

Proficiency Testing

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Proficiency Testing Outline

- Introduction
- Types of ELAP Certified Laboratories
- Vendors
- Proficiency Testing Process
- Not Acceptable Results
- Study Data Tracking
- Corrective Action
- Factors Affecting Results
- Area of Improvement with the Proficiency Testing Process

Proficiency Testing Introduction

Proficiency Testing Samples provide the following information:

- Evaluate a laboratory's performance.
- Provide reliability about the data.
- A component of ELAP Accreditation.

Proficiency Testing

Introduction--*continued*

Annual Performance Testing Required For:

- Environmental Laboratory Accreditation Program (ELAP) accreditation process.
- Discharge Monitoring Report –Quality Assurance (DMR-QA)Study.

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ELAP Certified Laboratories

- Environmental Laboratories
- Sanitation and Water Districts
- Manufacturing Laboratories
- Bottling Companies
- Correctional Facilities
- Military Facilities
- Oil Refineries
- State Regulatory Agencies

Proficiency Testing Vendors

- Prior to 1999, US EPA supplied chemical samples.
- Private sector vendors now sell samples.
- Drinking water, wastewater, hazardous waste and food matrices available.

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Vendors--*continued*

- Vendors are inspected to the NELAC Institute (TNI) Standards by a third party.
- Specialty fields may have samples from other sources.

Proficiency Testing Vendors--*continued*

- Many laboratories have contracts with Proficiency Testing vendors.
- Proficiency Tests are automatically delivered throughout the year.

Proficiency Testing Process

- A Field of Testing or FoT is a group of methods that detect the presence of a substance.
- The laboratory must analyze same matrix using appropriate regulatory method for the Field of Testing they seek certification.

Proficiency Testing Not Acceptable Results

- Failure determined by Proficiency Provider (NELAC Institute, EPA or Agency).
- Results can be overruled if Agency believed Study was biased due to method of evaluation.
- Overall failure rate is 1-2 % of all Performance Testing.

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Not Acceptable Results-*continued*

- A Corrective Action Report must be filed after each “not acceptable” result.
- A consecutive failure can initiate a site inspection. Normally a site inspection occurs every 2 years
- Decertification can occur for method in which a certification sought.

Proficiency Testing Study Data Tracking

- Vendors submit paper and electronic Proficiency Testing data study results to ELAP.
- ELAP reviews the data for accuracy.
- ELAP can confirm Proficiency Test results with the vendor.

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Study Data Tracking--*continued*

- ELAP receives data from vendors for approximately 700 certified laboratories.
- Data represents Fields of Testing with subgroups of 4 matrices.
- It has been ELAP's practice to have all data handled by one person.

Proficiency Testing Corrective Action

- Retesting is required for all “Not Acceptable” results.
- Laboratory must send to ELAP a Corrective Action Report.

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Corrective Action--*continued*

- A Corrective Action Report should be sent to ELAP before a second attempt at a Proficiency Test.
- It states the causes and system changes to correct the discrepancies and avoid a reoccurrence.
- Repeat the applicable Proficiency Test after the Corrective Action is implemented.

Proficiency Testing Factors Affecting Results

- Electrical surges
- Inexperienced staff
- Degraded Proficiency Testing study sets
- Improperly working equipment
- Incorrect equipment for analyses
- Not following sample preparation directions
- Samples not handled as routine environmental samples or prepared to vendor instructions

Proficiency Testing Areas for Improvement

- Lack of Correction Action Reports from laboratories that receive unacceptable data studies.
- The laboratory has the vendor send the results to the accreditation body only after reviewing the report.
- The acceptance ranges are published by the vendors. For some methods reporting an incorrect result is difficult which causes doubt of the accuracy of the data results.

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Areas for Improvement-*continued*

- Laboratories with more than one facility that participate in the same study and share results.
- Proficiency Testing sample analyzed multiple times on multiple instruments.
- Laboratories sending an aliquot of the sample analyte to another laboratory for analysis.
- Some organic methods are analyzed without the appropriate sample preparation.

Proficiency Testing Questions?

Proficiency Testing Contact

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