LPU – 6

Processing Guidelines

Crime Laboratory – Latent Fingerprint Unit	
Standard Operating Procedure Manual	
SOP # 6-1	Subject: Sequence of Submission
Approved: David C. Schultz	Matthew C. Mathis

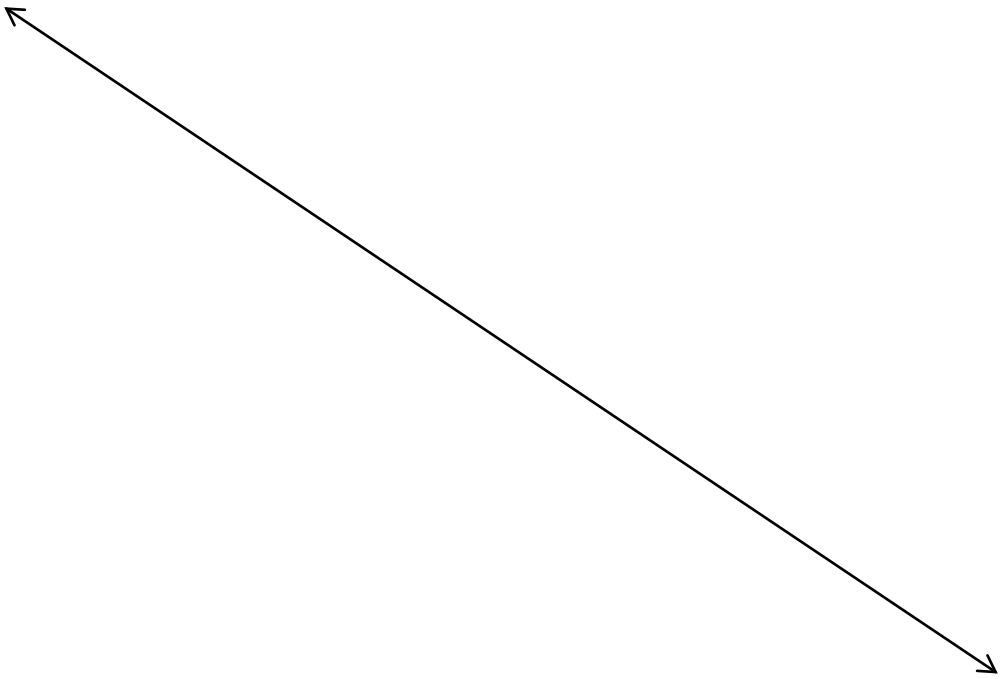
Sequence of Submission

Latent Print processing techniques can be detrimental or destructive to other types of physical evidence. Evidence shall be processed in sequence so as to preserve any biological or other trace evidence examinations that may be requested, and to provide for the collection of the most fragile and sensitive evidence first.

1. Evidence submitted to the Latent Print Unit prior to other lab sections will be evaluated on a case by case basis to determine if any preceding examination will be needed or has been requested.

2. Evidence received by the Latent Print Unit requiring processing by other lab sections shall be forwarded to that section before any latent print processing is applied if there is the potential to destroy evidence unless it is not clearly requested on the lab request by the submitting officer/detective.

3. Reference LPU 4-3 for recommended processing sequence.



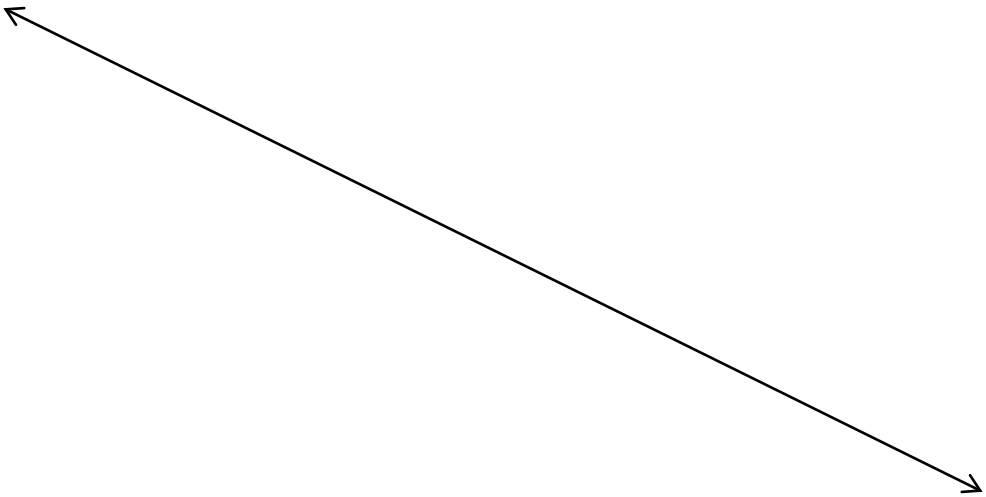
Crime Laboratory – Latent Fingerprint Unit	
Standard Operating Procedure Manual	
SOP # 6-2	Subject: Sequential Processing Techniques
Approved: David C. Schultz	Matthew C. Mathis

