

SHEET 1 OF 3: Copper, lead, and zinc in stream-sediment samples,
De Long Mountains A-1, B-1, and part of C-1 quadrangles, Alaska

In 1979, in conjunction with reconnaissance geologic mapping of the western De Long Mountains, 324 stream-sediment and 16 soil samples were collected in or immediately adjacent to the De Long Mountains quadrangle. The samples were analyzed by the U.S.G.S. Branch of Exploration Research for copper, lead, and zinc by the atomic absorption method.

The distribution and density of sampling were limited by time and logistic considerations. The drainages of the Kelly River, Haulupik Creek, Wrench Creek, and the area around Deadlock Mountain have been sampled in a relatively systematic manner, but the sampling in the rest of the quadrangle is sporadic. Geologically favorable areas for mineralization, such as streams with notable iron-oxide staining, or streams draining the Brooks Range thrust sequence (Mayfield and others, 1979) may be over-represented by this sample set, especially on sheets 2 and 3. Some soil samples are also shown on this map, although they have not been included in the histograms or in the calculation of averages.

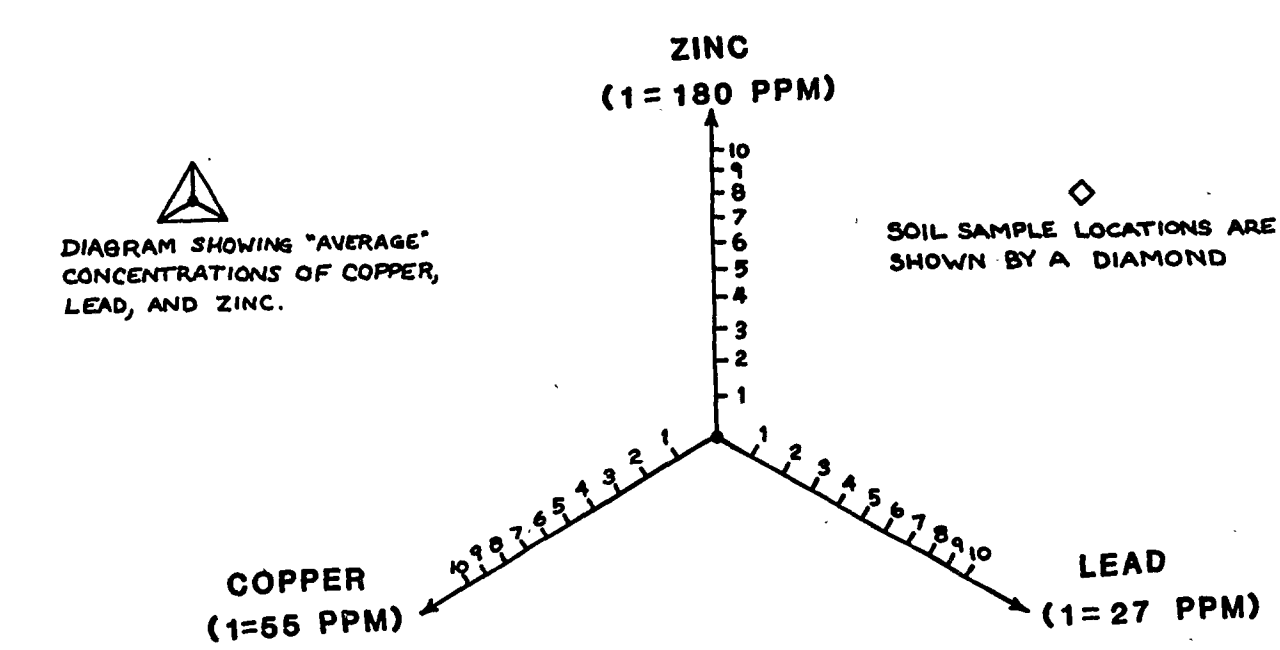
A graphical representation of element abundances was chosen in order to show relative abundances of copper, lead, and zinc, as well as their absolute concentrations. Each element has been normalized with respect to an arbitrarily determined "average" value, which is the arithmetic mean of all samples, including some outside the quadrangle, but excluding a few samples which appear to be anomalously enriched in the element. The abundance diagrams for each sample are made of three radial bars, the length of each bar being proportional to the concentration of the element in the sample. Triangles formed by connecting the ends of the bars show the ratios between the elements by their shape, and the absolute concentrations by their size.

On this map (sheet 1) are most of the samples which were taken during relatively uniform, drainage-by-drainage sampling. As a rough approximation, samples from streams which drain bedrock of Paleozoic limestones have low overall element abundances, with some relative enrichment in lead. Samples from streams which drain Cretaceous shale and weakly have close to average abundances of all elements. Samples from streams which drain Permian to Triassic chert, and/or Paleozoic shales and cherts, have greater than average element abundances, with a tendency to be relatively enriched in copper and zinc. One soil sample, in the southeastern corner of this map, has very high lead and zinc abundance. The bedrock near this is Mississippian to Devonian sandstone, with occasional pyritic zones.

