# DIVISION OF SCIENTIFIC SERVICES
# EVIDENCE SUBMISSION GUIDELINES

# Table of Contents


1.0 GENERAL EVIDENCE SUBMISSION INFORMATION ..... 3

1.1 GENERAL PACKAGING REQUIREMENTS ..... 3

1.2 REQUEST FOR ANALYSIS FORM ..... 5

1.3 CRITERIA FOR EVIDENCE SUBMISSION ..... 10

1.4 JOYCE WARRANTS ..... 10

1.5 LABORATORY CONTACT INFORMATION ..... 11

1.6 GUIDELINES FOR CASE TYPE ..... 11

2.0 COLLECTION/PACKAGING OF DIFFERENT TYPES OF PHYSICAL EVIDENCE ..... 12

2.1 SEROLOGICAL TESTING ..... 12

2.1.1 Blood ..... 12

2.1.2 Semen ..... 12

2.1.3 Other Biological Materials ..... 13

2.1.4 Packaging of Evidence for Serological Testing ..... 13

2.1.5 Sexual Assault Cases ..... 13

2.1.6 Sexual Assault Non-Kit Evidence ..... 14

2.2 BIOLOGICAL SAMPLE/DNA SAMPLE COLLECTION ..... 15

2.2.1 Swabbing of Blood or other Bodily Fluids: ..... 15

2.2.2 Swabbing for Touch DNA: ..... 16

2.2.3 Collection of Buccal Sample ..... 17

2.2.4 Collection of Pseudo Knowns: ..... 19

2.2.5 Products of Conception ..... 20

2.2.6 Missing Persons/Unidentified Human Remains ..... 20

2.3 BIOLOGICAL EVIDENCE – PREVENTING CONTAMINATION ..... 21

2.4 BIOLOGICAL EVIDENCE – COLLECTION ..... 21

2.5 COMPUTER CRIMES AND ELECTRONIC EVIDENCE ..... 22

2.6 FIREARMS EVIDENCE ..... 23

2.7 IMPRESSION/IMPRINT EVIDENCE ..... 27

2.8 LATENT PRINTS ..... 29

2.9 MULTIMEDIA EVIDENCE ..... 33

2.10 QUESTIONED DOCUMENTS ..... 35

2.11 DRUG EVIDENCE ..... 36

2.12 TOXICOLOGY TESTING ..... 37

2.13 TRACE EVIDENCE ..... 37

2.14 FIRE SCENE EVIDENCE ..... 37

2.15 PRIMER GUNSHOT RESIDUE (PGSR) EXAMINATION ..... 38

2.16 BOMB AND EXPLOSIVE DEVICE EVIDENCE ..... 40

## 1.0 GENERAL EVIDENCE SUBMISSION INFORMATION

In general, physical evidence must be submitted according to the following guidelines. Evidence examination request forms (SOP-ER-02:1) must be completed in full. **Please be advised that as of January 26, 2015, a new guideline protocol was effective replacing the "Limiting Forensic Examination Submissions to the Division of Scientific Services".** If there are questions or concerns about the submission of physical evidence, please contact the Case Management Unit at 203-427-4098 or 203-639-6494.

The Evidence Receiving Unit of the Division of Scientific Services (DSS) is the first point of contact for all agencies submitting evidence to the DSS. This Unit plays an integral role in maintaining the proper storage and chain of custody of all evidence. The Evidence Receiving Officers or other DSS personnel will evaluate the evidence, the requested services, and the case history to ensure that the needs of the submitting agency can be met by the DSS. A case synopsis or report can assist in evaluating the requested services. Due to accreditation requirements concerning proper submission of evidence, strict adherence to the following guidelines is necessary in order to protect evidence from being lost or contaminated.

Submitting agencies are requested to keep the DSS informed of any changes in the case (e.g. new suspects developed, arrests made, court disposition, case closed at the Troop/P.D. – including why the case was closed). All case updates should be communicated to the Case Management Unit via email at CT.ForensicLab@ct.gov.

### 1.1 GENERAL PACKAGING REQUIREMENTS

1.1.1 All evidence shall be submitted under proper seal. The term "proper seal" means evidence is prevented from contamination, sample loss, and the packaging has no evidence of tampering. The packaging of all evidence shall be of the appropriate size and containers must not be re-used unless verified to be clean.

Manufactured evidence storage bags must have a self-sealing capability with initials placed on the seal(s). It is suggested that all other plastic bags used for packaging be heat-sealed and initialed over the seal.

1.1.2 A tamper-evident seal must be initialed. Tamper-evident tape is evidence tape that will not remain intact upon its removal. Tamper-evident includes:

a. Heat seal on zip-lock or other plain plastic bags.
b. Paper bags and envelopes taped <u>end to end over the opening</u>.
c. Staples alone are **<u>not</u>** sufficient. If staples are used, they must be covered with evidence tape.
d. Metal cans taped over the top on opposing sides.
e. Specially manufactured evidence storage bags (Tyvek, plastic, etc.) must be sealed with tamper evident material.
f. When submitting evidence in a gun or knife box, all punch holes must be sealed.

1.1.3 Computers or other electronic devices with visible data ports/slots should have evidence tape placed over the power supply slot and over disk, CD, DVD and backup tape slots. Use evidence tape from the back to the sides to ensure computer case integrity. Initials shall be placed on the tape and seal(s). Faraday bags may be used to contain smaller electronic devices.

Large items of evidence that do not lend themselves to packaging should be submitted with the areas of interest protected. Example: car bumper – cover the damaged portion.

1.1.4 All outer packaging or containers should be labeled with:

a. Submitting Agency case number
b. Description of item
c. Item number
d. Date and time seized
e. Name/initials/badge # of seizing officer

| Packaging Type | Uses |
|---|---|
| Paper bags or envelopes | Any biological material (blood or semen stained items, dry condoms etc.) and plant material (suspected marijuana, psilocybin mushrooms).<br><br>*Note: All items are to be air-dried prior to packaging. If unable to air dry, freeze any items containing biological materials and submit to the DSS as soon as possible. Notify Evidence Receiving that the evidence was not dried and needs to remain frozen.*<br><br>*Note: Condoms containing fluid should be placed in a plastic container and frozen.* |
| Plastic bags or Ziplocs | A non-biological material such as powder drug samples, cartridges casing, or projectiles.<br><br>*Note: Heat-sealed is preferred to ensure integrity of the seal, but if they are manufactured evidence bags, the adhesive seal is sufficient.* |
| Metal Cans | Fire debris evidence, suspected liquid PCP samples<br><br>*Note: If DNA testing is needed, please indicate on the request form since accelerant analysis is considered destructive testing.* |
| Glass vials | Liquid drug samples, syringe contents, blood samples. |

| | |
|---|---|
| | *Note: Glass vials should be packaged inside a cardboard box or other protective device to prevent breakage.* |
| Paper folds placed into a heat-sealed plastic bag. | Small pieces of trace evidence such as residue amount of powder drugs, debris.<br><br>*Note: Make sure that the corners of these envelopes are sealed to prevent small items from falling out.* |
| Cardboard boxes | Firearms, knives, large pieces of plate glass, surfaces with shoe prints, large clothing items, bedding. Cover all openings in boxes with evidence/packing tape.<br><br>*Note: The submitting agency seals will be broken in accessing the contents of these boxes.* |
| Plastic containers | Condoms or other items containing liquids.<br><br>*Note: Do not use for arson samples; biological evidence should be frozen immediately.* |

**Note: All physical hazards (i.e. sharps or broken glass) must be packaged in a puncture proof container.**

## 1.2 REQUEST FOR ANALYSIS FORM

Each case must have its own request form. Separate request forms are not required for each piece of evidence submitted. Related cases can be cross-referenced.

1.2.1 The form is generated so that it may be typed or neatly and legibly handwritten. This form is available on the DSS website and may be downloaded by its customers. Please ensure that you are using the most current form available on the website. The DSS will post notification in the Evidence Receiving Unit of any changes/updates made to this form.

If evidence from a case was previously submitted to the DSS, mark the appropriate box and list the previously assigned DSS case number.

1.2.2 Fill in or respond to all blank spaces and questions included on this form, including agency case number, name and contact information for the investigating officer with an email address.

1.2.3 List the full names and DOB of all suspects and victims in the appropriate location. If additional suspects are developed at a later time, please contact the Case Management Unit of the DSS at 203-427-4098 to update this information or via email at CT.ForensicLab@ct.gov.

In this area, please indicate if the suspect has been arrested in connection to the incident and evidence being submitted.

1.2.4 Give a brief summary of the case. Emphasize facts that are relevant to the evidence examination request. If there is a companion case, state that fact in the summary. List each item and a brief description of that item. The agency may attach the incident report or search warrant to provide the case summary details.

1.2.5 The listed item numbers <u>must</u> correspond with the evidence numbers written on the actual evidence containers.

1.2.6 Check off all examinations that you want completed for each piece of evidence. DSS personnel will evaluate the evidence and determine the appropriate type and sequence of testing.

1.2.7 Remarks: Include any pertinent information. (e.g., evidence previously examined, evidence exposed to known adverse chemical or environmental factors)

1.2.8 Remote Evidence Drop-off: For evidence submissions, an RFA Addendum (see link below) is used for remote evidence drop-off. Lockers are available in the outer lobby and inner lobby (foyer) outside of the Evidence Receiving Unit (ERU). The lockers and the key assigned to each locker are numbered.

