Laboratory Training System and Records Management

SCOPE

This SOP is intended to provide guidance on the objectives and use of the laboratory's training system and the means for complying with the requirements of Chapter 5.5.2.6 [NELAC 2003 standard] and Section 5.2, V1M2 [TNI 2009 standard]. The Florida Department of Environmental Protection (FDEP) Bureau of Laboratories retains, primarily, electronic records of all analytical tests and employee training records. This document specifies laboratory training requirements and describes how electronic certification of training is accomplished.

PROCEDURE

Basic Training Requirements

All laboratory staff are required to complete basic training requirements regardless of their duties. Basic training is required in areas listed below. Some of this training need only be performed once, when the employee joins the lab, while others need to be performed on an annual basis. Training that is required only once may still be taken by employees in successive years on an as-needed basis or at their supervisor's discretion.

Annual training is required for:

- Quality Manual
- Ethics Training

A single training session is required for:

- CPR and First Aid
- Hazardous Waste Handling
- ERLN Tiered Training
- Globally Harmonized Hazard Communication Training

Additional general, one-time training for selected staff includes:

- Boat Operator Certification
- Hazardous Material Shipment
- Radiation Safety

Analyst Training

All analysts and technicians engaged in analytical work are required to complete training in the methodological requirements for assigned analyses. Additionally, analysts generating reportable data are required to (a) successfully complete method proficiency demonstrations prior to reporting any data from an analytical test and (b) demonstrate continuing proficiency on an annual basis.

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Certification and Documentation

1. **Laboratory Staff Documentation** - All training for laboratory staff is documented in the Laboratory Information Management System (LIMS) training module. Three training categories exist in the LIMS training module: 1) a **Bureau** training category covering basic training requirements (described above) for all laboratory staff; 2) an **SOP** training category covering methodological requirements; and 3) a **Method** training category covering initial and continuing proficiency demonstrations.

   Training requirements for routine tests that are frequently performed by experienced analysts are described in SOP **LB-007**, *Procedure and Policy for Demonstration of Capability for Methods, Instruments and Laboratory Staff*.

   For all other categories, including training for new analysts, instruments or methods and tests that are performed infrequently, supervisors are responsible for assigning appropriate training and a training due date for their staff within the LIMS training module. After training is assigned, personnel are alerted to training needs by a LIMS message that is displayed after logging into the system. When personnel complete their assigned training, they enter the LIMS training module and attest to completion of the training by a) selecting the 'Complete' menu tab; b) entering the training completion date and c) citing the analytical records containing method proficiency data where appropriate.

2. **Non-Staff Personnel Documentation** - All non-staff (i.e. visitor, contractor, and technician) training is documented in a logbook located in the main office area at the Non-Staff Training computer terminal.

Basic Training

Completion of Quality Manual training means that the employee has read, understood, and is using the latest version of the laboratory's in-house quality documentation, which relates to his/her job responsibilities. This training is conducted annually.

SOP Training

For SOP training, analysts that enter training records are attesting that they have read, understood, and agree to use the cited version of the method in the laboratory. This training is conducted on an annual basis.

Method Training

Supervisors are responsible for reviewing employee training records and any associated analytical records. If the review is acceptable, supervisors utilize the LIMS training module to authorize the completion of employee training. For method proficiency training, a supervisor's authorization attests that, consistent with Chapter 5, Appendix C [2003 NELAC standard] and Section 1.6 of V1M4, V1M5 and V1M7 [2009 TNI standard]:

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1. The analyst has performed the cited test method(s) according to approved lab SOPs for the analyses of samples under the National Environmental Laboratory Accreditation Program, and has met all demonstration of capability (DOC) requirements.

2. The test method(s) was performed by the analyst(s) identified on this certification (LIMS training record).

3. A copy of the test method(s) and the laboratory-specific SOPs are available for all personnel on-site.

4. The data associated with the DOC are true, accurate, complete, and self-explanatory.

5. All raw data (including electronic certification records) necessary to reconstruct and validate these analyses have been retained at the facility, and that the associated information is well organized and available for review by authorized assessors.

