

QUARTZ PROPERTY

Baker
June 1, 1938

- 1) Name of property: Highland-Maxwell mine.
Operator: Claire D. Schlemmer, Baker, Oregon (owner).
Location of property: In the Rock creek mining district, on the northeast slope of the Elkhorn mountains, about 15 miles airline WNW from Baker. The camp, mill, and main adit (4th level) are on the east fork of Rock Creek, an easterly flowing tributary of Powder River, at an elevation of 6,100 feet, in section 19, T8S, R38E. About 2500 feet above Haines, the shipping point on the U.P., which is 14 miles distant by fair valley and mountain road, all down grade. The contract cost of trucking the concentrates is \$1.75 per ton, or 12½ cents per ton mile.

(Quotation marks in this report refer to report by F.E. Calkins, 209 Tabor Bldg., Wallace, Idaho, October 5, 1937; made to secure data for presentation to the S.E.C. All the data quoted has been checked by Mr. Schlemmer as to continued accuracy).

Acreage of holdings: "The property comprises two contiguous mines, the Highland and the Maxwell, on the same vein, and consists of 21 mining claims and millsite as follows:

Highland: 12 patented claims, 187 acres; Millsite, 1 claim of 5 acres.

Maxwell: 8 patented claims, 132 acres; 1 unpatented claim of 20 acres."

- 2) History of property: "The claims were first located in 1891 and development began about 1900. Worked intermittently by various operators including Highland Gold Mines Company, and National Mines Company until 1921. Records of production up to that year are very incomplete, but estimates contained in old reports of \$375,000 for the Highland and \$100,000 for the Maxwell, total \$475,000 mostly in gold but with some silver, are probably somewhere near correct.

The Highland production was all from above No. 4 tunnel level, the lowest level, and principally from sulphide ore, which was concentrated before shipping to the smelter. The Maxwell production is said to have been mostly from free milling gold ore near the surface.

The Mine was idle from 1921 to July 1, 1935, when Mr. Claire D. Schlemmer, the present operator, began work under option to purchase, and has continued steadily up to present date.

The equipment was reconditioned, the No. 4 tunnel level was reopened and extended, new ore shoots discovered, the old 100-ton flotation mill repaired and remodeled, and milling of the ore started in April 1936.

Much experimental work was done, and mill recovery was increased from less than 75% of the gross value in the beginning to an average of 95% for the last six months, and over 95% for the last two months." (Since September, 1937, the average has been 96%. J.E.A.)

-2-

- 3) History of production: During the period of 17 months from the time the mill was reopened to September 1, 1937, the time Calkins report was made, the production was 5,400 tons of ore averaging 0.42 ounces of gold, and 3.65 ounces of silver, of a gross value of \$79,380 gold and \$15,120 silver, total \$94,500, figured at prices of gold \$35, and silver 77 cents per ounce.

"The net smelter returns on concentrates from this ore was \$65,050, of which \$38,700 was produced in the last six months of the period from No.3500 ore shoot at a profit of about \$7000."

"Profits have necessarily been small because of the low rate of production, about 10 tons per day, and consequently high overhead cost per ton, and also because much of the ore was mined through winzes and hoisted. Limited capital has prevented the doing of enough preliminary development work to open up a sufficient horizontal area of ore backs for an economic rate of production, which at this mine would be about 50 tons per day."

In the last 7 months since September 1, 1937, the mill has operated less than 100 hours per month, milling a total of 1636 tons of ore with an average concentrating ratio of about 7.5 to 1. The values per ton for this period averaged \$22.66, of which a 95.9% recovery was made. During October a recovery of 98.7% was attained.

During this same period, an average shipment of concentrates (although the values varied within wide limits) contained approximately the following values:

Pb%	Zn%	As%	Cu%	Oz.Au	Oz.Ag
3.30	3.40	2.27	.96	3.09	16.09

- 4) Development: "The Highland -Maxwell vein has been explored and partly developed, mostly to only a few feet vertical depth, for over a mile along its strike, by numerous tunnels. The maximum vertical depth attained by the lowest tunnel is 900' (now 1300', June 1, JEA) at the east end, under the west slope of the north-branching ridge that separates this mine from the Baisley-Elkhorn to the east.