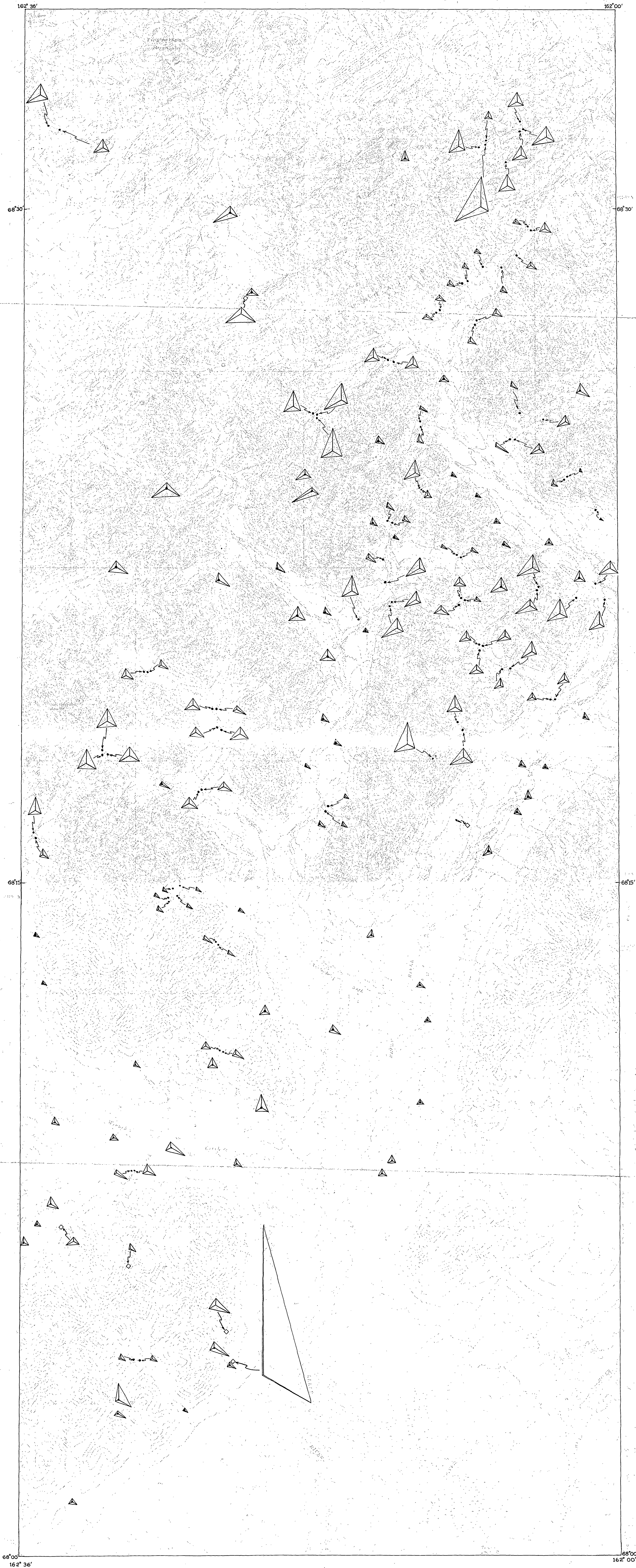
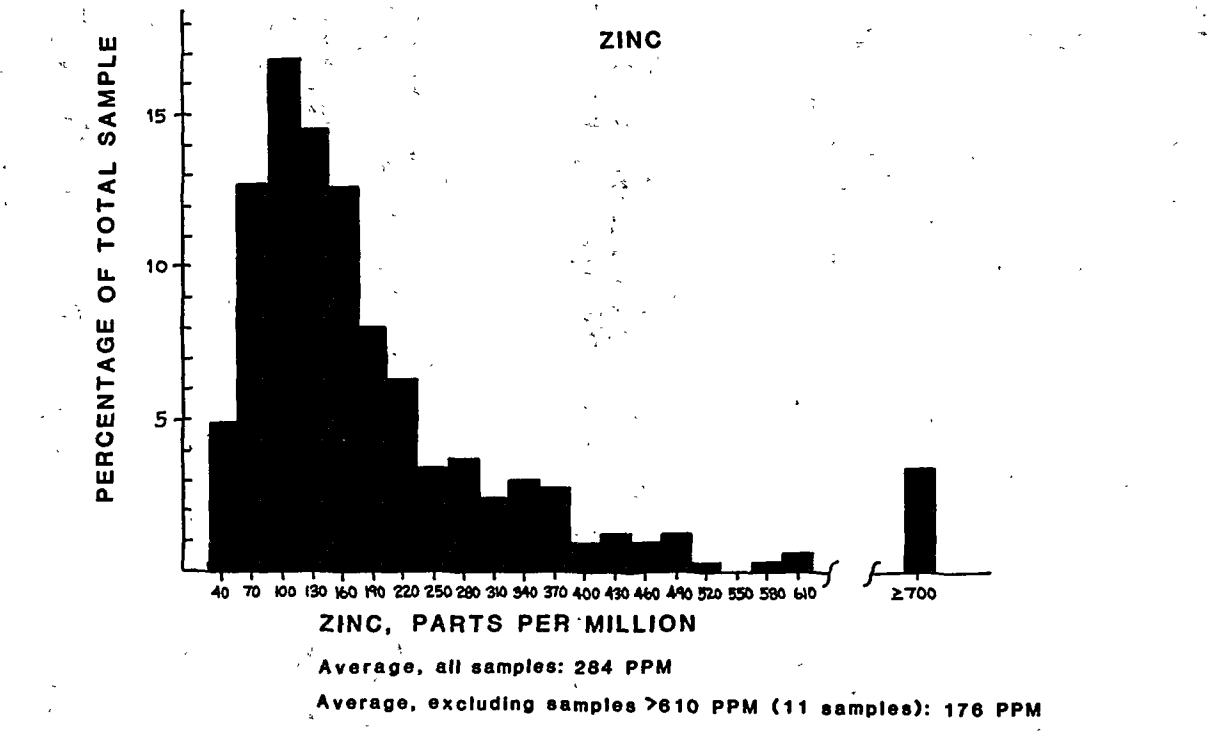
