EVIDENCE EXAMINATION AND SAMPLE COLLECTION GUIDELINES

1.1 PURPOSE

1.1.1 To provide guidelines for evidence examination and documentation in conjunction with GL-13 (General Evidence Handling).
1.1.2 To provide guidelines for collection of touch DNA, wearer DNA and body fluid samples.
1.1.3 To provide guidelines for forwarding samples for DNA analysis or retention.

1.2 RESPONSIBILITY

Personnel qualified to perform Forensic Biology duties.

1.3 SAFETY

Use appropriate measures for the proper handling of biohazardous materials and hazardous chemicals according to GL-2 (Safety Manual).

1.4 DEFINITIONS/ABBREVIATIONS

1.4.1 LIMS: Laboratory Information Management System
1.4.2 PPE: Personal Protective Equipment
1.4.3 QRW(s): Quality Record Worksheet(s); Appendix 1
1.4.4 RFA: Request for Analysis Form
1.4.5 QC: Quality Control
1.4.6 CODIS: Combined DNA Index System

1.5 GENERAL NOTES

1.5.1 Physical evidence will be examined, and serological tests will be performed based on the examiner's knowledge, training and experience according to the submitting agency requests, case information and the condition of the evidence.

1.5.2 All examinations are conducted macroscopically. Other types of examinations (i.e. microscopic or stereoscopic) will be recorded (along with the microscope(s)/ stereoscope(s) used) on the appropriate QRW(s) and specified in reports. See FB SOP-05 (Case Records and Reports).

1.5.3 If the suspect has been arrested, and DNA testing will consume a sample, there is a possible consumption issue. If there is reasonable expectation that more sample remains on the item and could be collected in the future, then there is no consumption issue. Consumption issues must be indicated as such in the evidence LIMS notes. A 'Consumption' request will be created for samples being forwarded for DNA testing.

1.5.4 Depending on the evidence type and amount of time necessary for examination, it is part of the normal process for some items being examined in Forensic Biology (FB) to remain on an examiner's workbench during the day. Therefore, it is not necessary for permission to be granted each time if the evidence is maintained according to GL-13. If possible, cover the evidence with bench paper when leaving the work station.

1.5.5 Evidence that is received wet should be removed from the package and air dried (in a hood whenever possible). Once dry, the evidence may be examined or re-packaged and sealed until future examination.

1.5.6 Only one submission will be open at a time. Evidence submitted from multiple scenes will be processed in a manner separated by time and/or space.

1.5.7 For cases requested to be expedited when body fluid testing is warranted, samples may be forwarded for DNA analysis prior to serological testing. FB will simultaneously conduct serological testing on a remaining portion of the sample for the presence of body fluids.

1.5.8 Certain evidence submissions require specific testing and sample collection. Utilize the appropriate FB SOPs below for additional guidance:

- Sexual Assault Evidence Collection Kit Examination (FB SOP-02)
- Whole Blood Sample Preservation (FB SOP-07)
- Trace Evidence Collection / Hair-like fiber Examination (FB SOP-19)
- Serological testing (FB SOP-08, -11, -12, -13, -14, -15, -16, -17, -18, -28)
- Autopsy Samples (FB SOP-06)
- Fingernail Samples (FB SOP-27)
- POC Collection and Preservation (FB SOP-29)

1.5.9. Extracts generated during serology testing are considered work product. These extracts are not sub-

itemized.

1.6 CLEANING AND PERSONAL PROTECTIVE EQUIPMENT

1.6.1 Cleaning Utensils and Laboratory Area

1.6.1.1 Clean utensils and bench top supplies during use as needed and between each case and case submission. The appropriate disinfecting solution is described in FB SOP-21 (General Chemical and Reagent QC) and is followed by ethanol to ensure aseptic conditions. dH_2O may be used between the disinfecting solution and ethanol.

1.6.1.2 Containers used to soak/clean utensils in disinfecting solution, dH_2O and ethanol, are replaced weekly. The disinfecting solution, dH_2O and ethanol are replaced daily or more often, if necessary.

1.6.1.3 Clean camera and other electronic equipment during use as needed and between each case to ensure aseptic conditions. The appropriate disinfecting solution is described in FB SOP-21. Avoid the use of ethanol.

1.6.1.4 Clean bench top using the appropriate disinfecting solution described in FB SOP-21 and replace examination paper between each case or more often, as necessary, to ensure aseptic conditions.

1.6.2 Personal Protective Equipment

1.6.2.1 Examiners must wear lab coats, masks, gloves, disposable sleeves and hair nets while examining evidence.

1.6.2.2 When conducting microscope work for Sperm Hy-Liter the examiner must wear a lab coat, mask and gloves.

1.6.2.3 Examiners will wear protective eyewear when it is indicated to do so.

1.7 CASE ASSIGNMENTS AND EVIDENCE RETRIEVAL

1.7.1 Case Assignments - Generally, examiners will be notified of case assignments by a Forensic Biology Lead/Supervisor, Case Management, a Manager or through the LIMS computer system according to GL-4 (LIMS). When necessary, an examiner may self-assign casework.