Sequential Processing Techniques

1. Adherence to correct processing techniques increases the probability of developing the best quality latent prints. Adherence to the listed sequences contained in this SOP and the FBI Latent Print Processing Guide and the PSDB Manual of Fingerprint Development Techniques ensures the best opportunity to develop all latent prints on an object and minimizes the chance of destroying latent prints. Surfaces on which latent prints are deposited can be divided into two basic categories, porous and non-porous. Listed are the suggested sequential processes for porous, nonporous, semi porous, and some unique and/or difficult surfaces. Depending on the circumstances, all of the suggested processes will not always be performed. This is left to the discretion of the examiner, abilities of the laboratory, availability of equipment and availability of chemical components.

2. Non-destructive techniques shall be utilized prior to any destructive techniques.

3. The FBI Processing Guide for the Development of Latent Prints, revised 2000 edition, and the PSDB Manual of Fingerprint Development Techniques, 2nd edition 1998, shall be adopted by this Unit. These manuals shall be referred to for all processes. Processes contained in these manuals are to be considered as validated.



Crime Laboratory – Latent Fingerprint Unit	
Standard Operating Procedure Manual	
SOP # 6-3	Subject: Porous Surfaces
Approved: David C. Schultz	Matthew C. Mathis

Porous Surfaces

The following is the recommended sequence for application of processing techniques to porous surfaces. This is a general guide and may be deviated from depending on surface conditions and available supplies and equipment. These are methods currently in use by the CMPD Crime Lab.

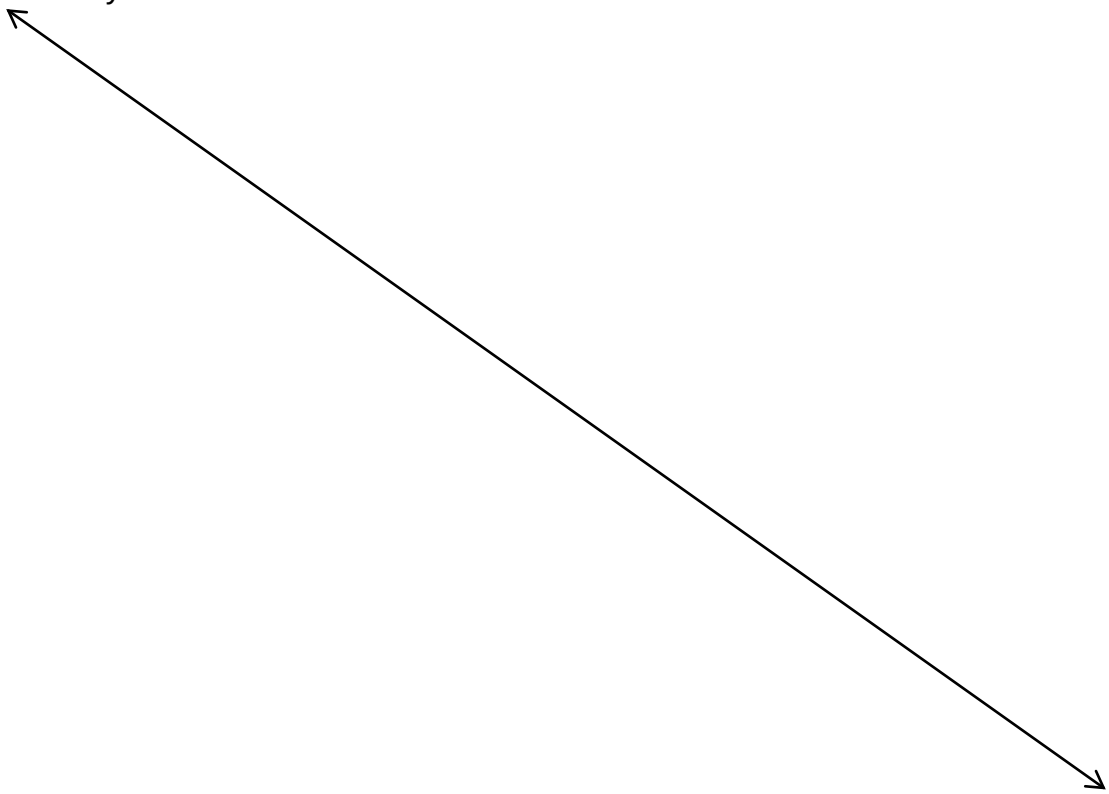
1. Visual, direct and indirect white light

