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Molybdenum geochemical anomaly, Endako  
Copper geochemical anomaly, Island Copper

1. On September 5, I was shown a map of the Mo analyses of soil samples at Endako and discussed the geochemistry briefly with E. T. Kimura, Endako Geologist.

Background in the region is about 2 ppm.

Values greater than 15 ppm. are considered definitely anomalous.

The ore zone is elliptical in plan, about 2 miles in maximum dimension, and elongate in an approximate E-W direction.

Most soil samples over this ore zone are above 40 ppm. Mo and several are 100 - 200 ppm.

The anomaly extends for about 2 miles E. of the ore zone; that is, in the direction of glacial transport and downslope. The contoured anomaly E of the ore becomes "streaky". Most values are below 50 ppm.; few are above 100.

Overburden above much of the ore body was only a few feet thick. At the E end of the ore body, where overburden was about 60 feet thick, most soil samples were still distinctly anomalous. (Kimura estimated average depth of overburden was about 30 feet; depth was about 60 feet at E end. D. B. Petersen, who worked at Endako for 3 years, believes Mo content of soils roughly indicated inverse of overburden thickness).

2. D. B. Petersen mapped the surface as the ore body was being stripped and also examined the upper benches in detail. The eastern part of the ore body consisted of a stockwork of quartz-molybdenite veinlets, mainly 1/16 to 1/4 inch in width - "the bread - and - butter of the ore body". Drill indicated grade was approximately 0.15% MoS<sub>2</sub>. Yet Petersen observed only one occurrence of molybdenite at the bedrock surface. Tight cracks at the bedrock surface gradually passed into quartz-molybdenite veinlets at a depth of 10 to 15 feet below the surface. A very small amount of yellow stain (ferrimolybdate) was present at the water table, 8 to 10 feet below the surface.

3. D. B. Petersen concludes from his observations that molybdenite and quartz are leached near the surface. Under the climatic conditions at Endako, water is not drawn to the surface by evaporation; hence, there is no significant ferri-molybdite zone, unlike the upper parts of molydenite deposits in the arid southwest U.S. J. R. Woodcock told me in Vancouver before my visit to Endako that he now considers there is evidence that molybdenite dissolves fairly readily in water of low acidity. Kimura mentioned to me that the pH of the water at Endako is 5.5 - 6.0.

4. On September 3, John Lamb, Chief Geologist of Island Copper (Utah International), briefly mentioned the soil sampling over the deposit. The maximum value was 1200 ppm. Cu; overburden was only 3 to 10 feet thick where the highest values were obtained. Over most of the ore body, where the overburden is 50 feet or more in depth, essentially no anomaly was evident.