Guidelines for the Collection, Packaging and Submission of Forensic Evidence

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Onondaga County Health Department

Wallie Howard, Jr.
Center for Forensic Sciences
100 Elizabeth Blackwell Street
Syracuse, New York 13210
The Center for Forensic Sciences – Forensic Laboratories, a part of the Wallie Howard, Jr. Center for Forensic Sciences (hereafter referred to as CFS), is a bureau of the Onondaga County Health Department headed by a Commissioner of Health.

The mission of the CFS is to provide accurate, reliable, timely and objective scientific analysis and subsequent expert testimony in a variety of criminal matters and death investigations.

The CFS provides high quality scientific laboratory services in support of the administration of justice and public safety programs for the citizens of Onondaga and surrounding counties. This service is provided primarily to the law enforcement agencies of Onondaga County in regard to the evidence submitted by them.

The CFS will carry out its testing activities in such a way as to meet the requirements of the ASCLD/LAB® -International Accreditation Program, the Quality Assurance Standards for Forensic DNA Testing Laboratories issued by the FBI Director, and the New York State Commission on Forensic Science.

The CFS Laboratories are comprised of five disciplines:

Latent Prints, Firearms, Digital Evidence, Forensic Biology/DNA, Forensic Chemistry (Controlled Substances & Fire Debris/Ignitable Liquids)

Joanne M. Mahoney, Onondaga County Executive
Michelle Mignano, Interim Commissioner of Health
Kathleen Corrado, Ph.D., Director of Laboratories
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Introduction

The Onondaga County Center for Forensic Sciences Laboratories is dedicated to providing accurate, reliable, timely and objective scientific analysis and subsequent expert testimony in support of the criminal justice system. The services offered by the CFS Laboratories provide an important link between the collection of physical evidence and the investigation and prosecution of crimes within our community.

This handbook provides an overview of the services offered by the laboratories and is meant to be used as a reference guide for law enforcement personnel to follow when submitting physical evidence to the CFS Laboratories. The handbook also provides information relating to best practices regarding collection and preservation of evidence to maintain the integrity of the evidence prior to submission. This handbook is not intended to be a comprehensive guide for crime scene processing.

The laboratories continually strive to improve our service to our customers and stakeholders. We continue to work collaboratively with our submitting agencies to focus laboratory resources on performing analyses on evidence that has the highest probability of providing probative results and to reduce or eliminate analyses of evidence with lesser or no probative value. Our goal is to work with our criminal justice partners to provide the highest quality of services in the most efficient and effective manner. The CFS encourages suggestions for improvement regarding laboratory services.

Grateful acknowledgement is made to the CFS staff members for their contributions to this handbook and for their continued dedication and commitment towards improving the safety of our communities.

Sincerely,

Kathleen Corrado, Ph.D.
Director of Laboratories
The CFS Laboratories will accept evidence submitted by law enforcement agencies, prosecutors, fire investigators, or Medical Examiner’s Offices.

• The CFS Laboratories do not provide analysis for private citizens or for civil litigations.

• Evidence can be submitted at the CFS Evidence Intake window from 8:00AM to 3:30PM, Monday through Friday.

• The CFS Laboratories are responsible for determining the appropriate test methods utilized for analysis.

• The customer(s) agrees to allow the CFS Laboratories to determine, based upon existing policies, when submitted items will not be examined as requested.

• The CFS Laboratories reserve the right to approve deviations regarding the test methods utilized when appropriate and to subcontract for analysis when necessary. The Forensic Laboratories maintain information on-site regarding the exact test methods used in examination. This information is available upon request by contacting the Director of Laboratories at (315) 435-3800.

The CFS Laboratories strive to provide the highest quality forensic testing to our customers in a timely and objective manner. The CFS Laboratories’ management welcomes positive feedback as well as suggestions for improvement regarding laboratory services. Please use the Laboratory Service Feedback Form, available as a link on the Laboratories’ website, http://www.ongov.net/health/forensic/index.html or contact the Director of Laboratories at (315) 435-3800 to provide feedback to the CFS.
How to Submit Evidence

The Center for Forensic Sciences – Forensic Laboratories has policies and procedures for the transportation, receipt, handling, protection, storage, retention and/or disposal of test items. These procedures include all provisions necessary to protect the integrity of the test item and to protect the interests of the CFS and the customer.

Acceptance of Evidence

Evidence must be submitted in a container to protect the items from loss, cross-transfer and/or contamination and must be properly sealed.

The evidence may be received in person, via mail or from on-site temporary storage lockers.

The CFS will maintain temporary secured storage lockers and refrigerators for law enforcement personnel to secure their evidence prior to submission to the CFS. The evidence stored in these locations is not considered received until the evidence comes into the possession of the CFS personnel and is accessioned.

Proper Seals

The CFS requires that the evidence accepted and stored in the laboratories is properly sealed. Evidence is properly sealed only if its contents cannot readily escape and only if entering the package/container will result in obvious damage/alteration to the outer package/container or its seal. Typically, a proper seal consists of heat seals or tape seals. Various other sealing procedures may meet this definition.

A proper seal for evidence submitted to the CFS must at a minimum be initialed or otherwise marked to document the person sealing the evidence.

It is recognized that not all evidence can be packaged and sealed (e.g. bulky items such as furniture, etc.). If it is not practical to package a piece of evidence, contact the CFS prior to submission.

BEAST-LIMS: System of Identification

An electronic bar-coded evidence analysis statistical tracking - laboratory information system (BEAST-LIMS) is used to maintain the identification of the items throughout the life of the items in the CFS. The BEAST-LIMS requires the use of an electronic signature or a personal identification number (PIN) for any transfer involving an individual. The system is designed and operated so as to ensure that items cannot be confused physically or when referred to in records or other documents. The laboratories must be able to demonstrate that the evidence examined and reported on was in fact the item(s) submitted to the CFS. A “chain of custody” record, which reflects the receipt of evidence and all internal transfers, is maintained utilizing the BEAST-LIMS. The electronic record details each person taking possession of an item of evidence, or the location of that item.
The BEAST PROPERTY system is available to agencies within Onondaga County. Please contact the Onondaga County IT department at 315-435-4750 for assistance.

