

GEOCHEMICAL ORIENTATION SURVEY
ON
EFFECTIVENESS OF SNOW SAMPLING

Test Site

The Rexspar property at Birch Island, 80 miles north of Kamloops, B.C., was chosen as a test site since access is relatively easy.

This property has reserves comprising a half-million tons of moderate grade U_3O_8 and fluorspar. Development has been hindered by metallurgical problems. Aside from U and F, Mo, rare earths, argentiferous Pb, Mn, and celestite are known to be present in anomalous concentrations. The principal mineralized zones tend to be tabular, up to 125' thick, and striking north north-easterly. These zones lie with a body of trachytic alkali feldspar porphyry, which is, in turn, surrounded by Precambrian meta sediments.

Reference to Assessment Reports 4032 and 1912B, indicated a suitable anomaly on grid line 18N on the Rexspar property. This line proved to be excellently picketed and was followed without difficulty.

Sampling Procedure

At 200' intervals along line 18N, 2 - 1000 m.l. plastic bottles of compacted snow were collected from the "crystalline" snow, an inch or two above the soil surface. Soil samples, (mainly podzolic "B" horizon) were collected at all but one of the same stations. Additional snow samples were collected at higher levels in the snow at two locations only, in order to provide vertical geochemical profiles.

The snow samples received some chemical pre-treatment prior to shipping, in lieu of being frozen, to prevent chemical deterioration.

Results

Some difficulty in interpretation arises since the principal anomaly peak unfortunately coincides, in all cases (see attached graphs) with a humus-clay soil sample, and, due to surface debris, its immediate neighbour could not be soil sampled at all.

In addition, no bedrock correlation is known on the line sampled. However, with the presence of widespread bedrock U mineralization on the property and the U contrasts generally present in the soils, the presence of U and F in the underlying bedrock seems probable. Furthermore, the soil anomaly sampled is 3,500'

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from, and on general strike with, all the main showings.

A consideration of the effect of the organic soils is complex, and the evidence somewhat conflicting. It is summarized as follows:

A. Evidence in favour of strong organic correlation.

- (1) U is normally preferentially retained in the organic component of a soil.
- (2) The only really good correlation of U (and F) between soil and snow is at the station 1E, where an organic soil was used.

B. Evidence against strong organic correlation.

- (1) The U anomaly, as a whole as seen from previous soil sampling, is strong and coherent. "Spot" highs are not evident within it. It is present on both adjacent lines to the one sampled.
- (2) Stations adjacent to 1E on the line sampled show high U values in both snow and in previous soil analyses. Our own soil sampling produced a moderately anomalous B horizon sample (30 ppm. U) at one adjacent station.

In connection with this high lateral, dispersion in the snow seems unlikely from the evidence we have of low vertical dispersion in the snow. However, the general broadness of the snow anomaly remains unexplained.

- (3) F, which usually has less affinity for the organics, is also anomalous at station 1E.

Conclusions

1. U and F are measurable in snow, and would quite probably have located the tested soil anomaly in a property snow survey.
2. U accumulated in organic soil will almost certainly be represented in anomalous concentrations in overlying snow.
3. There is some evidence that snow U anomalies would be developed over ordinary thin organic cover where the B soil horizon is anomalous.