1.2.8.1 There is a clear, locked box located on the ERU's waiting room door which will house keys from lockers which contain submitted evidence from the outer lobby. The keys for the lockers in the inner lobby will be placed on the counter in Evidence Receiving.

1.2.8.2 Brief instructions below:

1. Sign in to Log Book
2. Fill out *ER Addendum form* – one per case
3. Place <u>up to</u> 5 cases & paperwork per Locker
4. Place key on front counter or clear box on door
5. Evidence Control Officers will scan your returns & place in locker/bin, sign the receipts & ring the buzzer
6. Return receipts are copied, incoming receipts are emailed.
7. Sign out of Log Book

**Web Links to Forms**

Request for Analysis Form:

https://portal.ct.gov/-/media/DESPP/DSS/Forms/LabRequestFormJuly17pdf.pdf

Addendum Form:

https://portal.ct.gov/-/media/DESPP/DSS/Forms/Evidence-Receiving-Addendum-to-the-Request-for-Analysis.pdf

**The Division of Scientific Services is accredited to perform analysis in the following disciplines:**

| **Discipline: Biology** | | |
|---|---|---|
| **Component/Parameter** | **Item** | **Key Equipment/Technology** |
| DNA Profile Determination | Short Tandem Repeat (STR)<br>Y-Short Tandem Repeat (Y-STR) | Capillary Electrophoresis |
| Individual Characteristic Database | DNA Profile | National DNA Index System (NDIS) |
| Physical Comparison | DNA Profile | Software Program |
| Qualitative Determination | Body Fluid<br>Epithelial Cell | Chemical<br>General Microscopy<br>Immunoassay |

| **Discipline: Digital & Video/Imaging Technology and Analysis** | | |
|---|---|---|
| **Component/Parameter** | **Item** | **Key Equipment/Technology** |
| Field Sampling | Physical Item | Not Applicable |
| Acquisition/Extraction | Digital Data<br>Image<br>Multimedia Recording<br>Video | Software Program |
| Content Analysis | Digital Data<br>Image<br>Multimedia Recording<br>Video | Software Program<br>Visual |
| Enhancement | Image<br>Multimedia Recording<br>Video | Software Program |
| Physical Comparison | Digital Data<br>Image<br>Multimedia Recording<br>Video | Software Program<br>Visual |

| | | |
|---|---|---|
| Reconstruction | Inspection/Test Result<br>Other Information<br>Physical Item | Model<br>Software Program |
| Transcoding | Digital Data<br>Image<br>Multimedia Recording<br>Video | Software Program |

| **Discipline: Document Examination** | | |
|---|---|---|
| **Component/Parameter** | **Item** | **Key Equipment/Technology** |
| Chemical/Physical Comparison | Content<br>Document | General Microscopy<br>Reference Collection<br>Software Program<br>Visual |
| Recovery | Content<br>Document | Electrostatic Detection Device<br>Software Program<br>Visual |

| **Discipline: Fire Debris** | | |
|---|---|---|
| **Component/Parameter** | **Item** | **Key Equipment/Technology** |
| Qualitative Determination | Fire Debris | Gas Chromatography<br>Mass Spectrometry |

| **Discipline: Firearms and Toolmarks** | | |
|---|---|---|
| **Component/Parameter** | **Item** | **Key Equipment/Technology** |
| Determination of Functionality | Firearm | Measuring Equipment<br>Visual |
| Individual Characteristic Database | Ammunition | National Integrated Ballistic Information Network (NIBIN) |
| Physical Comparison | Ammunition<br>Tool/Toolmark | General Microscopy<br>Visual |
| Product (Make/Model) Determination | Ammunition<br>Firearm | General Microscopy<br>Measuring Equipment<br>Reference Material |
| Serial Number Restoration | Physical Item | Chemical<br>Magnetic<br>Visual |

| **Discipline: Friction Ridge** | | |
|---|---|---|
| **Component/Parameter** | **Item** | **Key Equipment/Technology** |
| Enhancement | Ridge Detail | Chemical<br>Physical<br>Software Program |

| | | |
|---|---|---|
| Individual Characteristic Database | Ridge Detail | Next Generation Identification (NGI) |
| Physical Comparison | Ridge Detail | Software Program<br>Visual |

| **Discipline: Impressions** | | |
|---|---|---|
| **Component/Parameter** | **Item** | **Key Equipment/Technology** |
| Enhancement | Footwear<br>Physical Item<br>Tire | Chemical<br>Physical<br>Software Program |
| Physical Comparison | Footwear<br>Physical Item<br>Tire | Software Program<br>Visual |
| Product (Make/Model) Determination | Footwear<br>Physical Item<br>Tire | Reference Collection |

| **Discipline: Materials (Trace)** | | |
|---|---|---|
| **Component/Parameter** | **Item** | **Key Equipment/Technology** |
| Qualitative Determination (Hair/Fiber) | Gunshot Residue<br>Hair | Energy Dispersive Spectroscopy<br>General Microscopy<br>Scanning Electron Microscopy<br>Visual |

| **Discipline: Seized Drugs** | | |
|---|---|---|
| **Component/Parameter** | **Item** | **Key Equipment/Technology** |
| Qualitative Determination | Botanical<br>Gas<br>Liquid<br>Solid | Chemical<br>Gas Chromatography<br>General Microscopy<br>Infrared Spectroscopy<br>Mass Spectrometry |
| Weight Measurement | Botanical<br>Liquid<br>Solid | Balance |

| **Discipline: Toxicology – Testing** | | |
|---|---|---|
| **Component/Parameter** | **Item** | **Key Equipment/Technology** |
| Qualitative Determination | Ante-Mortem Biological Item<br>Post-Mortem Biological Item | Gas Chromatography<br>Immunoassay<br>Liquid Chromatography<br>Mass Spectrometry |
| Qualitative Determination (Volatiles) | Ante-Mortem Biological Item<br>Post-Mortem Biological Item<br>Liquid | Gas Chromatography<br>Mass Spectrometry |

| | | |
|---|---|---|
| Quantitative Measurement | Ante-Mortem Biological Item<br>Post-Mortem Biological Item | Gas Chromatography<br>Liquid Chromatography<br>Mass Spectrometry |
| Quantitative Measurement<br>(Volatiles) | Ante-Mortem Biological Item<br>Post-Mortem Biological Item | Gas Chromatography<br>Mass Spectrometry |

## 1.3 CRITERIA FOR EVIDENCE SUBMISSION

Examination of evidence will ***not*** be performed at the Forensic laboratory unless the submitted items meet the following criteria:

1.3.1 Evidence or material generated in the course of criminal investigations that is intended to support criminal prosecution/defense, determine innocence, exoneration or to further a criminal investigation.

1.3.2 Evidence or material where the examination of such is necessary to further the cause of public safety or welfare.

1.3.3 Evidence or material that was ***not*** previously examined by another analyst or law enforcement laboratory unless prior approval by the Director of the DSS has been obtained.

1.3.4 DSS examinations may require reference materials for comparison or additional communications with the investigating officer and/or prosecutor. If a response to a documented request is not received within a reasonable time, the DSS reserves the right to return the submitted evidence to the investigating agency until an appropriate response has been obtained.

1.3.5 The Director of the DSS or his/her designee may refuse to accept evidence that does not meet these criteria or that could endanger the safety of DSS personnel.

1.3.6 For large cases or "Cold" cases, DSS staff will review the evidence with the submitting agency prior to submission. Please contact the Case Management Unit via email at CT.ForensicLab@ct.gov or (203) 427-4098.

1.3.7 Evidence of a civil nature will not be analyzed, unless prior approval by the Director of the DSS has been obtained.

## 1.4 JOYCE WARRANTS

1.4.1 Clearly identify the submitted evidence that will be examined pursuant to the issuance of a "Joyce" search and seizure warrant.

1.4.2 Submit a copy of a signed search and seizure warrant, with Joyce language present in this warrant.

1.4.3 The warrant copy may be date-stamped, and personnel from the DSS will sign the copy of the warrant on the appropriate pages. A copy of the stamped (when appropriate) and signed warrant will be provided to the submitting agency. The Joyce Warrant should be signed if DSS is listed as the location of the warrant. Otherwise, the warrant is not for DSS to acknowledge receipt.

1.4.4 When a Joyce Warrant is required, the warrants should be submitted at the same time the physical evidence is submitted. If evidence was submitted without a Joyce warrant and subsequently you are advised of the need for a warrant, notify the DSS **IMMEDIATELY** so that testing is placed on hold until the warrant is received.

1.4.5 The submitting officer is required to file the return on the warrant in compliance with statutory requirements and department guidelines.

## 1.5 LABORATORY CONTACT INFORMATION

Evidence Receiving: 203-427-4098

Case Management: 203-639-6494

Email: CT.ForensicLab@ct.gov

Missing Persons Unit: 203-639-6434

## 1.6 GUIDELINES FOR CASE TYPE

1.6.1 All reference specimens of identified individuals should be collected and submitted prior to DNA analysis or fingerprint examination. These reference samples will include elimination samples from individuals that may have reason to be on evidence (e.g., homeowner's samples in a burglary case involving their residence).

