



MassDEP

Massachusetts Department of Environmental Protection Bureau of Water Resources Watershed Planning Program

STANDARD OPERATING PROCEDURE

Field Safety

CN 000.2

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List of Revisions

Revision Date	Revision	Pages #s
2005	Original	---
1/2009	Added description re: use of outdoor safety building	Page 5
12/12/24	Revisions throughout	all

Scope and Application: The unique characteristics of accessing sampling sites along rivers, streams and lakes, the use of acid/base preservatives, the handling of unknown sample constituents, etc. present many potential hazards to WPP field survey crews. This SOP covers safety considerations for water sampling and other field activities. For additional safety considerations for laboratory work, see CN 0.36 WPP Laboratory Safety SOP.

General Field Safety Recommendations:

- **Site access:** the accessibility of sampling sites, including anticipated streamflow and depth characteristics, must be investigated prior to the collection of samples. If field staff feel that conditions at a site are hazardous, sampling should be postponed, or an alternative site found.
 - Follow USGS's rule of thumb: **do not** wade in to sample if the estimated water depth (ft.) x velocity (fps) > 10.
 - **Do not** engage in activities at very high bridges without fall protection safety equipment. Be free of entanglement at all times and be able to release equipment in an emergency situation.
 - **Do not** enter confined spaces (e.g., manholes) at any time without formal, documented training in confined space entry protocols.
 - Adhere to the most current and approved MassDEP WPP policies regarding accessing private property to collect samples.
- Always **sample in teams of two or more**, unless otherwise approved by the WQ Monitoring Section Chief.
- **Personal protection:**
 - **Dress for anticipated conditions** but be prepared for the "worst-case scenario." Items to consider include extra clothing, sunshade, sunscreen, orange safety vests, hats, insect repellent, insulated boots and gloves, safety glasses, waterproof boots for highest anticipated depths (chest waders or hip waders).
 - Use effective **insect repellents** (e.g. DEET, oil of lemon eucalyptus) and wear clothing to guard the skin against insect bites. Mosquito-transmitted conditions include West Nile Virus and Eastern Equine Encephalitis (EEE). Be aware of any West Nile Virus or EEE advisories.
 - **Avoid contact with poison ivy** (learn to recognize it!). If contact is made, make special note of it and take appropriate actions to prevent extent or spread of the poisonous sap (urushiol oil). Rinse skin immediately in ivy wash solution "Technu" (in field kit) or cold water if no ivy wash is available. Wash clothes (without touching contacted parts) and equipment thoroughly.
 - If you elect to do so, consult your doctor for available **vaccines** for Hepatitis A (water-borne potential), Hepatitis B and tetanus. There are currently no human vaccines for EEE, West Nile Virus, Hepatitis E (water-borne potential, yet uncommon in US), or Avian Influenza. Rabies vaccine is administered ASAP after infection.

- All members of any given sampling crew should be trained in **Adult CPR/AED/first aid**.
- **Field and First Aid kits** must be taken on all sampling trips; inspect and re-stock as needed before going on-site.
- An **AED** must be on site for all electrofishing surveys.
- The **preservatives 1:1 H₂SO₄, 1:1 HNO₃, and 1:1 HCL are strong acids**. If splashed on skin or eyes rinse with lots of water. Seek medical attention as needed. Never wear contact lenses when working with acids, bases or solvents. Disposable powder-free gloves are recommended for analytical sample handling (e.g., acidification of samples). Use of single-use aliquots for sample preservation is recommended.
- Never have **food or drinks** near samples. Schedule lunch/dinner/snack at a non-sampling time. Always wash hands (frequently and thoroughly) before and after handling samples and food. Never use sample coolers to store food or drinks.
- **Label all bottle contents**, especially samples, solutions or solids known or suspected to be hazardous because of flammability, corrosivity, toxicity, or radioactivity. This will ensure the appropriate precautions can be taken during sample handling, storage, and disposal.
- To prevent contaminating other personnel, put package sample bottles that have been coated on the outside with oily residues into **clear plastic bags** before transporting to a laboratory.
- Work at a **reasonable pace** to ensure personal safety (and data quality). Rapid, frantic or rushed sampling will usually lead to mistakes and poor results.
- **Boating safety:**
 - For sampling from boats, personal flotation devices (PFDs) are required for each occupant. It is highly recommended that these be worn at all times
 - **Massachusetts boating laws** shall be adhered to at all times. <https://www.mass.gov/info-details/massachusetts-boating-law-summary>
 - All field staff operating boats should complete the Massachusetts boating safety course. <https://www.mass.gov/info-details/boating-safety-course-schedule>
- Use common sense and always err on the side of safety, i.e. **SAFETY FIRST!**
- Contact with sample media should be avoided if there are suspected sources of contamination (e.g., sampling downstream of a CSO). Waders and elbow-length rubber gloves are recommended for work in such situations.
- **In Case of an On-the-Job Injury**
 - Call 911 in the event of an emergency. Notify your supervisor as soon as practicable.

- Seek medical attention as appropriate. If you see a doctor, have them complete a Physician's Report. Report forms are available from MassDEP's Health & Safety Officer - Martha Senn (martha.senn@mass.gov).
- Complete all required forms relating to the injury within 24 hours of injury. The Health & Safety Officer has the necessary forms, including the Notice of Injury Report. Once the completed forms are submitted, the information is entered into the Human Resources Division (HRD) system and a file number is assigned (this takes 1-2 days). If the Health & Safety Officer is not available, CERO's HRD contact may be able to assist.
- Provide additional information regarding the injury as needed.

Outdoor Hazardous Materials Storage Shed

The outdoor safety storage shed at 8 New Bond Street houses WPP's main flammable materials (e.g., gasoline and alcohol). Total liquid volume of contents is kept under the maximum rated amount for the building (B200 model rated at 120 gallons maximum). Following each field monitoring season, gasoline in cans and tanks is inventoried for quantity and quality/age. Fresher gas (current season) is preserved with gas stabilizer and stored for use the following season. Any older or unknown-age gas is either treated (i.e., filtered and preserved) for use in WPP vehicles (at a high dilution rate into full vehicle tanks) or disposed of in accordance with state and local regulations. Quantity of gas disposed of cumulatively or at any one time shall not exceed the monthly maximum set by WPP's VSQG registration (27 gallons/month).

