

## 4.1 GENERAL PROTOCOLS FOR CHAIN OF CUSTODY

### Overview

Samples need to be collected using specific techniques and appropriately labeled for accurate identification by the laboratory. It is important to ensure appropriate documentation accompanies the sample, and samples reach the laboratory in a timely manner. Samples that are time sensitive must arrive within enough time to ensure analyses can commence immediately upon arrival without affecting the integrity of the sample. This may require the samples be collected early in the week to coincide with travel time or ensure that arrangements are made with the laboratory to accept the samples and start analyses immediately.

A chain of custody/sample submission form is applicable for all projects but the form is crucial if the project is being carried out for legal reasons (e.g., compliance monitoring). This form is critical to the validity or soundness of the project and guarantees that the sample has not been tampered with. It also ensures that only authorized personnel handle samples and that proper field sampling techniques for the program are used. All transfers of samples are noted on the form. Transfer procedures are also described to make sure samples are properly protected and preserved. Any changes in sampling or sample storage should be noted on the chain of custody form. The information recorded on the form should be kept on file for the project.

### Sources

Ontario Ministry of the Environment (2006), EMAN-N (2005)

### At a glance

*timing  
issues*

**1** Preferably, samples are collected early in the week or on a weekend so that the samples can arrive at the laboratory when it is open and samples do not have to sit unattended. This is especially important when time-sensitive (e.g., bacteriological samples) or legal analyses are being requested.

*proper  
labeling*

**2** Bottle and other sample container labels should be marked with permanent waterproof markers, water-proof pencils or with peel and stick labels. Every bottle must be labeled with the field sample number, sample name, site number, date of sample, time, analyses requested for sample (e.g., Metals) and preservatives/filtration used.

**3** Information should be recorded on the sample submission form using a pen or a water-proof pencil, since felt markers or common lead pencils can smudge and rub off. Write as neatly and legibly as possible.

**4** Keep submission forms dry by storing in a Ziploc-type plastic bag and either placing on the top of the cooler/container with the samples and ice/ice packs or in a pouch located on the inside of the top of the lid.

*information  
needed on  
forms*

**5** Forms should contain the following information (important for the laboratory receiving the samples): client and program information; station location description; sample matrix and type; laboratory analyses (according to appropriate detection limits) requested; field sample identification number; submission date and time of collection (preferably 24-hour clock); sampler name and contact phone number; water and air temperature on sampling; and comments on any unusual conditions.

*legal  
sampling*

**6** For legal sample collection, individual samples need to be sealed and initialed prior to packing in the storage cooler. After preservation has been finished, the storage cooler itself should be sealed and initialed. The cooler must remain in the custody of the sampler with appropriate legal forms until it is turned over to the next person in the submission chain and signed-off by the sampler. Actual procedures for legal sampling should be followed by samplers who have completed a recognized legal sampling procedure course.

**7** Rapid transportation of the samples to the laboratory is recommended, especially in the case of legal samples.