1.6.2 To ensure optimal use of DSS resources, the lab may limit the number of samples that they will examine per case. The following are general guidelines for the number of samples examined:

1. Burglary/property crimes: 1-2 DNA samples. *Note: There are no restrictions on Latent Print evidence submitted for property crimes.*
2. Sexual Assault cases: The most intimate samples (CT 100 Kit), plus one or two additional samples of clothing/bedding items if needed.
3. Robbery/Assault 2nd and 3rd cases: Up to 5 DNA samples
4. Other cases: Number of samples is case-dependent. DSS staff will review cases with the submitting agency if there is a large amount of evidence to be tested. Contact Case Management prior to submission.
5. Toxicological evidence will have screening tests performed for the presence of the following: Amphetamines, Barbiturates, Benzodiazepines, Buprenorphine, Cannabinoids, Cocaine metabolite, Methadone, Opiates, Oxycodone and

Phencyclidine.
If appropriate, confirmatory testing will only be done if requested by the State's Attorney via email at CT.ForensicLab@ct.gov.

**Note: Exceptions to this policy may be addressed to the Director of the DSS and/or the Deputy Director of Chemical Analysis Unit.**

1.6.3 All expedited requests should be made in writing via letter or email addressed to the Director of the DSS. The letter should come from your agency's Chief of Police/Commanding Officer or the State's Attorney.

1.6.4 All DNA or fingerprint comparison testing from one case to another must be requested by the State's Attorney via letter or other form of written communication such as email. For other case-to-case comparison types that involve other disciplines, a letter from the submitting agency is sufficient.

1.6.5 The State's Attorney of the jurisdiction from which the evidence was submitted will be notified via email or by letter of any samples identified as a consumption issue. Testing on such samples may be released for testing approximately 30 days after the communication of the consumption issue. Should the Defense Attorney or his/her representative request to be present or have an expert present during such testing, the State's Attorney should communicate such requests to the DSS as soon as possible prior to the 30 days elapsing.

## 2.0 COLLECTION/PACKAGING OF DIFFERENT TYPES OF PHYSICAL EVIDENCE

### 2.1 SEROLOGICAL TESTING

The Forensic Biology Unit examines evidence to indicate the presence of blood and other body fluids, such as semen, saliva, urine and fecal material. This Unit determines which samples will be forwarded to the DNA Unit for further analysis.

2.1.1 Blood

A series of tests is used to indicate the presence of human blood on evidence. If these tests produce negative results, an animal bloodstain may be suspected. If the case warrants, additional tests may be employed to determine what species of animal blood is present.

Note: The use of Luminol, BlueStar® or other blood detection tests at the scene may cause the screening test to give false negative results. Please notify the DSS if this type of test was used on the evidence being submitted.

Spraying evidence with aerosol screening tests is not recommended if "touch DNA" testing will also be requested on this evidence.

2.1.2 Semen

The DSS tests stains for the presence of semen. This type of testing is routinely conducted on clothing, bedding or items contained in a Sexual Assault Evidence Collection Kit. If a stain is suspected of being semen and if the entire item cannot be collected, cut out the area containing the stain. Note: Semen stains are sometimes not visible to the naked eye. An alternate light source might need to be used to visualize such stains.

2.1.3 Other Biological Materials

The Forensic Biology Unit is also responsible for the indication of other types of biological material, such as saliva, urine and fecal material. When possible, provide information if this type of stain should be searched for on the evidence submitted.

If the examiner determines that no biological fluid is present on an item of evidence, but an individual may have come in contact with that item, then a "touch DNA" sample may be collected. The premise behind a "touch DNA" sample is that through normal handling or wearing of an object, there is a potential transfer of skin cells. A sample is collected from an area on the evidence that is a potential site of transferred skin cells. These samples may then be forwarded for DNA analysis or preserved for future testing if necessary.

Note: If a piece of evidence requires latent print processing and touch DNA collection, please add the latent print request to the request for analysis form at the time of submission by checking the appropriate boxes on the form.

2.1.4 Packaging of Evidence for Serological Testing

Evidence that is to be submitted for serological testing should be packaged in paper bags. When collecting bloody or wet evidence at the scene, make sure to air dry prior to sealing inside the paper bags.

2.1.5 Sexual Assault Cases

Pursuant to CT Public Act 15-207 (effective 10/01/2015), **sexual assault evidence shall be submitted to the DSS within 10 days of collection**. This includes evidence collected from an individual who wishes to remain anonymous.

https://www.cga.ct.gov/2015/act/pa/pdf/2015PA-00207-R00HB-06498-PA.pdf

Arrange for the victim to proceed to a hospital or medical facility themselves as soon as possible. Instruct the victim to avoid going to the bathroom or cleaning in any capacity. If the victim has cleaned themselves, an effort should be made to obtain any paper towels/ tissues that may have been used. Additional guidance on the collection and handling of Sexual Assault Evidence may be obtained at the State of Connecticut Commission on the Standardization of Collection of Sexual Assault Evidence website:

http://examguidelines.endsexualviolencect.org

2.1.5.1 A ‘CT100’ Sexual Assault Evidence Collection Kit is normally utilized during the physician’s examination at the hospital for Forensic Biology and DNA analysis. A 'CT-400' Sexual Assault Evidence Collection Kit is utilized for toxicology testing only in cases where the victim was suspected to have been incapacitated.

2.1.5.2 Take custody of the sealed and labeled ‘CT100’ or 'CT-400' Kit(s) and corresponding bag of victim’s clothing.

2.1.5.3 Refrigerate (Do Not Freeze) the Kit(s) and arrange for submission to the DSS within 10 days of the evidence being collected. The clothing may be kept at room temperature.

2.1.5.4 The submission of evidence should include the Kit(s), victim’s clothing, and any other associated evidence (i.e. CT-400 Kit).

2.1.5.5 If a suspect is developed, the DSS may need known biological (buccal) samples from the suspect. A sexual assault offender kit (‘CT 200’) is also available. The kit contains materials for other samples and clothing if a suspect is developed soon after the incident.

2.1.5.6 A summary of the case should include information such as the use of a condom, ejaculation, etc.

2.1.5.7 If there is an indication that the assault may have been drug facilitated, a ‘CT-400’ kit may be collected at the hospital and submitted to the DSS to be tested by the Toxicology Unit.

Note: the victim consent form should be included in this kit. If a ‘CT-400’ Kit was not collected, the blood from the ‘CT100’ Kit can be used with the proper consent form signed by the victim. Call or email the DSS Case Management Unit for guidance.

2.1.5.8 The victim may choose at the time of presenting to the hospital to not make a complaint to the police (sometimes referred to as “Anonymous”). In such cases, a ‘CT100’ Kit and ‘CT-400’ should still be collected. The kits should be identified with a numeric code and not the victim’s name.

2.1.5.9 “Anonymous” evidence will be held unexamined at the DSS for at least 5 years. Should an individual choose to make a complaint during that time frame, notify the Case Management Unit at (203) 427-4098 or via email at CT.ForensicLab@ct.gov so that testing can be initiated.

2.1.6 <u>Sexual Assault Non-Kit Evidence</u>

Effective May 1, 2018, the Division of Scientific Services (DSS) will require the Sexual Assault Non-Kit Evidence Form to be submitted for sexual assault evidence when a CT 100/400 is not collected.

The intent of this form is to capture and record incident related information needed to streamline evidence examination within the laboratory. This type of information is typically captured within the medical report accompanying sexual assault evidence collection kits (CT 100/400). In the event that a kit is not collected and only non-kit evidence is submitted for a case (ex. bedding, clothing, etc.), the laboratory is not supplied with the necessary information needed to conduct examinations.

This PDF-fillable form is available on our website: https://portal.ct.gov/-/media/DESPP/DSS/Forms/SexualAssaultNonKitEvidenceFormRev1pdf.pdf

## 2.2 BIOLOGICAL SAMPLE/DNA SAMPLE COLLECTION

Due to the potential of contamination, it is recommended that crime scene personnel wear masks and hair nets when collecting evidence. Gloves should be changed regularly. Collection tools such as tweezers must be cleaned with bleach and alcohol between samples. Single use supplies are recommended whenever possible.

Generally, any body fluid or cellular material can be tested as a potential source of DNA. These sources would include, but are not limited to, blood, semen, saliva, skin, sweat, hair roots, bone, tooth pulp, sloughed cells.

DNA recovery can be unpredictable. Many factors influence the recovery of DNA from a stain including age, exposure to light, moisture, heat and other environmental insults.

### 2.2.1 Swabbing of Blood or other Bodily Fluids:

2.2.1.1 Place gloves on hands. Use a disposable mask for the mouth/nose and a hair net. If you touch something which may contaminate the sample, replace gloves.

2.2.1.2 Open the packaging of 1-2 sterile swabs and remove swab(s).

Retain the swab(s)' packaging.

The swab(s) should only come into contact with the suspected stain/area of interest.

If you must store the swab(s) prior to collection, return them to the packaging.
- Indicate on the packaging where the swabbing(s) were collected from.

2.2.1.3 If stain/suspected sample is dry, moisten the swab(s) with one or two drops of sterile distilled water or saline solution. Do not saturate the swab(s) or you may dilute the sample.

The wet swab(s) will add moisture to dry stains, loosening the stain material and allowing it to be transferred more easily to the swab(s).

2.2.1.4 If the stain/suspected sample is wet, the sterile swab(s) is used directly on the stain/suspected sample.

2.2.1.5 Swab the area of interest vigorously until the stain is collected (approximately 10-30 seconds).

Try to collect the sample on the tip of the swab(s) thus concentrating the stain on one area of each swab.

Do not swab so hard that the swab surface starts to break down. 6. Swab(s) should be dried before packaging in outer envelope/paper bag. - Swab(s) can be returned to original packaging to dry.

Multiple swabs can be dried in the packaging of one swab (if they were used at the same time to collect the same sample).

When possible, place swabs used for the same sample in the same packaging to dry.