1.7.2 Evidence Retrieval – Examiners will retrieve evidence from a secure location, Evidence Receiving or other examiners through a secure transfer within the LIMS computer system according to GL-4 (LIMS).

1.8 REAGENTS

1.8.1 Only QC'd, unexpired reagents will be used for casework. This includes deionized water (dH_2O) for sample collection and testing as applicable.

1.8.2 The reagent lot numbers used during examination are recorded on the appropriate QRW(s) and/or the FB QR-09 (General Reagent Sheet). Additions made subsequent to the date on FB QR-09 will be dated and initialed.

1.8.3 An electronic reference containing reagent lot numbers and expiration dates will be maintained on the S: Drive.

1.9 EVIDENCE PACKAGING

1.9.1 The package or barcode of each item examined must be initialed by the examiner.

1.9.2 Examiners will document submission packaging on QRW(s) as follows:

- Type of package (bag, envelope, etc.)
- Type of seal (tape, heat-sealed, etc.)
- Labeling – the examiner will ensure the packaging barcode and submitting agency number correspond appropriately. It is the examiner's responsibility to further document additional relevant information on the Submitting Agency label not found on the RFA. This includes item descriptions that are needed for CODIS eligibility.

  It is not typically necessary to document irrelevant details such as precise address of occurrence, vehicle license/VIN number, etc.

1.9.3 Labeling discrepancies will be documented.

1.9.4 When possible, the Submitting Agency seals should remain intact.

1.10 SAMPLE COLLECTION METHODS

1.10.1 **Swabbing**: Swabbing is typically used for touch/wearer DNA collection or to collect a body fluid stain from a non-absorbent surface.

1.10.1.1 Sterile swabs and dH_2O will be used for swabbing samples.

1.10.1.2 The number of swabs used for collection will vary based on collection area size and substrate. Typically, 1-2 swabs will be sufficient for most samples. Up to 3 swabs may be placed in a single tube for DNA.

1.10.1.3 When an area is swabbed with the intention of separating the swabs (i.e. retaining half and sending half for DNA analysis), the swabs must be collected simultaneously.

1.10.1.4 Moisten the appropriate number of swabs with dH_2O. Swab the area by turning the swabs to ensure all sides contact the target area. If an item has been superglued then swab vigorously when collecting the sample.

1.10.2 **Cutting**: Cutting is typically utilized to collect a body fluid stain from an absorbent surface.

1.10.2.1 The cutting size collected and/or forwarded to DNA will depend on the body fluid type and condition. Approximately 0.5 cm^2 blood cuttings will be forwarded to DNA. Approximately 1.0 cm^2 will be forwarded for other body fluid types.

1.10.3 **Scraping**: A stain or debris may be scraped from a non-absorbent surface using a sterile scalpel.

1.11 EXAMINATION DOCUMENTATION

1.11.1 Note taking and documentation will be done on the appropriate QRW(s), based on evidence type and requested testing.

1.11.2 All QRWs will be initialed and dated and documentation will be completed contemporaneously to examination. If additional examination and/or testing is conducted on a subsequent day, then it will be initialed and dated on the worksheet accordingly.
All pages containing photographs will include initials. In general, pages with photographs are not dated since the QRW(s) in use will have a reference to the attached images.

1.11.3 Simple, common evidence items that can be sufficiently described in the written examination notes do not need to be photographed.

1.11.4 All photographs and/or sketches will be included in the case file.

1.11.5 Photographs will include a scale that is visible in the frame. The scale used should be based on the item size. When practical, the scale will be in the same plane as the item. It is not necessary to include generic manufacturer information/labeling/other markings in photographs.

1.11.6 Notes recorded on evidence photographs will include:

- All screening test results (Acid phosphatase, o-Tolidine, Kastle-Meyer)
- Location(s) on the evidence from which sample(s) are collected

1.11.7 At a minimum, QRW(s) documentation should include:

- Evidence description
- General item tag or label information (brand/size)
- Examination and test results, including stains not tested (NT) and not tested further (NFT).
- Number of swabs used to collect sample and number of swabs retained/forwarded
- For collected body fluid stain(s)/staining: document original size; specify if portion retained, when applicable.
- If amount forwarded for DNA testing is different than what is stated in 1.10.2.1, this must be specified.
- Description/disposition of sample(s) collected/sub-itemized and preserved for future testing
- Evidence disposition
- Evidence not examined at this time (NEATT)

1.12 GENERAL EXAMINATION NOTES

1.12.1 Evidence with multiple Unit requests will be handled according to GL-12, GL-13 and Appendices C (Latent Prints), D (Controlled Substances) or E (Gun Shot Residue).

1.12.2 Mark evidence with the examiner's initials when possible. A label may be used on evidence that is difficult to mark. If there is a Latent Print request, use caution when marking with initials or mark with initials after the Latent Print examination has been completed.

1.12.3 Sample selection is conducted considering the substrate and the type/amount of sample present. Sample selection details will be included on the appropriate QRW(s). The details will not be included with the results stated in the report.