**Evidence Submissions through BEAST PROPERTY**

1. Only package the contents of one item per BEAST item label.

2. Only choose exams deemed necessary. Only create a “submission” if the evidence requires testing at the CFS. Do not choose “NE” as an exam unless items are packaged together and you need to submit the other items for an examination. Try not to package more than one item with different item numbers together to avoid this issue.

3. You may select more than one item for examination on a single submission.

4. You may select more than one type of examination for items on a single submission.

5. Any items for TOXICOLOGY analysis (such as DUI blood or urine or DFSA kits) need to be on a SEPARATE SUBMISSION using exam code TOX.

6. Any items being submitted to the Medical Examiner’s Office need to be on a SEPARATE SUBMISSION using exam code ME.

7. The person listed on the submission in the “requesting officer” field will be the person that receives the email notification when the lab report is completed.

8. For latent print comparison requests, please include the names and dates of birth (and/or NYSID or FBI #) of suspects you want compared in the comment field of the submission tab. If this information becomes available after the submission has been made, please email or call Mark Mills with the information at markmills@ongov.net or 315-435-3800.

9. Use the proper lab exam code
   - **FB** for body fluid ID or DNA analysis/CODIS
   - **DR** for solid dose or liquid drug ID or quantitative analysis (purity)
   - **LP** for latent print development or comparison/SABIS
   - **FA** for firearms operability or ballistics/NIBIN
   - **DE** for computer evidence
   - **AR** for fire debris/ignitable liquid analysis

10. If the investigation changes and lab analysis is no longer needed, please contact the appropriate CFS section contacts listed on Page 13 by phone or email. Notification that a case no longer needs analysis will free up time for the CFS to analyze other cases.
Secure Web Access

Agencies that are not located in Onondaga County who desire the services of the CFS may gain access to a secure web pre-log account. Please contact the Director of Laboratories at 315-435-3800 if interested.

The benefits of the web pre-log system include:

- The ability to fill out an evidence submission form online, reducing the need to fill out cumbersome paper forms.
- The ability to print a bar-coded evidence submission form that can be scanned at the CFS, populating the laboratories’ database and reducing the amount of time it takes at the evidence submission window.
- The ability for automatic email notification upon completion of analysis, enabling selected agency personnel to view and print a copy of the laboratory report via the web.

Evidence Submission Form and Chain of Custody Continuation Form

The CFS provides the Evidence Submission Form (ESF) (Figure 1) and Chain of Custody Continuation Form (CCC) (Figure 2) to submitting agencies that are not part of the BEAST or web pre-log systems.

The ESF is a four-ply form that is to be used for the submission of evidence to the CFS Laboratories. The CCC is also a four-ply form to be used when chain of custody transactions must extend to additional pages.

Figure 1. ESF Form

Figure 2. CCC Form
ESF/CCC Page Descriptions:

(#1) ESF/CCC sheet is the original ‘Evidence’ chain of custody. The original remains at the CFS (along with copy #2) for as long as the evidence is in the custody of the CFS. When evidence is released to the submitting agency, the original ESF/CCC shall be transferred with the evidence.

(#2) ESF/CCC sheet is the ‘Case File’ copy and is an official laboratory record of the chain of custody. This sheet is maintained in the CFS case record.

(#3) ESF/CCC sheet is the ‘Records’ submitting agency copy.

(#4) ESF/CCC sheet is the ‘Submitting Officer’ copy. The submitting officer may take this copy upon delivery of the evidence to the CFS.

At a minimum, the top two sheets marked ‘Evidence’ and ‘Case File’ must be submitted with the evidence. The CFS will not accept evidence that is submitted without these top two sheets. (Exception: Evidence being re-submitted may be accompanied by sheet #1, as sheet #2 will be in the CFS case record.) If the ‘Records’ and ‘Submitting Officer’ copies are also submitted with the evidence (i.e. may be included with items left in lockers), these copies will be destroyed. It will not be the responsibility of the CFS to forward these copies to the Records divisions of any agency.

**Mailing / Commercial Carriers**

Certain regulations of the U.S. Postal Service cover the mailing of certain types of evidence. Liquid biological fluids such as urine or blood specimens must be packaged in a securely sealed primary container with sufficient shock-resistant material to withstand shock and pressure changes. An absorbent material should surround the primary container or otherwise be configured to take up the contents in case of a leakage. There should also be an outer shipping container with secondary leak-proof materials so that, if there is leakage of the primary container during shipment, the contents will not escape from the outer container.

The packaging and marking requirements for evidence of blood and body fluids are based on the OSHA Bloodborne Pathogen Standards, CFR Title 29 1910.1030, and on U.S. Postal Regulations, Domestic Mail Manual, C010. Other courier services may have additional requirements.

**General Evidence Packaging and Safety Considerations**

All evidence received at the CFS upon receipt, during examination, and post-examination will be stored under appropriate conditions to ensure that the integrity of the evidence is not compromised. Much of the evidence collected by law enforcement agencies is potentially hazardous. The hazards relate to the types of exposure individuals may have with the items of evidence. Four common methods of exposure are inhalation, absorption, ingestion, and
injection. The risk of exposure can be reduced by using appropriate packaging materials and the placement of hazard warnings on the exterior of the evidence containers.

The CFS maintains secured evidence rooms, refrigerators and freezers, and individual storage areas for short and long-term evidence storage.

**Examples of Properly Packaged Evidence**

**Biological Items (Liquid Blood and Other Liquid Bodily Fluids)**

Liquid blood and urine should be packaged in a crush-proof container that will contain all contents and prevent leakage during handling, storage, and transport. Label with the international biohazard symbol and warning label.

**Sharp Objects**

A sharp is any object capable of puncturing the skin. Sharp objects must be packaged in a way to ensure the safety of the handler of these items. Sharp objects should be packaged in rigid, puncture-resistant, and leak-proof containers.