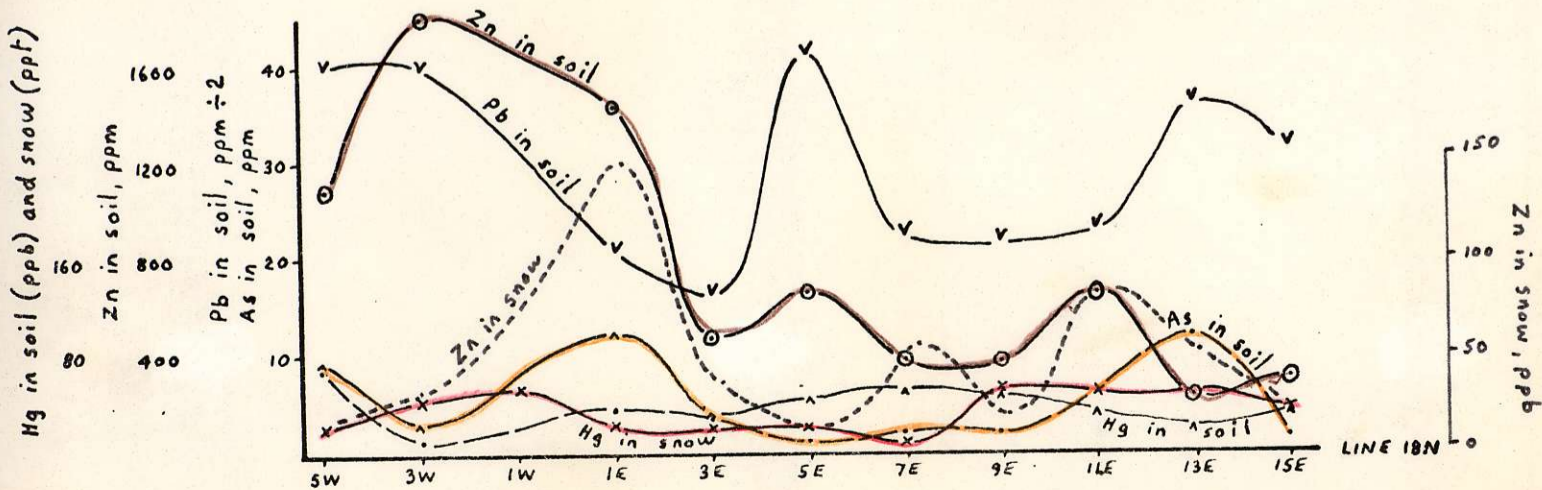
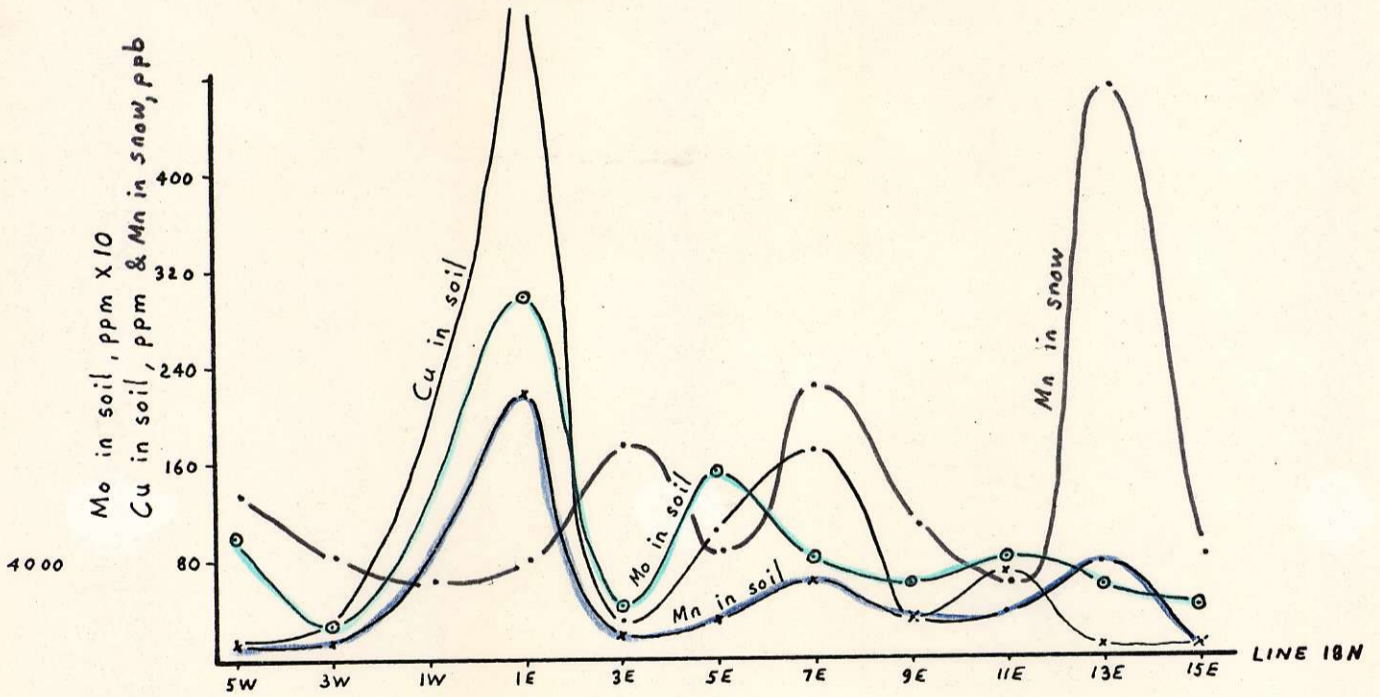
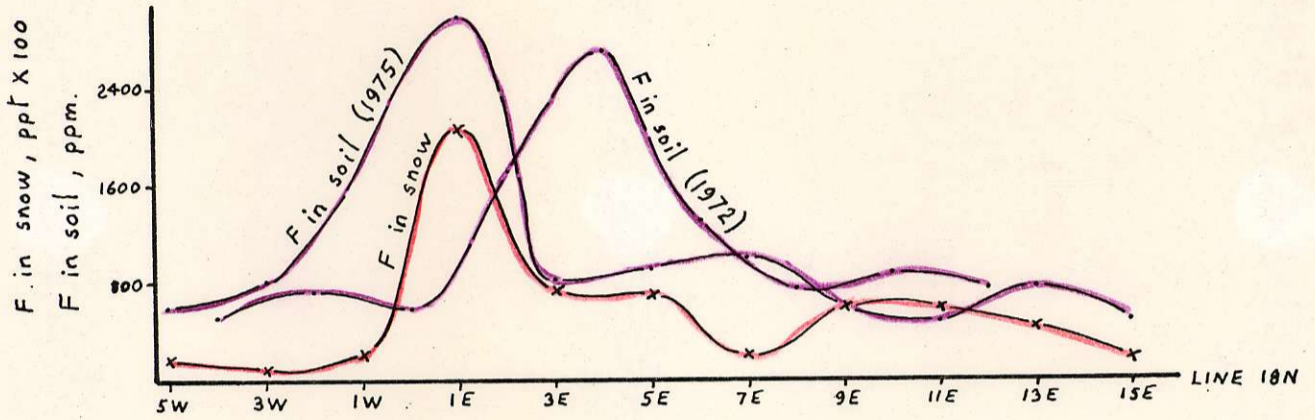
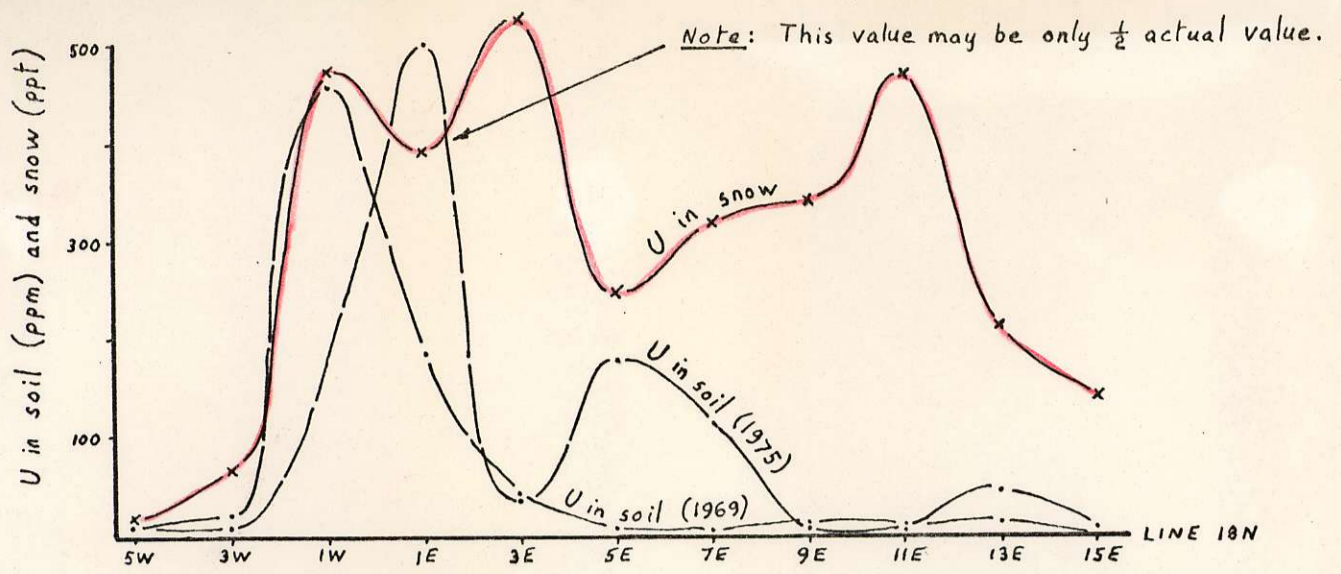
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4. Spurious anomalies could well arise over any well - developed organic soils in which U accumulation occurs.

5. From all the above, it is evident that the snow sampling method can be used for U exploration, but with considerable caution. In particular, very careful note should be taken of terrain slope and vegetation conditions which would reflect humus development in the soil beneath the sampled snow. Although the method appears promising, further testing is required before complete confidence can be placed in it.

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Vancouver, B.C.
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D.A.
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