1.12.4 Body fluid samples and samples collected for touch/wearer DNA analysis will be collected based on the submitting agency requests, case information and type of evidence. Body fluid sample collection is also dependent on the size and quantity of stain(s). Specific examination guidance related to evidence or collection type is available below in section 1.13.

1.12.5 Body fluid samples will be collected separately from touch samples (i.e. a blood droplet on a knife handle will be swabbed separately from the non-blood-like stain (non-BLS) handle area for touch).

1.12.6 An alternate light source should be used to locate body fluid stains. Observed stains will be marked on the evidence. Record the alternate light source used on the appropriate QRW(s). See FB SOP-28 (ML2-IR) for additional guidance.

1.12.7 When the evidence substrate allows, the evidence itself will be marked with the location of body fluid sample collection. Screening test results may also be marked on the evidence itself. Touch and wearer locations will not be marked.

1.12.8 Multiple swabs collected from the same area and submitted as one item will be considered one sample. Items submitted for body fluid testing will be tested accordingly (i.e. a portion of each swab will be combined and tested as one sample).
If all swabs in an item appear reddish-brown stained, it is only necessary to test a portion of 1 swab per item.

1.13 EVIDENCE EXAMINATION AND FORWARDING GUIDELINES

1.13.1 For evidence previously examined by the LP Unit, sample collection will vary based on LP designation(s)/identification(s) and whether BLS is present. See Appendix C for additional guidance.

1.13.2 **Wearer**: Use 1-2 swabs to collect a wearer sample as follows. If items appear new or gently worn, a second area may be collected. Typically, one sample per item will be forwarded for DNA testing. Any additional samples collected will be retained.

- Shirt, jacket, etc.: One sample will be collected from the interior collar. A second sample may be collected from the interior cuffs.
- Hat: One sample will be collected from the interior rim. A second sample may be collected from the brim.
- Pants, underpants, etc.: One sample will be collected from the interior waistband.
- Gloves, footwear: One sample will be collected from the interior of each item. If the glove interior cannot be determined, collect a sample from each, the interior and exterior, as it was received and forward both to DNA.

1.13.3 **Underpants, pants, etc.:** If necessary, collect a wearer sample (1.13.2). Based on the case scenario, avoiding stains, collect a sample using 1-2 swabs from each of the relevant areas below for touch DNA:

- Exterior hip and waistband areas
- Interior front panel and crotch areas
- Interior back panel and crotch areas

Touch samples will be forwarded based on case scenario and serology results.

1.13.4 **Knife**: Collect a sample from the handle, avoiding any BLS, using 1-2 swabs. Based on the case scenario, collect a sample from the blade using 1-2 swabs.Forward collected sample(s) to DNA.

1.13.5 **Cigarette Butts/Cigars/Blunts/Hand rolled:** Cut approximately 1/4” x 1/8” off of the filter end or approximately 1/2” x 1/4” off the unfiltered unburnt end and forward the collected sample to DNA. See Figure 1.

Figure 1

1.13.5.1 If the item is unsmoked or contains a mouthpiece, swab for touch with 1-2 swabs and forward to DNA.

1.13.6 **Drinking Containers:**

- One sample will be collected from the exterior mouth opening and interior cap (if present) using 1-2 swabs and forwarded to DNA.
- If it appears that the bottle hasn't been opened or drank from then a sample will be collected from the exterior body and cap areas using 1-2 swabs and forwarded to DNA.

1.13.7 **Paper (notes, cards, etc.):** Use 1-2 swabs to collect one sample from the overall area and forward to DNA.

1.13.8 **Envelopes:** In general, due to excessive handling during mail transport, no touch DNA sample will be collected from the envelope exterior. Sample collection will focus on any LP designated areas, and the adhesive areas of the envelope flap and stamp. Using caution to avoid tearing, gently attempt to pry the flap/stamp apart from the envelope with forceps. If the flap/stamp are not easily separated, utilize the steaming method in Appendix A.

Once separated, collect samples as follows:

- Flap: Use 1-2 swabs to collect a sample from the adhesive area of both surfaces. Forward the sample to DNA.
- Stamp: Use 1 swab to collect a sample from the adhesive area of both surfaces. Retain the sample.

If steaming attempts do not separate the adhesive areas, collect a sample as follows:

- Flap: Cut a sample, ~4x1 cm, along the adhesive area, including both the flap and envelope areas. Forward half of the cutting to DNA. Retain the remainder.
- Stamp: Cut around the entire stamp, including the envelope area. Retain the sample.

1.13.9 **Bloodstains** (positive screening and/or identification results):

- Stain/staining: Cut ~0.5cm^2 and forward to DNA.
- Heavily stained swab or swabbing: Forward ~½ swab to DNA. Retain the remaining half.
- Light/dilute stained swab: Forward a minimum of 1 swab to DNA.
- If the case scenario indicates that a sample was previously tested with a field test by the submitting agency, forward the sample directly to DNA without serological testing. Note agency field testing in LIMS.