Air holes in the outside container are important if Biology/DNA analysis is needed for the item.

Sharps include glass tubes, razor blades, scalpel blades, knives, hypodermic syringes and needles*, and other items capable of cutting or penetrating the skin.
Proper packaging may include: plastic tubes, metal cans, hard cardboard boxes, or any container that prevents the sharp object from protruding through the surface of the container that holds it.

Label the outside packaging with the words “**WARNING: CONTAINS SHARPS**”.

If needed, please use the international biohazard symbol.

* Because of the possibility of an accidental needle puncture, hypodermic syringes with needles pose a health and safety threat both to contributors and to CFS personnel. The CFS will not accept hypodermic syringes as evidence. Injection of a bloodborne pathogen such as HIV (AIDS virus), HBV (hepatitis virus), and others can occur by the accidental exposure to blood or body-fluid-contaminated sharps.

Review: [Items NOT Examined by the CFS Laboratories](#)

**Firearms**

Long guns and hand guns stored in boxes should be tape sealed in such a way to prevent entry into any of the three sides of the box that can be opened. Weapons need to be properly secured for safety.

The CFS will only accept firearms that have been unloaded and rendered safe with the action secured in an open position with nylon cable ties, chamber plugs, or some other mechanism that ensures the action will not accidentally discharge.

Submitting agencies are instructed to place loose ammunition recovered from the firearm inside a separate package within the outer packaging of the firearm.

**Firearms that cannot physically be cleared** (i.e. rusted shut, damaged or unsafe to unload, etc.) or firearms in which the loaded/unloaded status is not readily established (i.e. muzzle loaders/black powder type firearms) require contacting the Firearms Section at 315-435-3800 prior to their submission.

**IMPORTANT!**

**NEVER place safety ties through the trigger guard!**
Items NOT Examined by the CFS Laboratories

- Live explosives will not be accepted for examination.
  ✓ Small arms ammunition is not considered an explosive or explosive device for the purpose of this procedure and may be submitted for forensic examination.
  ✓ An explosive device ‘rendered safe’ may be accepted under certain circumstances.
  ✓ The decision to accept or reject the submission of a device shall rest with the Director of Laboratories or his/her designee.

- Large quantities of hazardous chemicals will not be accepted, including poisons such as arsenic, rat poison and ethylene glycol.

- Syringes/needles for analysis or storage due to biological, chemical, or physical safety hazards will not be accepted.
  ✓ The Director of Laboratories, or his/her designee, must approve any deviation from this policy.
  ✓ If approved for submission, a syringe/needle must be packaged properly following the packaging requirements for sharp objects, or it will not be accepted.

- Chemicals from clandestine laboratories will not be accepted due to the extreme danger of the chemicals present (e.g. methamphetamine lab); only the final product (e.g. methamphetamine) will be accepted.

In general, the CFS will not re-examine evidence previously analyzed by another accredited laboratory when to do so would duplicate a previous examination. This does not preclude examination of previously analyzed evidence with newer technologies that may provide additional information. This also does not prohibit examination of previously examined evidence if requested to do so by the agency that initially examined the evidence and if agreed to by the CFS Director of Laboratories.

Exceptions: The nature of our mission requires the CFS to handle a wide variety of submissions from a large number of agencies. This variety dictates flexibility in evidence handling methods. Deviations from the policy/procedure are anticipated.
CFS Evidence Submission Guidelines

The current guidelines for the submission of evidence for analysis at the Center for Forensic Sciences Laboratories can be found at:


This document is meant to serve as a guide for agencies to determine the types of evidence that should be submitted to the CFS for analysis. It is expected that exceptions to these guidelines may need to be made on a case by case basis; however, any deviations from these approaches should be discussed with the CFS prior to any submission requests being made.

*It is important to note that these submission guidelines are subject to change.*

Please contact the following staff at 435-3800 or by email if you have questions regarding submission of discipline specific items:

Director of Laboratories       Kathleen Corrado       kathleencorrado@ongov.net

Quality Assurance Manager     Kathleen Hum            kathleenhum@ongov.net

Latent Prints                  Mark Mills              markmills@ongov.net

Forensic Chemistry            Samuel VanDee          samuelvandee@ongov.net

Ignitable Liquids             Samuel VanDee          samuelvandee@ongov.net

Firearms                      Justine Kreso          justinekreso@ongov.net

Digital Evidence              Frank Brackin          francisbrackin@ongov.net

Forensic Biology/DNA          Sheila Gentile         sheilagentile@ongov.net
 Discipline Specific Capabilities

LATENT PRINTS

Mark Mills  Senior Latent Print Examiner  markmills@ongov.net

The Latent Prints section is responsible for developing fingerprints, palm prints, and footprints from items of evidence using various chemicals, powders, dye stains and light sources. The Latent Prints section is also responsible for comparing recovered latent prints to known prints of individuals for the purposes of identification. This can also be accomplished by searching unidentified latent prints in the Statewide Automated Biometric Identification System (SABIS).

Items that may yield a probative latent print for cases without an arrest should be submitted to the CFS for latent print analysis if needed for an investigation at the request of a police agency. Evidence from cases with an arrest should be submitted for latent print analysis at the request of the prosecuting attorney’s office unless special circumstances are communicated to the CFS (e.g. a known second suspect is unidentified). The CFS reserves the right to request elimination prints prior to latent print comparisons on a case by case basis.

Submission Guidelines

• Homicides
  In major cases it is valuable to have a meeting with CFS staff, detectives, prosecutors, and crime scene personnel to prioritize evidence and to discuss the case in its entirety to ensure the best and most efficient analysis occurs. Prior to homicide evidence being submitted for analysis (with the exception of firearms evidence), it will be required for a meeting between the submitting agency, prosecutor’s office (if applicable), and CFS staff of all relevant sections to occur. Exceptions will be made for exigent circumstances with approval of the CFS.

• Analysis of Firearms-related Evidence for Latent Prints
  All handguns (except those voluntarily surrendered or for safekeeping) and shortened or defaced long guns submitted to the CFS will be automatically examined for latent prints (LP), but the agency/prosecutor is encouraged to still officially make an LP request.