Nearly all the workings, except the lowest or No.4 tunnel level are now caved and inaccessible. No plan map showing all the levels is available. The plan of the No. 4 level, and a short stretch of No.3 level, opened up by Mr. Schlemmer, is all that is known.

Following is a list of the development work done by the present operator:

Drifts	Drifts	X-cuts	Raises'	Winzes	Total
West end	420	50	195	0	665
East end	1,040	427	220	136	1,823
	1,460	477	415	136	2,488

Since September 1, 1937, the following work has been done:

East end:	600	120	50	50	770
	2,060	597	415	186	3,258

The development work done by the present operator thus totals about 3,258 feet, of which the 665 feet at the west end of the No. 4 level was without favorable result. The east end of this adit, with 2,693 feet of work, developed about 7,400 tons of ore, with an average gross value of nearly \$22.00 per ton, which has been mined and milled and upon which smelter returns from concentrates averages \$13.50 per ton of ore.

Recent diamond drill holes below the No. 4 level have lead to the sinking of a 50 foot winze and lower level. Mining at the preset time (June 1, 1938) is going on at this level, in the 2300 and 2400 ore shoots at a level 50 feet below the No. 4 level.

Up to September 1, 1937, the estimated tons per foot of development on the main vein in the east workings was about 3 tons. This does not include the west workings nor a 383 foot crosscut to the north into the granite. (Since Sept, 2.1 Tons/foot.)

5) General description : The topography is steep and rugged, the millsite being over 1000 feet above the level of Rock creek. The vein crosses the north-flowing gulch (in which sufficient water for a 500 ton mill is said to flow the year round) and the ridge to the east, 1500 feet above the mill site. Of the four old millsites still visible, the present one is the lowest. The large old mill-building has been partitioned off for better heating, and only the lower portion is in use. The ore is brought out of the No. 4 tunnel into a large shed which is used for timber working, keeping the mules, with partitioned change rooms and blacksmith shops. From here a long shed runs out over the waste dump, and another carries the tracks about 500 feet to the mill. All ^{tracks} are enclosed for year round operation under the heavy snows. Nearby are the assay laboratories and offices, as well as the bunk houses and dining rooms.

The mill equipment is outlined in the flow sheet prepared by Mr. Motz, under section #7.

The Highland-Maxwell vein parallels the granodiorite contact, which lies about 300 feet to the north. The country rock is an argillite, varying from carbonaceous to siliceous.

Timber is plentiful, although continued operation in the vicinity has cut it back for several hundred yards in all directions.

Power is obtained from the E. O. L and P. line, 3000 feet distant in Rock creek.

Wages are \$4.00 per 8-hour day for muckers and \$4.50 for miners. Twenty five men are now employed.

6) Geology, General and local: The western part of the vein strikes almost east-west, but as one goes to the east the trend changes until in the easternmost workings the strike is N 55° E. The dip is nearly vertical, but the ore chutes are said to occur when it is dipping steeply to the north. The shoots are from less than 100 to nearly 1000 feet long. They are not wide, and the ore is seldom more than 3 feet thick, with attendant gangue and crushed vein material not over 25 feet thick.

The vein is entirely within the argillite, the granodiorite contact lying at least 400 feet to the north, on the No. 4 level. Several narrow dikes of aplitic of ~~alaskitic~~ material cross the vein. They seem to be off set by the movement of the vein a distance of about 350 feet, which bears out other evidences of considerable post mineral faulting, *south side to the east.*

The ore consists of pyrite, ~~sphalerite~~ and galena, with less amounts of sphalerite, and traces of chalcopyrite, arsenopyrite. Tetrahedrite is said also to be present, but was not seen. The highest values seem to be found in the fine-grained sulphides, some of which is said to run as high as \$420 per ton in gold and silver, and will pass a 100 mesh screen. The more coarsely crystalline sulphides are lower in value.