2.2.1.6 Swab(s) and/or swab(s) in original packaging should be packaged in paper material:

- Envelope

- Paper bag

- Cardboard box

***Do not use plastic for outer packaging.**

**NOTE: Swabs from the same location (collected simultaneously) should be placed in the same package. In the event that two swabs are collected from a stain/location using Cap-Shure® brand collection swabs, place both capped swabs in the same envelope/paper bag and indicate on the label "two swabbing(s) from …"**

2.2.1.7 Envelope/paper bag should be labeled to identify sample taken and location (i.e.):

- Blood-like stain from table

- Saliva sample from ground

2.2.1.8 Seal envelope/paper bag with evidence tape. Initial the seal.

2.2.1.9 Store at room temperature.

2.2.2 <u>Swabbing for Touch DNA</u>:

2.2.2.1 Place face mask over mouth and nose. Hair net may also be used.

2.2.2.2 Place gloves on hands.

- If you touch something which may contaminate the sample, replace gloves.

2.2.2.3 Open the packaging of 1-2 swabs and remove swab(s).

- Retain the swab(s)' packaging.

- The swab(s) should only come into contact with the area of interest.

- If you must store the swab(s) prior to collection, return to packaging.

2.2.2.4 Moisten the swab(s) with one or two drops of sterile distilled water or saline solution. Do not saturate the swab(s).

2.2.2.5 Swab the area of interest (as indicated on supporting documentation/photos/video or as indicated by the victim) vigorously (evenly applied pressure, approximately 10-30 seconds).

- Try to collect the sample on the tip of the swab(s).

- Do not swab so hard that the swab(s) surface breaks down.

2.2.2.6 Swab(s) should be dried before packaging in outer envelope/paper bag.

- Swab(s) can be returned to original packaging to dry.

- Multiple swabs can be dried in the packaging of one swab (if they were used at the same time to collect the same sample).

- When possible, place swabs used for the same sample in the same packaging to dry.

2.2.2.7 Swab(s) and/or swab(s) in original packaging should be packaged in paper material:

- Envelope

- Paper bag

- Cardboard box

***Do not use plastic for outer packaging.**

2.2.2.8 Envelope/paper bag should be labeled to identify sample taken and location (i.e.):

- Swabbing of counter top

- Touch sample from cash register keys

2.2.2.9 Seal envelope/paper bag with evidence tape. Initial the seal.

2.2.2.10 Store at room temperature.

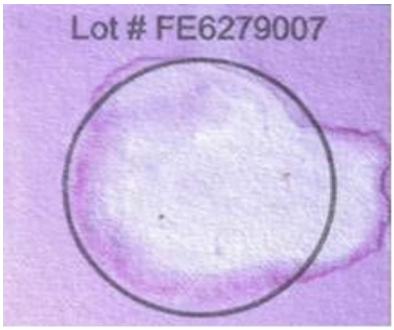
**NOTE: Swabs from the same location (collected simultaneously) should be placed in the same package. In the event that two swabs are collected from a stain/location using a Cap-Shure® brand collection swab, place both capped swabs in the same envelope/paper bag and indicate on the label "two swabbing(s) from…"**

2.2.3 <u>Collection of Buccal Sample</u>

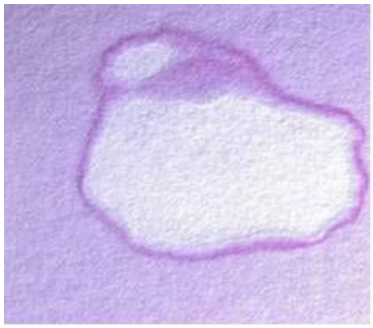
Swabbing:

1. Place gloves on hands.
   - If you touch something which may contaminate the sample, replace gloves.
2. Place FTA card on clean dry surface. Optional: Label the card with identifying information.
3. Open packaging of the swab and remove swab.
   - Retain the swab's packaging.
   - Do not let the swab come into contact with anything prior to swabbing.
   - If you must store the swab prior to collection, return to packaging.
4. Moisten the swab on both sides by inserting the swab end into the mouth and scraping/rubbing against the gums and under the tongue.
5. Once the sponge is wet,
   - Vigorously swab the inside cheek area on one side of the mouth.
   - Use the opposite side of the swab to collect a sample from the other cheek.
   - Lift cover of the FTA card.

6. In the circle lined area of the FTA card, place the swab flat to the surface of the FTA card.
   - Press down for 15-30 seconds. Do not rub the sponge back and forth (this may damage the FTA card).
   - Flip the swab and repeat with the other side of the swab.
   - The FTA card should turn from pink to white. If the card does not turn from pink to white, use a new FTA card kit and re-collect.
   - Once the swab touches the FTA card, do not return to the mouth. Example of a good collection and transfer:




Front side



Reverse side

Example of a poor collection and transfer:


Front side

Reverse side

7. Repackage the swab in the original wrapper.
8. Allow the swab and FTA card to dry.
9. Place FTA card and repackaged swab in an envelope or paper bag. Do not use plastic for outer packaging. Seal and label the packaging. Note: Label should include source's full name.
10. Store at room temperature.
11. When filling out the Request for Analysis form, make sure to clearly indicate the source of the sample(s) with their full name, arrest status, DOB, race, sex.

**Note: If Indicating FTA cards are unavailable, a sample may be collected using the sterile swab technique.**

2.2.4 Collection of Pseudo Knowns:

If there is insufficient probable cause to obtain reference sample(s) from a suspect, the investigator may submit a water bottle, straw, cigarette filter or similar item that was used by the suspected individual. The investigator should be able to document that an individual used the item submitted and that this item is reasonably expected to contain DNA from only the user. Upon collection of the item it should be treated as evidence with a documented chain of custody.

The DNA profile obtained from the "pseudo known" item can be compared to the DNA results from the evidence. The conclusion in the report will compare the questioned sample(s) to the item submitted as a "pseudo known" and not to the individual in question. If the profile appears to match, your agency may be able to use the report confirming the match as probable cause to obtain a reference sample from the suspect to confirm. A known sample will still need to be obtained and submitted to the DSS for comparison purposes.



2.2.5 Products of Conception

In the event that products of conception are to be collected as evidence, please alert the medical staff to provide the biological material/tissue in a sterile specimen container. It is preferred that no liquid media is provided in this container, but if the medical facility needs to add a liquid, saline is preferred. **Do not use formalin or formaldehyde since these preservatives may affect the DNA results.**

2.2.6 Missing Persons/Unidentified Human Remains

DNA samples related to a missing person or unidentified humans remains case can be submitted to DSS for testing. All samples should be submitted with an Evidence Examination Request Form (ER-SOP 2:1). Also, the Additional Information Required for Requests for Missing Persons Testing Form is required. https://portal.ct.gov/-/media/DESPP/DSS/Forms/MissingPersonsFormrev-3.pdf

All relevant areas are to be filled out in full to better facilitate the processing of these cases; this includes NamUs, NCIC and VICAP numbers. If there are specific questions or concerns about the submission of physical evidence for these types of cases, please contact the Missing Persons Unit at 203-639-6434.

2.2.6.1 Sources of Samples

a. Direct Reference Sample (DRS): samples obtained directly from the missing person.
   - Medically obtained blood cards, whole blood, or a tissue specimen that was collected from the missing person
   - A toothbrush/hairbrush used ONLY by the missing person

b. Family Reference Samples (FRS): samples obtained from family members of the missing person.
   - Buccal/Oral swabs
   - Blood Cards

c. Unidentified Human Remains Samples (UHR): samples obtained from unidentified human remains
   - Tissue (blood is preferred when available)
   - Bones (long bones are preferred when available)
   - Teeth (non-restored teeth are preferred when available)

2.2.6.2 Collection of family samples

Family reference samples should be submitted in the following order (when permitted):

a. Biological Mother and Father

b. Biological Child(ren)

c. Biological Full-sibling(s)

d. Maternal Relative

e. Paternal Relative (only when the UHR are male)

## 2.3 BIOLOGICAL EVIDENCE – PREVENTING CONTAMINATION

It is important when collecting an item of evidence or collecting a stain to take precautions to avoid contamination by transferring DNA/biological materials from one piece of evidence to another within a crime scene. The following is a list of preventative measures that can be used to reduce contamination:

2.3.1 Wear protective equipment (i.e. gloves, masks, hair net, booties, and gowns) when collecting biological evidence.

2.3.2 Change gloves frequently and between samples.

2.3.3 Sterile collecting material such as swabs or gauze should be used to collect evidence. Swabs should be lightly moistened with sterile distilled water prior to collecting dried stains. If gauze is used, lightly moisten the area that the sample will be collected onto with sterile distilled water.

2.3.4 Use clean or disposable tools with each sample being collected (razors, forceps, swabs, etc.). A diluted bleach solution followed by alcohol should be used for cleaning between uses if the tools are not disposable.

## 2.4 BIOLOGICAL EVIDENCE – COLLECTION

To obtain the best sample possible for analysis, the following measures should be taken when collecting evidence for DNA analysis:

2.4.1 Collect the entire item or take a cutting of the item.

2.4.2 Collect sufficient material for testing and preservation. When possible, **collect at least 2 swabs** of a suspected biological material.

2.4.3 Document how the swabs were collected, simultaneously (at the same time) or consecutively (one after the other).

2.4.4 When collecting a small stain, attempt to concentrate the stain on the tip of one swab.

2.4.5 Liquid Samples: Collect on a sterile cotton swab and air dry before packaging.

2.4.6 Known Blood Samples: Obtain one purple top (EDTA additive) vial of blood, ensure that the date on the tube is not expired.