  Long guns will only be examined for latent prints if there is an LP request made by the agency/prosecutor.

  Any firearm involved in a suspected suicide will be processed for latent prints whether or not a request for LP was made.

  Due to the extremely low chance of recovering latent prints from fired cartridge cases, only fired cartridge cases from death investigations should be requested for latent print analysis. Latent print analysis will not be performed on other fired cartridge cases unless there is information to believe the items were handled after firing.
• Residential Burglaries and Recovered Vehicle Crimes
For any residential burglary or recovered stolen vehicle cases, the CFS requests that the agency (other than the Syracuse Police Department) submit elimination prints, or provide information to the CFS for access to an electronic equivalent (i.e. name, NYSID# or FBI# for live-scan or RICI), prior to commencement of laboratory analysis. If known suspect prints (or the required information to access them) are provided up front, laboratory analysis of these cases will commence; however, prior to initiation of any SABIS searches, elimination prints may be requested.

Proper Collection / Proper Handling

✓ If the item has been disturbed or is out of place consider collecting and submitting for latent print analysis.
✓ When possible, appropriate elimination prints for people with legitimate access should be obtained.
✓ Gloves should be worn while handling evidence. Please indicate in police report (or preferably in the BEAST “Comment” area of the Submission tab whether any officer touched the items without gloves so that elimination prints can be obtained if needed.
✓ Only black, white, or bi-chromatic fingerprint powders should be used if possible.
✓ Wet or bloody surfaces should not be powdered.
✓ Visible (patent) prints should be photographed with a scale prior to lifting.
✓ Items should be handled in a way that minimizes destruction of latent prints due to their fragile nature (grasping item through packaging should also be avoided).

Optimal Packaging for Non-Porous Items (e.g., plastic, metal):

![Image of optimal packaging for non-porous items](image-url)
Good Packaging for Porous (paper-type) Items:

Multiple porous items can be submitted together.

Duct tape removed from victim:

Please do NOT wad up tape into a ball and submit it in a paper bag. Tape can be laid out, adhesive side down onto acetate sheets and then packaged. Tape can also be secured in a box with pins to prevent movement, adhesive side up.

For Lifts:

Please include the following:

✓ Date
✓ Location of Lift
✓ Case #
✓ Lifting Officer
✓ A sketch of where latent print was located
If fingerprints of the officer lifting the latent prints accidentally show on the sticky side of the tape, an “X” and their initials should be placed over the officer’s prints. This will alert the Latent Print Examiner that these prints don’t require analysis.

All lifts recovered should be retained for possible analysis. Even if the lift may not appear to be useful to the recovering officer, this determination should be made by the CFS Latent Print Section.

**Known Prints for Comparison:**

Please provide the following for suspects or victims if not submitting known prints as evidence through BEAST so the lab can attempt to obtain prints from RICI, DCJS, or the FBI:

- First and last name (middle initial if known).
- NYSID and/or FBI number if available.
- Biographical data to assist in locating a fingerprint record (i.e., DOB, Soc. Sec. #).
- Information can be included in the Comments box on the Submission Tab in BEAST when making requests for latent print exams.
- If the request for an exam was already made, the information should be provided to the Sr. Latent Print Examiner via phone or email.
Obtaining Elimination Prints

If obtaining elimination prints for comparison, ensure that they are recorded as clearly and completely as possible.

Example of Poor Quality of Elimination Prints:

Example of Better Quality of Elimination Prints:

Submission of Digital Images of Latent Prints to the CFS:

- Per the Scientific Working Group on Imaging Technology (SWGIT) and the Scientific Working Group on Friction Ridge Analysis (SWGFAST) Guidelines, the image should be captured at 1000 ppi or greater and shall be stored or transmitted without compression or with lossless compression. Please include a scale in photo.

- Digital Images of latent prints should be recorded on a CD or DVD, placed in a sealed container and submitted as evidence through BEAST.

- Be clear to differentiate if the CD/DVD contains photos of latent prints or if the CD itself needs to be processed to recover latent prints.
The Forensic Chemistry section receives evidence for analysis of suspected controlled substances. This refers to drugs and/or controlled substances listed in the Controlled Substances Act under federal law and the controlled substances listed under Article 33 Section 3306 of the New York State Public Health Law. Evidence may be in the form of powders, capsules, tablets, vegetable matter and paraphernalia, as well as any solid or liquid that could contain a controlled substance.

Techniques used in the Forensic Chemistry section include presumptive color tests, macroscopic and microscopic examinations, Gas Chromatography (GC), Fourier Transform Infrared Spectroscopy (FTIR) and Gas Chromatography-Mass Spectroscopy (GC-MS) to qualitatively analyze samples. Gas Chromatography (GC) with a Flame Ionization Detector is the method of choice if quantitative analysis is necessary.

**Submission Guidelines**

The following items should be submitted with a DR request for analysis:

- Seized drug evidence from A1 or A2 felonies.
- Seized drug evidence that is associated with seized firearms.
- Seized drug evidence in which a field color test is not available or gave inconclusive results and this information is needed for an arrest or charge may be submitted to the CFS for analysis at the request of a police agency or prosecuting attorney’s office.
- Seized drug evidence that is prone to heat or light degradation such as dimethyltryptamine (DMT), lysergic acid diethylamide (LSD) or cathinone/cathine should be submitted to the CFS as soon as possible.
- Volatile liquid drug evidence such as liquid phencyclidine (PCP) should be submitted to the CFS as soon as possible.
- Seized plant material suspected of being laced.
- Seized drug evidence that consists of numerous individually packaged items (>100) should be submitted to the CFS as soon as possible if required for prosecution.
- Other drug evidence in which the analysis is required for an investigation or prosecution as determined by the prosecuting attorney’s office or police agency should be submitted to the CFS for analysis.