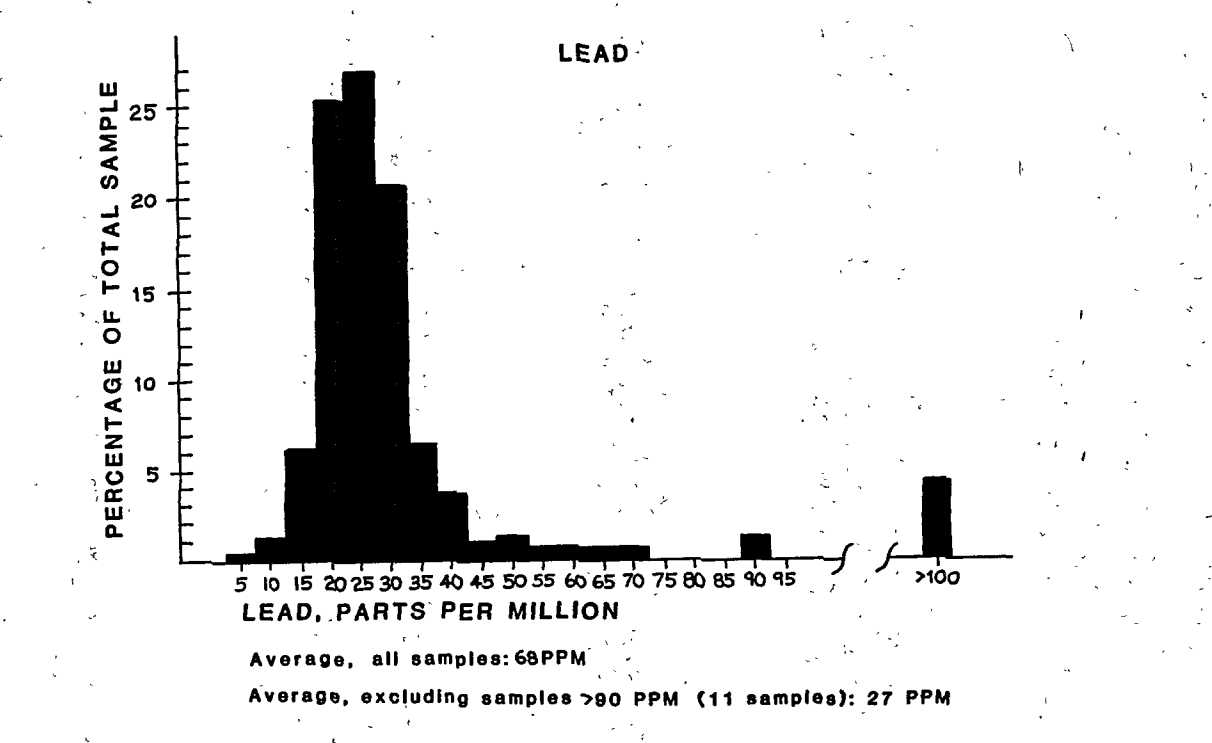
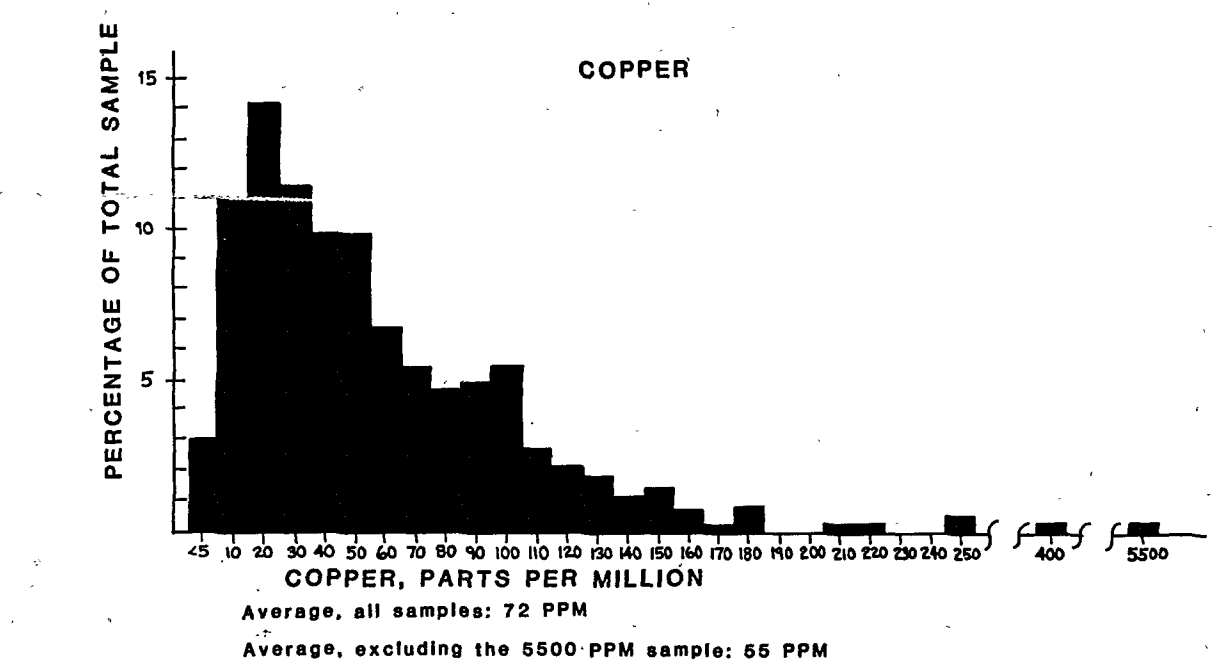
REFERENCE

