



SURFACE WATER QUALITY STEWARDSHIP TOOLBOX

Tiered Training Needs

Water quality stewardship groups can self-assess their group’s capacity for various tiers of water quality stewardship work (see Surface Water Quality Stewardship Toolbox – Group Capacity Assessment). Different tiers offer different potential benefits to collaborative work. If the Ministry of Environment and Climate Change Strategy (ENV) further determines the group has the capacity and aligned goals to work with ENV towards common monitoring goals and the group commits to partnering on a project, the following table can be used to determine the level of training a group needs prior to water quality monitoring:

Table 1. – Tiers of water quality monitoring showing monitoring frequency, type and required level of training.

	Tier 1	Tier 2	Tier 3	Tier 4
Summer low flow sampling frequency	Not applicable	1 day	5 weekly samples in 30 days	5 weekly samples in 30 days
Fall flush/spring freshet sampling frequency	Not applicable	5 weekly samples in 30 days	5 weekly samples in 30 days	5 weekly samples in 30 days
Type of monitoring	none	Field meter only (Temp/SpC/DO)	Field meter (Temp/DO/SpC/Turbidity) + QA/QC data	Field meter (Temp/DO/SpC/Turbidity) + grab samples for lab analysis + QA/QC data
Sites/Watershed	none	1+	4+	4+
Level of training required	<i>Not applicable</i>	<i>Calibration of and sampling with handheld field meters, field observation procedures, field safety</i>	<i>Tier 2 plus taking duplicate/replicate readings</i>	<i>Tier 3 plus grab sample and bottle cleanliness protocols, filling out requisition forms, how to ship samples</i>

The information sheets in ENV’s Surface Water Quality Stewardship Toolbox are intended to support and improve capacity of all groups and Tier levels, though monitoring training and protocol-specific sheets in the Toolbox were designed specifically for use by groups at Tiers 2-4. Below are short summaries of each training need from “level of training required” in Table 1 above; these are in turn covered in detail in the above-mentioned information sheets.

Calibration of and sampling with handheld field meters: How to store, care for, calibrate, operate, and maintain handheld field meters to be used in the specific project. Calibrations should be conducted at the start of the sampling season to ensure handheld units are still functional, and within 24 hours prior to each site visit.

Field Safety: How to assess the various hazards associated with stream sampling and determine the safest way to perform the sampling while minimizing risk to other team members.

Field Observations: How to take good and consistently formatted field notes, including documentation of all result values with their associated units, stream conditions, observable potential impacts like dams, farms, disturbances, etc. and other factors.

Taking duplicate/replicate readings: How to quality assure/quality control (QA/QC) data by taking duplicate readings and/or lab samples for side-by-side comparisons or results. Done to limit and understand variation and reduce monitoring protocol drift.

Grab samples and bottle cleanliness protocols: How to minimize contamination of grab samples (water collected in bottles) by the sampler. Includes specific bottle handling and grab sampling techniques.

Filling requisition forms: How to record information in required requisition/chain of custody form fields. These are applicable when sending grab samples to a laboratory and ensuring sampling specifics such as date/time/depth are recorded consistently.

Shipping samples: How to package, address, and ship samples using couriers to get grab samples to accredited labs. Includes managing your time during the sample day to get samples to the courier before courier closing times. Late samples can affect sample hold times which can affect the sample's accuracy.