2. ALS, Inherent fluorescence

4. DFO (1, 8-Diazafluoren-9-one)

5. ALS

6. Ninhydrin



Crime Laboratory – Latent Fingerprint Unit	
Standard Operating Procedure Manual	
SOP # 6-4	Subject: Non-Porous Surfaces
Approved: David C. Schultz	Matthew C. Mathis

Non Porous Surfaces

The following is the recommended sequence for application of processing techniques to non-porous surfaces. This is a general guide and may be deviated from depending on surface conditions and available supplies and equipment. These are methods currently in use by the CMPD Crime Lab.

1. Visual, direct and indirect white light

2. ALS - Inherent fluorescence

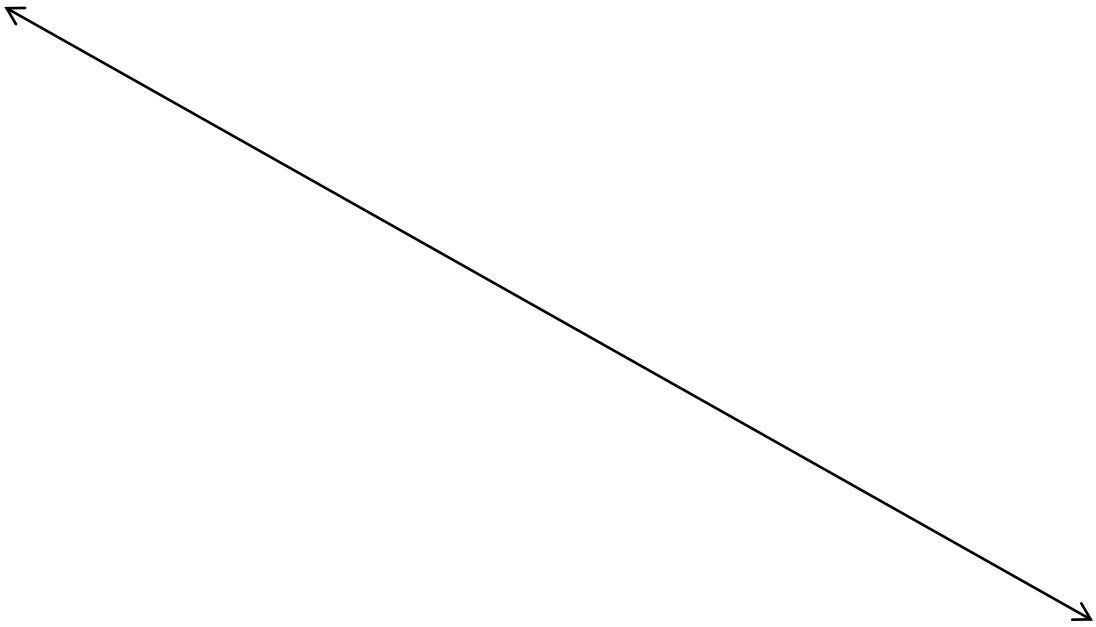
3. Cyanoacrylate fuming

4. ALS

5. Cyanoacrylate dye stain or powder

6. ALS

7. Powder



Crime Laboratory – Latent Fingerprint Unit	
Standard Operating Procedure Manual	
SOP # 6-5	Subject: Blood/Bio Contaminated Surfaces
Approved: David C. Schultz	Matthew C. Mathis

Blood/Bio Contaminated Surfaces

The following is the recommended sequence for application of processing techniques to Blood/Bio contaminated surfaces. This is a general guide and may be deviated from depending on surface conditions and available supplies and equipment. These are methods currently in use by the CMPD Crime Lab.

