

Standard Operating Procedure #11: Post-Season Procedures

Version 1.2 (2021)

In Water Quality Monitoring Protocol for Inland Lakes: Great Lakes Inventory and Monitoring Network

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Revision History Log

The following table lists all edits and amendments to this document since the original publication date. Information entered in the log must be complete and concise. Users of this standard operating procedure will promptly notify the project manager and/or the Great Lakes Network (GLKN) data manager about recommended and required changes. The project manager must review and incorporate all changes, complete the revision history log, and change the date and version number on the title page and in the header of the document file. For complete instructions, please refer to Revising the Protocol, SOP #13.

Previous Version #	Revision Date	Author (with title and affiliation)	Location in Document and Concise Description of Revision	Reason for Change	New Version #
1.0	5/01/2015	David VanderMeulen, GLKN	Updated the NPS contact author, added language about long-term storage of multiprobes, noted that equipment must be checked to ensure that it is clearly marked, added language about storing and inventorying equipment with GLKN and/or NPS property numbers, referenced chemical inventory records, replaced “Material Safety Data Sheets” with “safety data sheets”, fixed a handful of grammatical errors throughout	To clarify and update SOP based on changes that have occurred since Version 1.0 was published in 2008	1.1
1.1	3/2021	Alexander Egan, Aquatic Ecologist, GLKN	Minor text changes.	To clarify and update SOP based on changes that have occurred since Version 1.1 was published in 2015	1.2
Add rows as needed for each change or set of changes tied to an updated version number					

11.0 Introduction

The proper maintenance and storage of field and laboratory equipment will prolong the life of the gear as well as simplify start-up procedures for the next field sampling season.

11.1 End of Season Procedures

11.1.1 Field Instrumentation and Equipment

When water quality probes are to be stored for extended periods of time, make the following preparations:

- Thoroughly clean the sensors.
- Remove installed batteries.
- Fill the storage cap approximately one-fourth full of tap water or pH 4.0 calibration solution. Store in a temperature-controlled environment. Do not expose sensors to freezing temperatures. Store away from direct sunlight. Although the instrument should be able to be reliably reactivated for field use with a minimum of effort, this should be done well in advance of scheduled surveys to allow time for repair or replacement.

Refer to equipment manuals for more detailed instructions regarding maintenance of multiprobe sondes or individual sensors like those used in thermal arrays.

End-of-season care of other equipment includes the following:

- Inspect and clean all equipment following the procedures detailed in SOP #5, Decontamination of Equipment to Remove Exotic Species. This effort minimizes the potential for transferring nuisance species from contaminated lakes to uncontaminated lakes.
- Lay out all ropes and sampling lines to dry completely, then coil or roll back into their holders.
- Store field equipment in protective storage cases to avoid damage.
- Clean all sample collection and storage containers in a 0.1N HCl acid bath followed by deionized water rinses as per SOPs #6 and #7.
- Ensure that all equipment is clearly marked (e.g., GLKN WQ).
- Return all of the equipment and supplies to the proper storage area. Keep them organized so they can be inventoried using the equipment and supply checklists, and for annual property inventories for equipment assigned a GLKN or NPS property number.
- Store calibration standards and electrolyte solutions in a temperature-controlled environment.
- Properly dispose of all chemical waste material.

11.1.2 Laboratory Equipment and Supplies

- Clean all lab ware in a 0.1N HCl acid bath followed by deionized water rinses as per SOP #7.
- Inventory all supplies, including chemical inventory records, and if necessary replace chemical and non-chemical supplies as soon as possible.

- Ensure that safety data sheets (formerly known as material safety data sheets) are up-to-date, complete, and readily accessible.

11.2 Data Management

There is no substitute for complete and accurate record keeping of field-derived data. Field technicians, crew leaders, and project leaders share responsibility for collecting, verifying, and documenting data according to the guidelines in this monitoring protocol and all applicable standard operating procedures. Refer to the GLKN Data and Information Management Plan (Hart and Gafvert 2006) for overall guidance and follow SOP #8, Data Entry and Management and SOP #10, Reporting, for additional details.

11.3 Quality Assurance/Quality Control

Taking proper care of all field and lab instrumentation and sampling gear is a fundamental part of any QA/QC program. Sensors that are properly cared for will likely be less variable, equilibrate more quickly in the field, and less prone to malfunction or failure. See SOP #12 for additional details on QA/QC procedures.

11.4 Literature Cited

Hart, M., and U. Gafvert (editors). 2006. Data management plan: Great Lakes Inventory and Monitoring Network. Great Lakes Inventory and Monitoring Network Report GLKN/2006/20. National Park Service, Ashland, Wisconsin. Available at <https://irma.nps.gov/DataStore/Reference/Profile/660509>.