Information Paper 2.3.3

Sample Manipulation

Adopted from: Millar Alison, 2003
Surface Water Sampling – SOP- Section 5.
http://www.epa.gov/region6/6pd/qa/qadevtools/mod5_sops/surface_water_sampling/general/29palms-surface-wtr-sampling.pdf

Sample Manipulation

1.0 Introduction

Maintaining the integrity of samples (water, sediment, biological…) is extremely important in order to produce useable and representative data. Understanding sample manipulation is a critical component of quality control.

2.0 Sample Collection and Blank Preparation

Label all bottles and lids to be used. This is done because lids could mistakenly be exchanged between bottles. Samplers should always wear clean disposable gloves when sampling. Disturbance of the sample site must be avoided and samples should be collected facing up-stream. Samplers must avoid touching the bottle's mouth (including threads) and the inside of both the bottle and the cap. If preservatives are used, avoid overfilling in order to minimize preservative dilution. Protect samples in individual zip-lock bags and place in an ice-chest. Samples should not be submerged in ice water, and lids (or caps) should be tightly closed to avoid sample contamination during transportation.

Collect field blanks by pouring de-ionized (DI) water directly into sample collection bottles designated for that purpose, using sterile DI water for micro. Field blanks are included to account for anything in the immediate environment (contaminants, airborne particulates, etc.) that could affect sample results.

Collect equipment blanks by first pouring DI water into dip sampler collection bottle, then into sample collection bottle, using sterile DI water for microbiology samples.

A trip blank is a sample consisting of reagent grade water poured into the transfer bottle prior to sampling, collected and submitted for analysis so that any contamination present in the bottle can be accounted for.

3.0 Field Guidance for Grab Samples

Grab samples of surface water will be collected using the following method:

- Sample bottles provided by laboratory- Do not rinse sample bottle prior to sample collection.
- Sample bottles not provided by laboratory- Triple rinse sample bottle prior to sample collection.
- Collect samples in containers provided, filling nearly full without overflowing.
- Containers for microbiological samples should be filled with an air-space remaining.
- Samples of surface water should be collected from flowing, not stagnant/still water, if possible. If the sample site does not have a current, be careful not to disturb sediments.
- When using the collection bottles (or sampling pole with collection bottle) carefully place the bottle in the current facing upstream.

  - If there is no current, create a current artificially by pushing the bottle forward horizontally.
  - For shallow waters, such as streams, springs, seeps or other types of discharges, attempt to sample the water without touching any solids.
  - For extremely shallow waters, samples may be obtained from cleaned (or triple rinsed) syringes.
- Carefully remove the lid of the sample bottle, avoiding contamination by hands or particles in air by holding on outside surface with inside surface facing down.
- Collect sample by carefully pouring out contents of collection bottle into the sample bottle.
- Replace the lid and place with in closed plastic bag.
- Store at 4ºC in a closed ice chests containing frozen blue ice (or regular ice). Do not allow the sample to become submerged in any ice-melt.
- Send to laboratory within specified holding time requirements. Refer to Sample Submission SOP- GP007 for more instructions.