Bloodstained Specimens—Porous

1. Visual
2. Inherent fluorescence by ALS
3. DFO (1, 8-Diazafluoren-9-one)
4. ALS
5. Ninhydrin
6. Amido black, Diaminobenzidine (DAB)
7. Physical developer

Bloodstained Specimens—Nonporous

1. Visual
2. Inherent fluorescence by ALS
3. Amido Black, Diaminobenzidine (DAB); if not available, use Leucocrystal violet
4. Cyanoacrylate fuming
5. ALS
6. Cyanoacrylate dye
7. ALS
8. Powder

Crime Laboratory – Latent Fingerprint Unit	
Standard Operating Procedure Manual	
SOP # 6-6	Subject: Cyanoacrylate Fuming Chambers
Approved: David C. Schultz	Matthew C. Mathis

Cyanoacrylate Fuming Chambers

Cyanoacrylate fuming chambers are an effective method of developing latent prints on non-porous surfaces. When vaporized, cyanoacrylate fumes bond to the latent print residue on the item and polymerize the latent, preserving it for further visualization techniques. For operational reference the manufacturer's service and operations manuals shall be utilized. The CMPD Latent Print Unit operates the following fuming chambers.

Payton WS-1800-40-A CY-AT Vac.
Payton Cyvac M
Misonix CA 6000

1. Cyanoacrylate fuming chambers shall not be used for any other processes than what they were intended for.

2. Do not wear contact lenses when cyanoacrylate fuming.

3. Never under any circumstances fume any evidence that is under pressure in a vacuum chamber. Example, soft drinks, aerosol cans, etc. without first emptying their contents.

4. When fuming evidence in any of the chambers a control standard shall be placed in the chamber along with the evidence so development may be closely monitored.

5. Water may be introduced into any vacuum chamber. Water is also acceptable for ambient pressure fuming chambers to add humidity to aid development.

6. All units shall be maintained in a clean and serviced manner. Background development of the chamber surfaces shall be regularly cleaned as needed.

7. Only trained technicians/analysts shall operate the chambers.

Crime Laboratory – Latent Fingerprint Unit	
Standard Operating Procedure Manual	
SOP# 6-7	ALS - Crime Scope
Approved: David C. Schultz	Matthew C. Mathis

ALS Crime Scope

The forensic light source is a specialty tool that is utilized for the visualization of trace and latent fingerprint evidence. The system filters light to a specific wavelength. The following procedures shall be followed for proper use of the equipment and safety of the operators.

1. It shall be the responsibility of all analysts assigned to the Latent Print Unit to be completely familiar with the operation and maintenance instruction manual for the SPEX mini crime scope.

2. The unit shall only be operated by authorized latent print personnel.

3. All operators shall verify fan operation immediately after powering up unit.

4. Do not re-start the unit while the bulb is still hot.

5. All operators shall wear protective goggles while operating the system.

6. The light guide shall be pointed in a safe direction at all times when in use and never directed at an individual.

7. Direct viewing is dangerous; the light shall never be directed at the eyes.

8. The unit shall not be operated without filter wheels attached to the light guide due to extreme heat and fire hazard.

9. The light wand shall be extended only to the extent of its natural curve.

10. The unit shall be shut down properly by allowing the fan unit to cool the bulb prior to power disconnect.

11. MC1049 shall be dedicated to imaging; MC1396 shall be dedicated to visualization. Any deviation shall be documented in the case notes.

Crime Laboratory – Latent Fingerprint Unit	
Standard Operating Procedure Manual	
SOP # 6-8	Subject: Chemical Stock and Working Solutions
Approved: David C. Schultz	Matthew C. Mathis

Chemical and Stock Working Solutions

The majority of latent print development processes are chemical processing techniques. This policy shall set the minimum standards that this unit shall follow in regards to the safe handling, preparing and storage of stock and working solutions.

1. When mixing chemicals personal protective equipment shall be worn, including gloves, lab coats and eye protection. Ventilation will be active and the fire extinguisher shall be accessible.

2. Control standards shall be run on all new working solutions prior to use.

3. Chemicals will only be mixed according to the FBI Fingerprint Development Manual.

4. Only enough working solution that can be reasonably used within its shelf life shall be mixed.

5. All stock solutions shall be marked with the date of receipt and opening, and the initials of the analyst opening the solution.