**Proper Collection/Proper Handling**

- Evidence seized from body cavities or evidence contaminated with blood, body fluids or biological waste should be clearly marked as a biohazard.
- The inherent dangers of hypodermic syringes, including the transmittal of disease (AIDS, hepatitis, etc.) are significant. The Forensic Chemistry Section will not accept hypodermic...
syringes for analysis unless a special request for analysis is made by the police agency or prosecuting attorney’s office indicating that the evidence is essential to a criminal prosecution. The Director of Laboratories, or his/her designee, must approve the acceptance of hypodermic syringes. The investigating agency may submit the liquid from within the syringe by transferring it to an appropriate glass container.

✓ The Forensic Chemistry Section will not accept or examine clandestine laboratory waste products or poisons such as arsenic, rat poison or ethylene glycol.

✓ Used field test kits and wipes will not be examined and should not be submitted with the evidence.

✓ Any soil, roots and large stems/stalks should not be sent to the CFS. Package this material separately from the material to be tested.

✓ Plant material (including marijuana, mushrooms and khat) should be thoroughly dried before submitting them to the CFS. Storage and packaging of freshly cut or moist plant material in plastic facilitates the development of mold. Not only does the mold make analysis more difficult, it may also change the condition of the plant material and make it unsuitable for analysis. Additionally, the inhalation of mold spores may cause respiratory problems.

FIRE DEBRIS / IGNITABLE LIQUIDS

Samuel VanDee Senior Forensic Chemist samuelvandee@ongov.net

The Forensic Chemistry Section of the Center for Forensic Sciences performs analysis of fire debris samples. Items tested vary from liquids to charred debris and include items such as carpet/flooring, clothing, debris from automobile fires, and liquids removed from ignitable liquid containers and gas cans. The forensic chemist utilizes passive adsorption extraction/elution and Gas Chromatography-Mass Spectroscopy (GC-MS) to identify ignitable liquid residues into eight different classifications described in the ASTM E1618 standard.

Submission Guidelines

All suspected arson related evidence should be submitted to the CFS as soon as possible.

Proper Collection / Proper Handling

✓ Ignitable liquid residue is volatile and should be submitted to the CFS as soon as possible to prevent evaporation and container failure.

✓ Comparison samples should be collected and packaged separately from the debris samples. The outer packaging should be clearly marked as a comparison sample. A comparison sample is defined as:
A sample of material collected from a fire scene which is, to the best of the investigator's knowledge, identical in every respect to a sample suspected of containing ignitable substances, but does not contain ignitable substances.

A sample of suspected ignitable substance submitted for the purpose of comparing with any ignitable liquid substance separated for a debris sample.

Liquid samples should be removed from large containers and put into smaller ones before submission to the CFS.

The selection of the appropriate container depends on the physical state and characteristics of the sample and the type of test requested. The container used must seal in any volatile ignitable liquid vapors and prevent cross contamination between samples. Acceptable containers include:

- Cans – new, clean, lined metal cans of various sizes
- Jars – new, clean, Mason jar
- Bags – Nylon or polyester bags made specifically for use in fire debris analysis

Common consumer plastic bags, paper bags, and cardboard boxes are NOT acceptable since the ignitable liquid vapors can evaporate through the packaging.

Solid Samples: Examples - Wood, plastic, carpet and clothing
- Cans, jars and bags are acceptable containers.
- Containers should not be filled beyond two-thirds and packing down of materials within the container should be avoided.
- Ensure that the containers are closed securely to prevent loss of volatile vapors. Clean the rim groove before placing the lid on the can.

Liquid Samples:

Standing pools: Liquid samples can be collected with clean unused:
- Syringes
- Eye droppers
- Pipettes
- Sterile gauze bandages or cotton balls.
When gauze or cotton balls are utilized, a comparison sample of the gauze/cotton balls must be submitted in a separate container. All other liquid collection tools should be discarded, NOT included with the evidence sample.

Container Contents: One ounce or five milliliters of liquid sample is sufficient for analysis. Liquid samples should be secured in small screw cap bottles, suitable for volatile substances. The bottle should then be secured inside of a clean unused can. Clean paper towels can be used to protect the bottle inside of the can.

Soil Samples: Examples - Dirt, sand, leaves, grass, and foliage
Soil readily absorbs and retains ignitable liquid residues, which makes it a good source for laboratory analysis.
✓ Collect in new, clean, unused proper cans.
✓ Sample should be refrigerated or frozen. Soil contains bacteria which will destroy hydrocarbon products. Freezing of the sample will preserve the integrity of the evidence.

Samples with Multiple Purposes
Investigators will on occasion secure evidence that will require multiple types of testing such as:
• Ignitable liquid and residue identification
• Latent Prints
• DNA

Situations such as these may require the investigator to seek input from the laboratory personnel prior to collecting the sample. In some cases the type of test requested will dictate the type of container to be used and the sequence of the tests to be performed. In some cases multiple testing will not be possible and priority will need to be established for the type of tests desired. Procedures used to perform one test may eliminate the possibility of other tests. In these cases, the investigator should discuss with the CFS which form of evidence and test will be most useful for the case.

Physical Evidence NOT Analyzed
✓ Explosives and explosive residues
✓ Flares
✓ Fuses
✓ Thermite and related materials
✓ Commercial propellants such as black powder and modified black powder
✓ Powders removed from commercial fireworks or pyrotechnic devices
FIREARMS

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The Firearms section examines firearms to determine the operability status of submitted weapons. The Firearms section is also responsible for comparing projectiles, cartridge cases, and other fired components recovered at crime scenes to test fires from a weapon or other crimes scenes using a comparison microscope for the purposes of determining whether the recovered fired ammunition components were fired from the same firearm. Also, the Firearms section performs serial number restoration and gunshot residue muzzle to target distance determination. The CFS uses a computerized database called the National Integrated Ballistics Information Network (NIBIN) to aid in connecting shootings from different crime scenes.

