PE-52-1

NATIVE BISMUTH, INC.

There appeared on page 19 in the June 1951 issue of the MINING WORLD, an article pertaining to the Bismuth prospect near Nome, Alaska. Since that time considerable exploratory work has gone forward on the property. At the time of the original discovery, the men engaged in the enterprise were acting in partnership, however, since then so as to facilitate development of the project, the group has incorporated under the name of Native Bismuth, Inc. Mr. O. A. Margraf is the President of the company and also Manager of the operation; Mr. David Russell is Vice President; Mr. O. E. Margraf is the Secretary as well as the Mining Engineer on the project during this past summer's season; Mr. Hilkey Robinson is the Treasurer.

The property is known as the Charley Creek Bismuth Prospect and consists of a group of six lode claims and five placer claims, which are located on Charley Creek approximately 35 miles north of Nome. A fair tractor trail has been made to the mine from the end of the nearest highway. This highway starts in Nome, is 25 miles in length and ends approximately 12 miles from the mine.

During the 1951 season, equipment and supplies had to be moved to the property from the end of the highway where they had been stored the previous season. After the tractor trail had been brought up to shape these materials were speedily hauled in and a comfortable camp established near the vein system. Once the camp was set up, work started immediately on exploring the veins. The creek was dammed and carried away from the exposed veins in the creek bank. An adit was then started along the strike of the vein. At the same time, the bulldozer was utilized in putting in cross cuts on the hillside. In all thirteen crosscuts were made; in twelve of these the vein was uncovered; in the thirteenth cut there was too much overburden and although considerable bismuth bearing float was bulldozed up, the bedrock was not reached. By freeze-up time the adit had been driven in 54 feet, 13 crosscuts made, the property had been mapped and considerable amount of samples taken.

From evidence uncovered during this summer's exploration program, it was found that the bismuth occurs as native bismuth and bismuthinite in a siliceous gangue material.

Disseminated bismuth was also found in the schists surrounding the veins. The quartz vein matter where exposed was indicative of the filled or fissure type vein. Characteristically, it was frozen to one or both walls. An occasional horse of country rock was seen. Replacement of the schist by quartz was noted as a subordinate depositional feature. The silica possesses well-formed crystales surrounding drusy cavities.

The country rock in the immediate vicinity of the vein system consists of quartz-muscovite and quartz-biotite schists. This mica zone appears to lie within a chlorite schist zone. Wall-rock alteration is not extensive; however, metamorphic minerals are more abundant near the zone of metallization. A local post-mineralization intersecting fault system is seen at the face of the outcrop. Surface topography indicates that no major thrusts are to be expected.

No pattern of mineralization is apparent---the bismuth metals are disseminated throughout the quartz and schist with no obvious preference toward deposition in a particulare zone. High grade specimens show successive generations of metallization---re-fracturing providing openings of late deposition. Whether or not the native metal and the sulfied are of the same periods of mineralization remains to be determined. A small amount of pyrite is observed in the wall rock. Aresenopyrite is present in bismuth-bearing float in the creek but has not yet been found in place. The veins appear to be en-echelon but only slightly offset over the length of the exposed zone.

The boundaries of the mineralized zone can be delineated after the following definitions are stated. A proven boundary is one in which metallization has been observed or in which a positive qualitative bismuth spectrographic line is record ed; in both cases from samples of in-place schist or quartz. A probable boundary is one which is located by the presence of bismuth-bearing float.

The proven length of the zone is 700 feet and width is 600 feet. The area represented is roughly rectangular with its length measured along the strike of the known vein system. The probable length of the zone is 1600 feet and probable width is 900 feet. Surface exploration has been complicated by the thickness of the residual mantle so no conclusions or statements applying to the exact nature of the deposit can be offered until more

exploration work is accomplished.

Mapping of the property, running of assays for bismuth, gold and silver, as well as other technical services was accomplished in cooperation with Nome Field Station and Assay Office, Department of Mines under the direction of Daniel A. Jones, Associate Mining Engineer. The Department of Mines is a Territorial agency with headquarters in Juneau, Alaska under the supervision of Commissioner Leo H. Saarela. As yet not enough samples have been taken to completely determine the value of the property; however, representative samples show the schist country rock to run from a tract to 0.67% Bi, while the vein material runs from a tract to 1.92% Bi.

At various times during the season the property was visited by interested individuals. Among these examining the operation were Mr. J. A. Herdlick and Mr. Robert Thorne, both of the Bureau of Mines, Region I; also Mr. Max White, Alaska Section, U.S.G.S., Washington, D.C.; and Mr. J. D. Crawford, Fairbanks Manager of the United States Smelting Refining and Mining Company.

This coming season of 1952, plans are to continue running in the adit to at least 500 feet, with at least two 40 foot crosscuts out from the adit. While this work is going on, channel cuts every five foot along the adit will be taken and run for assays. On the most promising ore shoot, it is planned to sink approximately 200 feet. By the end of the season exploratory work should be completed and from that work future possibilities of the mine can by then be laid out.

Portal of the adit showing main vein system as weal as the fault in center of picture.

Looking down hill from right limit. Camp in lower center, workings and crosscuts in center.

The air compressor which was hauled to the job. Mr. Robert Thorne, Bureau of Mines, in foreground.

O. El Margraf in profile, and Mr. Max White, U.S.G.S., with back to camera, at the face.