debentures, bonds, or other securities of the Company.

(L) To establish, maintain or support, or aid in the establishment, maintenance and support of, or subscribe to associations, institutions, funds or trusts, for the benefit of persons, whether employed by or having dealings with the Company or not, including schools, libraries, dispensaries, infirmaries, societies, or any educational, literary, scientific, religious or charitable institutions, or any club for the benefit of persons employed by the Company, or their families, and whether or not in common with other classes of persons, and to grant pensions, allowances, gratuities and bonuses, and to make payments towards insurance, and subscribe and contribute or guarantee money for charitable or benevolent objects or for any show or exhibition, or for any fund raised by local or public subscription for any purpose whatever, or for any public, general, or useful object or for any purpose which the Company may consider conducive to its objects.

(M) To sell, lease, or dispose of the undertaking of the Company or any part thereof, for such consideration as the Company may think fit, and in particular for shares, debentures, bonds or securities of any other company having objects altogether or in part similar to those of this Company.

(N) To promote any other Company for the purpose of acquiring all or any of the property, rights, and liabilities, of the Company, or for any other purpose which may seem directly or indirectly calculated to benefit this Company and to acquire and hold in shares, stock, or securities of, or guarantee the payment of any securities issued by, or any other obligations of any such company or to underwrite or guarantee, or procure subscriptions for the shares or securities of any such company.

(O) To invest, lend, apply and deal with the moneys of the Company in the purchase, or upon the security of debentures, Debenture Stock, shares (whether fully paid up or not) bonds or securities of any Company, Corporation or public body, municipal, commercial or otherwise, or in such other manner and upon such other debentures, debenture stock, shares (whether fully paid or not) bonds and securities as the Directors may deem advantageous or conducive to the interests of the Company, and so that the income produced by such investment shall be reckoned as part of the profits of the Company.

(P) To borrow or raise, or secure the payment of money in such other manner as the Company shall think fit, and in particular, by the issue of Debentures, Bonds or Debenture stock, perpetual or otherwise, charged upon the undertaking of the Company or any part of its property or otherwise, including or not including its uncalled capital for the time being, and generally to borrow money in such manner as the Company may think fit.

(Q) To sell, improve, manage, develop, exchange, lease, mortgage, dispose of, turn to account, or otherwise deal with all or any part of the property and rights of the Company.

(R) To draw, make, accept, endorse, discount, execute and issue promissory notes, bills of exchange, bills of

## CHARTER (Continued)

lading, charter parties, warrants, delivery orders, debentures, bonds, and other negotiable or transferable instruments.

(S) To carry on stores for the supply of food, clothing, and other articles to persons employed by the Company and others, and to do all such things as may be considered calculated to advance the interests of the Company, or of persons employed by the Company.

(T) To remunerate any corporation, or person, whether in the form of brokerage, commission or otherwise for any service rendered in the formation of the Company, or for introducing business, obtaining subscription to, or guaranteeing the subscription of, or placing or assisting in placing the Shares or securities of the Company or of any Company, or association promoted by this Company, or in which it is interested, or otherwise assisting or rendering service to the Company.

(U) To enter into any arrangements with any governments or authorities, supreme, municipal, local or otherwise that may seem conducive to the Company's objects, or any of them, and to obtain from such government or authority any rights, privileges and concessions which the Company may think it desirable to obtain, and to carry out, exercise and comply with any such arrangements, rights, privileges and concessions in any part of the world.

(V) To apply for and seek to obtain from the State Legislature of this State or the legislative powers of any other Government, State or otherwise, anywhere, any legislation, enactment of any law for enabling the Company to carry any of its objects into effect, or for effecting any modification of the Company's charter or to join in or contribute to the expenses of any application for any purposes calculated to benefit the Company.

(W) To distribute any of the property of the Company among the members in specie.

(X) To procure any servants of the Company to be insured against risk or accident, in the course of their employment by the Company, and to effect insurances for the purpose of indemnifying the Company in respect of claims by reason of any such risk or accident and to pay premiums on any such insurance.

(Y) To give any servants or employees of the Company any share or interest in the profits of the Company's business or any branch thereof, and for that purpose to enter into any arrangements the Company may think fit.

(Z) To do all or any of the above things in any part of the world, as principals, agents, contractors, trustees, or otherwise and either alone or in conjunction with others, and either by or through agents, sub-contractors, trustees or otherwise.

(AA) To hold in the names of others any property which the Company is authorized to acquire, and to carry on or do any of the business acts and things aforesaid, either as principal or agent, and either by the agency of or as agents or trustees for others.

(BB) To pay out of the Company's funds all costs, charges and expenses of whatever kind in connection with the incorporation of the Company, the carrying out of said agreement, and the issue of the Company's shares of the original or any future capital, including brokerage and commission, and cost of advertising and all preliminary expenses.

(CC) To do all such other things as the Company may at any time consider incidental or conducive to the carrying out or attainment of the above objects, or any of them.

And it is hereby declared that the word "Company" in this clause except where used in reference to this Company, shall be deemed to include any partnership, or other body of persons, whether incorporated, and whether domiciled in the State of Oregon, the United States or elsewhere, and further that the objects specified in each paragraph of this clause, shall, except where otherwise expressed in such paragraph, be in no wise limited by reference to or inference from any other paragraph or the name of the Company.

(4) The liability of the stockholders is limited.

*The amount of capital stock . . . . . Seven Million Dollars (\$7,000,000); the date of filing its Articles of Incorporation the 13th day of July, A. D., 1910; the location of its principal office in the Town of Bourne, in the County of Baker, State of Oregon; the amount of the organization fee paid Five Hundred Twenty-five Dollars (\$525) and the amount of annual license fees paid One Hundred Ninety-three and Forty-five One Hundredths Dollars (\$193.45), for the current fiscal year ending June 30, 1911.*

*In Testimony Whereof, I have hereunto set my hand and affixed hereto the seal of the State of Oregon. Done at the Capitol at Salem, Oregon, this 13th day of July, 1910.*

[STATE SEAL]

**F. W. BENSON,**  
*Secretary of State.*



# United States of America

Department of the Interior

## THE GOLD BELT OF THE BLUE MOUNTAINS OF OREGON

During the year 1900, Hon. Charles D. Walcott, then Director of the United States Geological Survey, ordered a Geological examination made of the Blue Mountains Mining District of Eastern Oregon. The man sent in charge of the expedition was the eminent Geologist, Mr. Waldemar Lindgren, known the wide world over among Geologists, Mining Engineers, and Governments for his thoroughness and ability.

During 1901 Mr. Lindgren concluded his labors, and the Director of the Survey, in his annual report to the Secretary of the Interior embodied the results of the examinations, and from said report, published by the Government, as part of the 22nd Annual Report of the United States Geological Survey, the following extracts have been taken, with the page number given where they occur.

Full copies of said report are on file in many Public Reference Libraries, or may be had by application to Superintendent of Public Documents, Washington, D. C.

### INTRODUCTION

The State of Oregon contains several Gold-bearing areas, widely scattered over different regions.

The most important Gold Field of Oregon is that of the Blue Mountains. It is situated in the Northeastern part of the State. Its production is at least three-fourths of the total output of the State. (Page 561).

### MINING AND METALLURGY

In Eastern Oregon, mining is usually carried on under favorable circumstances. Wood, timber and water are ordinarily in good supply.

No special comment is required in regard to methods of mining. In many cases lack of technical skill has materially increased the difficulties.

Men of various professions have been sent out to take charge of mines, instead of experienced Mining Engineers. Still these matters have greatly improved, and many of the mines are now models of their kind. The cost of mining may be taken to vary from \$1.00 to \$4.00 per ton in the large mines, having considerable bodies of ore two to six feet wide. (Page 567.)

### THE PRODUCTION OF GOLD IN OREGON

The production of Gold in Oregon up to 1899 is approximately \$109,000,000. (Page 571).

### GENERAL CHARACTER

The primary Gold and Silver deposits are, with few exceptions, normal fissure veins of simple composite character, carrying native Gold, or sulphurets containing Gold or Silver, or both native Gold and sulphurets in a gangue of quartz, more rarely calcite or dolomite. (Page 599).

### VEIN STRUCTURE

In regard to structure, the most common is that of the simple vein with a quartz filling, continuous over considerable spaces. It is the simplest form of a gold quartz vein; it is an absolutely continuous filling of massive coarse crystalline quartz vein with irregularly scattered (Page 601) sulphurets, between sharply defined and clear-cut walls. The assay value is about \$20.00 per ton across the quartz. This, the most interesting type, includes the Gold and gold-silver veins in the argillite series. Among them are found the richest and strongest of the veins of Eastern Oregon, they are chiefly developed in the Cracker Creek District. (Page 600-602).

This type attains its extreme development in the North Pole vein, upon which some of the most celebrated mines of the Blue Mountains are located. It is a crushed zone, *absolutely continuous for at least four miles* and having a width of from a few feet up to 200 feet, averaging, perhaps, 25 feet. In very few places the walls approach each other within a few feet; no places were seen in which the fissure had locally closed down so as to contain no quartz. (Page 603).

### PAY SHOOTS

As in all Gold-quartz mines, only certain parts of the veins contain gold-bearing material of sufficiently high grade to be considered as ore. It is recognized, of course, that the definition of ore is a fluctuating one, dependent upon the cost of mining and milling. Under the general conditions prevailing in eastern Oregon, this varies with the accessibility of the districts and the cost of reduction of the ores. Under favorable circumstances the cost of mining and milling can be estimated at \$3.00 to \$4.00 for free-milling ores, as well as for ores adapted for concentration, provided that a continuous ore shoot with a thickness of at least a couple of feet of ore is available. Theoretically, then, everything over \$3.00 should be considered ore. As a matter of fact, the ores extracted run considerably higher, or at least \$7.00 per ton. (Page 605-606).

## UNITED STATES GEOLOGIC REPORT (Continued)

Ordinarily the pay shoots outcrop on the surface; this has been the usual case, many statements to the contrary notwithstanding. It was so in the North Pole, E. & E. and the Columbia Mines. (Page 606).

In the great North Pole vein, in the Cracker Creek District, are at least three pay shoots separated by wide spaces of poor quartz. The first is that of the North Pole continued in the E. & E. Mine. It is several hundred feet long, measured along the levels, and pitches 20°-30° S.W., the vein dipping 70° S.E. It has been followed for 2,500 feet along its pitch. Fifteen hundred feet further southwest is the Columbia shoot, also several hundred feet long, having the same pitch, and having thus far been followed for 2,000 feet along this pitch. Two thousand feet further southwest is the Golconda ore shoot, which has a more irregular outline, and thus far shows no decided pitch. The beginning of another ore shoot has been found northeast of the North Pole and E. & E. shoot in the workings of the former vein. (Page 607).

In the pay shoots of wide, composite veins in argillite, other and more complicated conditions prevail; out of a total width of quartz and quartz-argillite breccia of from 7 to 40 feet or even more, the pay is usually confined to a streak from 1 to 4 feet in width. This streak may lay on either wall, and sometimes crosses diagonally from one wall to another, or it may break up into several stringers of pay ore. The pay streak is often adjoined on both sides by normal quartz, sometimes differing but little in appearance from the ore. Ordinarily, however, to the practical eye there is a difference, consisting in a looser or more crumbling condition, or in the occurrence of finely distributed pyrite and arsenopyrite in the ore. This suggests at once that the pay streaks may be secondary breaks and fissures enriched by concentration from a great width of lean ore. This should not be understood as meaning concentration under the influence of oxidizing waters or a concentration in any way dependent on surface conditions. If these streaks really are secondary enrichments, they have been effected under the influence of the same kind of solution that formed the vein, as a whole, and may be relied upon to continue in depth.

### SURFACE OXIDATION

In eastern Oregon, as in most mining regions, the portion of the veins adjacent to the surface has undergone certain changes due to the action of oxidizing waters. In late years much attention has been devoted to these phenomena, and the studies of Messrs. Emmons, Weed, and Van Hise, have placed the active processes in a much clearer light. Their importance to the mining industry can not be overestimated, for the future value of a mine depends greatly on the extent of the secondary surface processes and of their certain identification.

In a broad way, the processes of oxidation and the sulphide enrichment accompanying them in greater depths are more active and extensive in an arid climate than in a region of heavy rainfall, where the water level stands high. The Blue Mountain region is essentially one of great precipitation, and has, in all probability, been so since Neocene time. It is further true in a general way, that gold-quartz veins are less readily effected than silver and copper veins, due no doubt, to the more difficult solubility of the gold. Furthermore, some of the districts in this region are located in arrears of former glaciation, which has swept away the softer products of oxidation, the limonite and the cellular quartz of the "Iron Cap."

The general conclusion, then, is that secondary surface enrichment has played a comparatively unimportant part in this region.

### GOLD VEINS

**NORTH POLE TYPE.**—This division includes the wide, composite veins in argillite and is characterized by a smaller quantity of free gold of rather low grade, together with finely divided sulphurets, which usually are rich in gold. The amount of free gold varies from a few per cent. up to 40 per cent.

In the Columbia mine similar relations prevail. The ore is prevaillingly a quartz filling showing comb-quartz structure. The argillite is a very fine grained but clear quartz mosaic, containing abundant streaks of organic matter. Cubes of pyrite are often inclosed in this carbonaceous substance. A slight silicification may have taken place. The argillite is cut by well-defined quartz veinlets, which again show a late infiltration of calcite. Dikes of very altered igneous rock of doubtful original character are also cut by the vein. A specimen of altered porphyry from the lowest tunnel level consists of sericite fibers, calcite, and a few anhydrons of pyrite. (Page 621).

The rich shipping ore, ordinary specimens of which assayed 245 ounces gold and 166 ounces silver per ton, is a greenish-grey quartz of varying grain. Much of it is very fine grained and almost flinty and darkened by finely distributed sulphurets.

At the Golconda mine the big quartz vein splits up into stringers, and there is more ore derived from alteration of the country rock than at the other mines. The argillite here approaches normal clay slate, extremely fine grained, with curved streaks of carbonaceous matter.

The rich shipping ore found in the Golconda is similar to that from the Columbia.