The gangue material consists of siliceous argillite in various stages of comminution and brecciation, of quartz, and of the abovementioned alaskitic dikes, which ^{some times} contain disseminated pyrites. There has been much post-mineral movement, as pyritic slickensides and large clean surfaces attest. The ore is primary, lying well below the water table in the No. 4 level.

omit 7) Metallurgy: The included flow sheet and mill survey kindly supplied by Mr. Motz gives the data for this.

8) Economics: There is entirely too small amount of developement for the size and best operation of the mill. At the present time there is only one ore-face, although there are good prospects of opening up another in a tributary vein now being developed to the north (see map). There seems to be only a small amount of ore in reserve, and it is pretty much a hand to mouth proposition. This fact is not due to lack of skill in management, but to lack of capital, I am informed.

The ore is now being mined 50 feet below the tunnel level, and the cost of hoisting is added to that of mining and milling.

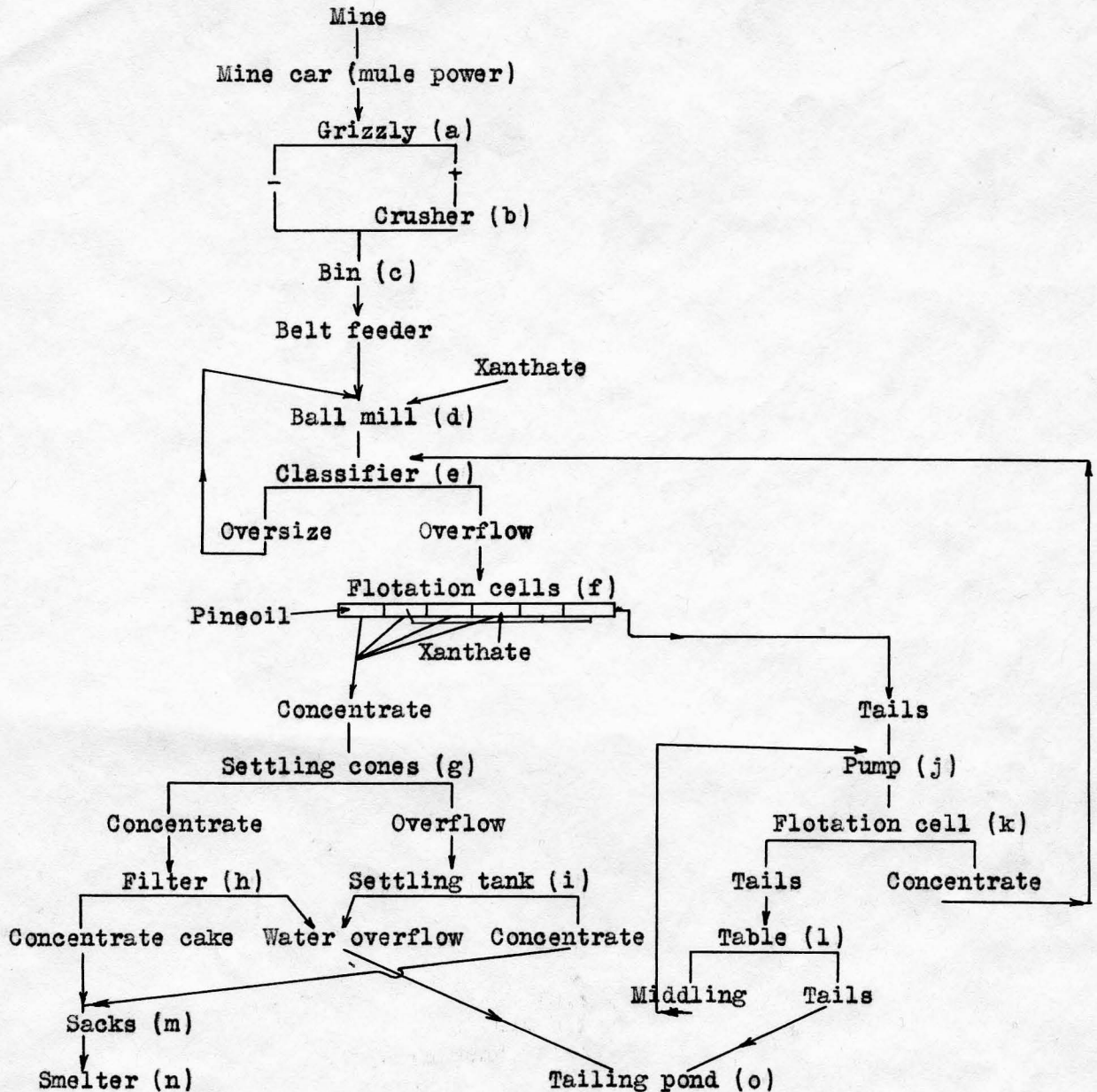
A large investement would be required to open up at a lower level, even though it has been proven that the ore goes down. Unless this is made, however, the life of the mine may be short. The only other possibility is that a new ore ~~shute~~ or ~~shutes~~ will be found further to the east or parallel to the main vein. It is to this end that present developement work is being directed.