2.4.7 Dried Bloodstains: Photograph and document the pattern with a scale prior to collecting. The preferred method is to send the entire article containing the stain to the DSS. The second option is to use a sterile cotton swab moistened with sterile distilled $H_2O$. Air-dry the swab prior to packaging. Place into a druggist fold/paper fold.

2.4.8 Bloodstained clothing or clothing and articles containing other body fluids: air dry and wrap in paper or place in a paper bag. (If possible, lay flat and wrap/fold with a paper protecting the stained area.)

2.4.9 Condoms with liquid – can use a plastic specimen container. Refrigerate or freeze and deliver as soon as possible to the DSS. DO NOT PACKAGE IN PAPER.

2.4.10 Bedding – mark position of top/foot of bedding and circle any wet stains using a permanent marker. Package in a paper bag, box or wrap in brown paper. If submitting bedding for a sexual assault, it is recommended that the agency submit only the layer of bedding that was in direct contact with the victim.

2.4.11 Mattresses/cushions: Remove the top portion (or the portion that was in contact with the victim) and package separately in paper bag. Remove the cover from the cushion and package separately in paper bags.

## 2.5 COMPUTER CRIMES AND ELECTRONIC EVIDENCE

The Computer Crimes Unit performs forensic analysis on a wide range of electronic evidence ranging from memory cards to phones and computers. Every effort should be made to collect any passwords needed to access these devices.

In order for some of the forensic extraction processes to be completed on cellular devices, some of the device settings may need to be changed or reset.

2.5.1 Collection of Evidence

2.5.1.1 Whenever computer equipment is seized, caution should be directed toward the proper shut down of the equipment to prevent damage or data loss. One

method of preventing data loss is the use of Faraday bags to protect the evidence from receiving digital signals.

2.5.1.2 Investigators should consult with Computer Crimes Unit personnel describing the type of equipment to be seized, if known, in the event that either hardware or software will pose a problem for the investigator.

2.5.1.3 All hardware including printers, scanners and peripheral devices, data storage disks, CD-ROM, DVD and other data storage media should be described and removed whenever possible.

2.5.1.4 Prior to startup, a person skilled in computer operations should be consulted to prevent loss of data or sabotage, or to defeat password protection placed on the device.

2.5.2 Computer Crimes Evidence Checklist

Prior to submission, the agency must complete the Computer Crimes Evidence Checklist.

This form is located on the DSS website:

https://portal.ct.gov/-/media/DESPP/DSS/Forms/QR-CC-1-Incoming-Evidence-Checklist-v3_20191108.pdf

2.5.3 Vehicle Infotainment Data

The Division of Scientific Services has acquired software that can forensically extract data from infotainment and telematics systems of supported vehicles. Depending on the infotainment system, extracted data may include GPS information, favorite locations, connected devices such as phones/media devices, call logs, contact lists, SMS messages, emails, photographs, videos and navigation history and data relating to the operation of the vehicle.

Please have the following information: vehicle year, make, model and VIN available to determine if a vehicle is supported. If supported, DSS can respond to the location of the vehicle to provide this technical assistance.

Contact Computer Crimes Unit 203-694-6576 or the Deputy Director of Identification at 203-694-6534 to inquire if a specific vehicle is supported.

2.5.4 iPhone Technology

The DESPP/DSS Computer Crimes Unit has forensic software that has the increased ability to unlock or extract data from iPhones. For best results, cell phones should not be powered off. When possible, iPhones should be submitted in the “on” state, in Airplane Mode, and secured in a Faraday bag.

## 2.6 FIREARMS EVIDENCE

**NO LOADED FIREARMS WILL BE ACCEPTED WITHOUT PRIOR APPROVAL.**

If unable to check firearm or you are unsure if it is safe, notify the personnel in Evidence Receiving upon submission.

2.6.1 Packaging of Firearms Evidence

2.6.1.1 All firearms submitted to the DSS must be unloaded and rendered safe before entering the laboratory. In order to "render a firearm safe", the ammunition must be removed from the firearm. It is preferred that a zip tie be placed through the action of the firearm. It is preferable that firearms are submitted in a cardboard box. If DNA testing is needed on the firearm, plastic bags are to be avoided.

2.6.1.2 If latent fingerprint examination is required, the investigator should avoid excessive handling of the firearm. Include all the types of examinations requested on the Request for Analysis form (SOP-ER-02:1).

2.6.1.3 Any ammunition recovered along with a firearm should also be submitted to the DSS. Live ammunition may be packaged in the same container as the firearm but should be packaged so that it is not loose in the container (i.e. Plastic bag or envelope).

2.6.1.4 The location of live ammunition and the position of the hammer in the cylinder of a revolver may be critical, requiring the numbering of each chamber and its corresponding round. This may be accomplished with photography or by marking with a felt tip marker, or both.

2.6.1.5 The magazine and cartridges can be submitted in the same box, secured and not loose in the box. Do not re-use gun boxes.

2.6.1.6 Submit fired cartridge cases and projectiles in sealed envelopes or non-metal containers. Do not physically mark bullets or cartridge cases.

2.6.2 Firearms in Water

For firearms recovered from bodies of water, special precautions must be taken:

2.6.2.1 Collect the firearm and store it submerged in the same type of water it was removed from (e.g. lake, ocean, brackish, etc.) and transport it to the DSS to prevent rusting.

2.6.2.2 Do not seal a damp firearm in plastic.

2.6.2.3 If the firearm cannot be transported in water due to unusual circumstances, contact the Laboratory for assistance.

2.6.2.4 Firearms recovered from water should be considered loaded whenever it is impossible to check the status or to unload them. Such firearms should be

forwarded to the DSS and identified and labeled as loaded and communicated to Evidence Receiving personnel as such.

2.6.3 Identifying and Tracing for Recovered Firearms (Sec. 54-36n, C.G.S.)

Firearms may be traced and tracked; it is the submitting agency's responsibility to complete the necessary forms. Please contact the Statewide Firearms Trafficking Task Force (SFTTF) for this information.

2.6.4 Firearms Laboratory Services

Operability of Firearm Operability testing is conducted to determine the operating condition of a firearm. This will include a check of make, model, serial number, safety features, trigger pull, barrel and overall length, test firing, and entry into the National Integrated Ballistic Information Network (NIBIN) database where applicable.

2.6.4.1 Serial Number Restoration

A serial number is a unique series of characters that identifies an object. Although serial numbers are often altered and/or removed, they can potentially be restored through chemical, physical, and magnetic processing techniques.

2.6.4.2 Examination of Fired Ammunition Components

Projectiles, cartridge cases, and shotgun shells can be examined microscopically to determine whether or not they were fired in a particular firearm. Any suspect firearm and/or live ammunition collected during the course of an investigation should be submitted to the DSS for analysis, in addition to any fired ammunition components.

Identification can at times be rendered even using distorted bullets or projectile fragments. Effort should be made to recover all projectile evidence from a crime scene.

2.6.5 NIBIN

Suitable firearms cartridge casings and cartridge casings from scenes submitted to the DSS will be entered into the NIBIN (National Integrated Ballistic Information Network). An entry notification report will be issued to the submitting agency. If a 'hit' is generated in NIBIN, the agency/agencies will be notified.

Bullets and revolver caliber cartridge casings are not entered or searched in NIBIN.

2.6.6 Firearms Evidence with Multiple Requests

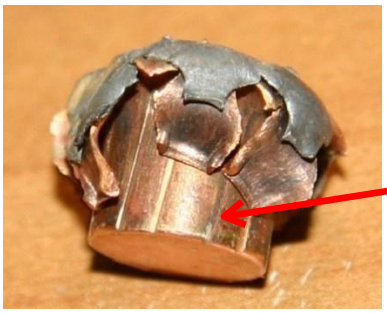
Evidence with multiple requests for other units (DNA/Forensic Biology Processing, Latent Prints) will not be examined by the Firearm/Toolmark Unit until all other units have completed their examinations. Firearm/Toolmark testing requires significant

handling and can possibly compromise DNA and fingerprints on a weapon, therefore it is the last analysis completed in these types of cases.

2.6.7 Collection of Firearms Evidence from Crime Scene

The recovery of fired bullets and shot pellets from the ceiling, walls, floor, furniture, body of victim, etc. should be performed so as not to alter them in any way.

When bullets are embedded in wood or some other object, it is recommended to secure that portion of the substance so that the bullet might be removed at the DSS. Avoid prying the bullet out of an object with a hard, sharp object such as a pocket knife which may alter the evidence.

