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SAMPLING VOLATILE ORGANIC COMPOUNDS

The aim of the sampling process is to take a representative sample and obtain a profile of the status of that site at a particular time. The sampling and transport processes must ensure that the integrity of the sample is maintained.

In the cast of volatile organic compounds the key to successful sampling is to minimize the disturbance to the sample and the time the sample is exposed to the atmosphere and warmth during the sampling and transport processes.

The following tips are recommended to help maintain sample integrity.

THE DO NOTS

Do not use hand lotions, aftershave, desanitising hand gels or perfumes prior to sampling.

Do not sample near an unrelated source of contamination; e.g. exhaust fumes from motors.

Do not freeze samples. VOCs may be lost if glass containers break during freezing.

Do not use marker pens that contain volatile compounds to label sample bottles.

Do not handle the sample vigorously (e.g. shake) during sample collection and transport.

THE DOS

Do submit the samples to the laboratory with sufficient time for the laboratory to analyse the samples within the recommended holding times (generally with at least half the holding time remaining).

Do use amber glass for waters (where appropriate) to prevent the photodegradation of organic compounds and only ever sample into glass with teflon septa for VOCs as plastic as plastic can adsorb VOCs.

Do chill to <4˚C or <6˚C (guideline dependent) and transport to the laboratory within 24 hours. ALS recommends placing samples in ice immediately upon sampling for best practice chilling, with either repacking into another esky or draining of free water and replacement of ice just prior to dispatch. Chilling overnight in a fridge may also benefit. The post-chilling addition of ice bricks is also recommended where samples are air freighted or dispatched long distance and where couriers will not freight ice (due to water leakage concerns).

Do use sampling devices/techniques that cause the least amount of sample disturbance and exposure to the atmosphere (quick and easy removal and containerization).

Do fill the water samples to the top to create zero headspace. If correctly filled no bubbles will be observed when the vial is gently inverted.

Do minimize the headspace in soil sample. Choosing the soil jars with the closest internal diameter to your soil 'core' diameter may benefit as this helps minimize losses and can save you time.

Do use H_2SO_4 or other approved acids, in pre-preserved vials for water samples to minimise microbial degradation.

Do wipe the jar thread with a clean tissue prior to sealing to remove any material or grit and ensure a tight seal.

Do provide a duplicate soil jar where ZHE TCLP testing is required to maximize sample integrity.

Do transport with sufficient ice to ensure that the temperature of the samples remain at 4°C ± 2°C for the entire transportation time.