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Standard Operating Procedure **NHX/SOP-810-002**

Title: Preparation and Handling of Performance Evaluation Samples

Source: Research Triangle Institute

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TITLE: STANDARD OPERATING PROCEDURE FOR PREPARATION AND HANDLING OF PERFORMANCE EVALUATION SAMPLES

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PREPARATION AND HANDLING OF PERFORMANCE EVALUATION SAMPLES

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1.0 SCOPE AND APPLICATION

Performance Evaluation Samples provide a system for assessing both intra- and inter-laboratory components of analytical bias. For the NHEXAS pilot program, Performance Evaluation Samples will be provided by the NIST Chemical Science and Technology Laboratory.

2.0 SUMMARY

Performance Evaluation Samples ("samples" in this SOP) will be provided to the analytical laboratory (RTI/EOHSI Consortium) by NIST. Analytical results will be reported to NIST. NIST will provide results, analysis of data and feedback to the labs. The tentative schedule for distribution of samples is shown below.

When	What	Why
May 1994	Distribute simple solutions containing NHEXAS analytes	for use in internal QC programs (calibration)
July 1994	Distribute real or simulated extracts containing NHEXAS analytes	for use as control materials in internal QC programs
September 1994	Distribute natural matrices	use as "Control Materials"

3.0 RESPONSIBILITIES

3.1 NIST serves as the Analytical Reference Laboratory for the NHEXAS pilot program and will provide performance evaluation samples to the laboratories.

3.2 The Principal Investigator is the primary point of contact with NIST and is responsible for all technical and management decisions regarding the NIST Analytical Reference Laboratory program.

3.3 Samples for the analytical laboratory will be shipped to the RTI QA Officer. The QA Officer is responsible for the receipt, preparation (if required), and distribution of performance evaluation samples to the appropriate analysis laboratory. The QA Officer is also responsible for documentation and sample tracking.

3.4 The RTI QA Officer will ship samples for EOHSI to the EOHSI QA Officer.

3.5 The EOHSI QA Officer is responsible for distribution of samples at EOHSI and sample tracking and documentation at EOHSI.

3.6 The laboratory manager is responsible for analysis of the samples, and reports results to the QA Officer.

3.7 The EOHSI QA Officer will report results to the RTI QA Officer.

3.8 The QA Officer will compile analytical results, and prepare reports. The results will be reported to NIST after review and approval by the Principal Investigator.

4.0 PROCEDURE

Performance Evaluation Samples will be received at RTI by the QA Officer. The QA Officer is responsible for the following procedures.

4.1 Sample Receipt and Log-in

4.1.1 Sample Log-in

The samples will be logged-in upon receipt. The QA Officer will note the condition of each sample upon arrival and will notify NIST of any problems such as container breakage or sample leakage.

4.1.2 Sample Storage

Samples will be stored at conditions recommended by NIST. Samples will be stored in a secure location until distribution by the QA Officer.

4.2 Sample Preparation

The QA Officer is responsible for sample preparation, if required. This could include sample dilution or preparation of aliquots.

4.3 Sample Management

The QA Officer is responsible for assignment of sample codes and sample tracking procedures and documents.

4.3.1 Assignment of Sample Codes

The QA Officer is responsible for assignment of sample codes and labeling of the samples. The sample code sequences for performance evaluation samples will be obtained from the Database Manager.

In some cases, samples may be submitted to the analytical laboratory on a blind basis. In these cases, eligible sample codes will be assigned. In some cases, it may be necessary to fabricate field sampling information as well.

NOTE: There must be no duplication in the use of sample codes.

4.3.2 Preparation of Custody Documents.

The QA Officer will initiate custody procedures. Chain-of-custody documents will be fully implemented. The QA Officer will retain completed chain-of-custody documents.

4.3.3 Final Disposition

The QA Officer is responsible for disposal of expired and unused portions of performance evaluation samples.

4.4 Submission of Samples to the Analysis Laboratory

4.4.1 The QA Officer will submit a memo to the laboratory manager after samples are logged-in. The memo will describe the samples and sample codes and provide any other relevant information. The memo will also direct the laboratory manager to report the analytical results to the QA Officer.

4.4.2 The QA Officer will submit the samples to the appropriate analytical laboratory. Chain-of-custody procedures will be followed.

4.4.3 The QA Officer will submit samples to EOHSI. A cover letter will describe the samples, sample codes and other relevant information. Custody documents will be included.

5.0 REPORTS

5.1 The QA Officer will prepare a memo report of analytical results for each set of samples. Prior to submission to NIST, the report will be reviewed by the laboratory manager, and reviewed and approved by the Principal Investigator.

5.2 The QA Officer will prepare a report for the Database Manager for each set of samples. The report will include analytical results by compound and sample codes and other identifying information. The Database Manager may require additional information such as special codes (for missing values), descriptors, and NIST values. This information will be provided for each sample set as well.

5.3 The Principal Investigator will distribute results and data analysis information from NIST to the QA Officer and appropriate laboratory managers.