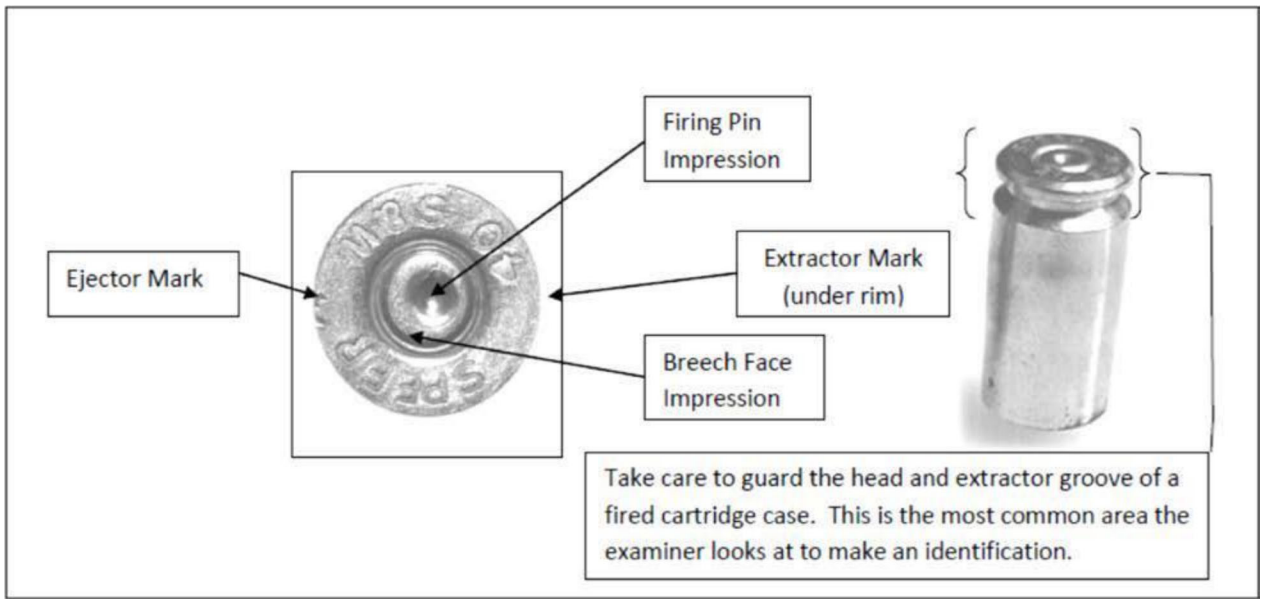



Care should be taken when collecting firearms evidence due to small markings on these surfaces that are necessary for analysis.

***Note: Internal studies have determined that it is difficult to get a DNA profile or a latent print on a fired cartridge casing due to the intense heat that is produced when a weapon is fired. This item will only be processed if information exists that the item was handled post shooting.**

2.6.8 Fired Cartridge Cases, Shot Pellets, and Wadding

Fired cartridge casings can exhibit marks left by the firing pin, ejector, extractor, magazine, chamber, and breech face. These marks can be compared and often matched with test-fired cartridge cases from the evidence weapon. The following depicts the various areas where markings may be present that can be used in analysis:




## 2.7 IMPRESSION/IMPRINT EVIDENCE

Impression/imprint evidence is usually comprised of footwear and tire track impression evidence, but on occasion it will consist of a mark made from a weapon, glove, socked foot or other object. Due to the nature of footwear and tire track evidence, the actual questioned impression is rarely able to be recovered and submitted to the DSS for examination purposes.

Best practice: Submit the original evidence; if the original evidence is not possible, photographs/digital files are acceptable.

2.7.1 <u>Recording Impression/Imprint Evidence</u>

It is imperative that you take examination quality photographs before using any chemical or physical enhancement techniques or attempting to take lifts or casts of an impression.

2.7.1.1 The following equipment is suggested for the best documentation of imprint evidence:

- Camera 1000ppi would be optimal
- Tripod
- Scale(s)
- Placards to indicate evidence number
- Dark cloth/cardboard ambient light
- Removable flash with 6ft extension to provide oblique lighting

2.7.1.2 The photographs documenting this type of evidence should progress from general scene photographs in order to relate the location of the imprint evidence to the overall crime scene.

Examination-quality photographs should then follow with maximum detail for forensic examination. All impressions should be photographed using both

methods. Photographs for examination purposes should be taken at a 90° angle with a scale in the same plane as the impression, prior to collection.

2.7.1.3 After identifying the impressions that are to be photographed, place a scale next to that imprint in the same plane. Achieving the same plane can be accomplished by digging into the impression's surrounding material (i.e. dirt, snow) to get the scale at the same level as the bottom of the impression. Take precautions not to disturb the impression itself.

2.7.1.4 Place the camera on a tripod and position it directly over the impression with the back of the camera (capture surface of CCD card) being parallel to the impression. If the impression is on an angle, adjust the tripod to achieve the parallel position.

A recommended rule on photographing the impression evidence is to "fill the frame." Cellular phone cameras are generally not suitable for examination quality photographs, but attempts can be made for analysis if no other recording device is available.

2.7.2 <u>Recovery of Impression/Imprint Evidence</u>

Casts and lifts of imprints/impressions may capture details that are not present in the examination of photographs. When possible, lift or cast the impressions. If the impression evidence consists of a long tire track, cast as much as much as possible to help in the analysis.

Some helpful recommendations on casting/lifting:

2.7.2.1 Gel lifts are recommended for lifting imprints in dust. Imprints made of wet shoe/tire can sometimes be enhanced using fingerprint powders and then lifted with a gel lifter.

Avoid using adhesive sheets for lifting imprints.

2.7.2.2 A dental casting stone material should be used. Avoid using plaster for the casting of impressions.

When pouring the casting material, try to avoid pouring the mixture directly into the impression. The direct flow of the casting material can be adjusted by using a piece of cardboard to direct the flow slowly into the impression.

**Avoid pouring directly onto the impression. Direct pouring may displace the details in the evidence.**

Let the mixture slowly flow into the entire impression with at least 1/2" depth of dental stone. Allow cast to dry for 20-30 minutes before removing it from the impression.

After lifting the cast, place into a cardboard box and pack paper on the sides to prevent movement. Do not clean the cast off; the DSS can do this to prevent losing details in the evidence.

2.7.3 Known Shoes/Tires

2.7.3.1 Known shoes and tires should be collected.

2.7.3.2 Test impressions of tires should be taken while the tire is located on the vehicle. These can be taken using foam board and either ink or Vaseline and magnetic fingerprint powders.

2.7.3.3 If you have any questions please call the Imprint and Impression Evidence Unit of the DSS at 203-639-6400.

2.7.4 SoleMate®

The Division of Scientific Services has the ability to search the SoleMate® library. This library contains approximately 30,000 images of footwear tread patterns of the major manufacturers. The examiners may be able to provide the manufacturer name and model of the shoe by comparing the tread pattern and utilizing this library.

## 2.8 LATENT PRINTS

The Latent Print Unit processes a variety of physical evidence utilizing the latest physical and chemical development techniques, examines photographs, lifts and negatives for identifiable impressions, conducts comparisons between the latent print and known impressions, and operates the Automated Fingerprint Identification System (AFIS) and the Next Generation Identification (NextGen).

2.8.1 Packaging Recommendations for Latent Prints

All hard evidence being submitted to the DSS should be fumed with cyanoacrylate (superglue) prior to submission. This step will help to maintain the integrity of the latent print evidence during transport and while it is being processed by other units of the DSS. Gloves should always be worn when collecting latent print evidence.

***Submission of images of latent prints (with scales) prior to being lifted is encouraged.***

2.8.1.1 It is recommended that after developing a latent print, the print(s) should be photographed with a scale prior to lifting. Sometimes the photograph/digital image file contains better detail than the actual lift.

2.8.1.2 Generally, packaging should be performed in such a manner as to minimize contact between the object with possible prints and the surface of the packaging material.

2.8.1.3 After dusting an object that has not been fumed, photograph the latent with a scale and proceed to collect the developed print with a lifter. Each lift shall have identifying marks (Case number and Lift number). If you are unable to lift the developed print, firmly secure the dusted object within a box.

2.8.1.4 Any item with a porous surface, such as paper, can be placed in an envelope and submitted to the DSS for chemical processing. Do not fold the evidence or the envelope.

2.8.1.5 Elimination Prints should be submitted whenever possible.

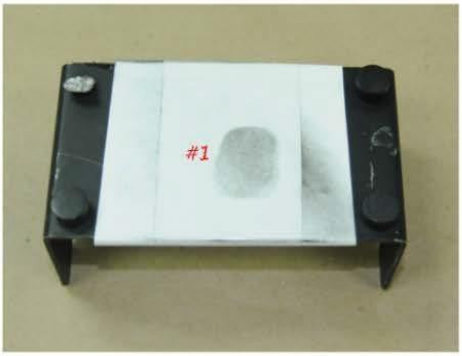
2.8.1.6 Should the agency want a specific person's fingerprints compared to latent impression of value, the subject's fingerprint card should be submitted with the evidence.

