

STATE OF ALASKA
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LABORATORY NOTES NO. 11

**Potential Geochemical Sample Contamination
From Cloth Sample Bags**

By

Paul L. Anderson

College, Alaska

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POTENTIAL GEOCHEMICAL SAMPLE CONTAMINATION
FROM CLOTH SAMPLE BAGS

I N T R O D U C T I O N

It has been suggested that cloth sample bags be used for field collection of geochemical samples. There is some hesitation in using cloth sample bags fearing that the cloth or the polishing compound (probably kaolin) may carry elements that would contaminate the samples. The experiment described below investigates that problem.

E X P E R I M E N T A L A N D R E S U L T S

A specimen of the cloth sample bags suggested for use⁽¹⁾ was obtained from the supplier. The bag was digested in hot nitric and perchloric acids until essentially all the bag fibers were in the solution.

The solution was filtered and brought to 100 ml volume. This liquor would contain the total heavy metals present in the bag, both "available" and "unavailable" metals for geochemical sample contamination; "available" meaning those ions that are cold water leachable, and the "unavailable" meaning those ions found in the fiber and not cold water leachable.

The digest solution was analyzed on the most sensitive settings of atomic absorption spectrophotometry. The elements analyzed for include Cu, Pb, Zn, and Ag. The results are as follows:

<u>METAL</u>	<u>PPM IN 100 ml OF SOLUTION FROM ONE SAMPLE BAG</u>
Cu	0.05
Pb	1.0
Zn	3.2
Ag	<0.01

(1) Oil well sample bag, manufactured and sold by Geophysical Instruments and Supply Co., Inc., 900 Broadway, Denver, Colorado, 80203, is described as "....made of 64/60 cambric cloth....with draw string." Size 4 1/2" x 6".

D I S C U S S I O N

The results of the experiment are interpreted to indicate that no significant heavy metal contaminants are present in the sample bag tested, and that the use of these bags for acquiring geochemical samples is acceptable. Probably only a very small fraction of the metals found to be present in the hot acid digest liquor would be "available" to leaching by moist samples. Even if all the metals found in the hot acid digest found their way into the sample they would represent a barely detectable contamination in geochemical samples.