Submission Guidelines

- All firearms (with the exception of “safekeeping” or pistol permit-related weapons) should be submitted for firearms analysis. This will include completion of a tracing form, operability/function testing to generate test fires, serial number restoration (if applicable), and open case file database searches with test fires (if applicable).
- Safe-keeping and pistol permit-related weapons may be submitted for tracing form data only unless prior approval is granted by the Firearms Section supervisor or their designee to complete a test fire.
- Fired ammunition components such as cartridge cases, shot shells, and bullets should be submitted as soon as possible for entry into the CFS open case databases (if applicable).
- Requests for gunshot residue analysis on victim’s clothing must be approved by the Firearms Section supervisor or their designee prior to the submission of the clothing.
- Suspect’s clothing is not routinely analyzed and will not be accepted for gunshot residue analysis without the approval of the Firearms Section supervisor or their designee.
- In distance determination submissions, the firearm and all associated ammunition components (both fired and unfired) should be submitted to determine the muzzle to target range. If a firearm is unavailable for submission, the analysis is limited to contact gunshots and the presence of residues.

Proper Collection / Proper Handling

Firearms and Ammunition:
- Do not place cable ties through trigger guards. This poses a safety hazard to those handling the firearm and packaging.
- Firearms must be rendered safe by securing the action open with a cable tie or by another mechanism. See Page 11 for proper submission of firearms. Make every effort to render a firearm safe without disassembling it as disassembly may affect the operability status of the firearm. Contact the Firearms Section directly if a firearm cannot be made safe without altering it.
✓ Weapons made in and imported to the United States pre-1968 may not have a serial number. The serial number is located on the frame or receiver of the firearm (not the barrel, cylinder, etc.).
✓ Each firearm should be packaged individually.
✓ No ammunition is to be submitted loose in the box or bag with the firearm.
✓ Magazines must be removed.
✓ Use a cardboard box if a latent print or biology/DNA exam is needed or if the firearm is wet. Paper bags are not recommended for firearms; they easily rip.
✓ If recovered in water, submit the firearm in the water it was recovered in to prevent further rusting (i.e. in a paint can), if possible.

Revolvers:
✓ When unloading a revolver, mark the cylinder along the back strap (i.e. with a Sharpie marker).
✓ Open the cylinder and note where cartridge cases or rounds of ammunition are in each cylinder chamber. Use a clock as a reference.
✓ Package each cartridge case or round of ammunition individually and mark the containers of the rounds recovered.

Projectiles and Fired Cartridge Cases:
✓ Package in a way that prevents damage such as an empty film canister or pill box.
✓ Package each cartridge case or projectile separately.
✓ If a biology exam is needed due to the possible presence of blood, be sure to use a breathable packaging such as a cardboard box or paper bag.
✓ Be sure to mark the container with a description of item.
✓ More than one cartridge case or projectile can be submitted as the same item; however, if there are both cartridge cases and projectiles in a case, the different types of evidence should have their own item number so the BEAST item type accurately reflects the contents of the packaging.

Muzzle to Target Distance Determination

The CFS conducts examinations for non-primer related gunshot residues on target materials. The purpose of these examinations is to evaluate muzzle to target distances. “Non-primer” residues include the physical effects and chemical deposits that may be placed on a target, especially those that are in close proximity to a discharging firearm. Initial target materials commonly encountered in criminal investigations include the clothing worn by the shooting victim. Observed physical effects on a close range target may be the result of the flame or hot gases exiting the muzzle, carbon/smoke deposits or high velocity unburned gunpowder grains striking the target. Observed chemical deposits may include lead and/or nitrite residue patterns that are the result of these chemicals being expelled from the muzzle.

Proper Collection / Proper Handling

✓ Air-dry clothing over paper prior to packaging in a secure area where clothing will not be disturbed.
✓ Submit clothing folded in the drying paper.
✓ Do not alter or disturb the item.
Package items separately.
Handle items minimally.

DIGITAL EVIDENCE

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The Digital Evidence section examines submitted electronic media (e.g., hard drives, optical discs, flash memory, digital cameras, etc.) for the purposes of acquiring, preserving, retrieving, and presenting relevant data that has been processed electronically and stored on the item. The target data may be in the form of text, photographs, video, audio or any combination thereof.

Submission Guidelines

Digital Evidence (computers and related peripherals) should be submitted to the CFS at the request of a police agency or prosecuting attorney’s office. At this time, the CFS does not analyze cell phones or tablets; however the CFS hopes to perform this analysis in the near future. In the meantime, please do not submit these items to the CFS. If you are not sure where to submit hand held devices, contact the Digital Evidence Section and we will direct you to someone who can analyze those items.

Items acceptable for submission include:
- Desktop computers
- All-in-one computers
- Laptop computers
- Digital cameras
- Thumb drives
- Digital video recorders
- Secure digital (SD) cards
- CDs and DVDs

Proper Handling / Collection
- Remove suspect’s access to the computer.
- Photograph screen if computer is on prior to any powering down.
- Only individuals trained on forensic previews should do anything beyond pulling the power cord from the computer and removing the battery in the case of laptops.
- Be aware of potential electrostatic discharge (ESD) and either wear examination gloves or take some grounding measures.
- Package digital evidence in heat-sealed plastic bags.
- Avoid jolts and bumps (the best place for a computer to be transported is on the back seat of a vehicle).

Helpful Information
- Provide a copy of the search warrant
- Crime scene photographs
- Photograph of the suspect if identification in photos/videos is needed
- Suspect/victim statements
The Forensic Biology/DNA section receives biological evidence as part of a homicide, sexual assault, burglary, and other types of criminal investigations. The section identifies bodily fluids and performs DNA analysis on items of probative value to the case. The section performs DNA analysis using both nuclear autosomal short tandem repeats (STRs) and Y-STRs. Current DNA technologies can be used to include or eliminate individuals as having contributed genetic material associated with evidence from a crime scene. In addition, the DNA laboratory serves as a local casework database site for the entry and searching of DNA profiles in the State of New York and the National Combined DNA Index System (CODIS). This database can be used to link unsolved crimes to each other, identify a previously convicted offender as a contributor of the crime scene DNA, or to associate unidentified remains with missing persons.