# Documentation of Fingerprint Lifts

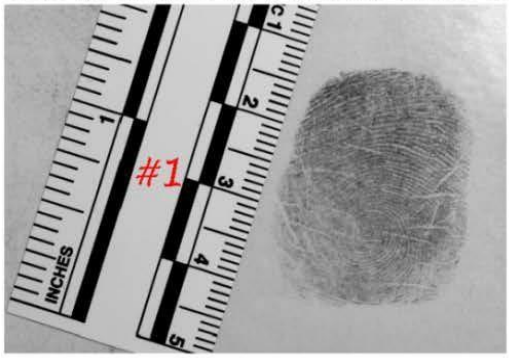
1. Take Overall Photo Prior to Processing

2. Dust for Latent Prints

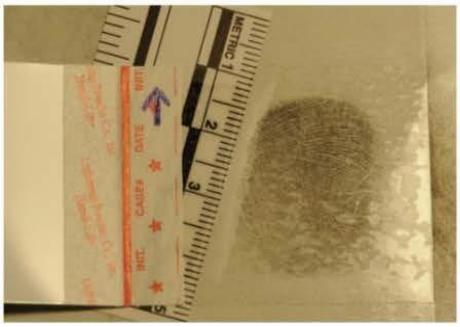
3. Take Overall Photo of Print w/Print #



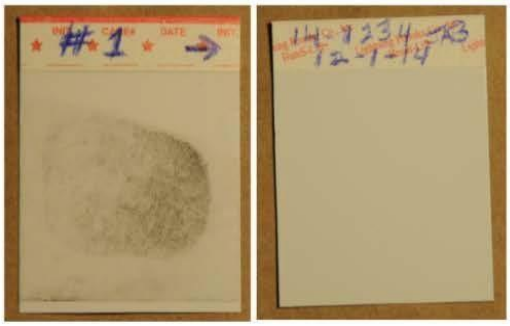

4. Add Scale with Print # and Photograph at 90°
Close-ups should fill 1/3 of the frame for AFIS quality




5. Place Lifter on Print, Draw an Up Arrow
then lift print (you can now swab area for DNA)

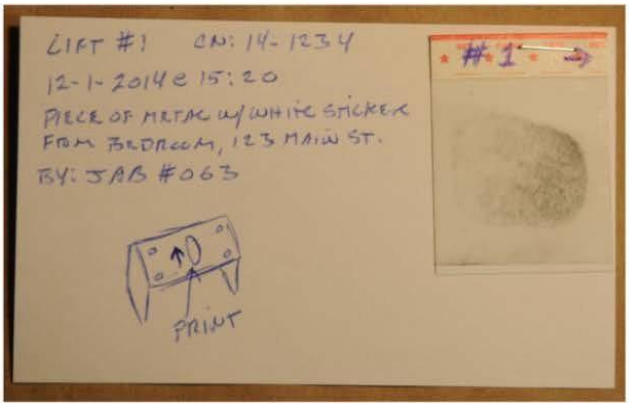



6. On Front of Lift write Lift/Print #
On Back of Lift write Case#, Initials and Date




7. Staple lift to 3x5 index card list the following information:

1. Lift#
2. Case#
3. Date/Time Collected
4. Lifted By
5. Description of item lift was taken from and location where processing was performed
6. Draw a simple diagram with up arrow



2.8.2 Recommendations for Photographing Latent Print for Email or Submission

2.8.2.1 Physical lifts must be scanned or photographed.

2.8.2.2 Scanned lifts must be at least 1000ppi and saved as .jpg images compressed not more than 30% or less than High Quality setting if using Adobe Photoshop.

2.8.2.3 Digital photographs of latent prints:

- Use your camera's macro mode if available. Note: Many cameras have to be zoomed out to wide-angle to achieve the closest possible image focusing.
- The latent print must occupy at least 1/3 of the camera's image frame or achieve at least 1000ppi resolution.
- The photograph must contain a scale that shows inches or cm/mm.

2.8.2.4 Image file names should incorporate an itemized number of your latent impression or lift. It is **important to be consistent with your labeling and file naming.** Some examples of file numbering: DCS00123, LP-1 or DCS00123, Latent-1 or DCS00123, Lift-1 or DCS00123, Lift-1, LP-1 or DCS00123, Lift-1, Latent-1

2.8.3 Evidence Not Conducive to Latent Print Processing

Certain types of evidence submitted for latent print processing either have a non-existent or extremely low chance of developing friction ridge impressions of value. Therefore, the latent print unit will not process or examine the following types of evidence without prior approval by the Latent Print Unit Supervisor/Lead or the Deputy Director of Identification Services.

- Rocks, Stones, Bricks, Concrete Block or Similar Masonry Type Products
- Bullets/Cartridges (live and spent)
- Cigarettes/E-Cigarettes or small hand-held smoking devices (*i.e.* crack pipes)
- Cords, Ropes and Wires
- Cloth and Woven Fabric and Leather-type items
- Coins/Currency (*does not include counterfeit paper currency*)
- Dye Packs
- Footwear
- Glassine Bags
- Heavy Gauge Rubber Gloves (*latex/nitrile or vinyl gloves are accepted*)
- Pens, Pencils or other Writing Instruments
- Rusted Weapons/Rusted Metal Instruments/Tools
- Straws
- Syringes

If appropriate, this type of evidence will be sent directly to the Forensic Biology/DNA Section for processing.

* Note: Unless blood-like stains are noted, DNA and latent print testing will not be conducted on currency due to the high exchange rate of this evidence.

## 2.9 MULTIMEDIA EVIDENCE

Multimedia evidence may be considered analog or digital media which contains images, video or audio files. This type of media may be contained in analog (VHS, 8mm, VHS-C) and digital (digital 8, MiniDV, camera cards/cameras, USB drives or digital video recorders [DVRs] and CDs/DVDs with various video file formats *eg. .avi, .mov, .mpg, etc. including proprietary files*) format. It is essential that video evidence be preserved until working copies can be generated.

### 2.9.1 Analysis Capabilities of the Multimedia Unit

The Multimedia Unit has the ability to perform audio enhancements or redactions. Due to the complexity of audio evidence processing, we request that evidence be submitted at least three weeks prior to the date needed for court.

The Multimedia Unit is able to export images, enhance images and conduct image comparisons to a known subject/item of evidence. Additionally, the Unit may be able to research the make/model of a vehicle and provide a comparative image for the submitting agency.

### 2.9.2 Submission of Multimedia Evidence

When submitting audio, video and MiniDV tapes, ensure that the erasure prevention tab has been placed in the "SAVE" or "NON-RECORD" Mode. Any audio, video or MiniDV cassette tapes which require enhancement should be cued to the appropriate location or the time/date of the incident must be provided in order to locate the area for enhancement.

### 2.9.3 Collection of Analog Media

Other considerations for Analog video (VHS, 8mm and VHS-C)

2.9.3.1 Note the time/date on the video monitor and note the real time (*i.e. using watch or cell phone*).

2.9.3.2 If a time-lapsed recording is being utilized, note the recording mode (*e.g. A2, A6, A12, A18, VRT, A24 or other*).

2.9.3.3 Note the make and model of the recorder and multiplexer if present.

2.9.3.4 Note any active cameras and camera view of interest. Note if any cameras are infrared sensitive (*this will change the colors of some materials*).

2.9.3.5 Stop the recorder; do not rewind the tape.

2.9.3.6 Remove tape. Once the tape is removed, remove the recording tab or set the recording slide to "save".

2.9.3.7 Place the tape in an appropriate evidence bag/envelope. Avoid transporting or storing near magnetic devices.

2.9.3.8 If viewing the tape is needed for investigative purposes, make a copy of the original tape and view the copy. If needed, personnel should seek guidance or assistance when deemed appropriate.

2.9.3.9 Do not use the "pause/still" or "freeze frame" functions at any time on the original tape.

2.9.4 Collection of Media on CD/DVD

Any media submitted on CD or DVD which is from a private security office should have the appropriate proprietary player file with the appropriate CODEC provided on the media.

All CDs and DVDs must be finalized prior to submission.

2.9.5 Collection of Digital Video Recorders or Network Video Recorders

2.9.5.1 When submitting DVRs, obtain all administrative, user and software passwords for the DVR. Collect any technical support phone numbers or contact names if present.

2.9.5.2 If seizing a digital video recorder, stop all recordings first. Prior to collecting, attempt to power down the system; as a last resort remove the plug from the wall outlet.

2.9.5.3 It should be noted that video evidence files located on a DVR have limited archival time and will be overwritten depending on the system's settings.

2.9.5.4 Note the DVR's make, model and serial number and collect any manuals/software if present.

2.9.5.5 Note the time/date on the video monitor and note the real *time (i.e. using watch or cell phone)*.

2.9.5.6 Note any active cameras and camera view of interest. Note if any cameras are infrared sensitive (this will change the colors of some materials).

2.9.5.7 Note if the system has a continuous recording mode or is time-lapsed or alarm/motion activated.

2.9.5.8 If exporting the video file from a DVR onto external media (e.g. CD, DVD, thumb or flash drives) make sure a copy of the proprietary player/viewer software is also included.

2.9.5.9 When possible, it is preferable to export in both the native proprietary format and as an .avi or .mov (Quicktime) file. When exporting to .avi or .mov file formats, use the least compression possible.

2.9.5.10 When exporting still images/single frames, utilize the .bmp option.

2.9.5.11 If extensive analysis or retrieval assistance is needed, it is preferred that the DVR be submitted directly to the DSS for examination.

2.9.5.12 Package any DVRs in a cardboard box or paper bag for submission. Avoid transporting or storing near magnetic devices.

2.9.6 Video Retrievals

Laboratory personnel may assist law enforcement agencies in retrieving video evidence from digital video recorders on-scene. The burden of consent or search rights will be the responsibility of the requesting agency. Video retrieval assistance may be requested by contacting the Deputy Director of Identification or Case Management. Examiners will make arrangements to meet law enforcement personnel at the scene of the retrieval. The retrieved video will be turned over to law enforcement personnel on-scene.

## 2.10 QUESTIONED DOCUMENTS

The Questioned Documents Unit of the Lab examines evidence that contains printed, written or typed materials. Examinations are conducted when the origin is unknown or the authenticity is in question.

The Questioned Documents Unit also performs writing/hand printing/signature identifications and comparisons, document alterations, counterfeit and composite documents, obliteration and/or erasures, alternate light source, charred documents, document sequencing, indented writing, lottery tickets, rubber stamp and other types of forensic analysis.

**In cases such as bank robbery notes, a latent print and DNA request will be added to the evidence being submitted after processing by the Questioned Documents Unit.**

2.10.1 Originals of the questioned and known materials are the preferable evidence but 1st generation photocopies/high resolution scans are acceptable for submission.

2.10.2 Known standards must be collected. Known standards can be obtained through requested writings or from genuine handwriting samples. Known standards must be packaged separately from questioned samples.