1.13.10 **Semen**: See section 1.12.8 regarding combined swab testing.

- ≥ 2+ sperm: Forward a total of 1 swab to DNA.
- 1+ sperm / (1) spermatozoon / p30 positive: Forward up to 3 total swabs to DNA.
- Forward ~1cm^2 of sperm/semen positive non-swab cuttings to DNA.
- See Appendix B for smear sample collection guidance.

1.13.11 **Amylase**: See section 1.12.8 regarding combined swab testing.

- Strong positive: Forward a total of 1 swab to DNA.
- Positive / weak / very weak positive: Forward up to 3 total swabs to DNA.
- Forward ~1cm^2 of amylase positive non-swab cuttings to DNA.

1.13.12 **Condoms**:

1.13.12.1 The condom interior and exterior are tested separately.

1.13.12.2 If acid phosphatase (AP) positive, use 4 swabs to collect a sample from the associated surface. The swabs will be tested for serology as appropriate.

- ≥ 2+ sperm: Forward a total of 1 swab to DNA.
- All other results, including negative: Forward up to 3 total swabs to DNA.

1.13.12.3 If AP negative, use 2 swabs to collect a touch DNA sample from the associated surface and forward to DNA.

1.13.13 **Firearms (FA) & Peripherals**: Firearm examination is dependent on the offense severity. See Appendix F for detailed photographs and depictions of the firearms and peripherals described below.

- Photograph the firearm showing both sides of the frame and from various angles, if necessary, including manufacturer and model number. Written documentation of the serial number is acceptable.

- Small areas and textured areas of the firearm can be swabbed prior to Latent Print processing. Small areas include, but are not limited to: sights, trigger, cylinder loading and latch areas, magazine release, slide catch/safety, hammer, bolt or lever.

1.13.13.1 Lesser Offense (i.e. – weapons possessions, shots fired, found gun, etc.):

- Trigger: Regardless of FA type, use 1 swab to collect sample separately and retain.
- Small FA (handgun, pistol, etc.): Use 2-3 swabs to collect DNA sample from all remaining surface areas. Forward to DNA.
- Large FA (shotgun, rifle, etc.): Collect a DNA sample from each of the stock and forearm areas using 2-3 swabs for each area. Forward one sample to DNA.

1.13.13.2 Serious Offense (i.e. – homicide, assault, robbery, etc.): Use 1-2 swabs to collect a sample from each of the below listed areas. Samples will be forwarded to DNA based on case scenario and examiner discretion. In general, two samples per submitted firearm should be forwarded for initial round of DNA testing.

- Small FA:
  Trigger
  Grip (including magazine release for pistols)
  Slide including sights, slide catch/safety and hammer (pistols)
  Cylinder including loading area, latch area, hammer and sights (revolvers)

- Large FA:
  Trigger
  Stock
  Grip(s)
  Forearm
  Bolt (semi-automatic rifles)
  Lever (lever action rifles)
  Hammer or magazine spring loader (shotguns)
  Safety collected based on location; typically collected with grip, forearm or action mechanisms

1.13.13.3 Magazine: Use 1-2 swabs to collect sample. Sample is forwarded to DNA based on case scenario and examiner discretion. If magazine is loaded, unload and see section 1.13.13.4.

1.13.13.4 Cartridges / Cartridge Casings (fired and unfired) / Bullets / Projectiles:

- Document the caliber and manufacturer head stamp information of cartridges/casings via photograph or on QRW(s).

- In general, cartridge(s) are only swabbed if they have not been previously unloaded from the magazine, if there is specific information they were handled, and/or if the submitting agency requests it.

- Use 1 swab to collect a sample from all exterior surfaces. If more than one item is present, collect one sample from all items using 1-3 swabs. Samples will be forwarded to DNA based on case scenario and examiner discretion.

- A sample is only collected from fired cartridge casings (FCC) if the request explicitly indicates the FCC was handled.

- A sample is only collected from fired bullets/projectiles if requested by the submitting agency and approved by Laboratory Management. If examined, take care not to alter/mar the surfaces while handling. Plastic forceps should be used.

1.14 POST-EXAMINATION

1.14.1 Sample Preparation:

- Swab cotton will be removed from the stick and stains will be cut to the appropriate size.
- The sample will be placed in a sterile plastic tube labeled with case number, item number and initials.
- No more than three total swabs are to be placed into one tube for DNA analysis. Place any additional swabs into a separate tube and indicate that 2 tubes are present in the LIMS notes.
- Samples not being forwarded to DNA may be retained in a labeled tube or paper-fold.

1.14.2 The samples will be sub-itemized in LIMS according to GL-4 and GL-13. Sub-itemization will occur as contemporaneously to examination as possible.

- For evidence submitted as swabs, include the location/description in quotes and utilize the term 'swab' in the item description (i.e.- Swab – "steering wheel")
- Sub-items swabbed by the examiner will utilize the term 'swabbing' in the description (i.e. – Swabbing – mouth of bottle).
- Stain(s)/staining cut by the examiner will utilize the term 'stain' or 'staining' in the description (i.e. – Stain – interior crotch of underpants). "Cutting" will be added to the sub-item LIMS notes.
- Sub-item descriptions may be simplified, abbreviated versions of the parent description if done in a manner that maintains unique item identification.
- It is not necessary to record the number of swabs or cutting size in LIMS.