**NORTH POLE MINE.**—The most northeasterly of the important mines on the big vein comprises two full claims. The North Pole and the More-or-Less. It is located on the mountain slope northeast of Cracker Creek, and ascends to a height of 2000 feet or more above that stream. The elevation of the lowest tunnel is about 5800 feet. The North Pole Claim was located in 1887, croppings of rich ore being found near the surface.

The North Pole is developed by means of three main tunnels, the upper two starting on the vein, the lower one being a crosscut for 1000 feet. The upper tunnels are respectively, 450 and 750 feet above the main adit, the total vertical distance on the vein opened by the workings being 850 feet. (Page 659).

## UNITED STATES GEOLOGIC REPORT (Continued)

The pay does not include the whole width of the vein, but when present occupies a space of 2 feet up to a maximum of 12 feet, appearing along one wall or the other, or in the middle of the vein, adjoined by barren quartz on both sides. Usually the form is that of a number of lenses which sometimes overlap. The pay shoots, ordinarily on the foot wall, may break across in stringers and streaks and follow the hanging wall for a distance. It is stated that in general the pay has a tendency to follow the seams of gouge found in the vein. As a whole, it has a flat southwesterly dip, as in the Columbia and E. & E. mines and may in fact, be continuous with one of the E. & E. shoots. A large amount of ore is unquestionably in sight; thus, for instance, it is stated that there are 600,000 tons between the short intermediate and the uppermost tunnel level. Besides the pay shoot following the slope of the hill, there are others exposed in the lowest and middle tunnels.

**EUREKA AND EXCELSIOR MINE.**—Comprises the two claims on the North Pole vein having the above names, and is usually known as the E. & E. In 1900 it was idle and the underground works were not accessible. For the most of the data regarding it, I am indebted to Messrs. E. Melzer and J. Arthur, of Sumpter. A 20-stamp pan amalgamation mill was erected in 1889 for \$200,000, which proved utterly unsuited to the ore, and for several years the mine was worked with indifferent success. In 1895 the mine was leased to Mr. J. H. Longmaid for three and one-half years. The lessee put vanners in the mill, and in three and one-half years mined and milled 75,000 tons of ore, valued at \$900,000. Since the expiration of the lease the property has been idle except for a little surface work, but it is said it will soon be reopened. If worked in a rational manner the property will doubtless maintain its reputation as one of the best mines in Oregon. (Page 661)

There are four pay shoots in the mine, which may be said to partly connect, forming a body dipping southward at a gentle angle, like the shoots of the North Pole and the Columbia. In fact, the shoot of the E. & E. may be considered as the continuation of that of the North Pole.

The shoot south of this is on the Eureka claim and is said to be 200 feet long and 4 feet wide. From these stopes came most of the shipping ore and a higher grade of milling ore, showing some free gold, not found in the other stopes. This shoot was mined out to the 260-foot level. There is another shoot still further south which is imperfectly known but from surface cuts and tunnels it should be 600 feet long. (Page 662)

**COLUMBIA MINE.**—This mine is situated on Fruit Creek, at an elevation of about 5600 feet, between the Golconda and the E. & E. and comprises two claims on the North Pole vein, called the Columbia and the Appomattox. It is owned by the Columbia Gold Mining Company, who also possess a number of other claims in the vicinity. The mine was sold to the present company in 1895 by Cable Brothers, but during the first few years there was but little gold produced. During the last three years the mine has been in active operation.

The surface croppings, which can be traced continuously from the E. & E. are very strong, showing a width of from 70 to 100 feet. The vein strikes nearly due northeast and has a southeasterly dip of 60°. Its general character is similar to that of the North Pole. It is a zone of fracture in the brittle siliceous argillites, with a width of about 40 feet, the walls being fairly well defined. Outside the walls there is no strong mineralization. The structure is well shown in the lower tunnel level.

**GOLCONDA MINE.**—This part of the North Pole vein was located as the Golconda claim in 1887 and sold for a reported sum of \$24,000 in 1897, there being at that time only 250 feet of development. The Golconda Mining Company at present owns besides this claim, eight others adjacent, which are said to cover two parallel veins. The Golconda and the Wide West are located on the North Pole vein. In 1898 a large bromination plant of a capacity of 100 tons per day was erected but was soon found unsuited to the character of the ore. A 20-stamp mill and a Bryan Roller Mill, together with 18 concentrators, were substituted, giving a total capacity of over 100 tons per day. In the fall of 1899 a rich ore chimney was struck, 20 tons of which yielded \$10,000 in the mill. Still richer ore was shipped to the smelting works. In September, 1900, 15 stamps were running. At present there are 2500 feet of developments, including a 400-foot double compartment perpendicular shaft and four levels, the opening of the fourth having just begun; also a 650 foot tunnel running southwest on the ledge.

The average value is believed to be from \$8 to \$15 per ton. The ore is in part free milling, containing from 40 to 50 per cent. of gold, which can be caught on the plates. The sulphurets are stated to be of comparatively low value, the percentage contained in the ore being from 7 to 14.

On the second level the crushing and the irregularity seem to have reached a maximum. On the fourth level the lode contracts to less than 100 feet and the ultimate walls are fairly well defined. The whole mass between them consists of crushed argillite with replacing sulphides and traversed by small quartz veinlets. The pay streak is from two to three feet wide. It is to be expected that more regularity will be found in depth, and it may also be expected that there will be somewhat less free gold. (Page 666)



Risk Tunnel, on the Sampson Property

Extracts from Reports by

**Dr. Alfred R. C. Selwyn, M. C. G., F. R. S.**

(English Government Geologist)

One of the most important things to be considered in mining investments is the opinion formed of a district by men upon whose judgment the investor must, to a certain extent, rely.

Among many men qualified to pass upon the merits of a district are the late Dr. Alfred R. C. Selwyn, M.C.G., F.R.S., eminent British geologist and mineralogist, and Prof. Waldemar Lindgren, of the United States Geological Survey. These men occupy high positions in their professions, and neither their judgment nor honor can be questioned. The following excerpts are published from their reports on the district, showing the estimate they place upon its merits:

Dr. Selwyn: "I find in Eastern Oregon one of the most interesting and hopeful mineral zones of the globe. The formation, contour, climate, accessibility, timber and water form a combination which tends to reduce the cost of extracting gold to the minimum. And, in addition, I find the ores are less refractory and contain a larger amount of free gold, generally speaking; besides they are softer and less expensive to treat.

"Referring to the quartz ledges adjacent to Sumpter, I say unreservedly that I have never been in any mining country which I consider more promising, or as having a brighter future than that of Eastern Oregon. The ledges here have immense breadths, and there is not a shadow of doubt in my mind but that values will continue with depth here, just as they have in Australia and in California, in what geologists know to be identically the same formation."

"I find mines here running 10 and 20 stamps, which could just as well be operating half a hundred. They would not then be able to exhaust the ore during this or the coming generation."

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Extracts from Reports on

**The Sampson Mine**

**To The Sampson Company, Limited**

Bourne, Oregon.

In the reports on this property we have gone into considerable detail in respect to a description of the geologic structure and formation of the vein on this property, which, taken in connection with the extracts from the United States geologic reports, will enable you to have some knowledge of this remarkable mineral deposit. We have eliminated this geologic detail from the reports on the other individual mines because the formation here is identical with all the others.

Situated on North Pole Mountain, and on the southwest side of the Rock Creek Divide, in the Elkhorn Range of the Blue Mountains of Oregon; having its longitude axis in a northwest-southeast direction, and on the headwaters of Little Cracker Creek, seven miles north of Sumpter, in Baker County, Oregon.

The Sampson Mine occupies a most excellent and favorable position from every point of view.

It is at an elevation of about 6,600 feet and the highest outcrop is about 800 feet above this point, across Little Cracker Creek,—on the slope towards the Rock Creek Divide.

**APPROACH**

The mine is reached over a good road from Sumpter Station on the Sumpter Valley Railroad, a narrow gauge road, running west from Baker City to Sumpter, a distance of 30 miles.

**PHYSICAL FEATURES**

**TIMBER AND WOOD:** The Company has one 10 and one 20 acre claim to the south of the mine, well covered with pine, which affords an abundant supply of most excellent fuel, as well as mine timber.

**WATER**

The Company owns the headwater rights to Little Cracker Creek, from which an abundant supply of water is obtainable, both for domestic, mine or milling purposes.

The water is now piped to and used at the mine camp.

The mine is admirably situated for cheap development and extraction, the tunnel on the Risk-Claim being now 627½ feet in length and about 700 feet below the enormous outcrop on the Risk-Claim and gaining in depth as it enters the "Sampson" Claim until it will attain a backing of about 1,100 feet of ore on the vein; all the ore from above this tunnel level will be extracted, as a matter of course, by gravity.

There is practically no water in the mine, except for a little seepage at the breast of the Risk tunnel.

**GEOLOGY**

The Blue Mountains form an irregular complex of mountain groups, which as a whole may appropriately be regarded as a projecting spur from the Great Central Mountain Mass of Idaho.

The older pre-Neocene structure is veiled by the lavas to such a degree as to make it very difficult to obtain an idea of its probable configuration.

## THE SAMPSON MINE (Continued)

It is by no means, a unit, for it was separated into several masses by deep depressions and valleys of erosion, but the general trend is surely southwesterly, although folding movements of different age, faults and extreme active erosion has greatly diversified its features.

The rocks consist chiefly of argillites, often very silicious.

Coarse sediments are absent at the "Sampson."

The age of the argillite formation at the "Sampson" is Paleozoic.

The silicious argillite structure at the Sampson is disrupted in many places, and contains intrusive masses of granite, gabbro and serpentine.

The sediment shows a distinct stratification in the outcrops, and the carbonaceous streaks, indicating the planes of depositions are readily recognized.

The entire strata is shattered by intrusive granular rocks covered by Neocene lava flows.

The structural features show considerable regularity and trend a few degrees north of west and dip about 60 degrees S. The dip being at steep angles toward the north.

The thickness of the argillite cannot be safely estimated at present, but prominent scientists who have examined the formation, estimate it at several thousand feet.

The vein which crosses the "Sampson" property, traceable across the surface of three of the claims for a distance of about 4,000 feet, outcropping very strongly in many places, especially so on the Risk-Claim, and again in several places on the Sampson Claim, must be studied and considered in connection with the very extensive vein system of Cracker Creek.

For a distance of five miles, the vein continues strong and unbroken; but gradually changes its strike from northeast-southwest to east-west.

The main vein system is known as the North Pole vein or the "Mother Lode" of Cracker Creek.

See Geologic Vein Map attached elsewhere.

### VEIN STRUCTURE

The vein is an absolute continuous filling of massive coarse crystalline vein quartz with irregularly scattered sulphurets, between sharply defined, clear cut walls of somewhat altered silicious argillite.

Nearly all the gold values are contained in the quartz filling, but part of the ore also consists in the silicified argillite mud which largely fills the fissures.

On the Risk-Claim, where the tunnel is driven on a parallel vein, that appears as an offshoot from the main fissure crossing the property, the tunnel is practically in ore all the way, and in the breasts of the crosscuts is found a mass of argillite fragments embedded in the quartz.

The Risk vein has a width of from a few feet up to 35 feet, averaging perhaps from 16 to 18 feet; in very few places the walls approach each other within a few feet, and in no places had the fissure locally closed down so as to contain no quartz.

The normal development shows two fairly defined walls but no system of sheeting or shear planes.

Between these walls lie the mass of quartz-argillite, breccia. In places bodies of pure coarse vein quartz appear, 10 to 20 feet in width, with only a few intermixed argillite fragments.

Above the Risk tunnel, on the Risk-Claim appears enormous quartz outcroppings, measuring from 60 to 100 feet across.

We are of the opinion, however, that this excessive thickness of the fissure is deceptive, and is very likely caused, in part, by the sliding or settling of the outcrops.

The veins of the district as we have examined them, and from information obtained from reliable sources, are very little affected by subsequent disturbances. Faults are not common and when occurring, are of slight throw.

The interrelation of the vein systems proves almost conclusively that the veins in argillite are of the same age and of the same genesis. Extensive alteration has not taken place, but we find that very frequently the argillite is filled with sharply developed crystals of pyrite and some sericite.

### PAY SHOOTS

In all gold-quartz mines, only certain parts of the veins contain gold-bearing material of sufficiently high grade to be considered an ore.

It must be recognized of course that the definition of ore is a fluctuating one, dependent upon the cost of mining and milling. Under the conditions existing at the "Sampson" the cost of mining and milling can be estimated at from \$4.00 to \$5.00 per ton.

Theoretically, everything over \$4.00 may be considered an ore. As a matter of fact the ore runs considerably higher or at least \$8.00.

### HISTORY

If the exact date of the discovery of the "Sampson" is known, we have no knowledge to that effect, but it is said to have been located about 11 years ago.

The discoverer having found great outcroppings on the surface did some desultory work on the "Sampson" Claim, then sold the property, for lack of capital to develop it.

In considering the "Sampson" property, the history of the district and of the adjoining mines must be taken into consideration, and it is well to carefully study the reports on the other properties of the district in connection with the "Sampson."

## THE SAMPSON MINE (Continued)

### DEVELOPMENT

The Risk tunnel is driven for a distance with crosscuts of 627½ feet, is of standard size, well timbered for a distance of about 200 feet and trenched under the ties for drainage. The tunnel on the "Sampson" Claim was done by the locators and first owners and was not done to any very great advantage, and has been abandoned by present owners.

The work at the Risk tunnel has been done in a very thorough miner-like manner, and speaks well for the man under whose direction this work was done.

### SAMPLING and ASSAYING

Wherever possible to get at the vein, the samples were taken every five feet; where the ore was cut between the walls, over a distance greater than five feet, two or more samples were taken out of the same cross-section, up to as great a width as 12 feet, and the series, when assayed, averaged up for width represented by the number of samples taken at the one cross-section.

The assaying—furnace work—and weighing were done under our direction. We are, therefore, sure that the work was done, from the taking of the samples to the weighing of the gold, in accordance with our idea of good and thorough work.

As to correctness, some experiments, tests, etc., made at that time, lead us to conclude that we fell far short of getting the full actual gold contents of the ore treated.