2.10.3 If more than one set of standards are submitted, each set must be packaged separately.

2.10.4 Each questioned document should be packaged individually.

2.10.5 In many situations handwriting exemplars may be required for examination purposes.

For cases in which handwriting exemplars are necessary, contact the Questioned Document Unit of the DSS for assistance or download the QD Handout form from the DSS website:

http://www.ct.gov/despp/lib/despp/DSS/Forms/Collection_of_Handwriting_Exemplar _Specimen_Form.pdf

## 2.11 DRUG EVIDENCE

2.11.1 Vegetative Material

Plant material includes items such as suspected marijuana, psilocybin-containing mushrooms, and vegetative material possibly laced with drugs.

2.11.1.1 Use containers which will prevent sample loss, contamination, and tampering. Wet plant material in plastic may cause decomposition of the plant material and fungal growth.

2.11.1.2 Samples should be individually packaged, labeled appropriately and sealed properly.

2.11.1.3 If your evidence is comprised of a potted plant, submit a sample of the leaf material. Do not submit the entire potted plant.

2.11.1.4 Do not send drug paraphernalia (e.g., pipes and scales) if there are measurable amounts of drug material being submitted.

2.11.1.5 Any questions regarding packaging or submission should be directed to the DSS laboratory.

**NOTE: Tea/mint leaves or marijuana that are charred and suspected to be coated with PCP should not be packaged as above. This type of substance should be placed into a plastic bag and then into a metal can.**

Liquid samples must be submitted in a manner which prevents leakage. Liquid samples may be collected in capped glass vials and placed into larger plastic bottles and/or metal paint cans to prevent spillage.

2.11.2 Syringes

Syringes containing needles should be packaged in a sharps-type container to prevent injury. If liquid is present within the syringe, then leave in the syringe and package to ensure that no leakage occurs during transport. If both bulk and residue evidence is submitted then agencies should contact the laboratory's Controlled Substances Unit to discuss a sampling plan.

2.11.3 Clandestine Laboratories

In the event that the submitting agency encounters a clandestine laboratory, all precautions should be taken to safely collect the evidence. The Division of Scientific Services can be contacted for guidance.

## 2.12 TOXICOLOGY TESTING

The Toxicology Unit performs alcohol and drug analysis testing on blood/urine samples taken from individuals believed to have been driving under the influence. Information regarding ethanol levels within hospital reports can be submitted for blood-ethanol conversion but must be done following appropriate document submission guidelines and are mainly done electronically.

The unit also performs similar testing on samples taken from victims of sexual assault. Appropriate kits are available for the submission of toxicological evidence (e.g., DUI – blood, DUI – urine, CT400 Sexual Assault). Samples from the Office of the Chief Medical Examiner (OCME) involving blood, urine, and other biological materials (e.g., vitreous) can be submitted, but prior approval of submission is expected.

Toxicological evidence can either have screening-only or have full confirmatory testing done. The level of analysis needed should be clearly documented within the Request for Analysis (RFA) form. If an analysis is needed on a deceased subject, please submit a request through the Office of the Chief Medical Examiner.

**Poisonings**

For cases of suspected poisoning, contact the DSS laboratory's Toxicology Unit prior to submission.

## 2.13 TRACE EVIDENCE

Contact between individuals or objects may be established via the transfer of trace evidence.

**Hairs, fibers, ropes, tape, glass and soil may be submitted to the FBI laboratory for analysis. Please contact the FBI Evidence Control Unit at (703) 632-8360 for further information.

2.13.1 Paint Samples

Contact the DSS laboratory's Chemistry Unit prior to submitting paint evidence for analysis.

## 2.14 FIRE SCENE EVIDENCE

2.14.1 Collect relevant debris or clothing that are suspected of containing accelerants. The use of certified K-9 or Fire Marshal personnel to assist in locating evidence may assist with relevant evidence collection. If more than three (3) samples are to be taken from a scene, please contact the DSS laboratory's Chemistry Unit.

2.14.2 Place debris or clothing in an unused uncoated metal paint can and seal with metal top. The can should be not more than 2/3 full. If your item is large and you cannot obtain a 5 gallon can, contact the DSS laboratory. Only properly approved plastic bags should

be used to package evidence and must be heat-sealed. Glass jars can be used for liquid accelerant/ flammable samples. Jars should be placed in a metal can with packaging material to avoid breakage.

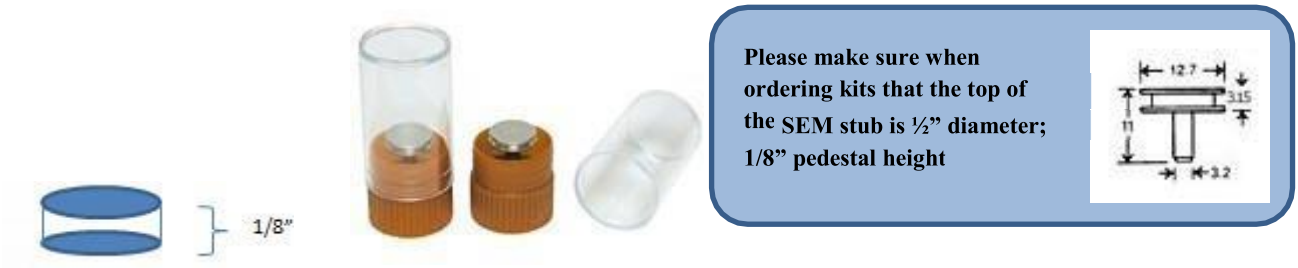
2.14.3 Collect control samples from areas adjacent to the suspected sample area (e.g. carpeting, insulation, foam, if necessary).

2.14.4 If DNA testing is necessary, please indicate on the Request for Analysis form. The fire debris analysis testing method will destroy any DNA present on the evidence, therefore the request must be made when initially submitting the evidence for examination.

## 2.15 PRIMER GUNSHOT RESIDUE (PGSR) EXAMINATION

Use a 2-stub GSR Collection Kit (or only 2 stubs from a 4-stub collection kit) containing discs with adhesive for sampling (e.g., hands). When sampling hands use one (1) stub for the front and back of the left hand and one disc for the front and back of the right hand.

Optimally, collect samples within 4-6 hours after an incident and prior to any cleaning. During collection of samples from people, collectors should thoroughly wash their hands and must wear new disposable gloves in-between sampling multiple people to minimize the possibility of contamination. When collecting from one object/source, changing gloves is not necessary.




2.15.1 Obtain the samples as soon as possible and before the individual is fingerprinted or allowed to wash his/her hands.

2.15.2 Label appropriately and place evidence under proper seal.

2.15.3 GSR collection kits can be used to collect GSR samples from vehicle interiors or other surfaces suspected of containing GSR. Use as few stubs as possible and use each stub until the adhesiveness has been depleted. Prior to the collection of samples collectors should thoroughly wash their hands and must wear new disposable gloves in-between multiple vehicles to minimize the possibility of contamination. When collecting from one object/source (e.g., inside of vehicle) changing gloves is not necessary. A maximum of four (4) stubs should be used per vehicle. Separation of stubs between front/back or driver/passenger sides within a vehicle is not necessary because determination of pGSR, as a whole, will be tested.

2.15.4 GSR samples are not analyzed in routine firearm-suicide cases. Contact the DSS laboratory's Chemistry Unit prior to submitting GSR kits from victims of gunshot wounds.

2.15.5 Effective February 2017, DSS will analyze two stubs of the GSR kits. Please see the following memo:

STATE OF CONNECTICUT

DEPARTMENT OF
EMERGENCY SERVICES and PUBLIC PROTECTION
DIVISION OF SCIENTIFIC SERVICES

Guy M. Vallaro, Ph.D.
Director

Page : 1 of 1

To: State Attorney's, Law Enforcement
From: Dr. Guy Vallaro, Director
Date: February 14, 2017
Subject: Gunshot Residue (GSR) Collection Practice Change (4-stub to 2-stub)

Effective **February 28, 2017** the Division of Scientific Services (DSS) will analyze only two stubs for suspect hand GSR determination. Historically the DSS laboratory has accepted 4-stub GSR kits wherein separate stubs were used for the backs and palms of each hand. Current research and change of practice within the forensic community has determined that one stub per hand is appropriate, with no loss of information or evidentiary value when one stub to sample both the backs and palms of each hand is employed.

The proposal of changing from a 4-stub to a 2-stub sampling has been vetted within the Office of the Chief State's Attorney and has been discussed at a recent meeting of State's Attorney representatives. Furthermore, a recent review of other jurisdictions along with communication with subject matter experts has reinforced this sampling change decision, and no objections were raised or potential problems found.

Current 4-stub kits may still be used for collection, however submitting agencies must use only two of the four GSR stubs found within the kits for submission into the lab. One stub will be used to sample the back and palm of the left hand and another stub will be used to sample the back and palm of the right hand. Please label the stubs accordingly. The unused stubs should be removed from the kit and not submitted to the DSS laboratory.

For questions or concerns please contact Dr. Michael Rickenbach, Deputy Director, Chemical Analysis Section, at (203) 427-4040.

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## 2.16 BOMB AND EXPLOSIVE DEVICE EVIDENCE

2.16.1 Prior to submission the device must be inspected and deactivated by Emergency Services personnel**. Note: No active explosive devices will be accepted at the Division of Scientific Services.**

2.16.2 Whenever possible, photograph the device before submitting it to the DSS.

Contact the DSS laboratory prior to submission if explosive material needs to be analyzed.