6. All working solutions shall be marked with the date of preparation, identity of working solution, date of expiration, initials of preparer and date of validation/control.

7. Stock and working solutions shall be stored in the provided chemical storage cabinet.

8. It shall be the responsibility of all analysts assigned to the Latent Print Unit to be familiar with the chemical Material Safety Data Sheets (MSDS) for the normally used chemicals.

9. There will be no eating, drinking, smoking, chewing gum or tobacco in the vicinity of chemicals or in the development lab.

10. Inventory will be assessed and re-supplied as needed.

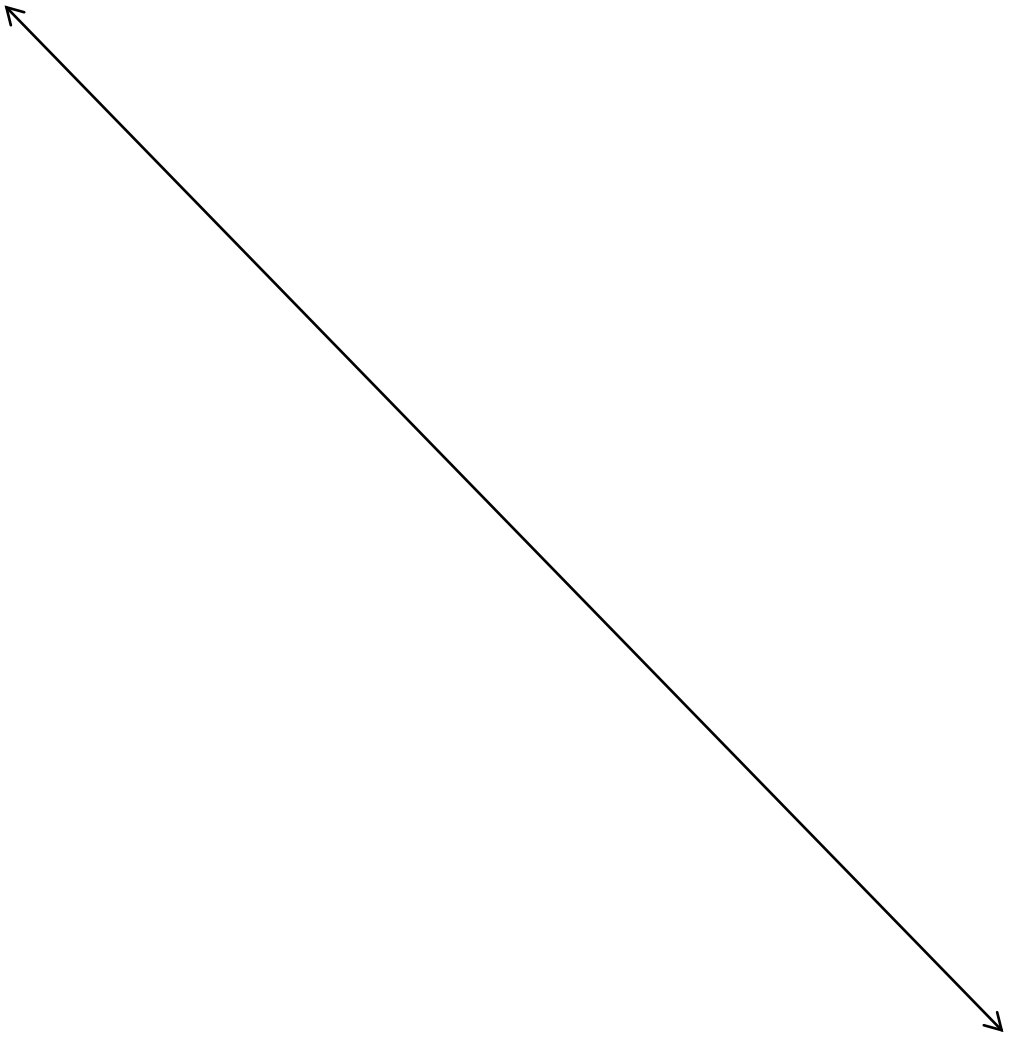
Crime Laboratory – Latent Fingerprint Unit	
Standard Operating Procedure Manual	
SOP # 6-9	Subject: Processing Log
Approved: David C. Schultz	Matthew C. Mathis

Processing Log

1. A processing log shall be maintained in the Latent Print Processing lab.

2. All cases processed shall be entered into the processing log when processed.

3. At a minimum the entries shall include case number, item number, item description, development results and results of test standard.