June 9, 1938

John Eliot Allen
John Eliot Allen

FLWSHEET OF HIGHLAND MINE

Rock Creek, near Haines, Oregon



Notes on flowsheet: a) $1\frac{1}{4}$ " opening. b) Gates, 8x4", 50-HP AC Motor. c) Timber, 120-ton capacity. d) Colorado Iron Works, 6x6', 50-HP AC motor, belt and gear drive. e) Dorr Duplex, 54"x 15', belt drive from ball mill line shaft. f) Denver Equipment Company, 6-cell Fahrenwald, one 5-HP AC motor to 3 cells, V-belt drive. g) 2 10-foot Callow cones. h) Portland (Oliver type) Filter, Colorado Iron Works, 4' wide, 6' diameter. Gardner-Rix compressor, $4\frac{1}{2}$ x $4\frac{1}{2}$ ', 5-HP AC motor. Ingersol vacuum pump. i) 24x6' wood stave tank. j) 3-HP sinking pump with sump. k) Denver Equipment Company Unit cell, 5-HP AC motor, V-belt drive. l) Wilfley, 6x15', 240 strokes per minute, 5-HP AC motor. m) Canvas cement sacks, 125# concentrate (10% moisture) per sack. n) Tacoma smelter via truck to Haines and then U.P. freight to Tacoma. o) Cribbed and flumed with vertical drain in pond, clear water drains continuously. Reagent consumption: 6 balls (30#) per 100 tons; Xanthate, 2-6, 0.5# per ton; Pine oil, 3 pints per 100 tons.

Respectfully submitted,

Leslie L. Motz
Leslie L. Motz, State Assayer

Highland Maxwell Mine ✓

Gold Silver-Lead

NAME

OLD NAMES

PRINCIPAL ORE

MINOR MINERALS

T8S

R38E

Sec.19

T

R

S

PUBLISHED REFERENCES

Lindgren 01:648
 Swartley 14:161
 Pardee & Hewett 14:77,78
 Parks & Swartley 16:121,150
 Hewett 31:3,10,13,15
 Lorain 38:24
 Oregon Metal Mines Handbook 14A pg-87

MISCELLANEOUS RECORDS

Baker..... COUNTY
 Rock Creek..... AREA
 6100..... ELEVATION
 ROAD OR HIGHWAY
 14 mi. UPRR near Haines.. DISTANCE TO SHIPPING POINT

PRESENT LEGAL OWNER (S) ... W.F. Johnston
 ... J.S. Newcomer

Address

OPERATOR

Name of claims Area Pat. Unpat.

20 claims x

Name of claims Area Pat. Unpat.

EQUIPMENT ON PROPERTY

DEPARTMENTAL RECORDS on file in

MINERAL AND VEGET RECORDS

Bureau of Geology

Bureau of Geology
 Department of Geology
 1938

1938
 1939
 1940
 1941
 1942
 1943
 1944
 1945
 1946
 1947
 1948
 1949
 1950
 1951
 1952
 1953
 1954
 1955
 1956
 1957
 1958
 1959
 1960
 1961
 1962
 1963
 1964
 1965
 1966
 1967
 1968
 1969
 1970
 1971
 1972
 1973
 1974
 1975
 1976
 1977
 1978
 1979
 1980
 1981
 1982
 1983
 1984
 1985
 1986
 1987
 1988
 1989
 1990
 1991
 1992
 1993
 1994
 1995
 1996
 1997
 1998
 1999
 2000
 2001
 2002
 2003
 2004
 2005
 2006
 2007
 2008
 2009
 2010
 2011
 2012
 2013
 2014
 2015
 2016
 2017
 2018
 2019
 2020
 2021
 2022
 2023
 2024
 2025