The assay results we give just as the samples came from the mine, none, however low, being discarded, and all averages obtained by multiplying the assay value of each sample by the feet sampled, adding the products and dividing the sum by the total number of feet sampled in one section or division of the tunnel.

For general average, the same treatment was given the original average, and we confidently believe that the vein throughout the development will be found to yield \$9.00 per foot ton.

As the development work is yet incomplete, it is not possible to get at the exact or approximate ore tonnage in a scientific manner, and the entire ore reserve will depend largely upon the future development.

### COST

As to the cost and treating the ore, we do not deem it essential to this report to go into details, from the fact that there is as yet no need of any mill on the property, nor will any be required for from one to three years, as we consider the development of the property the one thing essential to success; as well as the further fact that the nature of any plant to be erected could not be determined upon, until the main vein had been crosscut and drifted on, developed and sampled.

We are of the opinion that this property could be operated to the very best advantage by being consolidated with the Cracker-Oregon property and developed at depth from a crosscut tunnel, from the level of the mill now on the Cracker-Oregon property and the ores from both of these properties treated in the Cracker-Oregon mill, enlarging same to 40-stamp capacity, erecting a cyanide plant for the treatment of slimes below the town of Bourne.

In our opinion, no fears enter as to the continuity, presence or magnitude of the ore in the vein, to be developed and mined.

The Sampson vein is traceable for over 4,000 feet and gives very great promise of developing into a very valuable producing mine.

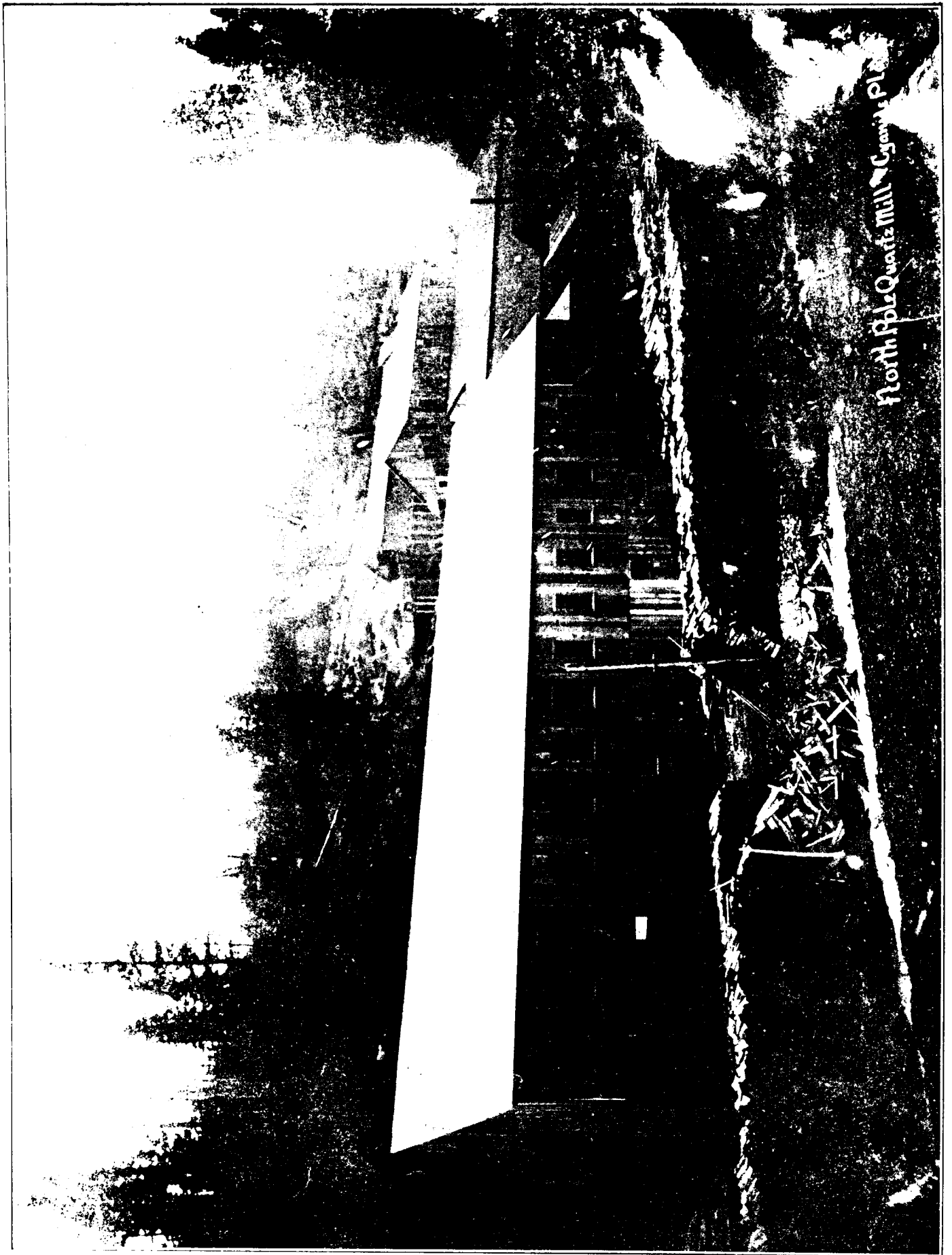
### AREA

The holdings of the Company consist of four 20-acre claims and one 10-acre claim, three of which are patented; these claims are all contiguous.

### CONCLUSION

We respectfully submit this report as containing all the information, facts and data that may at present be obtained at, near or on the premises, and will state that there is a boarding-house, well equipped, assay office, complete, blacksmith's shop, tools, hand cars, rails, etc., used to prosecute the work with, as far as same has been possible to do by hand.

With enough means provided to prosecute and complete the work laid out under Common Sense Management, there is no reason why the Sampson property may not become a source of abundant revenue.



North Pole Quartz Mill

North Pole Mill



Extracts from Reports on  
**The North Pole Mine**  
by  
**Emil Melzer, E. M.**  
and  
**White and Company**

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The "North Pole" Mine is situated in the county of Baker, in the State of Oregon. The mine is on a mountain slope, northeast of Cracker Creek.

About one mile north of the village of Bourne is a strong quartz vein; the "North Pole" Mine and several other important mines in this district are located on this vein, which is known under the name of "The Mother Lode" Vein.

The "North Pole" is a mine worked by tunnels and has produced one-eighth of all the gold mined from quartz in the State of Oregon for the past twelve years. The average value of the ore mined was \$15.63.

The "North Pole" embraces a total length of 5,679 feet on the main ledge of the district, also some detached claims on parallel ledges. The vein has a strike of about north 34 degrees East, and dips about 70 degrees southeast.

### OCCURENCE OF ORE

The vein filling is quartz. The walls are as a rule well defined, with gouge seams of varying width. The country rock is a silicious slate described as an argillite by Waldemar Lindgren. The vein itself is quite prominent and persistent, and is traced through the various properties mentioned above. The width varies from a few feet to more than 100 feet in the widest place.

The ore is generally confined to one wall or the other, but sometimes it cuts across obliquely. Its occurrence might be called a series of lenses which frequently overlap each other, forming an ore body of great continuity. The width of the ore varies from a mere seam to as much as 25 feet; the average width of all the ore stoped may be given as a little more than 3½ feet.

The gold occurs chiefly in a fine arsenopyrite which often forms concentric layers in coarsely crystalline quartz. The average value per ton of all the ore mined from 1896 to 1908 was \$15.63 in gold.

### MINE WORKINGS AND EQUIPMENT

As the mine is situated on a hill with a slope of about 20 degrees or more, it is opened by a series of tunnels. The lowest or No. 1 tunnel is 210 feet above the level of Cracker Creek where the creek crosses the vein near the Eureka & Excelsior shaft house. It is a crosscut tunnel, 1,000 feet to the vein, and then following the vein for a distance of about 2,150 feet. Two raises connect it with tunnel No. 2, 424 feet above. Several smaller manways and some levels were opened between tunnels Nos. 1 and 2 and considerable stoping done from them.

Tunnel No. 2 is about 2,450 feet and No. 3 about 2,300 feet long. Tunnel No. 3 is 270 feet above No. 2, with a blind intermediate level between. Tunnel No. 3 has been the main working tunnel of the mine for several years. It was remarkable for a continuous payshoot, 1,600 feet long. Tunnel No. 4 is 211 feet above No. 3. The latest working tunnel, No. 5, starts as a crosscut tunnel from the west side. It is 327 feet above No. 4. The five tunnels cover a vertical distance of 1,227 feet.

The greatest depth obtainable above the level of No. 1 tunnel will be about 2,200 feet at the north end of the claims.

The "North Pole" is equipped with blacksmith shops, air compressor fitted for steam and water power, and with electric motors to supply power during the low-water season in the cold winter months. A sawmill with a capacity of 10,000 feet per day was partly used for sawing, lagging and cribbing.

### MILL AND TRAMWAYS

The mill is one and one-half miles below the mine in the canon of Cracker Creek where there are several water powers available. It is connected with the mine by an aerial wire-rope tramway, single-rope type, with a capacity of 100 tons per 10 hours.

The 30-stamp mill has a 300-ton ore-storage bin, and is built in three 10-stamp units, supplied by the Allis-Chalmers Company. The ore passes over amalgamating plates and is then treated on Wilfley tables for the removal of a first concentrate. It is then retreated on Frue vanners—three for each Wilfley—and a second concentrate is removed. The tailings are then separated into sands and slimes preparatory to cyanide treatment.

The sands plant consists of nine percolating tanks of 100 tons capacity, arranged in two rows with two revolving distributors fastened to overhead carriages—one for each row—to be moved from tank to tank as the operation of charging requires.

The slimes are treated by the agitation and decantation method. There are six 5x18-ft. agitating tanks fitted with mechanical stirring apparatus. The slimes amount to 30 per cent. of the total pulp. The gold solution is precipitated on zinc shavings.

## NORTH POLE (Continued)

The compressor is operated by a 3-ft. DeRemer water wheel, driven from an 8-in. pipe line with a 325-ft. head. A flume one mile long brings the waters of Cracker Creek to this pipe line. There are two water powers available to furnish power for the mill. The more important one, from Cracker Creek, drives a 4-ft. DeRemer water wheel and develops enough power for 20 stamps even during the low-water season. The other pipe line is fed by the waters of Fruit Creek and furnishes power for dynamos and solution pumps. An auxiliary steam plant with two boilers and a Corliss engine provides power for emergencies and steam heat to the mill.

As the mill is about two miles below the mine by wagon road, the ore is carried from mine to mill by means of an aerial wire-rope tramway, a distance of 7,800 feet in a straight line. The tramway is of the single-rope type and has 200 side-dump buckets of 235-lb. carrying capacity. The loading station for this tramway is in front of the ore bin at the mouth of No. 1 tunnel. Another single-rope tramway, of a length of 2,400 feet connects the ore-storage bins at tunnels Nos. 4, 3 and 2 with the ore bin at the mouth of No. 1 tunnel.

### SUMMARY AND OPERATIONS

Within the 12 years, 1896 to 1908, there were mined at the "North Pole" mine 158,917 dry tons of ore containing \$2,485,006 in gold, an average of \$15.63 per ton. The total gold recovered amounted to 100,045 oz., a recovery of 80.55 per cent. The total tonnage of ore mined includes 1,115 tons of high-grade ore shipped direct to the smeltery and averaging \$500 per ton.

The balance of 157,801 tons of ore of an average value of \$12.21 per ton was treated in the company's mill, yielding \$1,443,729 in amalgam, concentrates and cyanide bullion.

You will see from the Sectional Map that the workings in the "North Pole" ground do not connect with the workings in the "Excelsior" claim of the "E. & E." Mine. This is caused by a certain animosity existing between the owners of these two mines. The "North Pole" owner is prevented from making tunnel connections with the Creek-Level Tunnel on the "Excelsior" claim, through which he could so easily drain his property.

The inflow of water from the mountain side is on the "North Pole" mine very considerable. There are many little streams and there is in this district an average snow-fall of 20 feet.

The pumping of all this water together with the additional expense of hoisting all the ores and transporting them by tramway over a distance of one and one-half miles, was the cause of a very heavy bill of expense to the owners. Other heavy expenses were entailed by the transportation of the smelter-ores and other smelter products, which had to be hauled by team to Sumpter, there reloaded on the Sumpter Valley Railroad, again reloaded in Baker City on the standard cars, with Tacoma, 450 miles distant, as destination.

The additional fact, that the mill of this property was never able to save better than 75 per cent. of the gold-values in the ores, causes this property to be for sale. The average of the free milling ores treated was never under \$15.63; the present unoxidized, sulfide ores run an average of \$10.00 to the ton.

How this mine can be turned into a big producer is set forth in the attached Plan of Operation.

The ore body still in place above the present workings may be considered additional ore developed.

The mill is in splendid physical condition and can, with nominal changes, be brought to make a saving of between 85 per cent. and 90 per cent. of the values. The Sampson Company, Limited, intends to treat in this mill the ores from the "E. & E.," the "Tabor Fraction," the "Cracker-Oregon," and "Sampson" ground, till such a time as the large mill at the end of the drainage tunnel will be completed.

The exact ore tonnage cannot be reported upon, at least not in the same manner, as we did in the case of the "Columbia" Mine, but we know enough of this mine to be able to state, that we are purchasing this mine at a very low figure, taking into consideration the fact that this property has a valuable asset in its mill and timber lands.

The gold production of Oregon during the period from 1896 to 1908 amounted to about \$17,000,000 one-eighth of which must be credited to this mine. As it may be assumed that the neighboring "Columbia" Mine has had a similar output, it may be said that the mines of the "Cracker Creek" district furnished more than one-quarter of the gold output of the State during the last 12 years.

Detail production sheets showing shipments and milling operations from 1896 to August, 1908, follow.