**Submission Guidelines**

Evidence that may yield a probative DNA profile for cases without an arrest should be submitted to the CFS if needed for investigative purposes as determined by a police agency or if needed for prosecution purposes as determined by a prosecutor’s office. Evidence that may yield a probative DNA profile for cases with an arrest should be submitted at the request of the prosecuting attorney’s office. If probative information is obtained from the analysis of an item, the testing of additional items may be deferred.

- **Homicides**
  In major cases it is valuable to have a meeting with CFS staff, detectives, prosecutors, and crime scene personnel to prioritize evidence and to discuss the case in its entirety to ensure the best and most efficient analysis occurs. Prior to homicide evidence being submitted for analysis (with the exception of firearms evidence), it will be required for a meeting between the submitting agency, prosecutor’s office (if applicable), and CFS staff of all relevant sections to occur. Exceptions will be made for exigent circumstances with approval of the CFS.

- **Assaults/robberies/violent crimes against persons**
  Possible weapons, suspect’s clothing (if the victim may have bled or for wearer’s DNA if the clothing was left at the scene by the perpetrator), victim’s clothing (if the perpetrator may have bled), or other items that may link the perpetrator to the crime scene should be submitted for analysis. Known DNA standards from the victim may be requested prior to commencement of DNA analysis.

- **Sexual Assaults**
  Initially, a sexual assault kit and/or used condoms should be submitted. Victim’s clothing may be submitted at a later date if the sexual assault kit is negative for probative evidence. Bedding and other items should only be submitted if other evidence does not yield probative information and after approval from the CFS.
• **Non-violent crimes**
  Items belonging to the suspect and left at the scene by the perpetrator such as blood; saliva from bottles, cans, cigarette butts, and chewing gum; tools such as screwdrivers, and flashlights; or clothing items such as hats, shirts, glasses, and gloves should be submitted. For cases with arrested suspects, the CFS may contact the submitting agency and prosecutor to see if analysis is necessary and may request submission of the known DNA standard from the suspect prior to analysis. For crime scene samples that may have been handled or used by the victim, the CFS may request submission of the known DNA standard from the victim prior to analysis.

• **Firearms**
  Firearms will be swabbed for DNA upon an FB request. Further DNA analysis will only be performed if the identity of the handler of the firearm is unknown and is probative. Further DNA analysis will not be performed if the firearm was recovered directly from a suspect, suspect’s residence, suspect’s car, etc. unless the known DNA standard from the suspect is submitted for elimination. Contact the CFS if DNA analysis is required to obtain a court order for a DNA standard. Any firearm involved in a suspected suicide will be swabbed for DNA whether or not a request for FB was made.

• **Touch Evidence**
  Touch evidence is defined as evidence that has no visible staining and would contain DNA that only results from touching an item with the skin. Touch evidence will only be analyzed if profiles are not generated from other probative evidence. If probative information is obtained from one item, testing of additional items may be deferred. For non-violent crimes, a maximum of two touch items will be analyzed per case unless exceptional circumstances have been discussed with the CFS.

  **Items that will not be analyzed for touch DNA:**
  Ammunition and fired cartridge cases (with the exception of shot gun shells). Fired cartridge components may only be submitted for DNA analysis if there are visible body fluids present.

  **Items that will not be analyzed for touch DNA for non-violent crimes:**
  Touch evidence swabs of counters, walls, light switches, doors etc. from public locations. Touch items or swabs of items that were generally handled by the victim and believed to only have been touched briefly by a suspect such as padlocks, tools, jewelry boxes, door knobs, light switches, electrical cords, etc.

**Proper Handling / Minimizing Contamination**

- Use only clean gloves and utensils
- Change gloves often and in-between handling different items
- Do not talk, sneeze, or cough near evidence
- Do not process items for latent prints with same brush or by dipping into container of powder
Proper Collection – General

- Always package evidence for biological analysis in PAPER. Never use plastic bags or containers (with the exception of sharps; see Page 10).
- If items are being collected at the scene for touch DNA, no more than two swabs should be taken from the same item.
- Be sure to document what/where the swab was collected from.
- Package items separately to avoid cross-contamination.
- Wet items should be dried prior to packaging and stored in breathable containers.
- Store in a dry, room temperature environment to preserve DNA.
- Any liquid body fluids should be stored in a refrigerator prior to submission.
- Any human tissue or bones should be stored frozen prior to submission.

Proper Collection of Stains

- For large items or hard to handle items with obvious stain patterns, collect stained item directly by cutting out a smaller area.
- Do not perform field-test directly on a stained area.
- Collect liquid or wet stain directly onto sterile cotton swabs.
- Collect liquid stains using sterile swabs lightly moistened with water (do not dilute stain).
- Substrate control swabs are NOT needed.

Information Necessary for CODIS Entry

Only items of evidence attributable to a potential suspect may be uploaded to the Combined DNA Index System (CODIS). The CFS must have information that reasonably links a particular item to a crime.

Please make every effort to describe in your police report (or in the evidence submission comments) why you think the evidence is from the crime and was left by the suspect.

For example:
- Home owners do not smoke and there was a cigarette left at a burglary scene.
- A beer can was found in a stolen vehicle and the owner states that is was not there prior.
- Blood stains were collected near broken window / point of entry.

Prioritization of Evidence (Best Probative Value)

Probative Transfer of DNA:

- Blood, semen, saliva left by suspect at scene or on victim
- Blood, semen from victim on suspect’s clothing
- Objects belonging to suspect left at scene
- Body fluids left at scene
  - Blood: points of entry/exit stained tissues, cloths, etc.
  - Saliva: cans/bottles, cigarettes, straws, gum, spit
- Wearer items left at scene
• Hats, masks, bandanas, glasses, gloves, clothing, shoes thought to belong to perpetrator
✓ Stolen vehicles
• Personal items: drink containers, cigarettes (as long as suspected as having been left by the perpetrator and not the victim)
• Steering wheel, gear shifter
✓ Sexual Assault Cases
• Sexual assault kit
• Condoms or swabs of semen
• Victim’s clothing if worn during or assault or put on directly after assault (should only be submitted if evidence listed above is determined to be negative)
• Bedding (should only be submitted if evidence listed above is determined to be negative)

Touch – DNA Samples
✓ Individuals shed differently.
✓ It is better to submit an object if it is typically used by one individual and believed to have been left by perpetrator.
✓ Objects that may contain multiple persons’ DNA are NOT usually the best.
✓ Objects that sometimes work well: lighters, tools, combs, etc.
✓ It is better to submit the actual object than swab it if possible.

