FIELD PROCEDURE. SOIL SAMPLING

This is not a health and safety risk assessment

1. APPLICABILITY

This document describes the standard field procedures used to collect soil samples for geotechnical and environmental investigations. It relates specifically to the collection of soil samples from the following types of location:

- Surface or near-surface soil
- Boreholes (during drilling)
- Test pits or excavations
- Stockpiles of soil

This field procedure does not cover sampling of materials suspected to contain asbestos.

2. OBJECTIVE

Soil samples are collected for subsequent laboratory analysis, on-site testing and/or logging of the subsurface conditions. The objective is to collect a sample that is representative of the subsurface conditions, including both the chemical composition and the geological consistency of the material.

3. DISCRETE SAMPLE COLLECTION METHODS

Equipment Decontamination

Prior to first use each day and after collection of each sample, all equipment that comes into contact with samples should be decontaminated.

Sampling Locations

Both targeted (judgemental) and non-targeted (probabilistic) sampling patterns should be considered, depending on the project objectives and on the site history, layout, potential or known sources of contamination, and the availability of existing data. Investigations can include both methods provided that any subsequent statistical analysis excludes judgemental sample data.

Sampling Frequency

Samples should generally be recovered at every change of strata and at regular depth intervals (e.g. 0,5 m or 1,0 m) to determine the profile of the ground. The frequency of sampling will largely depend upon the variability of the ground and the level of detail required from the investigation.

For chemical analysis, site-specific consideration should be given to where contamination is most likely to be distributed, based upon the available information. Sampling of the top of silt/clay soils, when encountered immediately beneath more permeable horizons (sands or gravels), is often particularly important.

Samples for laboratory analysis should be selected on the basis of visual and olfactory observations made in the field corroborated with field analysis of the drilling returns

Recording of Sampling Locations

Sampling locations should be photographed and should be recorded using GPS coordinates and/or by surveying or by reference to a detailed site plan, so that the locations can be re-visited if necessary.

Soil Sampling below the Water Table

When soil samples are to be collected from below the water table, the potential for cross-contamination or for inter-connection of different aquifer units should be taken into account and an appropriate drilling and sampling method must be used.

Sample Size and Storage

Laboratories specify minimum requirements (volumes) for analytical methodologies, which should be checked prior to collection of samples. Samples should be stored and transported appropriately to prevent alteration in composition as per the analytical laboratory guidance, including sealing to prevent evaporative losses and maintenance of a stable temperature (generally in the range 0 - 4 degrees C).