Because much of the raw data acquired and retained by the laboratory are in the form of electronic records, the requirement of item (5) above may be met by including references to electronic data records in the LIMS training module. Method training is conducted annually by lab analysts for the analyses they perform. Details are documented in SOP **LB-007**.

Environmental Response Laboratory Network (ERLN) Training

All employees and non-staff personnel must be provided with up-to-date information and training on Ultra-Dilute Agents (UDA) in accordance with 29 CFR 1910.120(h)(1). Specifically, employees must be provided with training on UDA in their work area at the time of their initial assignment, and whenever a new physical or health hazard that has not been previously covered in the training is introduced into their work area. Information and training may be designed to cover categories of hazards (e.g., toxicity, carcinogenicity) or specific chemicals. Chemical-specific information must always be available through labels and material safety data sheets.

Personnel at DEP will receive training on the hazards and hazard communication systems employed in the UDA laboratories consistent with their job function. Training for UDA areas is categorized into four levels: Tier 1 – General Awareness, Tier 2 – Visitor, Tier 3 – Operator/Laboratory Worker, and Tier 4 – Response/Decontamination and Remediation. This tiered training is given to lab personnel or other staff on an as-needed basis, prior to entering laboratory areas containing UDA samples.

- **Tier 1 Training** – Tier 1 training is general awareness training that shall be given to those individuals who will not enter the UDA laboratory areas. This will include DEP general staff. Training may include information on chemical hazards and signs and symptoms of exposure.

- **Tier 2 Training** – Tier 2 training is provided to visitors and personnel that could enter the UDA laboratory areas. These personnel must be escorted at all times. This will include visitors, auditors, maintenance personnel, and janitorial staff. Training

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may include information on c**hemical hazards**, signs and symptoms of overexposure, alarms in the UDA laboratory areas, and evacuation procedures.

- **Tier 3 Training** - Tier 3 training is given to personnel working unescorted in the UDA laboratory areas. This includes the Chemical Agent Operators, auditors, management, sample custodian, security officer, and Chemical Hygiene Officer. Training may include information on chemical hazards, signs and symptoms of overexposure, alarms in the UDA laboratory areas, evacuation procedures, first aid procedures (including use of the Mark I kits), decontamination procedures, personal protection equipment (PPE), laboratory hoods, security and accountability procedures, and emergency procedures.

- **Tier 4 Training** – Tier 4 training is given to personnel who may respond to emergencies including medical emergencies and spill events. This includes personnel on the emergency response team, medical personnel, and off-site responders. Training may include information on chemical hazards, signs and symptoms of overexposure, first aid procedures (including use of the Mark I kits), decontamination procedures, PPE, and emergency procedures.

DEMONSTRATION OF CAPABILITY

Demonstrations of capability (DOCs) are documented electronically under Method training as described above. Initial demonstrations of capability are performed for all analytes and methods according to NELAP Chapter 5, Appendix C [2003 NELAC standard] and Section 1.6.2, V1M4 [TNI 2009 standard]. Ongoing DOCs are performed annually according to the requirements specified in Chapter 5.5.2.6 (c) [2003 NELAC standard] Section 1.6 of V1M4, V1M5 and V1M7 [2009 TNI standard]. More details are provided in SOP **LB-007**. Documentation for only one test method is maintained for similar test methods using the same technology. EPA test method 1311 (TCLP) and 1312 (SPLP) are considered similar methods differing only in the leaching solution.

For some methods, it is not feasible or practical to include all analytes in the blind performance samples, laboratory control samples or authentic samples. If an analyst is demonstrating on-going capability using one of those samples and an analyte was not added or present in the sample, the analyte must still be reported by the analyst. Acceptability of results for analytes not added or present in ongoing capability demonstration samples shall be based on the supervisor's judgment (either using non-detection as a criterion or, if the amount is judged to be a co-contaminant, based on comparability of results produced by other experienced analysts).

REFERENCES

1. SOP LB-007, *Procedure and Policy for Demonstration of Capability for Methods, Instruments and Laboratory Staff*.
2. 2003 NELAC Standard.
3. 2009 TNI Standard.

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APPENDIX OF CHANGES

10/06/2010 Added language to address ERLN Tiered training and non-staff personnel training.

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