Deviation Request Form (DRF)

Directions: The Initiator will complete Sections A through C. Additional continuation pages can be included if necessary.

Initiator	Adrianne Reeve	**Date**	7/16/2021

A. Requested deviation applies to (Technical Procedure – include specific section):

Friction Ridge Analysis and Comparison- 3.0, 6.1.2.3.4, 8.4.4, 9.8, 10.6, added section after 11.0

B. Requested deviation:

See attached document
Additionally, for section 8.4.4- remove "The forensic scientist acting as the verifier shall document the verification on the individual item(s) of evidence, the known exemplars, as well as by completing the verification review."
This is to extend the two previous DRFs (dated 2/13/2020 and 5/18/2020).

C. Necessity for the deviation:

-Marking on the evidence is not required for all verifications; Add value determinations to verification review.
- Changed definitions to be consistent in wording for conclusions.
-No longer a full case review requirement on homicide cases.
-All reverse SAFIS Hit and SAFIS Migration Hits require memo.
-Added Resubmission and Re-Examination definitions and guidelines.

D. Technical review and Authorization (to be completed by the Quality Manager and/or Technical Leader)
Comments(to include merits and impacts):

For clarification purposes the requirement for marking the identification verification(s) on the lifts/ photographs and known standards still applies.

Approved	☑	Yes	☐	No	Duration	One year
Signature	Adrianne Reeve Digitally signed by Adrianne Reeve Date: 2021.07.16 11:13:00 -04'00'				Date	7/16/2021

E. Quality Assurance Authorization (to be completed by the Quality Manager, Forensic Scientist Manager or designee)

Acceptable within general QA guidelines and good laboratory practice?	☑	Yes	☐	No
Significant negative impact to Crime Laboratory Quality System?	☐	Yes	☑	No

Restrictions/limitations:

☑	Authorized	☐	Rejected	Signature	Timothy G. