

PRELIMINARY REPORT OF THE HIRSHEY MINE,
MOOSE PASS-HOPE DISTRICT, ALASKA
October 2, 1937.

Location and Accessibility:

The Hirshey Mine is located near the head of Palmer Creek, a tributary of Resurrection Creek, in the northern section of Kenai Peninsula. A gravel road has been built to the mill and camp from the Hope-Moose Pass road, a distance of 12 miles. The mine is located on the east side of the valley at an elevation of 3,000 feet, or approximately 1,000 feet higher than the mill and 3,000 feet distant. The ore is conveyed to the mill over a gravity aerial tram 3,000 feet in length. A horse trail, over which the early ore was hauled, leads from the mill up to the mine. The road to Hope connects up with the Hope-Moose Pass road.

Ownership:

A group of nine claims and one mill site (not patented) are owned by Mrs. John Hirshey and sister of Hope Alaska, and 320 Cedar Street, Seattle, Washington, respectively.

History:

This mine was discovered in 1911 by John Hirshey, who staked the present claim group under the name of Lucky Strike. The vein was opencut by trenches and the upper tunnel was driven a distance of 125 feet a few feet below the surface croppings. Hirshey installed a one-stamp mill in 1914 and milled the higher grade ore. This mill operated intermittently until 1921. Following, a larger mill and a 3,000-foot aerial tram were built between the lower No. 3 level and the mill. A total of 800 tons was milled during this period and a recovery ranging from \$30 to \$100 a ton was reported. The No. 2 tunnel was started 90 feet vertically below the No. 1 or upper tunnel, and later the No. 3 or lower tunnel was started.

In 1922 the property was optioned to Sumner S. Smith, who formed the Alaska Minerals Company the following year. Development started on the No. 3 level and in the fall of 1923 the vein was out on this level. Development continued, which consisted of drifting on the vein on No. 3 level and stoping of ore between No. 3 and No. 2 levels. A total of 250 tons of ore was milled and a recovery of \$6,000 was reported. The mill tailings were ponded below the mill and a total of over 1,000 tons with values reported between \$15 and \$20 (old price) have accumulated.

New camp buildings and a new mill were constructed, and a blacksmith shop and ventilation system were installed at the No. 3 tunnel portal. In 1927 this company dropped the option.

Mr. Eirsbey again operated the mine from 1927 to 1932. A small amount of ore was milled and a small amount of development was accomplished. A 25-ton cyanide plant was put into operation. A few tons of the ponded tailings were treated, but this process was not a success. This failure was due to the fact that no agitator was used in connection with the treatment, and further, the tailings contained arsenic weathered from the arsenopyrite, and considerable iron oxides.

In 1932 the property was optioned to R. B. Heaston. No work was done on the property, and it was turned back in 1934. In 1935-36 Homer Hoe had an option on the property. A little ore was milled and very little work was done. Last year only assessment work was done.

Development:

The total amount of development consists of three tunnels at nearly a hundred feet vertical intervals. This lateral work including several crosscuts totals approximately 2,065 feet. Nearly all the pay ore above the No. 3 level has been stoped and mined. Several opencuts have been made on the surface. These, however, are mainly filled with slide rock.

No. 1 tunnel has a reported length of 200 feet and is only a few feet under the surface. The vein was hit at a point 50 feet from the portal. This tunnel is caved a few feet in from the portal and is not accessible.

No. 2 tunnel has a length of 600 feet, including four short crosscuts. This tunnel intersects the vein at a point 145 feet from the portal, and at the end of the first crosscut to the north. In a short raise in this crosscut the vein is rolled and has a width of 4 feet. The vein shows a decided curve which the tunnel follows. In the east end the vein is faulted and narrows to a seam. On this level the vein has been stoped a distance of nearly 140 feet. This level is in a good condition and serves as a ventilating outlet for the level and stopes below.

The No. 3 level is the present working level. It has a length including crosscuts of 1,065 feet. At a point 175 feet from the portal a long crosscut leads to the south. Nothing shows in this crosscut and no doubt it was a mistake in direction while mining. At a point 425 feet from the portal the vein was cut. From this point west the curved vein was followed a distance of 50 feet at which point, it pinches out. Here a small lense 60 feet in length occurs on the curve in the vein. This lense has an average width of 1 foot. To the east of this intersection a distance of 60 feet a fault intersects the vein on the hanging wall.

This fault was followed with a crosscut for a distance of 85 feet. A 50-foot raise at the end follows up on this fault. From this crosscut east the drift follows the vein for a distance of 150 feet. In this distance a second lense of quartz averages nearly 12 inches in width and extends over a hundred feet in length. Above this level the ore in the lense has been stoped. The last hundred feet of drift shows a highly schistose brecciated area formed by folding. This is cut by a flat fault past which the vein continues, but narrows to a tight seam.

Geology and Structure:

The formation is described in U. S. Geological Survey Bull. 849-I, "The Moose Pass-Hope District, Kenai Peninsula, Alaska," by Ralph Tuck as follows:

"The country rock is slate, the cleavage of which has a strike ranging from north to N. 35° E., with a dip of 60° - 80° E. Near the surface the slate may show an inclination as low as 40° E., owing to the surface creep. Bedding in the slate was not visible underground, and the only place at which it was observed was at the portal of the lower tunnel, where it had been brought out by weathering. It is highly contorted at that point, but in general it is horizontal."

This slate series is a band of the massive interbedded graywacke and slate with inclosed volcanic rocks parallel to the structure. These have a greenish gray color and occur in the top of the mountain ridges. The profitable gold veins appear to be associated with these apparent dikes. The structure of these slates is highly complex. The cleavage of the slates with its steep dip to the east or into the mountain represents the east limb of a large anticlinal fold that strikes down Palmer Creek and plunges at an angle of 10° to the north. (See Bull. 849-I, p. 484). The crest of this anticline has been eroded away and the two steep walls of the valley represent the limbs. There are numerous faults, two of which in the mine appear to limit the lateral extremities of the ore zone. The vein occurs on a fault or shear zone which shows both pre and post movement. It is no doubt related to the general forces that existed during the folding. This fault vein cuts across the cleavage at nearly right angles. The vein is decidedly curved and both the strike and dip are variable. However, the dip is comparatively less between the two lower levels, Nos. 2 and 3, than between Nos. 1 and 2 levels. The general strike is west to northwest and the dip averages approximately 45° to the northeast. Since the vein itself shows post movement and being combined with the cross results the variable strike may be due somewhat to the latter movement. However, the general flattening of dip in depth leads one to believe that orebodies were formed in the openings caused by the flexure during the period of folding. Considerable study of the structure in this area is necessary before conclusions can be drawn as to the continuation of these orebodies in depth.

A decidedly more costly development program is necessary for the future in that the vein dips into the mountain away from the slope on a comparatively flat dip. This will necessitate shaft sinking or long crosscut tunnels. This factor, along with the general tenor of the ore, the average width of the vein, the faulting conditions, presents a difficult mining venture. The vein narrows and widens along its strike from a few inches to over five feet. The average width of the stoped portions was 18 inches. It has a banded nature, with free loose walls which contain considerable gouge. Considerable post movement shows in the vein walls.

Mineralization:

The mineralization corresponds to the other properties in the district, however, its distribution is very erratic. In places the sulphide occurs very abundantly both in the quartz and wall rocks and other places are nearly barren. The gold values are very erratic also and apparently only slightly associated with the sulphide mineralization. High values in gold were reported from the vein near the surface and in spots in the stopes. The mineralization carries lower values and in places extends into the wall rocks. The sulphides consist in order of abundance of arsenopyrite, pyrite, galena and sphalerite. Free gold also occurs. The gangue minerals are milky white quartz, crushed quartz and slate, small amounts of calcite and ankerite. Graphite was noted along the walls.

Assays:

Five samples were taken during the visit in the mine. These are contained on the accompanying sketch along with description, location, widths and assay results in gold and silver. These do not show an average for the general tenor of the ore, but show the variable values of the vein. These vary from a trace to one and forty six hundredths ounces of gold. From the 800 tons milled by Mr. Hirshey up to and including 1922 a recovery of 30 to 100 dollars was made from plates alone. The ore on the lower level was reported as averaging approximately \$40 in gold per ton.

Machinery and Equipment:

All of the machinery is housed in the mill building, a wooden structure. A 3,000-foot gravity tram with 3/4-inch carrier cable extends from the mill to the No. 3 level. This is equipped with two buckets. The bottom of the dump at the top of mill has a 2x8' grizzly of 2-inch steel bars and 1 1/2 inch spaces. A Risdon 6x12" jaw crusher feeds one battery of five 1050-pound Risdon stamps. Below the battery only one plate, 4x6 feet, remains. A Gibson Impact amalgamator and a No. 8 Wilfley concen-

trating table are installed below the stamps. A single-stage Sullivan 8x9 inch compressor with receiver appears in good condition. A small electric light plant, badly in need of repairs is contained in the mill. The above are operated from a 60-inch Pelton wheel. Alongside the mill building another 30-inch Pelton has been installed, which operates an Allis Chalmers 4 Kw. generator. Below the mill building are 10 cyanide tanks and 32 zinc boxes. These have only been slightly used, but are exposed to the weather. A small assay muffle and nearly complete assay equipment is intact in the assay office. There are numerous used small tools at the mine, some in fair condition. The camp buildings consist of a large cook house with equipment, and several small cabin bunk houses.

Timber and Water Power:

The developed water power is small and can only be operated during the summer season, four to five months. It consists of run-off water from rain, ice and snow.

Timber is available in the lower valley of Palmer Creek.

October 2, 1937

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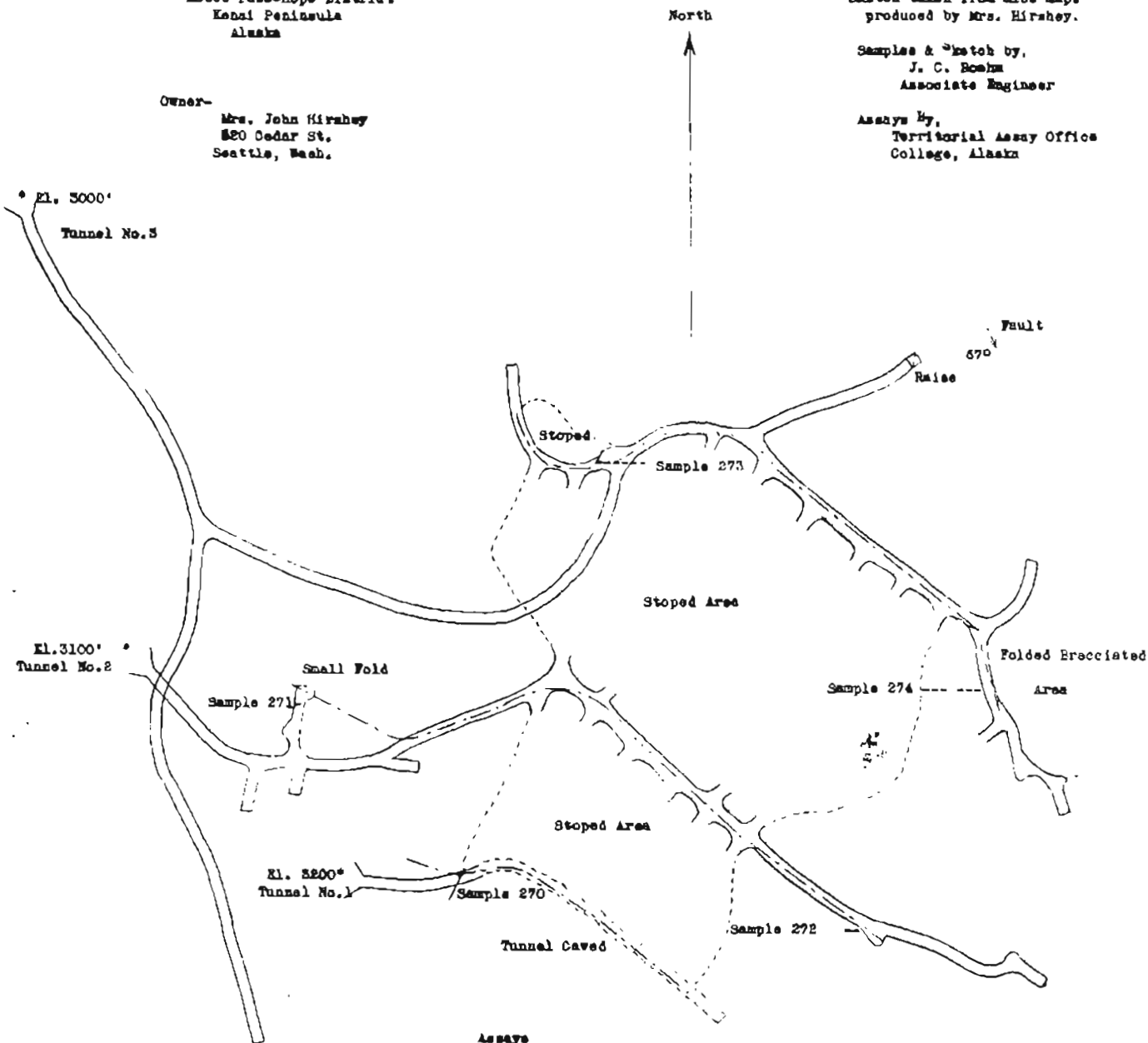
Sketch Showing
Underground Workings
HIRSHEY MINE
Moose Pass-Hope District
Kobai Peninsula
Alaska

Owner-
Mrs. John Hirshey
820 Cedar St.
Seattle, Wash.

Sketch taken from mine maps
produced by Mrs. Hirshey.

Samples & Sketch by,
J. C. Boehm
Associate Engineer

Assays by,
Territorial Assay Office
College, Alaska



Assays

Sample No.	Location	Description	Width	Assays	
				Gold Ozs. Per Ton	Silver Ozs. Per Ton
270	No. 1 Tunnel. Intersection Drift & vein. North Wall	Across Banded quartz vein	12"	1.45	2.8
271	No. 2 Tunnel Cross-cut 10' From Portal. 10' Up.	Across folded & Banded Quartz vein	4'	0.02	Trace
272	No. 2 Tunnel. 95' from End of Drift	Across Banded quartz Vein	4"	Trace	Trace
273	No. 3 Tunnel. Intersection Drift & vein (pillar) Center of shoot.	Across banded quartz. Center of shoot.	18"	0.58	0.02
274	No. 3 Tunnel 255 S.W. of Sample 273	Brecciated and folded slate with quartz stringers	6'	Trace	Nil