

## Chapter XI

### SAFETY GUIDELINES

Please read the following safety guidelines carefully. In addition, familiarize yourself thoroughly with the safety policy at your school.

#### Field Safety Equipment Checklist

- First aid kit
- Eye wash kit
- Materials Safety Data Sheets (MSDS)
- Rubber gloves
- Safety goggles and aprons
- Container of clean water for washing hands
- Biodegradable soap
- Paper towels or clean rags
- Waste container for used chemical reagents
- Container for broken glass and miscellaneous trash
- Blanket or extra warm clothing

#### General Field Safety

1. At least two adults should be present for each field trip, especially when travelling a distance from school. If possible, one adult should drive a separate vehicle. Should an emergency arise, one person may seek help while the other stays with students.
2. Avoid sampling at sites with steep banks or near roadsides. Exercise caution when working along the water's edge or in the stream where the substrate is likely to be slippery.
3. Always wear rubber boots when wading into a stream to protect feet and legs against cold temperatures, broken glass, and chemicals or pathogens in the water.
4. Wear rubber gloves when collecting water samples and invertebrates. Use a stiff brush to remove invertebrates from rocks, and a gardener's hand rake to disturb the sediment.
5. If sampling downstream of a wastewater treatment facility, check with the facility's operator to find out whether effluent is sanitized (chlorinated or irradiated) to kill pathogens before being discharged into the river. Treatment plants are not required to sanitize between October 1st and May 1st in Connecticut. You may wish to take extra

precautions against direct contact with the water during this time.

6. Ticks are common in grassy and wooded areas. Not all ticks carry diseases. However, deer ticks, which are much smaller than common dog or wood ticks, are the vectors of Lyme disease. In the field, it is suggested to wear a long-sleeved shirt, long pants with socks pulled over, closed shoes, and a hat. After leaving the field, be sure to check your clothes and body thoroughly. Pay particular attention to your head, checking your ears and feeling your scalp for any small bumps. If you find an attached tick, do not pull it out with your fingers or coat it with petroleum jelly, nail polish remover, etc. Grasp the tick with forceps and gently twist counter-clockwise until the mouthparts are detached and the tick is free. Wash the area and your hands with soap and water after the tick is out. Lyme disease can have serious debilitating effects if left untreated. The most common symptoms of the disease include an expanding red rash, chills, fever, headache, nausea, fatigue, stiff neck, and pain in muscles and joints. Less common symptoms include swollen lymph glands and spleen, dizziness, sun sensitivity, sore throat and dry cough, facial paralysis, and testicular swelling. If you find an attached deer tick or exhibit any disease symptoms, it's a good idea to see a physician. If identified and treated early, Lyme disease is a relatively minor problem. Delaying treatment could prolong and complicate recovery and lead to heart, joint, and nervous system problems.

### **Chemical Test Safety**

1. Familiarize yourself thoroughly with chemical reagents and respective Material Safety Data Sheets provided with LaMotte field test kits. Keep copies of these sheets in an easily accessible place for quick referral in the field. These sheets explain immediate safety procedures should someone ingest or otherwise come in contact with a chemical.
2. Safety goggles should be worn by all students conducting chemical tests. Safety aprons and rubber gloves are recommended to protect skin and clothes against possible spills.
3. Students should wash their hands with soap and fresh water after handling stream water samples and using chemical reagents. Advise students not to touch their mouths or eyes during test procedures.
4. Dispose of all reagent wastes in a clearly labeled plastic container and flush down the drain with copious amounts of water. You may wish to collect and store reagent wastes from nitrate and ammonia tests separately. These wastes contain cadmium and mercury and can be disposed of with other hazardous materials.
5. Broken glass should be disposed of according to your school policy.

### **Fecal Coliform Test Safety**

1. Wear rubber gloves when collecting and handling water samples.
2. Be very careful when working around an open flame during the filtration procedure.
3. Do not remove the top of the petri dish when counting colonies.
4. Autoclave used petri dishes at 121° and 15 psi for 15 minutes, or treat with full strength bleach before discarding.