1.14.3 Samples should be immediately transferred electronically to the appropriate storage location. The LIMS transfer sheet will be printed.

- Samples may remain in an examiner's custody (non-shared evidence locker) or an 'In Progress' location as described in GL-13 if additional work is being done on the case that extends beyond the normal work day. In these instances, the below steps will be conducted at a later time.

1.14.4 Samples with a consumption issue or being retained will be packaged in plastic bags labeled with the case number. These samples will be verified against the appropriate transfer sheet. A second examiner, however titled, will verify the bag and tube labeling as well as the applicable contents (cutting vs. swab). Verifiers will initial and date the transfer sheet in agreement. In the

event of a labeling discrepancy, the items will be corrected, and a Lead or Manager will be notified.

- Once verified, the plastic bag will be heat sealed and the seal initialed by the examiner prior to physical transfer to the appropriate storage location.

1.14.5 Non-consumption samples being forwarded for DNA analysis or male screen procedure are not verified at this time. These samples will physically be placed directly into a designated storage location for pending DNA extractions and added to the appropriate DNA batch spreadsheet.

1.14.6 The transfer of samples from laboratory cases which were opened prior to 1998 and not in the LIMS system will be recorded on the Evidence Transfer Sheet (FBQR-11) located in Appendix 1 (Qualtrax).

1.15 APPENDIX

1.15.1 Appendix A: Steaming Instructions

1.15.1.1 If there is a designated latent print area and it is necessary to collect the area separately, please follow the instructions in Appendix C (Evidence with a Latent Print request).

1.15.1.2 Using caution to avoid tearing, begin at one corner of the envelope and gently attempt to pry the flap apart from the envelope with forceps.

1.15.1.3 If the flap does not separate easily, STOP and proceed to step 1.15.1.6.

1.15.1.4 If the flap separates easily and cleanly, continue until it is completely separated from the envelope.

1.15.1.5 Collect a sample from the adhesive area of both surfaces using one or two swabs.

1.15.1.6 Applying Steam (should be conducted in a hood)

- Fill a 250ml beaker with approximately 200ml dH2O and bring to a boil. Note: Add more dH2O to the beaker as evaporation occurs.
- Beginning at one end of the envelope, hold the envelope flap approximately 1” above the steam for approximately 5 minutes. Use caution not to touch the envelope to the beaker.
- Remove the envelope from the steam. Using forceps, gently and slowly

attempt to pry apart the flap in the steamed area, avoid tearing. If the flap begins to separate from the envelope continue to gently pry it apart until the flap becomes stiff as it dries and will no longer separate.

- Repeat steps above in the next area of the flap until it is completely separated. Note: Some envelopes may require numerous applications of steam and increased exposure time (up to ~10 minutes at a time to the point of visible dampness, do not allow the envelope to become saturated). Use extra caution to avoid tearing.
- Collect a sample from the adhesive area of both surfaces using 1-2 swabs.
- If unable to separate the flap from the envelope, collect a cutting along the adhesive area of the flap, measuring approximately 4cm x 1cm in size. This cutting should include both the flap and envelope layers.

1.15.1.7 Stamps will be removed according to 1.15.1.6 when necessary.

- Collect a sample from the adhesive area of both surfaces using 1 swab.
- If unable to separate the stamp from the envelope/postcard, collect the stamp by cutting through the envelope/postcard layer. Don't send to DNA initially but retain.

1.15.1.8 Record the lot # of the dH2O used to collect the sample(s) and also the dH2O used for steaming, when necessary, on the appropriate QRW(s).

1.15.2 Appendix B: Smear Coverslip Removal

1.15.2.1. Photograph the slide as received.

1.15.2.2. Conduct a microscopical examination of the smear for cellular material. It is not necessary to search the entire smear.

- Record the result and microscope(s) used on the appropriate quality record worksheet.
- If an intact spermatozoon is identified, a second Forensic Biology (FB) analyst will confirm this identification, when necessary, and initial the appropriate quality record worksheet.

1.15.2.3 For smear(s) stained with Sperm Hy-Liter, use acetone to remove the nail polish from the cover slip by placing acetone on a swab and rubbing off the nail polish.

1.15.2.4 Place the slide in the freezer for 5 to 15 minutes.

1.15.2.5 Remove the slide and allow to thaw, preferably at 37°C.

1.15.2.6 While wearing eye protection, insert a clean blade under one (1) edge of the

cover slip and gently pry it off the slide. Use caution since the coverslip may break into pieces when removing.

1.15.2.7 If needed, repeat the freeze-thaw cycle to aid in the removal of the cover slip.

1.15.2.8 Once the cover slip is removed, use 1-2 swabs (plastic handles) moistened with dH2O to collect the smear off of the slide. Additional swabs may be used to collect any remaining smear.