Crime Laboratory – Latent Fingerprint Unit	
Standard Operating Procedure Manual	
SOP # 6-10	Subject: Calibration Weights and Equipment Inspection
Approved: David C. Schultz	Matthew C. Mathis

Calibration

1. Calibration of balance (OHAUS Galaxy 400) serial #6850 weight reading must read 1.00 +/- .02 grams at beginning of calibration activity. Calibration of the balance will be performed once a year by an outside agency.

2. Verification of balance (OHAUS Galaxy 400) serial #6850 will be performed each month with the Troemner ASTM SS 1g traceable weight and noted in the calibration log.

    a. Weight shall be placed on the balance.
    b. Reading shall be observed and recorded.
    c. If reading does not fall within 1.00 +/- .02 grams balance shall be taken out of service and the calibration vendor notified for repair.

3. Transportation and Handling of Weights:

    a. All weights will be handled with gloves, tweezers or tongs.
    b. All weights will be transported in their original box/container.
    c. All weights will be stored in their original box/container.

4. A complete list of all latent fingerprint unit equipment is maintained on the CMPD R drive Crime Lab sensitive documents folder. This spreadsheet shall be updated as equipment is placed into or removed from service by the Section Administrator.

5. Unless otherwise specified within this SOP, all Latent Print equipment listed on the laboratory equipment list shall be inspected monthly and documented within the Equipment Maintenance Log located within the Latent Fingerprint Unit. This inspection shall be completed by the Section Administrator or his designee on a monthly basis. Any irregularities, deficiencies or maintenance issues shall be documented and addressed as soon as possible. If the irregularities, deficiencies or maintenance issues could potentially effect the test results of any evidence the piece of equipment shall be removed from service until repaired and re-inspected.

6. Any irregularities, deficiencies or maintenance issues discovered outside of routine inspections shall be immediately brought to the attention of the Section Administrator.

Crime Laboratory – Latent Fingerprint Unit	
Standard Operating Procedure Manual	
SOP # 6-11	Subject: Process Validation - Testing
Approved: David C. Schultz	Matthew C. Mathis

Validation Testing

1. All processes used for development of latent fingerprints shall be validated according to the CMPD Crime Laboratory QM 5.4 prior to being used on live casework.

2. Processes outlined in the FBI Guide to Latent Print Processing and the PSDB Manual of Fingerprint Development Techniques shall be considered as validated and available for immediate application.

3. All new working solutions shall be tested for effectiveness on a test standard known to have an intentionally placed latent print on its surface. The development shall be monitored to validate the new solution's effectiveness.

4. All fuming chambers shall have a test control strip placed in the chamber with the evidence being processed. The test strip shall contain an intentionally placed latent print on its surface. The development shall be monitored to validate the effectiveness of the process. The test strip shall be changed for each application. All other processes shall be tested as outlined in Sub Section 8 of this SOP before placed into production.

5. For all other chemical processes the test standard shall be consistent with the normal application of the technique to include the following:

    A. DFO - Ninhydrin shall be applied to a porous test standard such as paper or cardboard.

    B. Dye stains shall be applied to non-porous test standards, such as cans or bottles, which have been previously exposed to cyanoacrylate fuming process and where a known test print is present.

    C. SPR shall be applied to a wet non-porous test standard surface such as cans or bottles.

    D. Powders shall be applied to a dry non-porous test standard surface such as a can or bottle.

    E. Sticky side powder/crystal violet and tape glow shall be applied to glue side tape standards.

    F. Blood processing techniques shall be applied to either porous and/or non-porous surfaces utilizing known blood standards when practical.

Crime Laboratory – Latent Fingerprint Unit	
Standard Operating Procedure Manual	
SOP # 6-12	Subject: Crime Scene Protocol
Approved: David C. Schultz	Matthew C. Mathis

Crime Scene Protocol

At the request of the Laboratory Director or his designee, the Latent Fingerprint Analyst may be required to respond to crime scenes as a technical expert. In the event that an analyst is dispatched to a crime scene the following protocol shall be followed.

