

TIN OCCURRENCES NEAR ROCKY MOUNTAIN (LIME PEAK), EAST CENTRAL ALASKA

J. Dean Warner, Geologist, Alaska Field Operations Center, Bureau of Mines, Fairbanks,
AK.

D. C. Dahlin, Metallurgist, and L. L. Brown, Geologist,
Bureau of Mines, Albany Research Center, Albany, OR.

ABSTRACT

In 1984 and 1985, as part of its critical and strategic minerals studies, the Bureau of Mines investigated lode and placer tin occurrences near Rocky Mountain (Lime Peak), in east-central Alaska. The lode occurrences consist of mineralogically complex, generally fault-controlled veins, and contain an average of approximately 0.05 pct Sn, as cassiterite. Beneficiation testing of two bulk samples of the vein material produced concentrates containing 65 and 59 pct of the total tin values at grades of 0.35 and 13.9 pct, respectively. Although as much as 30 million short tons (MMst) of mineralized rock containing up to 20 MMlb Sn may be present, the grade of these occurrences is too low to be considered economic at this time.

Trace amounts of cassiterite were also identified in surface samples of glacial outwash gravels collected along North Fork Preacher Creek, which partially drains the area of tin lode deposits near Lime Peak. Low tin grades in the samples do not account for the former erosion of a large volume of lode tin mineralization from near Lime Peak; higher tin grades may be present in gravels closer to bedrock.

INTRODUCTION

The Bureau of Mines has intermittently investigated lode occurrences of tin and other metals in the Lime Peak (Rocky Mountain*) area since 1977. These investigations have been conducted as part of the Bureau's Alaskan critical and strategic minerals study, the goal of which is to identify reserves or resources of certain critical and strategic minerals that could be developed in times of prolonged national shortage. The investigations have also been partially motivated by the Federal Bureau of Land Management's need for mineral data in the Steese and White Mountains National Conservation and Recreation areas.

*Although Rocky Mountain is the newly assigned name, the name Lime Peak is retained in this report because it is more widely known.

Results of Bureau reconnaissance investigations in the Lime Peak area prior to 1984 are presented in Bureau of Mines Open File Report 31-85 (1). That report identifies an area of tin lode mineralization on the southeastern flank of the Lime Peak summit warranting further study and recommends that North Fork Preacher Creek be investigated for placer