Mayfield, C.F., Curtis, S.M., Ellersieck, I.F., and Tailleux, I.L., 1979, Reconnaissance geology of the Giny Creek zinc-lead-silver and Hinkukuk barite deposits, northwestern Brooks Range, Alaska: U.S. Geological Survey open-file report 79-109, 2 sheets, scale 1:63,360.

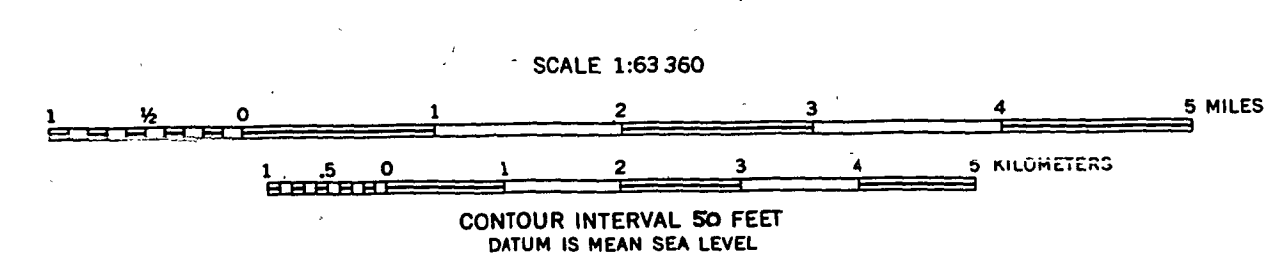
KEY TO ABUNDANCE DIAGRAMS



The length of the radial bars on element abundance diagrams is proportional to the logarithm of a multiple of the "average" value (excluding a few strongly anomalous samples) for each element. The higher the concentration, the longer the bar.



BASE BY U. S. GEOLOGICAL SURVEY, 1955
Composite of De Long Mountains A-1,
B-1, and part of C-1 quadrangles



This report is preliminary and has
not been edited or reviewed for
conformity with Geological Survey
standards and nomenclature.

SHEET 1 OF 3: A-1, B-1, AND PART OF C-1 QUADRANGLES
COPPER, LEAD, AND ZINC IN STREAM-SEDIMENT SAMPLES
FROM THE DE LONG MOUNTAINS QUADRANGLE, ALASKA
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