# Training Procedure for Chemistry Technician

**1.0 Purpose –** The purpose of this procedure is to provide a training program for Chemistry Technician's in the Trace Evidence Section of the North Carolina State Crime Laboratory. This program shall provide individuals with the theoretical background and the working knowledge to conduct independent instrument calibrations, handle evidence, perform safety inspections, process stop work cases and testify in court. The practical/laboratory exercises are intended to give the trainee experience performing job functions and to demonstrate ability to perform those functions independently.

**2.0 Scope** - This procedure applies to technician trainees in the Trace Evidence Section of the State Crime Laboratory. The training outline shall be followed by all technician trainees, regardless of experience level. Blocks may be completed independently of each other and the technician may be authorized to perform portions according to the Procedure for Personnel Training. Completion shall be documented and approved on the Training Log.

**3.0 Objectives:** Upon completion of the training program, the technician shall:

**3.1** Know and understand the Laboratory and Section policies and procedures governing evidence handling, note taking, and report writing.

**3.2** Be able to receive, properly identify and transfer evidence, remediate seals and inventory the section's vaults.

**3.3** Be able to process stop work cases.

**3.4** Be able to calibrate and check the calibration and/or performance of the following instruments and items of laboratory equipment:

**3.4.1** FTIR, GC-FID, and GC-MS

**3.5** Be able to perform section safety inspections.

**3.6** Be able to testify in court.

## 4.0 Evidence Handling

**4.1** Required Reading

**4.1.1** Policy and Procedure for Evidence Submissions

**4.1.2** Laboratory Procedure for Evidence Management

**4.1.3** Laboratory Procedure for the Use of FA

**4.2** Tasks: The training officer shall demonstrate the following:

**4.2.1** Receiving Evidence

**4.2.1.1** Evidence shall be received from the Evidence Control Unit. The trainee shall

demonstrate the ability to retrieve mock evidence from the Evidence Control Vault in order to prepare cases for transfer to analysts and/or general storage according to the State Crime Laboratory Procedure for Evidence Management.

**4.2.1.1.1** The trainee shall ensure that evidence packaging is in a properly sealed condition. If the packaging seal does not meet policy, the technician shall remediate the seal.

**4.2.1.1.2** The trainee shall demonstrate how to mark received evidence.

**4.2.1.1.3** The trainee shall maintain custody of received evidence until it is transferred to an analyst or general storage.

**4.2.2** Transfer Evidence

**4.2.2.1** The trainee shall demonstrate the ability to transfer properly sealed and labeled evidence to the appropriate analyst or general storage according to the State Crime Laboratory Procedure for Evidence Management.

**4.2.3** Vault Inventory

**4.2.3.1** The training officer shall demonstrate the procedure for reconciling the section evidence vaults.

**4.3** Evaluation

**4.3.1** Given four pieces of mock evidence, ensure that they are properly sealed and marked.

**4.3.2** Given four mock cases, correctly transfer them from the evidence control vault to the section vault.

**4.3.3** Independently reconcile two or more shelves in the section evidence vault.

**4.3.4** Written exam.

## 5.0 Stop Work Cases

**5.1** Required Reading

**5.1.1** Laboratory Procedure for Stop Work Order

**5.1.2** Laboratory Procedure for the Use of FA

**5.1.3** Laboratory FA Training PowerPoint Presentation

**5.2** Tasks

**5.2.1** Learn use of the computer software for Laboratory note taking and report writing (Forensic Advantage) with the Trace Evidence Section's FA Administrators.

**5.2.2** The training officer shall demonstrate the proper completion of a stop work case according to the Procedure for Stop Work Orders.

**5.3** Evaluation

**5.3.1** The trainee shall successfully process two stop work cases.

## 6.0 Equipment Calibration and Maintenance

**6.1** Required Reading

**6.1.1** Technical Procedure for Infrared Spectroscopy

**6.1.2** Technical Procedure for Gas Chromatography (GC-FID)

**6.1.3** Technical Procedure for Gas Chromatography-Mass Spectrometry (GC- MS)

**6.1.4** Laboratory Procedure for Equipment Calibration and Maintenance

**6.1.5** Laboratory Safety Manual- Chemical Hygiene Plan and Hazardous Communication Program

**6.2** Tasks: The training officer shall demonstrate the following:

**6.2.1** FTIR

**6.2.1.1** The trainee shall demonstrate the maintenance and quality control checks on the FTIR according to the Technical Procedure for Infrared Spectroscopy.

**6.2.1.2** All quality control checks shall be documented in the appropriate logbook.

**6.2.2** GC/FID and GC/MS

**6.2.2.1** The trainee shall demonstrate the maintenance and quality control checks on the GC-FID and GC-MS according to the Technical Procedure for Gas C hromatography (GC-FID) and the Technical Procedure for Gas Chromatography - Mass Spectrometry (GC-MS).

**6.2.2.2** All quality control checks shall be documented in the appropriate logbook.

**6.3** Evaluation

**6.3.1** The trainee shall successfully demonstrate the calibration, calibration check and/or performance check of the instruments or equipment listed above.

**6.3.2** The trainee shall read and comprehend the SDS for each chemical used in the procedures. The trainee shall understand the hazards associated with all the chemicals used in the procedure including 1) methods and observations that may be

used to detect the presence or release of a hazardous chemical, 2) the physical, health, and other associated hazards of a hazardous chemical, and 3) measures employees can take to protect themselves and others from these hazards, including environmental and administrative controls, emergency procedures, and personal protective equipment to be used.

## 7.0 Safety Inspections

**7.1** Required Reading

**7.1.1** Laboratory Safety Manual- Chemical Hygiene Plan and Hazardous Communication Program

**7.2** Tasks

**7.2.1** The section safety officer shall demonstrate the required section safety checks.

**7.3** Evaluation

**7.3.1** The trainee shall successfully perform the required monthly safety inspections.

## 8.0 Preparation for Court

**8.1** Required Reading

**8.1.1** CVs or Statements of Qualifications of other Forensic Scientists.

**8.1.2** Ron Smith and Associates, Inc. “Courtroom Testimony Techniques: Success Instead of Survival.” Collinsville, Mississippi.

**8.2** Tasks

**8.2.1** Prepare or update a CV or Statement of Qualifications.

**8.2.2** Review courtroom testimony with the Forensic Scientist Manager or designee and the ECU Supervisor or Training Coordinator.

**8.2.3** Prepare a set of qualifying questions.

**8.2.4** Observe pretrial conferences, courtroom testimony and/or moot courts if available.

**8.3** Evaluation

**8.3.1** Successfully complete a moot court.

## 9.0 Records

- Training file
- Training checklist
- Laboratory Safety Manual - Chemical Hygiene Plan and Hazardous Communication Program

**10.0 Attachments** – N/A

| **Revision History** | | |
|---|---|---|
| Effective Date | Version Number | Reason |
| 09/21/2020 | 2 | Changed Physical Evidence Section to Trace Evidence Section throughout document.<br><br>Removed Firearms Unit training requirements from document. |
| | | |