REPORTS

SHIPMENT AND ASSAY RECORDS

MAPS

<p><i>Sketch tracing by JEA of a map showing underground workings</i></p>				
<p>Claims and plan--by Metzger, 1916, revised by Henderson to 1937</p>				x
<p>Plan and section including some assay data, Henderson, Sept., 1937</p>				x
<p>Section, 1937</p>				x
<p>Tunnel, 1938</p>				x

HIGHLAND MINE

BALD MT. -
ELKHORN R.
ROCK CR. D.

The most important properties in the Rock creek district are the Highland, Maxwell and Baisley-Elkhorn.

The *Highland mine* is located a mile southeast from Rock creek, in the lower end of what is frequently called Maxwell basin. This property, which has been developed since 1900, was closed down in April, 1914, after having produced a little less than one-third of a million dollars.

The country rock varies from carbonaceous to siliceous argillite, and is close to the border of the intrusion. The strike of the vein is N. 75° E., and the dip is nearly vertical. The lode, although locally as much as 25 feet wide, has usually no more than 2½ feet of ore. Four shoots have been encountered in the development of the vein. The principal one is 1,000 feet long, and has been the source of most of the ore recently extracted. The ore is a concentrating one, and the values are in pyrite, blende, galena and lesser amounts of arsenopyrite, chalcopryite and tetrahedrite. The average value of the ore mined is about \$8, and the recovery is 75 per cent or less.

The present concentrating mill, which has a daily capacity of 50 tons, is neither properly equipped nor of sufficient size to operate profitably upon this ore. It is reported that only a small part of the available tonnage of ore has been extracted from the principal shoot, which has only been developed to about 350 feet in depth.

} low in
ZINC ZONE
pyrite - more
blende - less
galena - disappears
} more.

HIGHLAND MINE

ROCK CREEK DISTRICT

Prescott 6/1/37--In the Rock Creek District 13 miles southwest from the shipping point, which is Haines, Oregon, on the Union Pacific and the Old Oregon trail. The mine was located about 40 years ago and consists of 12 patented claims, which are recorded in Baker County. It is located in a high mountain area, the country rock being argillite with hanging walls and footwalls of argillite. A true fissure vein, the vein strata bearing northeast and southwest, width, 3 feet to 4 feet; length, one mile. Mineral is gold and silver, assays at \$22; has production record of \$375,000; water is ample, power from Eastern Oregon Light and Power Co.; timber on claims. Mine is in operation, 24 men employed; equipped with a ball mill and flotation plant of 100 tons capacity and other equipment required for a first-class plant. Developed by 6000 feet of tunnels, 1000 feet of raises. Owner is Claire D. Schlemmer, Baker, Oregon.

HIGHLAND-MAXWELL MINE

From report by F. E. Calkins, Mining Engineer & Geologist, Oct 5th 1937. (209 Taber Building, Wallace, Idaho).

I respectfully submit the following report on the Highland Maxwell Gold Mine, after two weeks examination from September 8th to September 23rd 1937. The purpose of this examination was to secure data for presentation to the Securities and Exchange Commission and also to determine the structural control of the ore-shoots in order to facilitate future development work. I wish to acknowledge the valuable assistance of your mine superintendent, Mr. B. T. Isgrig, and your engineer Mr. Donald Henderson.