# Statement of Milling Ore in North Pole Mine From 1895 to 1908

**EASTERN OREGON MINING CO., Bourne, Baker Co., Oregon**

Year	Ore Treated in Dry Crushing Cyanide Plant After Roasting						Ore Treated in Stamp Mill--Wet Crush				Total Tons Milling Ore	Total Gold Value Milling Ore	Average Gold Value Per Ton of Ore Mined and Milled
	Dry Tons	Assay		Gold ozs.	Silver ozs.	Gold Value	Dry Tons	Assay		Gold Value			
		Gold Oz. per ton	Silver Oz. per ton					Gold oz. per ton	Gold oz. per ton				
1895-1896	2,066.52 283.55	.988 .793	.74 .80	2,041.72 224.86	1,529.22 226.84	\$45,331.40	—	—	—	—	2,350.07	\$45,331.40	\$19.29
1897	3,543.30	.785	.83	2,781.49	2,940.94	\$55,629.80	1,964.75	.0132	\$2.642	\$5,190.13	5,508.05	\$60,819.93	\$11.04
1898	5,460.86	.683	1.10	3,763.91	6,061.94	\$75,278.20	—	—	—	—	5,460.86	\$75,278.20	\$13.78
1899	2,125.90	.625	1.12	1,296.78	2,347.43	\$25,935.60	6,006.88	.3763	\$7.526	\$45,211.06	8,132.78	\$71,146.66	\$8.75
1900	4,964.77	.567	.88	2,815.02	4,369.00	\$56,300.40	168.40	.3100	\$6.20	\$1,044.08	5,133.17	\$57,344.48	\$11.17
1901	5,006.27	.776	1.113	3,884.87	5,571.98	\$77,697.40	3,666.92	1.0515	\$21.03	\$77,127.19	8,673.19	\$154,824.59	\$17.85
1902	709.64	1.116	1.605	791.96	1,170.91	\$15,839.20	8,631.68	1.1540	\$23.08	\$199,219.64	9,341.32	\$215,058.84	\$23.02
1895 to 1902	24,160.81	.7285	1.001	17,600.60	24,218.26	\$352,012.00	20,438.63	.8019	\$16.038	\$327,792.10	44,599.44	\$679,804.10	\$15.24
1903	—						20,045.72	.6690	\$12.38	\$248,179.60	20,045.72	\$248,179.66	\$12.30
1904	—						18,770.33	.5910	\$11.82	\$222,774.20	18,770.33	\$221,774.20	\$11.82
1905	—						23,659.34	.5610	\$11.22	\$265,658.60	23,659.34	\$265,658.60	\$11.22
1906	—						22,341.17	.5385	\$10.77	\$240,602.80	22,341.17	\$240,602.80	\$10.77
1907	—						157.72						
	—						19,434.41	.5195	\$10.39	\$203,557.90	19,592.13	\$203,557.96	\$10.39
1908	—						8,793.71	.3881	\$7.76	\$68,258.80	8,793.71	\$68,258.80	\$7.76
1895 to 1908	24,160.81	.7285	1.001	17,600.60	24,218.26	\$352,012.00	133,641.03	.5896	\$11.792	\$1,575,894.00	157,801.84	\$1,927,836.06	\$12.216

# Milling Results, North Pole Mine, 1895 to 1908

EASTERN OREGON MINING CO., Bourne, Oregon

Year	Plant	Treatment	Dry Tons treated	Gold Contents per ton	Value	RECOVERED					
						Product	Gold ozs. fine	Total ounces	Value @ \$20 per oz.	Per Cent.	Total %
1895-1902	Dry Crushing	Roasting and Cyaniding	24,160.81	\$14.57	\$352,012.06	Bullion Slag & Ashes	12,814.570 43.007	12,857.577	\$257,151.54	72.81 .24	75.05
1895-1902	Wet Crushing Stamp Mill	Amalgamation and Concentration	20,438.63	\$15.89	\$327,192.10	Bullion Concentrates 673,099 tons	4,690.505 7,291.833	11,982.338	\$93,810.10 \$145,836.66	28.62 44.49	75.11
1902-1908	do	Amalgamation Concentration Cyaniding Tailings	113,202.40	\$11.016	\$1,248,031.96	Bullion Concentrates 2,669.191 tons	20,627.939 26,718.642	47,346.581	\$412,558.78 \$534,372.84	33.08 42.85	75.93
1895-1908	—	—	157,801.84	\$12.21	\$1,927,836.06	—	72,186.496	72,186.496	\$1,443,729.92	—	74.93
1897-1908	Shipping Ore		1,115.556	\$499.45	\$557,170.96	—	27,858.545	27,858.545	\$557,170.90	—	100.00
1895-1908	Total Production		158,917.40	\$15.63	\$2,485,006.96 Gold	Total Saving	100,045.041	100,045.041	\$2,000,900.82 Gold	—	80.55 % Gold

## Statement of Gold and Silver Productions and Net Returns

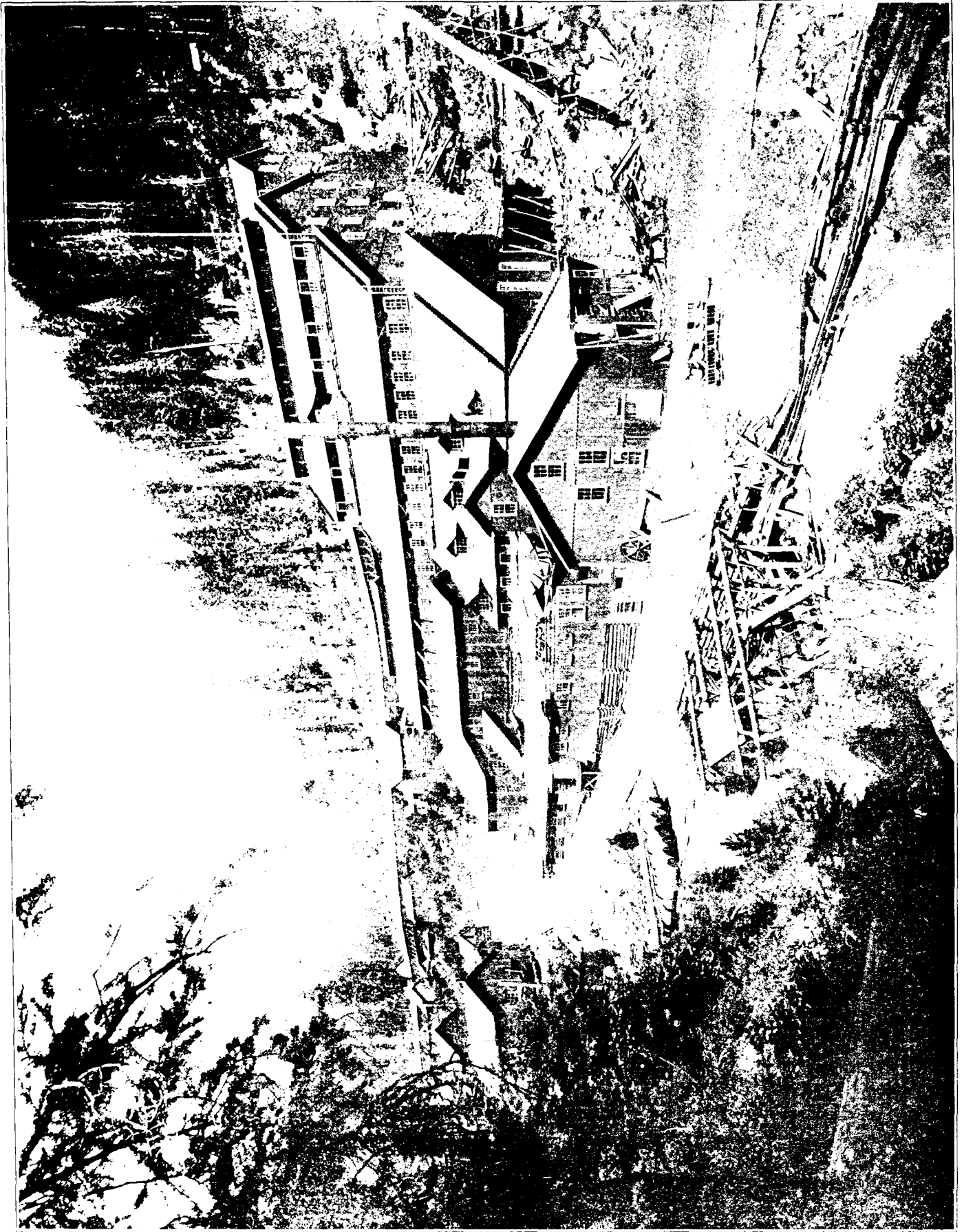
of North Pole Mine, EASTERN OREGON MINING CO., From 1895 to 1908

Recovered by	Dry Tons Ore Treated	Ounces recovered and sold		Charges deducted			Net Returns
		Gold	Silver	Melting	Express	Freight	
Amalgamation and Cyanidation	157,801.84	38,133.014	32,039.344	\$3,939.30	\$1,999.15	—	\$799,206.28
Concentration		34,010.475	46,190.974	—	—	\$13,618.83	\$666,511.26
Slag and ashes		43.007	38.440	—	—	\$13.83	\$815.88
Shipping Ore	1,115.56	27,858.545	25,347.437	—	—	\$6,264.05	\$556,171.87
<b>Totals</b>	<b>158,917.40</b>	<b>100,045.041</b>	<b>103,616.195</b>	<b>\$3,939.30</b>		<b>\$19,896.71</b>	<b>\$2,022,705.29</b>

Oct. 1908.

at \$35/oz = \$3,500,000.00 approx.

EMIL MELZER, MGR.



Eureka and Exrclair Hill

# Extracts from Reports on The "Eureka and Excelsior Mine"

## GEOGRAPHY

The mine is situated in Baker County, Oregon, near the village of Bourne. The principal claims are the "Eureka," located to the southwest of Cracker Creek, and the "Excelsior," located to the northeast of the same creek; both claims are on the main vein of the district, commonly known as the "Mother Lode" Vein.

From these two claims the mine takes its name.

The drainage basin for this mine is Cracker Creek, in its turn draining off in the Powder River. Cracker Creek crosses the property in its center, at an elevation of 6,300 feet above sea-level.

The location of the property on both sides of Cracker Creek, gives it a very commanding position, especially in respect to the draining of the "North Pole" Mine, down to the level of the "E. & E." tunnel on Cracker Creek level. The "E. & E." may be considered the key to the entire project of consolidating these various mines.

## HISTORY

In every mining district there is generally a so-called "FIRST PRODUCER." In the Cracker Creek district this was the "E. & E." Mine. The "E. & E." was also the first located property.

The "Excelsior" Claim was located in 1873, bought by a Californian syndicate in 1877, and leased to John Longmaid, who operated the mine for three years.

During late years the property was very extensively developed under the ownership of U. S. Senator Jonathan Bourne, Jr., who, with U. S. Ambassador the Hon. R. C. Kerens, and Col. S. W. Fordyce, of the Waters-Pierce Oil Company, owned or controlled this famous mine.

There is no cyanide plant on this property, and the mill that proved inadequate to save a sufficient percentage of the gold values has for the last two or three years not been operated.

## DEVELOPMENTS

The present shaft is now at a depth of 762 feet below its collar, and about 1,250 feet below the apex of the property. The levels driven from this shaft are to be found at the depth of respectively 68, 176, 273, 380, 527 and 727 feet. They are at the present time under water.

The "Excelsior" claim is opened up by three tunnels extending to the northeast end line of the claim.

The "Eureka" claim is opened up by five tunnels, all extending to the southwest end lines and into the "Taber Fraction" ground.

The entire development consists of about 20,000 feet of work.

## THE VEIN

The country rock is black silicious argillite. The vein is directly contiguous with that of the "North Pole," "Taber Fraction" and "Columbia," having a strike of N. 34 degrees East, and a dip of about 60 degrees. The vein as exposed in the workings of the mine is absolutely without fault planes, being always strong, continuous, and contained within its well defined walls; and varies in width from 10 to 30 feet, the quartz gangue, carrying the pay values, averaging about four and one-half feet; this is easily the most strongly defined and persistent vein in the Blue Mountain district of Eastern Oregon.

## THE ORE

The ore is a quartz gangue, containing pyrite and arsenopyrite, and some little free gold, and will concentrate from seven to ten per cent., the concentrates having a value of from \$100 to \$250 in gold per ton.

First Class Ore .....	Tons	211	TOTAL TONS	\$26,024.27
Cyanide Ore .....	"	1,369		30,556.93
<b>TOTAL .....</b>			<b>1,580</b>	<b>\$56,581.20</b>
<b>ORE MINED FOR CONCENTRATION</b>				
1894 .....	"	1,620		20,624.40
1895 .....	"	19,532		168,331.01
1896 .....	"	23,285		233,522.80
1897 .....	"	26,405		240,051.75
1898 .....	"	9,440		82,900.80
<b>TOTAL .....</b>			<b>80,282</b>	<b>745,430.76</b>
<b>1903 to 1905</b>				
First Class Ore .....	"	1,086		42,145.00
Concentrating Ore .....	"	21,337		152,492.00
<b>TOTAL .....</b>			<b>22,423</b>	<b>194,637.00</b>
Recorded Production .....	"		<b>104,285</b>	<b>\$996,648.96</b>
Tonnage Stopped Prior to 1894 .....			<b>52,142</b>	<b>499,324.48</b>
<b>TOTAL PRODUCTION .....</b>			<b>156,427</b>	<b>\$1,495,973.44</b>

## ORE IN SIGHT

The only ore in sight that is completely blocked out so that the tonnage can be positively measured, and the ore sampled so as to give exact values, is a block of ground above the S. W. adit number one on the "Eureka" claim, comprising the following totals:

Tons Ore, 14,323	Value Per Ton, \$23.98	Total Value, \$341,414.17
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## THE EUREKA AND EXCELSIOR MINE (Continued)

### PROBABLE ORE

In all the drifts on the levels being worked at the present time, there is an excellent showing of ore, the latest assays of the different faces giving very satisfactory results. The drift on the number four level south has been in ore for seven hundred feet; the same level north for 200 feet. The drifts on the number five level south have been in ore for 200 feet and on the same level north for 650 feet. While there are no openings between these levels and the ore cannot be considered technically blocked to the degree that it can be positively measured, it is felt that in consideration of the continuity and homogeneous character of the ore body above to estimate the tonnage above these levels, assuming five feet as the width of pay quartz, as follows:

Tons Ore, 235,428 \$12.00 Gross Value \$2,825,256.00

### SUMMARY

Total Past Production .....	\$1,495,973.44	
Above the Collar of Shaft .....		\$341,414.17
Below the Collar of Shaft .....		2,825,256.00
<b>TOTAL</b> .....		<b>\$3,166,670.17</b>

The present indications of even greater ore bodies, with continued ore values, warrants in our opinion the expenditure of large capital in extensive development and operation of this property.

