

SAMPLING FOR ULTRAFINES

Collecting samples for analysis of the ultrafine fraction is a relatively simple process, when compared to collection of the samples that are required for traditional methods of near-surface exploration.

Sample volumes can be kept much lower due to the excellent sampling statistics inherent in the very fine fractions.

The objectives in taking samples are:

- Consistency of sampling: A constant approach should be taken across the project area.
- Elimination of organic matter: Removal of the surficial organic matter is desirable.
- Elimination of large rock particles.
- Ease of use: This technique is designed to be practical to apply, and the requirement for simple sampling approach reduces workload on the field crew

A. SIZE FRACTION

An advantage of the UltraFine+™ technique is that the chemical parameters being measured are expressed in terms of their concentration in the ultrafine clay fraction (<2µm), rather than in terms of the bulk soil. Provided that enough of the clay material can be collected for analysis by the laboratory (generally the case in WA outback soils), the topsize is relatively unimportant, and screening is more a matter of removing coarse rock and organic material. This can be readily achieved by screening at 2mm in the field.

B. SAMPLE SIZE

The UltraFine+™ technique requires relatively little material, and 200g of soil (~1 cupful) is adequate to allow for testing and followup analysis if required.

C. DEPTH OPTIONS

i. CONSTANT DEPTH

Samples are collected at a constant depth, depending on the average conditions across the prospect. 5cm may be sufficient to allow access to a clean subsurface layer, relatively free of organic material, although 10cm may be preferable.

ii. SELECT SOIL HORIZON

Existence of a well-defined, clay-rich B horizon may provide a desirable sampling point. In this case the sample will be scooped from below the A/B interface, though this will engender a greater degree of difficulty than the constant-depth approach. Many WA soils do not have well defined A and B horizons, in which case the constant-depth option may be preferred.

For further information, please call LabWest.