PROPERTY

The property comprises two contiguous mines, the Highland and the Maxwell, on the same vein, and consists of twenty-one mining claims and a mill-site as follows; *First loc. in 1891*

	LODE MINING CLAIMS						MILL-SITE	
	<u>Patented</u>		<u>Unpatented</u>		<u>No.</u>	<u>Patented</u>		
	<u>No.</u>	<u>Acres</u>	<u>No.</u>	<u>Acres</u>		<u>Acres</u>		
HIGHLAND	12	187			1			
MAXWELL	8	132	1	20		5		
	20	319	1	20	1	5		

(over)

SITUATION

The property is situated in the Rock Creek Mining District Baker County, Oregon, on the northeast slope of the Elkhorn ridge of the Blue Mountains, and is fifteen miles air-line distance west northwest from Baker, the county seat. *Sec 19 - T8S - R 38E*

The camp, mill and main adit are on the east fork of Rock Creek, an easterly-flowing tributary of the Powder River, at an elevation of 6,100 feet above sea level. *(2500' above Haines)*

TRANSPORTATION:

The mine is fourteen miles distant by good valley and fair mountain road from Haines Station on the Union Pacific railroad. This road is all down grade to Haines and the contract cost of motor truck haulage of concentrates is \$1.75 per ton, or 120 1/2¢ per ton-mile.

TIMBER, WATER, POWER, WAGES, Etc.

The property has considerable mining timber, which is the present source of supply, and large additional supplies are available nearby.

Water is abundant, enough for a 500-ton mill in the driest season, and the camp water is excellent.

Mine, mill, and camp are supplied with hydro-electric power from the main line 3,000 feet distant. *E. Ore. L. & P.*

Wages are \$4.00 per 8-hour day for muckers and \$4.50 for miners. Snowfall is heavy in the winter but operations are conducted throughout the year.

The claims were located in the early nineties and development began about 1900. Worked intermittently by various operators including Highland Gold Mines Company, and National Mines Company until 1921. Records of production up to that year are very incomplete but estimates contained in old reports of \$375,000 for the Highland and \$100,000 for the Maxwell, total \$475,000 mostly in gold but with some silver, are probably somewhere near correct.

The Highland production was all from above No. 4 tunnel level, the lowest level, and principally from sulphide ore, which was concentrated before shipping to the smelter. The Maxwell production is said to have been mostly from free-milling gold ore near the surface.

The mine was idle from 1921 to July 1, 1935, when Mr. Clate D. Schlemmer, the present operator, began work under option to purchase, and has continued steadily up to present date.

The equipment was reconditioned, the No. 4 tunnel level reopened and extended, and new oreshoots discovered, the old 100-ton flotation mill repaired and remodeled, and milling of ore stated in April 1936.

Much experimental work was done, and mill recovery was increased from less than 75% of the gross value in the beginning to an average of 95% for the last six months and over 95% for the last two months.

96% for last 6 m.

HIGHLAND-MAXWELL MINE

From the time milling was started, to September 1, 1937, a period of seventeen months, the production was 5,400 tons of ore averaging 0.42 ounces of gold and 3.65 ounces of silver of a gross value of \$79,380 gold and \$15,120 silver, total \$94,500, figured at prices of gold \$35, and silver 77¢ per ounce.

The net smelter return on concentrates from this ore was \$65,050 of which \$38,700 was produced in the last six months of the period from No. 2500 oreshoot at a profit of about \$7000.

Profits have necessarily been small because of the low rate of production, about 10 tons per day, and consequently high overhead cost per ton, and also because much of the ore was mined through winzes and hoisted. Limited capital has prevented the doing of enough preliminary development to open up a sufficient horizontal area of ore backs for an economic rate of production, which at this mine would be about 50 tons per day.

DEVELOPMENT

The Highland-Maxwell vein has been explored and partly developed, mostly to only a few vertical depth, for over a mile along its strike, by numerous tunnels. The maximum vertical depth attained by the lowest tunnel level is 900 feet at the east end, under the west slope of the high north-branching ridge that separates this mine from the Baisley-Elkhorn mine to the east.

Nearly all of the workings, except the lowest or No. 4 tunnel level are now caved and inaccessible. Map No. 3, accompanying this report, shows a long section of the mine, on which the

HIGHLAND-MAXWELL MINE

stoped areas are outlined, largely from hazy information. Very little ~~inf~~ is known of the details. Old reports state that it is reasonably certain that not all of the stoped areas are shown.