1. The analyst shall not enter any scene that has not been cleared of suspects and rendered safe.

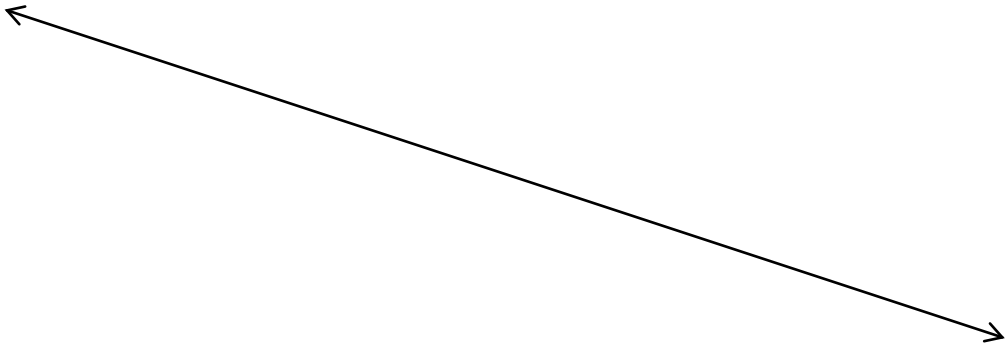
2. The analyst shall confer with the lead detective and validate that the analyst has a legal basis to enter the scene, e.g. search warrant and/or consent, exigent circumstances.

3. Prior to entering any crime scene the analyst shall assure that they are properly suited so as not to contaminate the scene, e.g. gloves, booties, mask, respirators, disposable suits and eye protection in the event of biohazards.

4. The analyst shall assess the scene and determine what items of evidence shall be field processed or transported to the laboratory.

5. The analyst shall work closely with the CSS technician and/or the lead detective.

6. The final determination on all latent print technical, evidentiary, or processing issues shall rest with the analyst only.



Crime Laboratory – Latent Fingerprint Unit	
Standard Operating Procedure Manual	
SOP # 6-13	Subject: Purchasing, Critical Supplies, Service
Approved: David C. Schultz	Matthew C. Mathis

Critical Supplies and Services

1. Supplies and materials that may affect quality of tests and calibrations must be checked and cleared before use.

2. All chemicals shall be of a reagent grade.

3. All fingerprint supplies shall be purchased from a reputable vendor who specializes in forensic equipment and supplies.

4. Critical supplies that effect quality of tests include the following:
    a. Fingerprint powder
    b. Lift cards
    c. Lift tape
    d. Brushes
    e. Bulk fluorescing agents
    f. Cyanoacrylate
    g. Chemicals
    h. Pre-assembled specialty processing kits

5. The following vendors meet the quality standards for goods and services as required:
    a. Sirchie Fingerprint Laboratory
    b. Lightning Powder
    c. Foster Freeman
    d. SPEX Forensics
    e. Lynn Peavey Co.
    f. Armor Forensics
    g. Evident Crime Scene Products
    h. Reagents

6. Inventory shall be evaluated monthly and any goods or services required shall be listed by the Section Administrator for purchase.

7. Goods and services shall be purchased according to departmental policy and procedure by the Section Administrator, Laboratory Director or designee.

8. Materials and supplies that do not meet the minimum quality standards will not be used in case work.

Crime Laboratory – Latent Fingerprint Unit	
Standard Operating Procedure Manual	
SOP # 6-14	Subject: Peer Review – Processing & Development
Approved: David C. Schultz	Matthew C. Mathis

Peer Review

Peer review of processing and development cases is performed through a separate and independent visual examination by another qualified analyst after the primary analyst has examined the processed evidence for friction ridge detail.

1. Peer review shall be performed by any qualified analyst assigned to the latent fingerprint unit.
2. 100% of cases that are determined to have no latent ridge detail of value or items that are not moved forward to the photography phase shall be peer reviewed.
3. The review shall consist of an independent visual examination performed by another qualified analyst to verify that no latent ridge detail of value is present on the item of evidence.
4. The reviewing analyst shall use direct examination under white light and a subsequent examination under ALS.
5. In the event of a conflict in conclusions between the primary analyst and the reviewing analyst the item shall be moved forward to the photography phase by the primary analyst and the Section Administrator notified.
6. The reporting analyst shall acknowledge the peer review in the notes field in the processing matrix of PLIMS, indicating date and analyst that performed peer review.
7. This requirement shall not eliminate or take the place of the case record technical review as outlined in LPU-5.

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