## Taber Fraction Mine

This property consists of the "Taber Fraction" and "Rastus" mining claims, located on the "Mother Lode" vein, between the "Eureka" and "Columbia" claims, and at the apex on the divide between Cracker Creek and Fruit Creek.

### HISTORY

Originally located by Clark Taber, this small fractional property has had a more or less checkered career, through a maze of litigation which WHITE AND COMPANY have practically brought to an end.

### GEOLOGY

The croppings are strong. The country rock is all right, the gangue quartz containing gold and sulphurets and is in fact the same as in the "Columbia" and the other properties elsewhere described.

### DEVELOPMENTS

The property is opened by eleven tunnels connecting down to the 500 foot level with the workings of the "Columbia" mine, and with the workings on the "Eureka" claim of the "Eureka & Excelsior" mine. From the 500 to the 1,100 foot level development is through connections through the "Columbia" mine.

### PRODUCTION

In the early history of this property considerable high grade ore was shipped, the amount of which can only be estimated.

During the period from December 1st, 1903, to April 1st, 1905, the ores extracted were treated at the "Columbia" mill, giving the following results:

Year	Tons Milled	Assay Value	Total Value
1903	1519.1	\$12.95	\$19,671.85
1904	18486.0	11.44	211,430.81
1905	4905.8	13.21	64,778.88
	24910.9		\$295,881.54
Total tons milled .....	24,910		
Average value per ton .....		\$11.88	
Total value milled ore .....			\$295,881.54
Concentrates shipped, approximately .....			40,000.00
Other production, estimated .....			180,000.00
<b>Total production</b> .....			<b>\$515,881.54</b>

In order to test the ores from this property, sampling tests were made with the following results:

A lot containing 5,150 lbs. was crushed through a Blake crusher to one inch size, sampled by a Vezin sampler, the material then being dry crushed through a roll-jaw crusher to approximately 3/8-inch size, then screened on a double shaking screen, the upper screen having 1/4-inch mesh, the lower 40 mesh. The overflow size from the 1.4-inch mesh screen was delivered to a crushing roll and again returned to the screen where the material finer than 40 mesh was delivered directly to the amalgamation plant from which place it was pumped to an Isbell classifier, the sands from which were concentrated on a Wilfley table and the slimes were delivered into a callow cone and then concentrated on a Wilfley slimer.

### TABER FRACTION MINE (Continued)

The coarse material from the shaking screens was sacked and delivered to a stamp battery and then crushed through a 40-mesh slot screen, amalgamated and concentrated like the over size of 40 mesh.

The material between the 1.4-inch and 40 mesh amounted to 4,198 lbs.; the material finer than 40 mesh to 952 lbs., a percentage of fine of 18.5 per cent.

The result of this test was as follows:

	Head-weight, 5,150 lbs.	Moisture 9.8 per cent.
Assaying Gold .....	0.65 ozs.	
Silver .....	2.41 ozs.	
The material finer than 40 mesh, assayed: Gold 1.15 ozs., Silver, 4.1 ozs.		
On the amalgamation plate was recovered 0.75 grains of fine gold.		
There was obtained 81 lbs. of coarse concentrates.		
Assaying Gold, 14.65 ozs.	Iron, 32.1 per cent.	
Silver, 45 ozs.	Silica, 19.1 per cent.	
Slime concentrates, 57 lbs.		
Assaying Gold, 9.65 ozs.	Iron, 18.9 per cent.	
Silver, 26.8 ozs.	Silica, 47.2 per cent.	

The combined tailings assayed, Gold 0.34 ozs., Silver, 1.5 ozs.

The percentage of savings, gold and silver, was as follows:

	Gold	Silver
Heads .....	1.50 ozs.	5.57 ozs.
Coarse Concentrates .....	0.592 "	1.82 "
Slime .....	0.275 "	0.76 "
Middlings .....	0.02 "	0.06 "
Amalgam .....	0.025 "	
<hr/>		
Recovery .....	0.912 ozs.	2.64 ozs.
Extraction .....	67.47 per cent.	47.56 per cent.

This of course is not as high a percentage as can ordinarily be obtained from a continuously running mill, as on a small lot of ore like this, quite a percentage of concentrates necessarily will stick to the launders and corners, that does not take place in a continuously running mill.

The conclusions to be drawn from the above are that the principal loss of values on this ore is in the slime portion, where the tailings contain a large percentage of the values, and we are of the unquestioned opinion that the erection of a cyanide plant for the treatment of the slimes is the only thing needed to increase the savings to a basis of from 90 per cent. to 92 per cent.

In entering the mine from the "Eureka" No. 2 tunnel, striking a point about 30 feet below the second tunnel level of the "Columbia," about 350 feet below the apex of the ledge at the surface.

At this point, from a stope 70 feet above this level, to the adit level of the "Eureka" claim, 26,500 tons of ore were extracted and milled in the "Columbia" mill. From where work was discontinued April 1st, 1905, to the surface, the ground is practically intact.

Below this level there has been some stoping on the next two levels. The balance of the ground remains intact, being opened by drifts from the "Columbia" side, at intervals of about 100 feet, to a depth of about 1,200 feet, making a total of about 700 feet in which there has been absolutely no stoping done, nor any ore extracted.

#### ORE IN SIGHT

There is at least 20,000 tons of ore-in-sight above the "Eureka & Excelsior" adit level, of a value of \$16.00 per ton, and this tonnage will no doubt be materially increased by additional development along the footwall.

Tons ore, 20,000.	Value \$16.00 per ton.	Gross value, \$320,000.
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#### PROBABLE ORE

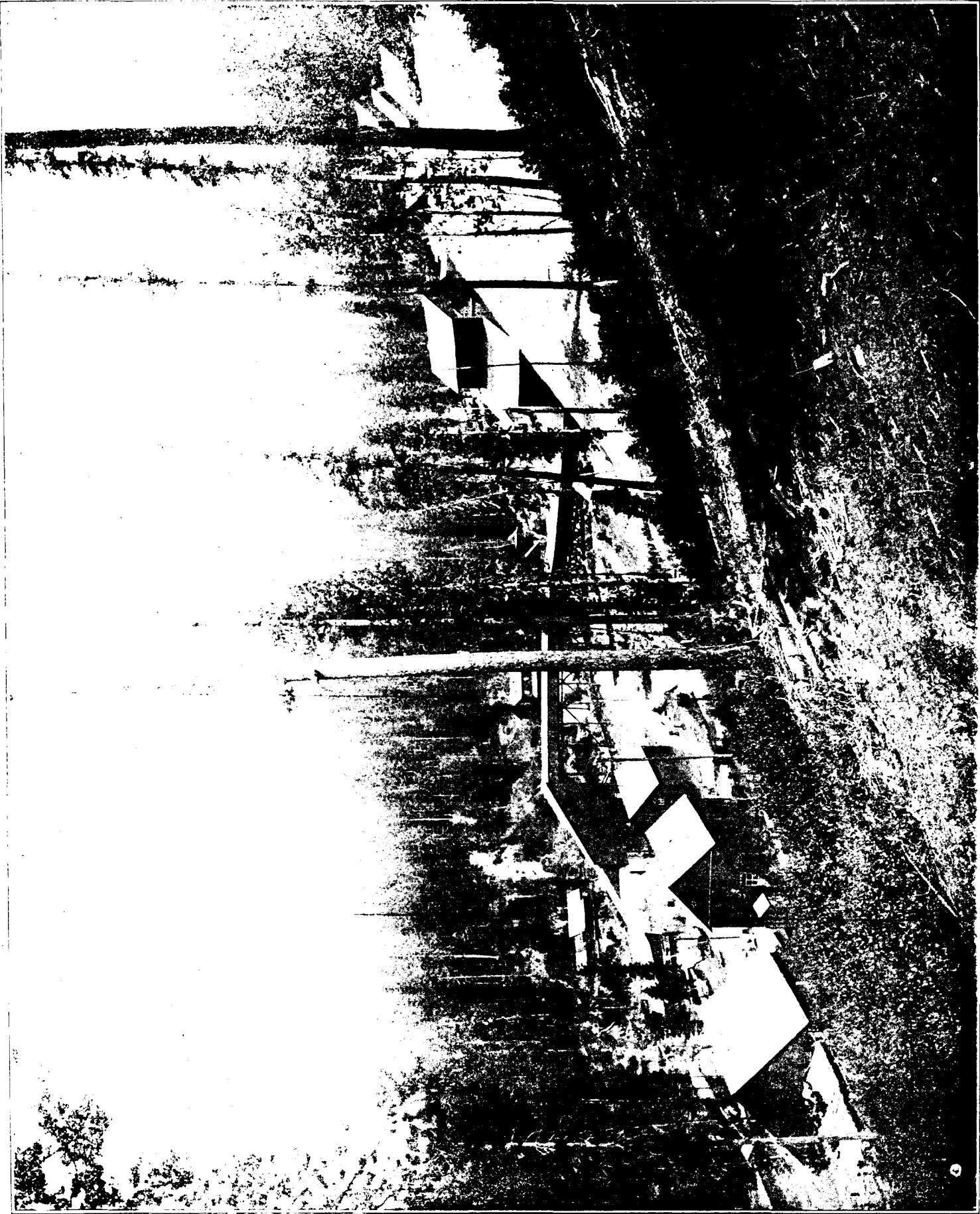
While the ore body has been proven below to a depth of 1,200 feet, there has not been sufficient work done there to warrant the making of any definite measurement or estimate of the tonnage that could possibly be obtained, but in all the seven drifts below the "Eureka & Excelsior" adit level there is an excellent, as well as a permanent, showing of ore. An estimated value of \$11.00 per ton will no doubt prove an entirely safe one, and while there are no openings between these seven levels, and the ore is not technically blocked out, or in sight, to a degree that it can be measured, it is felt that, in consideration of the continuous character of the ore-body above, as well as in adjoining "Columbia" ground, to estimate the tonnage in these levels, assuming four feet as the width of the pay-ore, as follows:

Tons ore, 48,000.	Value per ton, \$11.00.	Gross value, \$528,000.
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#### SUMMARY

Ore-in-sight .....		\$320,000
Possible ore .....		528,000
		<hr/>
Total .....		\$848,000





Extracts from Mr. Frank Baillie's Report on

**The Columbia Mine**

**GEOGRAPHY**

The "Columbia" Mine is located in Baker County, State of Oregon. More definitely the mine is located in Township 8 S.R. 37 E.W.M. on Fruit Creek, in the Cracker Creek mining district of the Blue Mountains of Eastern Oregon.

Its drainage basin is known as Fruit Creek, a branch of Powder River, and is at an elevation of about 5,600 feet above sea-level.

**HISTORY**

The "Columbia Gold Mining Company" purchased the property from the Cable Bros. in 1896; they immediately erected a ten-stamp mill and began mining and milling operations, that have been carried on ever since. The milling plant was increased to 20 stamps in the year 1901. A cyanide plant was also added to the mill.

**DEVELOPMENTS**

In 1897 the company began sinking the present three compartment shaft, which has been continued from time to time, and has now reached a depth of 918 feet below the collar of the shaft. This represents a depth of 1,300 feet under the apex of the property.

From 1896 up to the present time the company has steadily improved and developed the property along the most effective lines, ever tending to lower the expenses and better the production.

The outcrop of the vein is well defined and runs practically the length of the "Columbia" and "Appomattox" claims. The maximum width of the outcrop is about 100 feet.

The property is opened up by three tunnels extending to the end line and also by a three compartment vertical shaft, with a depth of 918 feet. In the shaft, stations are cut every hundred feet; a cross-cut is made to the footwall and thence drifts are run to the north and south on the footwall, as the ore here appears concentrated on this wall. At the lowest point of the explorations the vein is about 26 feet wide, with pay-ore on the footwall.

**DRIFT FOOTAGE**

Drifting .....	17,134 ft.	
Cross-cuts .....	2,336 ft.	
Raising .....	3,327 ft.	
Shaft .....	918 ft.	
		23,715 ft.
Stoping .....		25,029 ft.
		48,744 ft.

**SHIPMENTS AND MILL PRODUCTION**

YEAR	SHIPMENTS	TONS MILLED	VALUE	TOTAL
1897	\$6,084.98	8,645.00	\$98,120.75	\$104,205.73
1898	6,245.86	9,531.00	82,635.77	88,881.63
1899	64,752.81	9,536.00	306,391.68	371,144.49
1900	82,899.95	8,727.00	267,734.36	350,634.31
1901	54,719.62	13,699.00	197,676.57	252,396.19
1902	None Shipped	16,216.00	235,780.64	235,780.64
1903	30,565.08	20,540.00	292,035.46	322,600.54
1904	None Shipped			
1905	13,550.83 (April)	13,226.10	124,964.19	138,515.02
1906	16,806.29	11,577.44	130,908.47	147,714.76
1907	38,360.66	9,779.65	113,778.09	152,138.75
1908	25,588.69	14,944.66	161,464.11	187,052.80
1909	10,920.00	17,165.00	191,046.45	201,966.45
	\$350,494.77	153,586.85	\$2,202,536.54	\$2,553,031.31

**SUMMARY PRODUCTION**

SHIPPING ORE .....	\$350,494.77
MILLING ORE .....	2,202,536.54
TOTAL PRODUCTION UP TO 1910 .....	\$2,553,031.31

**COLUMBIA MINE (Continued)**  
**ORE TONNAGE**

The work of development has produced in the mine a certain tonnage of ore in sight; the situation might be summed up as follows:

**ORE-IN-SIGHT:** That ore, which has been sampled upon three sides, within reasonable distance, and averaging about \$8.00 per ton. This is in all cases estimated at 14 cubic feet per ton.

Average Width, 47 inches.	Tons, 123,498	Value, \$14.41	Total, \$1,779,343.97
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**POSSIBLE ORE:** That ore, which has been sampled upon three sides, within reasonable distance, but averaging less than \$8.00 per ton, and which will become ore-in-sight by an increase of the milling capacity of the mine.