1.15.2.9 If unable to swab the smear off the slide, the smear can be removed by scraping it from the slide. Use a clean blade and collect the scrapings with 1-2 swabs moistened with dH2O.

1.15.2.10 Photograph the slide after the smear has been collected.

1.15.3 Appendix C: Evidence with a Latent Print Request

1.15.3.1 Evidence Previously Examined by the Latent Print Unit

- If an area is designated/identified by LP, examiners will use 1 swab to collect the sample, if applicable.
- If more than one area is designated/identified, it is at the examiner's discretion, on a case-by-case basis, to collect each area separately with 1 swab or multiple areas simultaneously using 1-2 swabs, if applicable.
- Collection may or may not be applicable depending on identification(s) made by LP.
- Each case will be evaluated to determine which of these samples, if necessary, should be forwarded for DNA analysis.

1.15.3.2 Evidence with BLS and a Latent Print Request

1.15.3.2.1 If there is information from the Submitting Agency of BLS on an item, then the item will go to FB first.

- If ridge-like-detail in BLS is observed by FB, then LP will be contacted to determine if serological testing may be conducted prior to LP processing.
    - Once determined, it will be documented on the appropriate FB QRW(s), and initialed/dated by the LP examiner consulted with.
    - It should be noted that if a BLS will be tested and collected prior to LP processing, then the FB examiner should test and collect the BLS from the heaviest area to avoid interfering with any latent prints that may be present.
- If forwarded to LP first and a blood enhancement reagent is used, then only KM testing will be conducted upon return to FB.

1.15.3.2.2 If there is no information from the Submitting Agency of BLS on an

item, then the item will go to LP first.

- If BLS is observed on the item by LP, then FB will be contacted to determine if it should be forwarded to FB prior to LP processing.
- Once determined, it will be documented on the appropriate LP QRW(s), and initialed/dated by the FB examiner consulted with.

1.15.3.3 If a Submitting Agency has used Amido Black on the evidence being submitted, then only the KM testing will be conducted by FB.

1.15.3.4. If a Submitting Agency has used any reagent other than Amido Black on the evidence being submitted, the Deputy Director, Assistant Director and/or designee will be notified immediately.

1.15.4 Appendix D: Evidence with a Controlled Substance (CS) Request

1.15.4.1 General

- This Appendix is a guideline for cases with a Controlled Substance request or if a potential controlled substance is present in an amount greater than a residue.
- When examining evidence with a controlled substance request and a potential controlled substance is known to be present in a quantity greater than a residue:
  - A second examiner must witness the package being opened, verify the contents and date and initial the appropriate QRW(s).
  - The contents must again be verified by a second examiner when it is re-packaged and sealed. The second examiner must initial the seal and again date and initial the appropriate QRW(s).
  - If a potential controlled substance of any quantity is unexpectedly observed during the examination of any evidence, at any time, the CS Unit must be notified immediately

1.15.4.2 Workflow

- Evidence will be in CS examiner's custody.
- CS will bring evidence to Forensic Biology (FB) lab space.
- Both FB and CS examiners will maintain their own QRW(s) and will work together on necessary photo-documentation.
- CS examiner will open the package and count bundles with FB. CS and FB will serve as witnesses to each other.
- CS examiner will determine gross weight in disinfected container.
- CS examiner will then transfer the evidence to the FB examiner.
- FB examiner will create LIMS sub-items/containerize any additional evidence, if present/needs testing (see below examples).

- FB examiner will continue with examination:
  - Each group of bundles to be swabbed will be further sub-itemized regardless of whether some or all of the bundles will be swabbed (see below examples).
  - If glassine bags with different stamps/colors are present then sub-itemize separately based on similar appearance. If loose glassine bags are present and will be swabbed, then sub-itemize this group separately.
  - Any remaining bundles or loose glassine bags not swabbed will not be separately sub-itemized.
  - In general, swabbings may consist of groups of ~3 bundles (i.e. 1 swab per 1-2 bundles).
  - For items containing numerous bundles (i.e. more than 10), 10% of the total or 10 bundles (whichever yields the lower number of samples) will be swabbed. When applicable, apply to each of the similar stamp/color/loose glassine bag sub-items.
  - Upon completion of sample collection, groups of swabbed bundles will be placed in separate, appropriately labeled, coin envelopes.
  - Rubber bands will be left intact by FB.
- FB examiner will repackage the evidence.
  - If only bundles are counted at the start, then CS must re-witness the closing.
  - If exact glassine bag count was taken, then CS or other examiners can witness the closing.
- FB examiner will seal the package.
- Both FB examiner and witness will initial and date the seal.
- The evidence will be transferred back to CS storage.
- It is acceptable for CS to remove the rubber bands and weigh as one, post FB collection.