No plan map showing all of the levels is available. The plan of No. 4, level, and a short stretch of No. 3 level, opened up by Mr. Schlemmer, is all that is known.

Following is the list of development work done by the present operator.

	DRIFTS	X-CUTS	RAISES	WINZES	TOTAL
West End	420	50	195	0	665 feet
East End	1,040	600	427	120	2,227
			(597)	(186)	(2,593)
TOTAL	1,460	2,060	477	(597)	415
				136	186
					2,488
					" (3,258)

Map measurements indicate a total of about 18,000 feet of development work, of which 2,488 feet was done by the present operator, through No. 4 ~~tunnel~~ level between July 1, 1935, and the September 1, 1937. Of this latter amount 665 feet was west of the main crosscut adit, called the Mill Adit, without favorable results.

East of this adit, ^{770 ft since Sept. 2, 1933} 1,823 feet of work developed 5,400 tons of sulphide gold-silver ore of an average gross value of \$17.50 ^{2,000} per ton, which has been mined and milled and upon which the net smelter returns from concentrates averaged \$12.05 per ton of ore. ^{*22.00} ^{*13.50±}

From my study of the oreshoots, and the reported character of the ore exposures in the bottom of the drifts, and the results of recent diamond drill holes that have cut the 2300 and 2400 oreshoots below No. 4 level, I believe it is safe to estimate that

HIGHLAND-MAXWELL MINE.

an additional tonnage of similar grade below No. 4 level can be considered to be half developed by the same work.

Two diamond drill holes have cut No. 2300 shoot at points 37 feet below No. 4 level and 25 feet apart, showing 4-foot samples of \$65 and \$28 ore and indicating a horizontal width of over 2 feet, a length of over 30 feet, and an average grade of \$46 for the shoot at that depth. For the average stoping width of 4 feet the average grade will be about \$25, a great increase over the average of \$11 for the ore stoped above the level from that shoot.

The downward extension of 2400 shoot is now being drilled and the first two holes have shown one foot of \$211 ore and two feet of \$42 ore.

The above samples are similar to many that were obtained on 2500 shoot, whose average grade as mined was \$30.

TONS PER FOOT OF DEVELOPMENT.

The 1,823 feet of development work in the east and inclined ^{ACT?} ~~cluded~~ a 383-foot crosscut to the north, exploratory for parallel veins, leaving 1,440 feet of workings on or near the main vein chargeable to the completely and partly developed ore. An additional 710 feet would completely develop the estimated ore below No. 4 level, making 2,160 feet for 10,800 tons of ore, or three tons per foot of development along the main vein.

MAXWELL MINE

BALD MT. -
ELKHORN R.
ROCK CR. DIST.

The Maxwell mine is a short distance east of the Highland and at a higher elevation; its principal vein strikes N. 60° E. More than a mile of development has been done in 18 separate tunnels. The principal vein is in argillite and the ore is similar to that in the Highland. Two shoots, one 250 feet long, with a maximum width of 4½ feet, and another 80 feet long, with a maximum width of 6 feet, are found in No. 14 tunnel. Tunnel No. 10 is about 300 feet long and has been driven on a vein which is partly in granodiorite and partly along its contact with argillite. This vein strikes N. 30° E. and the ore mineral is pyrite in dense quartz. The productive period for this mine was from 1900 to 1905.

MAXWELL MINE

ROCK CREEK DISTRICT:

Prescott, 6/1/37---In 13 miles southwest from its shipping point, Haines, on the Union Pacific and Old Oregon Trail. This mine was located about 40 years ago and consists of a group of 9 patented lode claims and one unpatented claim, recorded in Baker County. Located in a high mountain area, the country rock being argillite with hanging walls and footwalls of argillite, a true fracture vein, a continuation of the Highland vein; width is 4 feet, length, 5000; values ore, gold and silver, assays at \$22; water is ample, timber on claim; power from Eastern Oregon Light and Power Company. Mine is being operated as a part of the Highland Mine, with the same plant and equipment, developed by 5000 feet of tunnel, 500 feet of raises. Owned by Claire D. Schlemmer, Baker, Oregon.