Buccal Swab Collection Kits
✓ Please submit known buccal (oral) standards from victims / suspects for comparison
✓ Please submit known DNA elimination samples whenever possible
✓ Be sure to include the donor’s name
✓ We do not accept DNA standards on FTA cards

Order DNA Buccal Swab Collection Kits from PWI
240 O’Connor Street Wellsville, NY 14895
585-593-6645 ext. 321
Proper Collection of Sexual Assault Evidence

Sexual Assault Kits are available FREE from NYS DCJS

http://www.criminaljustice.ny.gov/ofpa/evidencekit.htm

- Sexual assault kits do not require additional outer packaging.
- Sexual assault kits should never be packaged in plastic.
- Articles of clothing should be packaged separately. Do NOT put items packaged separately into one larger bag.
- Do NOT package photos or CDs with photos in packaging with the sexual assault evidence collection kits or any other evidence.
- Do NOT package blood or urine specimens in the sexual assault kits.

NYS Sexual Offense Evidence Collection Kit
and the
NYS Drug Facilitated Sexual Assault Kit
Frequently Asked Questions

Q. What is a NYS Sexual Offense Evidence Collection Kit?
A. The NYS Sexual Offense Evidence Collection kit is designed to assist New York State hospitals in the uniform collection of evidentiary specimens in any case in which the crime/incident involved is a sexual assault. The kit includes 15 steps with envelopes for collection, swabs, slides, etc.

Q. What is a NYS Drug Facilitated Sexual Assault Kit?
A. This kit is only to be used in conjunction with a NYS Sexual Offense Evidence Collection Kit and should be used if the victim blacked out or victim feels like they were drugged or have memory loss, etc.

Q. How do I order kits?
A. You can order kits on line at http://criminaljustice.state.ny.us/ofpa/evidencekit.htm or call the Division of Criminal Justice Services, Office of Program Development and Funding, Violence Against Women Unit at 518-457-9726.

When DJCS submits the order to the vendor the kits are shipped UPS and take 7-10 business days from time vendor ships the order.
Q. How many cases of kits can a hospital order at one time?
A. Kits can be ordered as often as needed. In order to avoid having kits sit around unused for several months, only a reasonable amount of kits should be ordered at one time. “Reasonable” is defined by quantity of sexual assault exams performed at a given hospital. Hospitals in urban areas will need to order larger quantities than hospitals in rural areas.

Q. How many kits are in a case?
A. NYS Sexual Offense Evidence Collection Kits - 12 per case.
NYS Drug Facilitated Sexual Assault Kits - 6 per case.

Q. Hospital is completely out of kits….what do you do?
A. If a hospital finds they are completely out of kits the following is the best thing to do:
   1. Call surrounding hospitals to see if they have kits and if they can spare a couple until the kits ordered through DCJS are received. DCJS can help identify nearby hospitals if the caller is not sure.
   2. Go to the Division of Criminal Justice Services website and order kits at http://www.criminaljustice.state.ny.us/ofpa/evidencekit.htm
   3. Or call the Violence Against Women Unit at the Division of Criminal Justice Services at 518-457-9726.
   4. Kits can be mailed express at the hospital’s expenses.

Q. I have expired DFSA kits can I order more?
A. When the vendor (PWI) creates the kits, they put blood tubes in that are good for almost a year out. If you have tubes that have expired, it might mean that the DFSA kits have been sitting unused for an extended time. The expiration date has to do with the ability of the tube to actually draw the blood. We recommend rotating your kits when you order….keeping the older kits up front. If the blood draws, the tube is fine even though there is an expiration date on it. However, for legal ramifications, it is not recommend using an expired tube. It causes unnecessary questions regarding the integrity of the specimen. The hospital can simply substitute unexpired GREY top tubes. However, if the hospitals grey top tubes are smaller, collect more tubes. Labs need as close to 20 ml as possible. That being said – we can send new DFSA kits if the hospital does not have grey top tubes. Kits can be ordered as often as needed so there is no need to over order, this will help eliminate expired grey top tubes.

Q. Is there an expiration date on the Sexual Assault Evidence Collection kits?
A. There is no expiration date on the kit. The only thing in the kit that has an expiration date on it is the buccal swab. That date actually refers to the guarantee of sterility. PWI (the vendor who compiles the kits) purposely inserts buccal swabs that have expiration dates out at least a year or so, to avoid any expiration date issues. This is a reason why we question (and sometimes do not allow) large quantities of kits to be sent to programs. The kits need to be used within a reasonable timeframe (depending on urban, suburban or rural and the number of sexual
assaults). Please make sure that when you (or the SAE Coordinators) order new kits that the older ones get used up first; hopefully, this will help you avoid expiration date concerns in the future.

Q. Can I order kits for training purposes?
A. DCJS can only provide kits free of charge to hospitals for victims of sexual assault. Kits can be purchased for training from PWI by calling (585) 593-6645.

Q. How long after a sexual assault can a kit be done?
A. A health care assessment and evaluation must be offered to all patients reporting sexual assault, regardless of the length of time which may have elapsed between the assault and the examination. If the assault occurred within 96 hours, a New York State Sexual Assault Evidence Collection Kit is used. If it is determined that the assault took place more than 96 hours prior to the examination, the use of an evidence collection kit could still be done if the victim wishes to have one collected and/or if the examiner feels there might be a possibility of finding evidence. With advances in DNA there is not a good definitive cut-off time. Clearly if it has been weeks after the assault, it would be unlikely to find DNA evidence, however, a health care assessment might still be a good idea.