Average Width, 54 inches.	Tons, 73,823	Value, \$4.66	Total, \$343,778.61
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**PROBABLE ORE:** That ore which has been sampled upon one or more sides, but which has not fully been proved up by development.

Average Width, 44 inches.	Tons, 98,318	Value, \$8.30	Total, \$815,854.35
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Grand Total ..... \$2,938,976.93

**SUMMARY**

TOTAL AVERAGE WIDTH .....	44 in.
TOTAL TONS OF ORE .....	295,144
TOTAL AVERAGE VALUE PER TON .....	\$10.00
TOTAL VALUE .....	\$2,938,976.93

The above data are obtainable from the Mine-office assay-chart, which is kept from the process of daily samplings at the mine.

**Extracts from Reports on  
The Golconda Mine**

The "Golconda" Mine is located seven and one-half miles north of Sumpter in the Cracker Creek district, Baker County, Oregon.

The two principal claims, the "Golconda" and "Wide West" are located on the southwest end of same, adjoining the "Columbia" mine.

These claims were first located in 1887 and were sold ten years later to John C. English and his associates. In 1898 a large bromide plant was erected on this property, which proved entirely unsuitable to the treatment of the ores. Later a 20 stamp mill, with a Bryan roller and 18 concentrators, was substituted, operations commencing in 1900.

The amount of production has been impossible to ascertain, no authentic records having been kept at the mine; but about this time on the 200 foot level a very rich shoot of ore twelve inches wide, but only about seventy feet long, was said to have produced over \$100,000.

In 1902 the property was sold by Mr. English and fell into the hands of unscrupulous promoters who, through connivance with a fiscal agent, exploited the property through the public press but never conducted any satisfactory operations at the property.

A mortgage was later placed on the property, but no interest was paid on it and same eventually became in default, the property was sold at auction and bought by Mr. C. S. Jackson.

The development consists of a double compartment shaft and about 7,500 feet of development work.

The formation and ore occurrence is identical with the "North Pole," "E. & E." and "Columbia," although at the "Golconda" the main fissure appears to have split, and the pay-ores occur in three veins, the east, north and intermediate.

The west vein has shown some good ore.

The intermediate vein at the tunnel level is nearly flat and dipping west from the east vein.

Below the 100 foot level, on the east vein, is shown an andesite quartz, porphyry intrusion with a clay gauge, which is probably the source of the mineralization; the vein is followed down to the 500 foot level, showing a 50 foot slope to the 300 foot level.

The ore developed by the former owners has practically all been taken out. The general conditions of the mine are fair but constant care must be exercised to catch up the ground and keep the levels open in the outlying drifts, where the future development work must be done.

Ore-in-Sight: Not to exceed 5,000 tons; in reality there is little or no ore technically in sight.

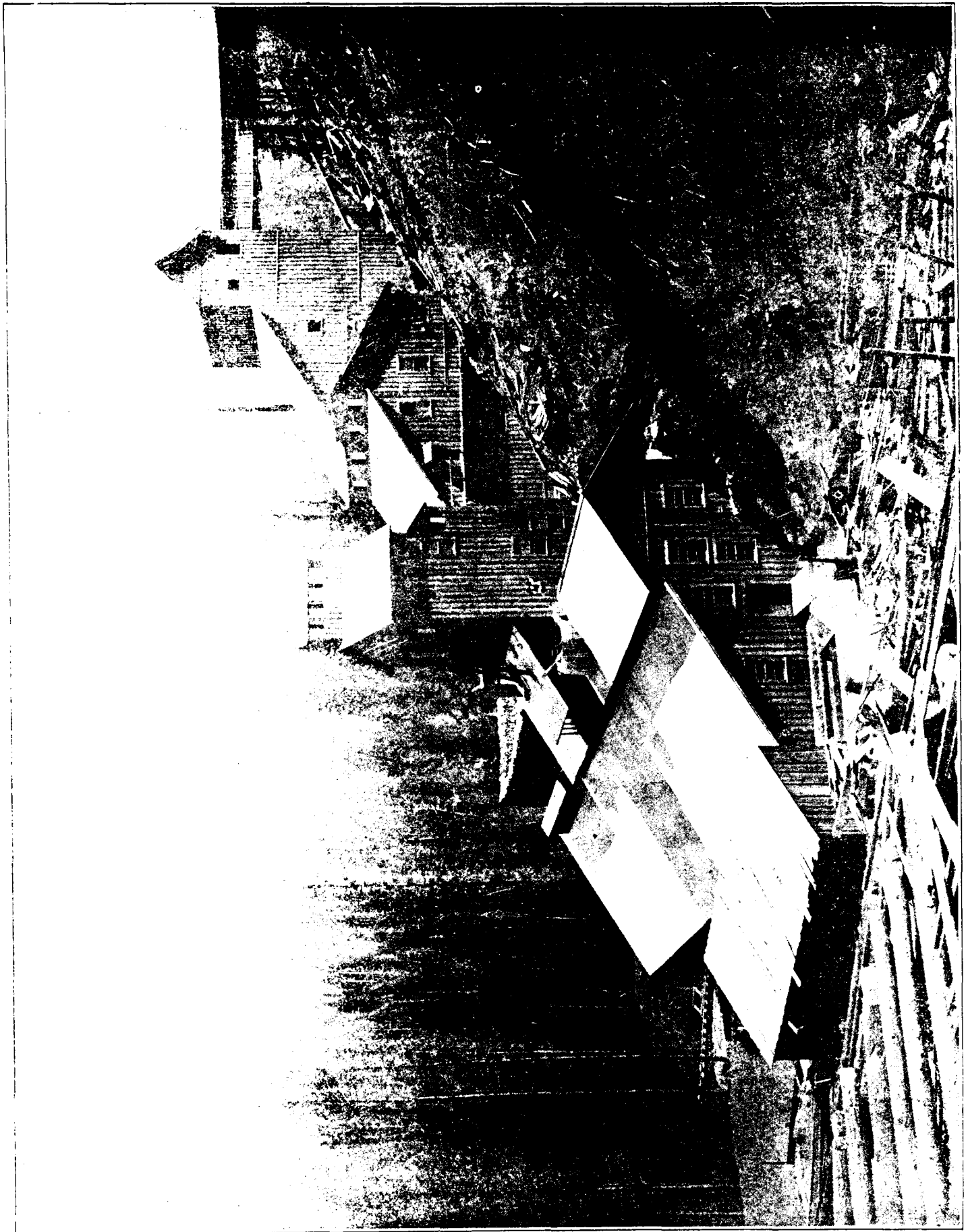
Tailings: About 10,000 tons impounded, of an average value not to exceed \$1.50 per ton.

The last operation of this property in 1903-04 gave the following production:

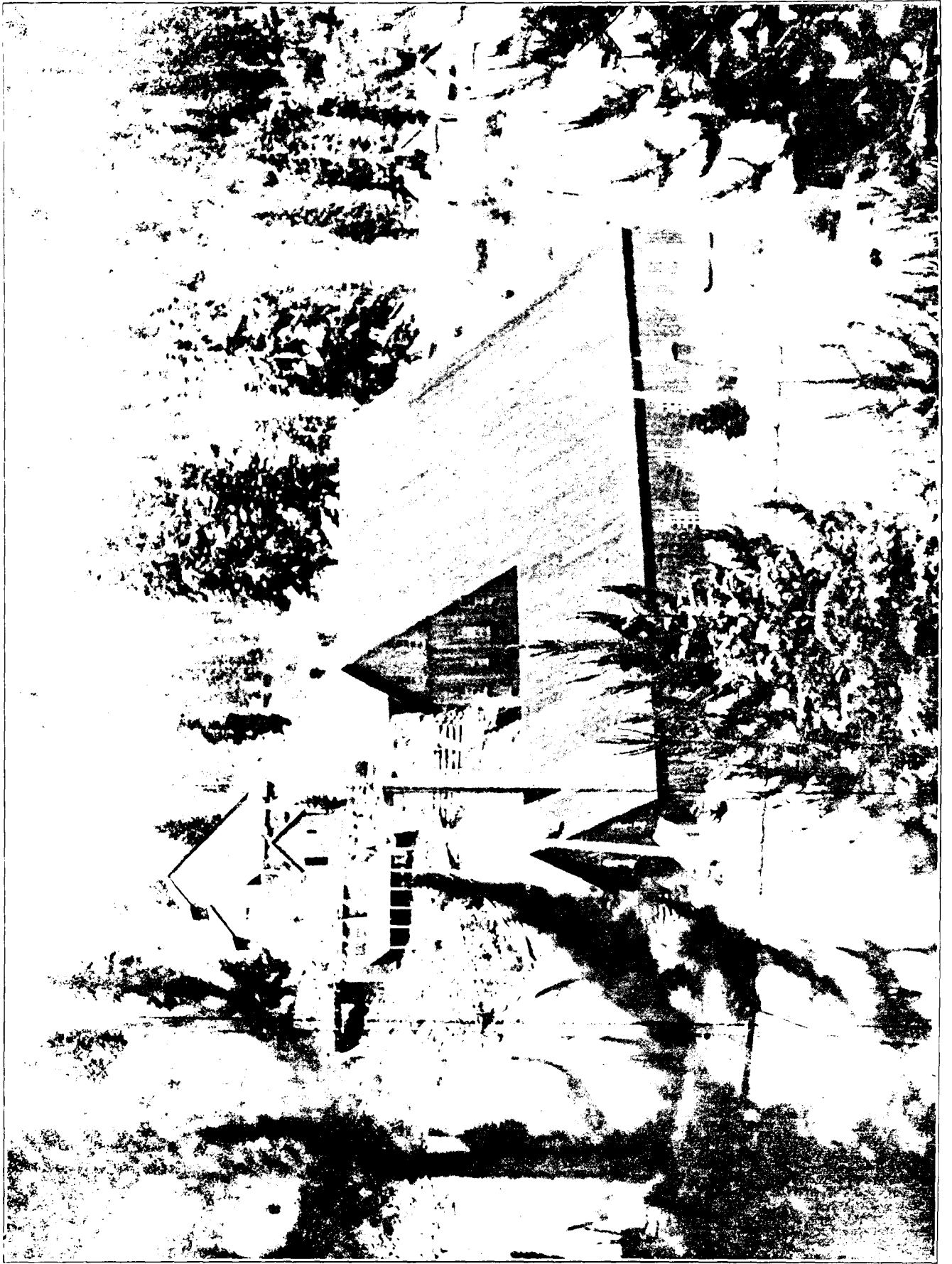
23,674 Tons ..... Total Value \$147,949.54.

To further develop and operate this property separately would require an expenditure of about \$100,000, which we do not consider advisable, as we do not believe this property can be operated independently and be made to produce any profits.

Developments during the summer of 1910 at the "Columbia" mine on the "Appomattox" claim, on the 500 foot level, within 100 feet of the junction of the same with "Golconda" ground, has disclosed a new ore shoot that without doubt extends into the "Golconda" property and when the mine is consolidated with the other properties and unwatered through connections made with the drainage tunnel it would be advisable to thoroughly explore the entire property, but not until the other properties are in full operation, and we would not recommend any expenditure on, or operation of this property until that time.



Glencunda Hill



Cracker Oregon Hill

## Cracker-Oregon Mine

The principal claims of this property are the two patented claims known as the "Cracker" and the "Oregon" and are located immediately adjoining the town of Bourne.

Reference to the Vein System Map attached to the general report shows the location and situation of the vein that crosses the two claims of this property and from which the mine takes its name.

The development work consists of about 3,000 feet; but the different lateral tunnels started under the different managers this property had in its early history, were not continued and none of the three lands opened up above the creek level reached the vein.

In the shafts and in the drifts driven from same, there was encountered some very rich ore during 1902-03, but this find was only in the form of a float deposit and while it is stated that approximately \$100,000 was extracted, and shipped to smelter, from which might be called a "picture ore."

The management at the time was such that this otherwise valuable "pocket" of rich ore was used by the promoters and their fiscal agent as an average to float the stock at very largely increased prices. While we have been unable to discover that any of the proceeds from the shipment of this ore ever reached the treasury of the Oregon Development Company, who were at the time the corporation that owned this property, and whose shareholders were in our opinion, judging from all the information we have been able to obtain in respect to past history of said company and its early management, without any doubt, swindled out of their money by one of the unfortunate conditions that surround the mining industry—that of the "Wild Catter," or camp follower; who, because of the presence in a camp such as the "Cracker Creek" is, with its well-known great producing and valuable mines, attracts to itself the unscrupulous promoter, who secures some mining claims adjoining one of these well-known mines, organizes a company, generally under some foreign state or territory, as in this case the territory of Arizona, with its loose corporation laws, was made use of by the swindlers who organized The Oregon Development Company. A fiscal agent was secured who, from the evidence, was either as unscrupulous as the promoters or else their stupid, willing tool, and the stock foisted upon the public in general.

In this case we find that the entire capital stock of this company, consisting of 1,500,000 shares, was sold at prices ranging from a few cents to a dollar per share; that this sale produced enough money, even if the promoters and fiscal agent had kept half of it, to have still left enough cash on hand to thoroughly develop this property.

In place of this a mill was partially built, presumably as another cloak used by the fiscal agent to sell stock on, causing his dupes to believe production would soon commence; when, as a matter of fact, there was none whatsoever developed, to be treated in the mill, nor was the mill ever completed.

What became of the deluded stockholders' money we have been unable to ascertain. We do know that it never was expended upon this property. The original promoters of this company were as unscrupulous a set of scoundrels as it has been our misfortune to investigate, both as to their disregard for all decency and respect for the laws of our country. They never filed their Arizona charter in the State of Oregon; they mortgaged the property, issued bonds and sold same to such of their stockholders as they were able to extract any money from; practically none of this money was expended upon the property itself. A thorough search by us of all the records in the State of Oregon or Baker County, where the property is situated, failed, to our amazement, to disclose one single instance where the company, its promoters or fiscal agent ever paid to the State or county one single dollar in taxes, but allowed these taxes, which in themselves were very nominal, consisting only of a small school tax, to remain unpaid for many years, and these, with the accumulated penalties, became tax liens against the property itself. It was sold for such by the sheriff; the company eventually, by the operation of the law, completely losing title to its property.

