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82FNE014 Buckeye

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REPORT ON THE BUCKEYE PROPERTY

1932

by

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Resident Mining Engineer.

A trip was made to this property near Ainsworth, with A.O. Hayes, professor of geology of Rutgers University, New Brunswick, N.J., in connection with his examination on behalf of W. C. Dalglish of Paterson, N.J., long connected with the ownership of the Buckeye and in charge of former development operations. The property, adjoining the Highland mine property to the north-west, is easily accessible from Ainsworth by good road and trail of a combined length of 2 1/2 miles, of which the trail is about 1 mile long. A description of the Buckeye deposits by S.J. Schofield is contained in Geological Survey Memoir 117, 1920, which contains a recapitulation of information published in the report of the Commission appointed to investigate the zinc resources of British Columbia, Department of Mines, Canada, Mines Branch, 1906. The workings mentioned in these publications, less easily accessible now, were not all definitely identified. The ore-bodies occur as irregular replacement deposits in the Star limestone, the lowest member of the Silver Hoard formation which overlies the Josephine formation containing the Highland mine deposits. The latter occur in north-westerly trending fissure veins, cutting the north-south strike of the formation, the ore-bodies, extensively developed through seven levels, having had their greatest development in the zone of the vein intersections with green hornblende schists. The Buckeye deposits are associated with a similar system of north-westerly striking fissures but occur as replacements in the north-south striking limestone in the zones of intersection. The ore consists of pyrite, zinc-blende, and galena, and their oxidation products, in a gangue of silicified limestone, calcite, and quartz. The following is extracted from the Report of the Zinc Commission:-

" Development work on the Buckeye consists of two inclined shafts 100 feet apart, each about 40 feet deep, and one tunnel 200 feet long driven in under the shafts. The surface showing of zinc ore is considerable, but the work done does not seem to have been carried sufficiently far to expose the ore at depth. The two shafts are located on a north-east and south-west line, while the trend of the vein appears to be more north and south. There was too much water in both shafts to permit examination of the bottom. To the south of the first one a distinct mineralization is visible

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on the surface. The second shaft was started outside of the vein with a view to intersecting it at a depth of about 70 feet, but it was never sunk to that depth."

The tunnel, which is about 75 feet below the surface showings, was driven as a crosscut for 70 feet. At that point a body of zinkiferous ore has been intersected and followed for 45 feet. The ore-body only shows in the roof and has not been raised upon. Drifting in the tunnel was continued for an additional 150 feet through country rock when a second shoot of zinky ore was encountered at the breast, where it can be seen. This exposure appears to correspond with the principal surface showings and seems worthy of attention. In order to learn its extensions the tunnel should be continued. The work was evidently left immediately after ore was broken into, as it was considered of no value by the owners, who at that time were looking for clean silver-lead ore, and not for a matrix of zinc and iron ore with more or less galena mixed through it. A sample of the face (top and bottom) taken on the vein for a width of 18 inches assayed 23 per cent zinc, but carries less than 1 oz. silver to the ton."

In the report of S.J. Schofield (G.S.C. Memoir 117, 1920) he says:-

" A lower tunnel to tap the ore-bodies at depth has been driven at an elevation of 3,540 feet, or 100 feet below the outcrop. The tunnel penetrated the andalusite schists but did not reach the Star limestone which contains the ore-bodies. In 1918 preparations were under way to continue the first level of the Highland mine to reach the Buckeye ore-bodies."

This proposed work was not undertaken, however, and the situation is not materially changed since these two reports were made. The inspection, on which these notes are based, was confined to the outcrop workings consisting of two shallow shafts and several trenches on a bench at an elevation of about 3,600 feet or about 1,835 feet above the level of Kootenay lake. The drift workings, immediately below a 40-foot vertical shaft and two neighbouring trenches, could not be entered without delay owing to some caving at the portal. Samples from the accessible showings in this group of workings gave the following results:-

Location.	Gold, oz. per ton.	Silver, oz. per ton.	Lead. %	Zinc. %
Selected ore from dump at portal of tunnel	0.02	18.6	44.2	9.8
Selected ore from 40-foot shaft	0.02	20.2	42.2	5.9

Location.	Gold, oz. per ton.	Silver, oz. per ton.	Lead, %	Zinc, %
Across 6 feet in trench 15 feet south of same shaft.	0.01	3.4	5.2	4.2
Selected from same trench.	0.02	22.6	45.7	6.5

A few hundred feet to the north-west there is a 10-foot shaft developing oxidized material containing carbonates and bunches of galena, over a width of 18 inches, in a fault fissure striking north-westerly and dipping steeply to the south-west or into the hill. Two samples taken here representing selected material and a width of 18 inches, respectively, assayed:- Gold, 0.02 oz. per ton; silver, 11.1 oz. per ton; lead, 37.2% zinc, 0.9%; and Gold, 0.01 oz. per ton; silver, 6.8 oz. per ton; lead, 15.5%; zinc, 5.6%.

Summarizing conditions there would appear to be several interesting objectives for continuing exploration. The fissures exposed in the 10-foot shaft, which parallels the fissure with which the mineralization is associated in the vicinity of the previously mentioned showings near the 40-foot shaft, should be traced to its intersection with the same limestone horizon where replacement ore might be expected. The limestone itself might advantageously be prospected for other similar parallel fissures since indications of access are in evidence at points along its trend. A little work by the owners to make all the workings accessible would seem to be desirable before an examination can be made which would do justice to the possibilities of the property. Systematic investigation should be directed to correlating the system of fissuring with that at the Highland where of three fissures one was of outstanding importance. While the character of the deposits are entirely different at the two adjoining properties the intersection of the main Highland fissure with the Star limestone should be an important objective for exploration. According to report the No. 1 tunnel drift of the Highland mine would, if extended, prove the Buckeye deposits at a depth of 384 feet below their outcrop but preliminary exploration would seem to be necessary before such an extended programme of development could be considered. The major replace-

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ment deposits explored in the Ainsworth camp have been in limestones of the Josephine formation and in the No. 1 limestone (see G.S.C. map 1742, issued with Memoir 117) and the susceptibility of the Star limestone to mineralization of this character has not been tested to any appreciable degree in past exploration.