1.15.4.2.1 Examples of sub-itemization

- Example #1 (submission #1 contains PB with (50) bundles; the PB is swabbed after the bundles)

001-001: Plastic Bag containing item #001-001-01
001-001-01: (50) bundles of glassine bags
001-001-01-01: (3) bundles of glassine bags
001-001-01-01-01: Swabbing of (3) bundles of glassine bags
001-001-01-02: (2) bundles of glassine bags
001-001-01-02-01: Swabbing of (2) bundles of glassine bags
001-001-02: Swabbing - plastic bag containing item 001-001-01

- Example #2 (submission #1 contains PB with (50) bundles; the PB is swabbed

before the bundles)

001-001: Plastic Bag containing item #001-001-02
001-001-01: Swabbing - plastic bag containing item 001-001-02
001-001-02: (50) bundles of glassine bags
001-001-02-01: (3) bundles of glassine bags
001-001-02-01-01: Swabbing of (3) bundles of glassine bags
001-001-02-02: (2) bundles of glassine bags
001-001-02-02-01: Swabbing of (2) bundles of glassine bags

- Example #3 (submission #1 contains PB with white substance):
001-001: Plastic Bag containing white substance
001-001-01: Swabbing - plastic bag containing white substance

1.15.5 Appendix E: Gun Shot Residue

1.15.5.1 If there is a Gun Shot Residue (GSR) request, the Chemistry Unit may be notified prior to the FB examination and examination efforts may be coordinated.

1.15.5.2 It will be the responsibility of the Chemistry Unit to collect the appropriate samples. Such sample collection will be conducted by appropriately-trained analysts, according to the needs of the Chemistry Unit, and according to relevant procedures within that unit.

1.15.5.3 The sample collection of evidence by the Chemistry Unit (or other unit, as appropriate) may occur at the same time as the Forensic Biology examination. If the evidence is being simultaneously examined in the FB Unit:

- The examiner from the Chemistry Unit will temporarily transfer the evidence into their custody in LIMS while in the presence of the FB examiner.
- The chemistry analyst will collect and sub-itemize the sample(s) and then transfer the evidence back into the custody of the FB examiner

1.15.6 Appendix F: Firearm Photo-documentation

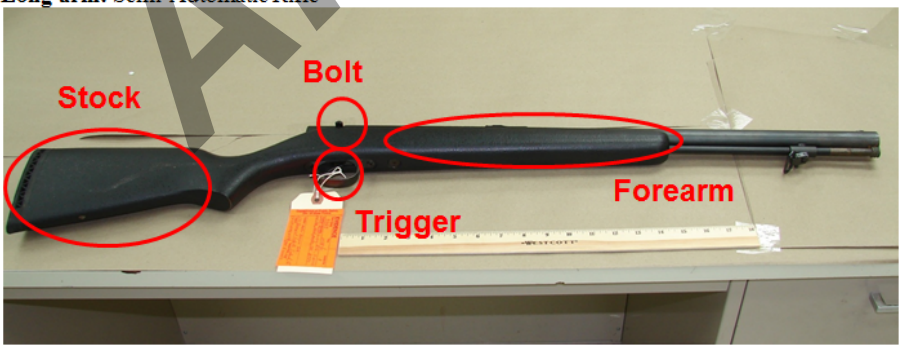
1.15.6.1 Firearm photographed from various angles:

1.15.6.2 Examples of various firearms with areas of typical sample collection noted:

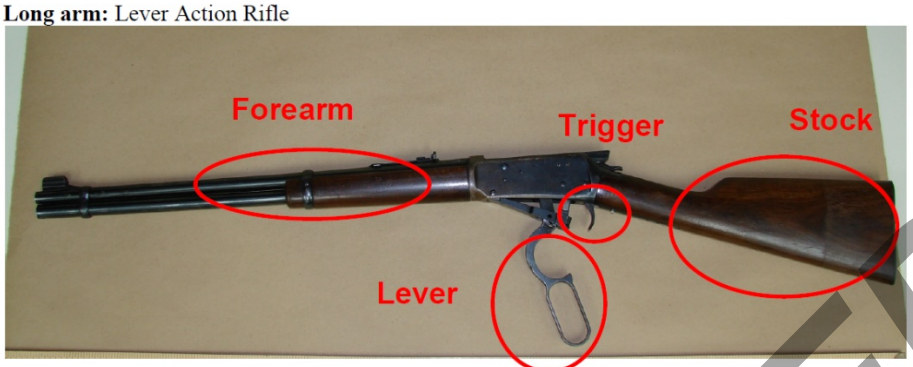
Handgun: Revolver

Handgun: Semi-Automatic Pistol

Long arm: Semi-Automatic Rifle

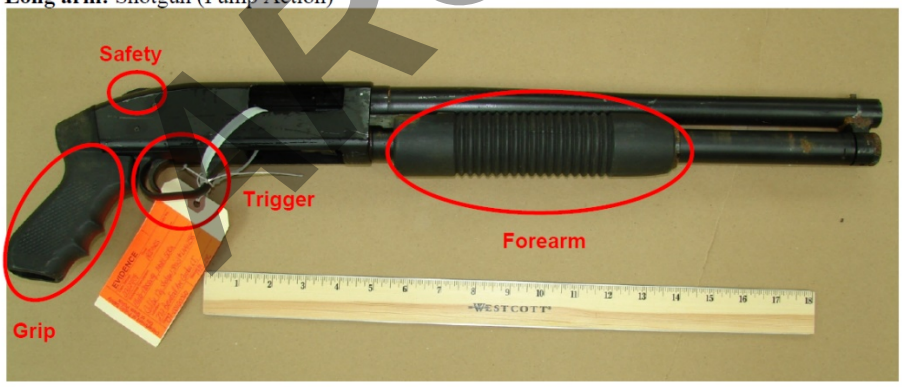


Long arm: Lever Action Rifle



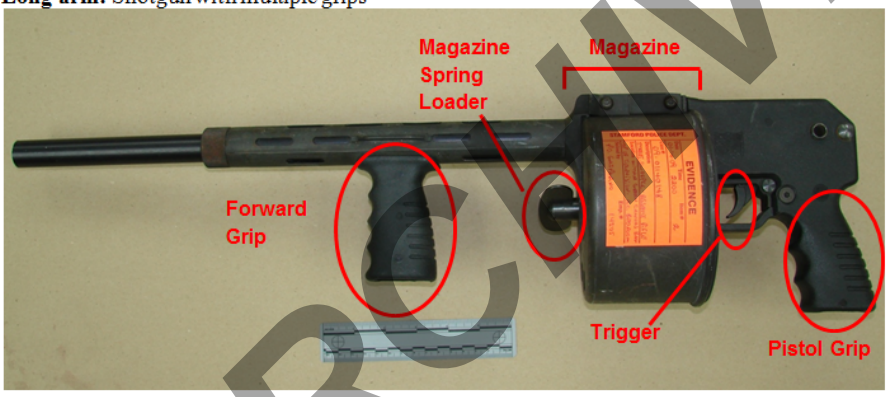
Long arm: Semi-Automatic Rifle

Long arm: Shotgun (Pump Action)

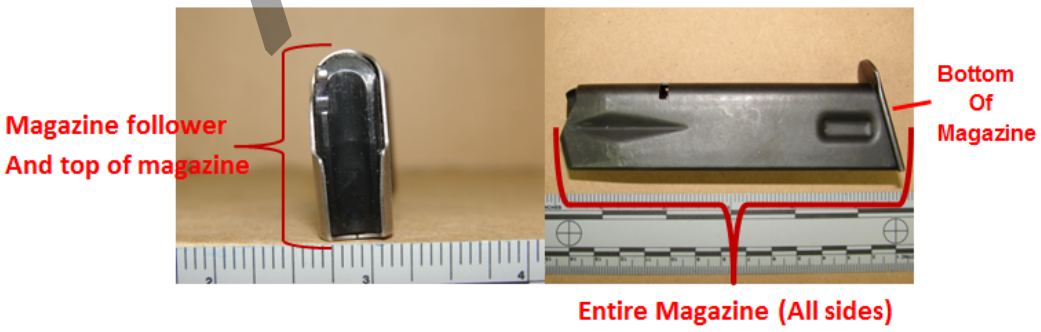


Long arm: Shotgun

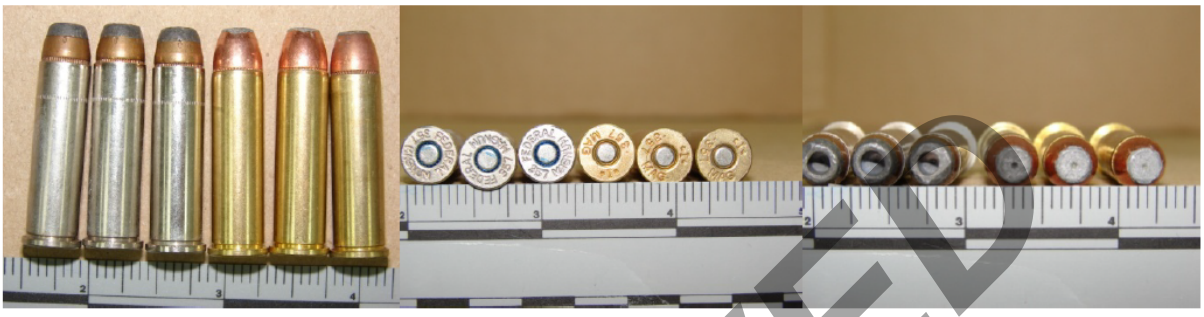
Long arm: Shotgun with multiple grips



1.15.6.3 Examples of a magazine with areas of typical sample collection noted:



1.15.6.4 Cartridges photographed from various angles:



1.15.6.5 Examples of bullets/projectiles and cartridge cases/casings:

Bullets/projectiles

cartridge cases/casings

1.16 REFERENCES

1.16.1 GL-2 (Safety Manual)
1.16.2 GL-4 (LIMS)
1.16.3 GL-5 (Ethics)
1.16.4 GL-13 (General Evidence Handling)
1.16.5 GL-16 (Proficiency Testing)
1.16.6 FLIN SOP-07 (SEM sample collection on clothing for GSR analysis)