Interest on the bonds defaulted, as soon as new sales could no longer be effected.

Labor and supply bills were left unpaid, thereby still further jeopardizing the property, holders of these liens obtaining judgments against the property.

This property in itself, in our opinion, is one of considerable merit; we believe it has within itself the making of a producing mine. The formation is absolutely identical with the "Mother Lode," on which are located the famous "North Pole," "E. & E." and "Columbia" mines.

We believe that proper care in the development of the vein that crosses this property and outcrops so very prominently, will make of this a producing mine as good proportionately to its size as any in the entire district; if operated in connection with the "Sampson" it would be especially advantageous to either or both of these. While the entanglements surrounding this property are many and the difficulties to be overcome very considerable, we believe the effort should be made by you to secure this property, put it in active operation, under economical, practical management, and we believe your company will be well repaid for its efforts.

The mill on the property is in good order and with a very nominal expenditure can be put in order for milling purposes, when the ore development warrants such operation. A cyanide plant should be added to the equipment at that time.

We, however, strongly urge you not to expend any money nor time upon this equipment, except such as is necessary in order to protect the property from the elements or camp thieves, but to devote your entire expenditure upon actual development of the mine itself. When you have blocked out above 100,000 tons of milling ore it will be time enough for you to consider the mill and cyanide equipment.

On our inspection and later examination of this property, we found that the O. D. Co. did not have a watchman or anyone else to look after the mill and other property; but under an agreement made by us in respect to this property, we took possession of it and placed a man in charge.

## The Cracker Jack

This property was exploited by the same promoters as had the "Cracker Oregon" in charge.

There is no mineral on this property, no vein, no outcrops, nothing; it is situated on the crest dividing "Little Cracker" from "Cracker Creek," never had any value, never should have been exploited as a mine, nor even a prospect.

Its history may be summed up in one word: Fraud.

## Plan of Operation

Chicago, September 1st, 1910.

To The Sampson Company, Limited  
Bourne, Oregon

In connection with the proposed merger of the mines of the Cracker Creek district, we beg to recommend the following plan of operation:

Immediate clearing up of the Creek-level tunnel on the "Excelsior" claim, a waterway or trough two feet wide and three feet deep to be made under the ties in said tunnel, and immediately upon completion of the same connections to be made with the drifts in "North Pole" ground and same drained of water.

The Creek-level tunnel on the "Excelsior" claim to be enlarged to a two-track tunnel and retimbered all the way, new ties and new rails, the tunnel to be enlarged in height sufficient to make room for overhead electric power wires so this tunnel can later on be equipped with electric locomotive and cars for hauling ore by train loads. Connection to be made from the mouth of this Creek-level tunnel with "North Pole" tramway, that crosses the "Eureka" claim.

Extraction of ores from the "E. & E." ground to commence at once, transported by tramway to "North Pole" mill. Dismantle the Cracker-Oregon mill, dismantle the "Golconda" mill and add their thirty stamps to the thirty stamps now at the "North Pole" mill, rebuilding that part of the "North Pole" mill that contains the old roasters. (No longer in use.)

With 60 stamps, 50 should be kept in constant commission and brought up to an efficiency of crushing five tons per stamp, per 24 hours. The above work should be done in from 60 to 90 days and at that time should show a crushing of from 250 to 300 tons of ore per day, or a monthly crushing of from 6,500 tons to 7,500 tons.

Reconstruct the present "E. & E." mill to a concentration mill, and mill there all the sulphide ores, from "North Pole" ground, opening up the ores in said ground while mill is being rebuilt.

Operate the "E. & E." mill with "North Pole" ores, while the "E. & E." property below Creek-level (see map) is being prepared for mining the sulphide ores.

At this period the power question should be taken care of.

By referring to the Golconda Water Power report and map by Juessen & Clark, attached to our report, it will be observed that the present power plant at the Golconda gets its water from Silver Creek, about 130 to 150 H. P. being now generated.

By reference to the Cracker Creek District Claim Map in rear of our report and also the United States Topographic Map, it will be noted that Fruit Creek is only a short stream, with but one or two small tributaries, and the water supply is limited. Silver Creek, by reference to the same map, will be seen to be a longer and larger stream, carrying a very large volume of water, starting in the uprise of Cable Cove, with a large number of tributaries, and a supply of water sufficient to develop about 500 H. P., giving a total of 650 H. P. from the waters of Fruit and Silver Creek.

This amount of power would answer for the present only. Therefore, we recommend that the field work by Juessen & Clark be resurveyed, with the object of locating the Power Plant, about 1,200 feet below the point selected by Juessen & Clark, namely, below the junction of Silver Creek with Cracker Creek, at Hanover.

Cracker Creek and Little Cracker Creek can, by damming and reserving the water, render available about 1,000 miner's inches of water, enough to make possible the development of 1,500 H. P., which, added to the 650 H. P. from Fruit and Silver Creek, would give the company from 2,000 to 2,500 H. P. on an average all the year around.

Pending the development of the water resources, for which we especially attached the Topographic Map, so you could clearly see what they actually are, power can be purchased from the Fremont Electric Company, whose wires now cross at Bourne, west to east; a substation is located below the "E. & E." mill.

With the power question settled, and during the construction of same, connections should be made through "Tabor Fraction" ground with the "Columbia," the shaft at the "E. & E." enlarged to a three-compartment shaft, retimbered and equipped with an electric hoist large enough to hoist 1,000 tons of ore in an eight hour shift. Ore bins at the "E. & E." mill should be large enough to hold from 2,500 to 3,000 tons of ore.

The foregoing plans should all have been concluded during the first year and should, of course, include erection of suitable buildings for caring for the company's employees, as well as staff quarters, general offices, etc. We especially recommend commodious houses for employees, preferably two-family houses of from 5 to 7 rooms, equipped with modern appliances, etc. We cannot too strongly recommend that especial consideration be shown towards the comfort

## PLAN OF OPERATION (Continued)

of all employees; Men's Club House for the Staff, a small library open to all; sufficient school house accommodations for employees' children should immediately be provided, without waiting for the county to provide same.

We cannot lay too great stress upon the matter of treating employees who work for and risk their lives in behalf of the company. They should be accorded fair, square treatment, even to the extent of liberality. We believe the company can make no investment that will pay as great dividends as the money it invests in the safeguarding of the lives of its employees and the comforts supplied towards making life worth living at these mines.

We recommend a strict management, the responsibility to be placed where it belongs, and every man, from the superintendent to chores boy, made to feel that each has a duty to perform, a spirit of each man striving to do his very best, not by being driven to do it, but because he wants to do it, because of the community of interest made clear to him, by which all realize that their permanent employment or increase of compensation rests with each man's doing his level best, so the company and he may jointly succeed.

These properties are located in an organized labor union district. We recommend the paying of union labor wages and the working hours as the law of the State makes legal. We, however, recommend that these mines be operated upon the open door principle so any man who can demonstrate his fitness to do the work he is assigned to do may find employment, the company always reserving the right to discharge any man for cause sufficient to itself, without regards to his affiliation with any labor union on earth.

Under no circumstances should the company contract to employ or recognize *only* members of labor unions. There has, as far as our knowledge goes, never been a labor strike in this district, nor do we believe any will ever take place.

After the first year's operation, and after two mills are working full capacity and in good running order, there are three things to be carried out, and each will add in the future a greater success for the company.

First—Drainage.

Second—Smelting.

Third—Transportation.

The question of drainage is not one for the near future, because the ores above the water level, available, will keep two mills going for some years to come, but the question of drainage is of the future and *must* be cared for.

Drainage—By reference to the Topographic Map and the Claim Map, it will be noted that south of the "After-Thought" claim of the "E. & E." property, towards Hanover Flat, Cracker Creek runs to the east, Fruit Creek to the west, from 4,000 to 1,000 feet apart. Between these creeks, and separating them, is an upland or hill, the continuation of Columbia Mountain. The difference in altitude at the east end line of the "Columbia" claim and at Hanover is 5,000 feet, the difference at Hanover, and about 6,900 feet, the difference at the "Tabor Fraction," being a difference of about 1,900 feet.

By driving a double track tunnel from a point near Hanover Flat, north-northeast, a distance of about 6,000 feet, these properties would be drained to a depth of about 1,200 feet below the collar of the shaft at the "E. & E.," and thereby drain the entire vein fissure for a distance of about 9,000 feet, northeast from the point of intersection of deep level tunnel, with the vein at northeast and of the "Columbia" claim, and about 6,000 feet to the southwest on the vein through the "Columbia" and "Golconda" properties, a total of about three miles. (See District Claim Map.)

This would open up an enormous probable tonnage at depth, and with this done, drifts should be run in both directions on the vein, the ores blocked out and a large new mill built at the end of this drainage tunnel large enough to there mill the entire output. The other mills would by this time be dismantled, and the machinery used in the new mill. This new mill, we believe, should be of a capacity of 400 to 600 stamps, crushing from 2,000 to 3,000 tons daily.

SMELTER: Concentrates are at present shipped to the smelter at Tacoma, about 450 miles distant, at a cost of \$8.50 per ton, and the cost of hauling seven miles by team over wagon road to Sumpter. There is located at Sumpter a 250 ton pyritic smelter, now idle, on account of inadequate financing and incompetent management.

This smelter is for sale; it should be bought and put in operation by the company. There is enough public business to be had to pay all the operating charges of the smelter.

Fluxes are available in the vicinity. Coke and coal are the only items entailing special expense. They have to be reloaded to narrow gauge cars at Baker City.

The question of moving the entire plant to some point on the main line of railroad should be carefully looked into, as with the plant there a large amount of custom ores would come from mines east of Baker City, as well as from Idaho mines. We are negotiating for this smelter now.

TRANSPORTATION: These mines are six to seven miles north of Sumpter, the nearest railroad point. This distance should be covered with the construction of a railroad, operated either by steam or electricity, thereby doing away with the hauling by teams of all supplies, machinery and concentrates from the mines.

By the time the drainage tunnel is completed and the new mill erected, assuming the latter handles 2,000 tons of ore, there will be about 200 tons of concentrates to haul every day. This should be done by rail, preferably electric. The power to do so will be available from the company's own plant at a nominal cost.

We want to call especial attention here at this time to the condition of the shipping ores taken from the "North Pole." By reference to the milling result sheet in our report, it will be observed that the average of this class of ores was \$499.45 and that \$557,170.90 worth of this high class ore was shipped from the mine. There is, in our opinion, a great deal of very high grade ore in the "E. & E." property now, and much more ore of similar high values will no doubt be encountered during the operation of all these merged properties. These ores go direct to the smelter, after



## PLAN OF OPERATION (Continued)

being sacked right at the stope where taken. This, in connection with the large tonnage of concentrates there will be milled, makes it desirable that the company own the Sumpter smelter and build and own its own facilities for transporting its supplies to the mines and its ore production to the smelter.

The distance from Sumpter to Hanover Flat is about six miles, along the bed of Cracker Creek. No obstacles exist to prevent easy and rapid construction of a road bed. There is plenty of timber on hand, and the cost per mile need not exceed \$25,000, fully equipped for operation. Satisfactory connections and agreements can be made with the Sumpter Valley Railroad Co., and track connections can readily be made with the smelter.

We believe the foregoing covers the entire situation so far as a practical operating plan is concerned for these properties, as merged. Two years, or at most three years from June 1, 1911, should see the entire proposed merger under this plan effected and in full operation. There remains only the question of the advisability of undertaking this merger from the standpoint of risk and possible profits.

In matter of safety for the principal, it may be well to state that the company purchases the respective mines upon the basis of their ore-in-sight values.

## OPERATIONS AND LIABILITIES

Under this plan the company will not have any fixed charges. Its only liabilities will be:

Dividends to its stockholders.

Amortization fund.

There will be outstanding \$7,000,000, par value of stock for which dividends must be provided.

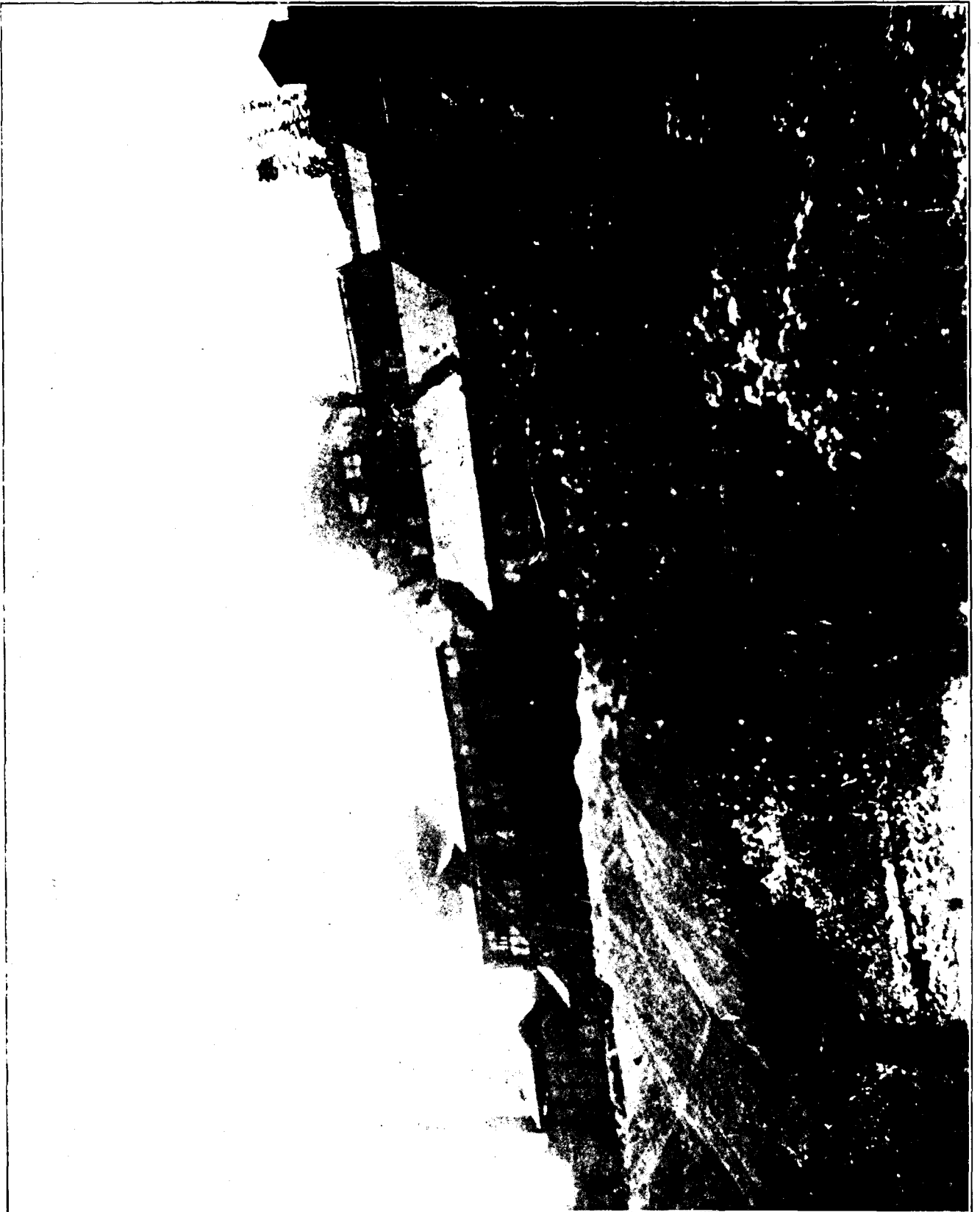
At the commencement of the third year the new large mill should be completed and in operation. This mill's minimum capacity should be at least 1,000 tons daily—an average yearly production of 300,000 tons of ore.

In order to be conservative, we believe it well to take into consideration the possibilities of the average values decreasing as depth is attained, and we believe it best to discount this contingency in advance. We prefer to make this possible value reduction sufficient to cover any possibility and would place the average ore value at \$10.00.

With the new drainage tunnel in operation, the new mill, transportation and smelter conditions overcome, as outlined, we know that the ore can be mined and milled at a cost not exceeding \$3.00. On a saving of 90 per cent. of value, a net profit of \$6.00 per ton on a yearly production of 300,000 tons, there would be earned \$1,800,000 net profits per year.

However, we are of the opinion that by the end of the fourth or fifth year the properties will be able to send 2,000 tons of ore to the mill every day, and this would make possible a gross production of 600,000 tons yearly of \$10.00 ore, or \$6,000,000 gross. We have reason to believe that this is not alone possible but very probable, and may even be exceeded.

We further believe that by merging these properties and operating them as outlined above, with a progressive, active, practical management, these mines will rank among the first, second or third largest producers on the American continent, and they will rank very high among the gold mines of the world.



Smelter Smelter

Crocker Creek Dist

Analulu Mine (gold-silver) Crocker Creek Dist

Reported owned by Bert Piper Baker Oregon  
Located about nine miles from Deserpter on a branch  
of Silver Creek in Sec 6, T 9 S, R 37 E at Elvaston 5320.  
On the NW extension of the North-Pole-Columbia Pole  
About 300 ft of tunnels and 300 ft of shafts. Mine is  
being prospecte<sup>d</sup> by the owners. vein said to be 10  
wide, assays \$6.00. Area 4 claims and millsite

Argonaut Mine Crocker Creek Dist

Quote D.L. 7015 page 23

Press reports of 1937-8 state that some high grade  
ore was shipped and that the Baker Creek Mill  
had been purchased and was being hauled to  
the property. Later private advices indicate  
that there were some financial difficulties and  
work had ceased.

Baker of Baker Mine

Crocker Creek Dist

Quote Vol 1-6-p 97

No additional information

Big Pine Group

Crocker Creek Dist

Copy address report

2/ Crocker Creek Out (cont)

Buckeye Mine

Crocker Creek Out

Quote Handbook page 204  
No additional information

Bunker Hill Mine

Crocker Creek

Quote Handbook page 667 as indicated

Parent ownership of the property unknown. It is on the SW extension of the North Pole - Columbia lode and has been idle for years.

Almax Mine

Crocker Creek Out

Quote De 7010 - page 21

Crocker Creek Gold Mining Co (9-22-38) Center Creek West

<sup>holding</sup> Delaware corporation organized 1938, officers, Paul <sup>E</sup> Murphy  
pres. Portland, Oregon, C B Howe Secy, Portland Oregon and  
A A. Fieger Municipal Mine. Mex.

Property: This is a consolidation of the of the properties of  
the Columbia Gold Mining Co, Tabon Tracer, to and E, North  
Pole, Monument, Golden Gate and Hammer Claims, together  
with water rights making a large acreage along  
and near the North Pole - Columbia lode. The total length  
along the lode, <sup>of the above named properties</sup> is 10,428.9 ft. Transfer of properties by  
deeds was made and recorded late in August 1938.  
In Sept. 6, 1938 the consolidated property was

3/ Coalsco Creek Mine (cont)

for 99 years  
leased, on a royalty basis to the Campbell-Oregon Gold  
Mining Corporation, <sup>also</sup> a Delaware corporation, address  
84 William St. New York, R. Potter Campbell Pres. Austin G,  
Hoady-See-Trans. (~~with~~)

Work began at once in cleaning out and retrimming the  
workings, repair of buildings and an exhaustive examination  
and sampling of the mine above the water level.

This will take several months, if the results are  
favorable a large operation will result.

Cracker Creek Dist (cont)

Cracker-Oregon Mines (gold-growth) Cracker Creek Dist  
Quote Handbook page 82

Galconda Consolidated Gold Mining Co Cracker Creek Dist  
The Galconda Mine, <sup>Controlled by the Jackson estate of Portland Ore</sup> is on the North-Pale-Columbia ~~beds~~  
immediately NW of the Columbia River (near a part  
of the Cracker Creek Gold Mining Co) with 3000 ft along  
the side. There has been but little activity here  
since 1905: until recently when a lease is now  
mining by hand methods and shipping to a smelter.  
Geology and other details are given in the North-  
Pale-Columbia Rock description.

Hemlock (No 5) claims Cracker Creek Dist  
Quote Handbook page 118

Iber Gold Mining Co Cracker Creek Dist  
An Operating Corporation: P.O. McTavish Pres. 310 Rogers Bldg  
Vancouver B.C. L.E. Guelle Vancouver B.C. Secy  
W.C. Fellows Manager and attorney-in-fact Baker Oyer  
Capitalization \$20,000, <sup>per value 15</sup> Common \$70,000 preferred per value  
\$10

Quote I.C. 7015 page 22

Since the above was written drifting <sup>both ways</sup> upon the ~~the~~  
~~about 600 ft~~ has been done with ~~concrete~~ <sup>at intervals</sup>

# Crocker Creek Sect (cont)

Loss of finances has prevented ~~much~~ work  
being done during 1928. In Sept and Oct. 1927  
113.86 tons coal shipped netting \$1403.50

References, *Geological Society Handbook Hewitt Z.C. 7015*  
*Min. Res. Vol. #6 - p 95*

Macintosh Mine

Crocker Creek Sect

Quote *Handbook* page 145

Mountain View Mine

Crocker Creek Sect

By *R.P. Anderson, Baker*

Quote *Z.C. 7015* page 23

Pica Anderson Group

Crocker Creek Sect

Quote *present* *Coal*

6) Crocker Creek Dist (cont)

South Pole Mine

Crocker Creek Dist

Owned by R P Anderson Baker Oregon

While most of this property is on the Rock  
Creek side of the divide it is placed in  
the Crocker Creek District because it joins  
the North Pole mine on the N-W and is on the  
North Pole Columbia beds. (See Crocker Creek  
Gold Mining Co for description. Has been  
idle for years.



GOLCONDA: Bourne District, Cracker Creek Area.

Development: Shaft 510 ft.; total work about 7,000 ft.

Relationships: 3 veins in argillite. Strike NE., dip NW. Quartz, pyrite, arsenopyrite, marcasite, possibly other sulfides, much fuchsite.

Milling & Production: Meager record. Ratio of concentration 7:1 to 15:1. Free gold 40 to 50 per cent. Ratio of gold to silver in bullion 720 to 220.

Production estimated at \$600,000. (Hewett, 31; 17)

COLUMBIA: Bourne District, Cracker Creek Area.

Development: Shaft 918 ft.; total work about 50,000 ft.

Relationships: Vein in argillite. Strike NE., dip SE. Quartz, pyrite, stibnite, fuchsite, roscoelite.

Milling & Production: Record not available. Ratio of concentration 10:1 to 15:1.

Free gold 40 per cent. Estimated production \$4,000,000. (Hewett, 31; 17)

EUREKA-EXCELSIOR: Bourne District, Cracker Creek Area.

Development: Shaft 762 ft.; total work about 20,000 ft.

Relationships: Vein in argillite; strike NE. Quartz, pyrite, arsenopyrite.

Milling & Production: Ratio of concentration, gangue to sulfides 25:1 to 20:1.

Free gold less than 5 per cent. Ratio of gold to silver about 1:2. Production estimated at \$1,750,000. (Hewett, 31; 18)

NORTH POLE: Bourne District, Cracker Creek Area.

Development: 5 tunnels, total work about 13,000 ft.; attains 1,100 ft below outcrop.

Relationships: Vein in argillite, strike NE., dip SE. Quartz, pyrite, arsenopyrite, stibnite, tetrahedrite, fuchsite, roscoelite, hessite.

Milling & Production: Free gold, 6 to 20 per cent. Production estimated at \$2,000,000. (Hewett, 31; 18)

BUCKEYE: Bourne District, Cracker Creek Area.

Development: 4 tunnels, total work about 4,000 ft.; attains 900 ft below outcrop.

Relationships: 2 veins in argillite. Strike N. 60° E., dip SE.; strike N. 85° E., dip S. Quartz with meager sulfides.

Milling & Production: Not recorded. Production estimated at \$6,000. (Hewett, 31; 18)

IBEX: McCully District, Cracker Creek Area.

Development: 3 tunnels, total 5,500 ft.; lowest tunnel follows vein 2,700 ft.; attains 600 ft. below outcrop.

Relationships: Vein in argillite near quartz diorite, few premineral dikes. Strike N. 25° E., dip 60° to 80° SE. Quartz, pyrite, tetrahedrite, pyrargyrite, calcite, secondary cinnabar.

Milling & Production: Meager record. Ratio of gangue to sulfides low (less than 5 per cent?). Ratio of gold to silver about 1:10 or less. Gold 30 per cent free. Small production. (Hewett, 31; 16)

BALD MOUNTAIN: McCully District, Cracker Creek Area.

Development: Shaft and drifts with tunnel 300 ft.; total about 3,000 ft.

Relationships: Vein in argillite (extension of Ibez?). Strike N. 60° E., dip 70° SE. Quartz, pyrite.

Milling & Production: Meager record. Ore similar to Ibez. Gold 30 per cent free. Small production. Hewett, 31; 17)

BELLE OF BAKER: McCully District, Cracker Creek Area.

Development: Shaft 385 ft.; with 2,000 ft. of drifts.

Relationships: Vein on contact of argillite and diorite (extension of Mammoth). Quartz, pyrite, roscoelite, calcite.

Milling & Production: Meager record. Ratio of gangue to sulfides very low. Gold largely free. Production estimated at \$400,000. (Hewett, 31; 17)

MAMMOTH: McCully District, Cracker Creek Area.

Development: Shaft 300 ft. with drifts.

Relationships: Vein on contact of argillite and diorite. Quartz, Pyrite.

Milling & Production: Meager record. Bullion 500 to 600 fine. Production estimated at \$40,000. (Hewett, 31; 17)

ANNALULU: Silver Creek, Cracker Creek Area.

Development: Tunnels.

Relationships: Vein in argillite. Quartz.

Milling & Production: No record of milling or production. (Hewett, 31; 17)

MOUNTAIN BELLE: Silver Creek District, Cracker Creek Area.

Development: Shaft 300 ft. and tunnel.

Relationships: Vein in argillite. Quartz, pyrite.

Milling & Production: No record. (Hewett, 31; 17)

CLIMAX: Bourne District, Cracker Creek Area.

Development: 2 tunnels, lower 550 ft. crosscut, and drifts.

Relationships: 3 veins in argillite. Strike N. 65° E., dip 60° NW. Quartz, fuchsite, sparse sulfides.

Milling & Production: No record of milling. Small production. (Hewett, 31; 17)

MAYFLOWER: Silver Creek District, Cracker Creek Area.

Development: 2 tunnels, lower 510 ft. crosscut, and drifts.

Relationships: 2 veins in argillite. Strike N. 75° E., dip 75° SE. Quartz, pyrite, chalcopyrite, tetrahedrite, roscoelite, fuchsite.

Milling & Production: No record of milling. No production. (Hewett, 31; 17)

Cracker Creek Cable Cove Dist.

NAME	OLD NAMES	PRINCIPAL ORE	MINOR MINERALS
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T	R	S
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..... Baker ..... COUNTY

..... Cracker Creek ..... AREA

..... ELEVATION

..... ROAD OR HIGHWAY

..... DISTANCE TO SHIPPING POINT

PUBLISHED REFERENCES

MISCELLANEOUS RECORDS

PRESENT LEGAL OWNER (S) .....

.....

.....

.....

Address .....

.....

.....

.....

.....

OPERATOR .....

Name of claims	Area	Pat.	Unpat.

Name of claims	Area	Pat.	Unpat.

EQUIPMENT ON PROPERTY

.....

Bourne District

NAME	OLD NAMES	PRINCIPAL ORE	MINOR MINERALS
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T	R	S
---	---	---

..... Baker ..... COUNTY

..... Cracker Creek ..... AREA

..... ELEVATION

..... ROAD OR HIGHWAY

..... DISTANCE TO SHIPPING POINT

PUBLISHED REFERENCES

MISCELLANEOUS RECORDS

PRESENT LEGAL OWNER (S) .....

Address .....

OPERATOR .....

Name of claims	Area	Pat.	Unpat.

Name of claims	Area	Pat.	Unpat.

EQUIPMENT ON PROPERTY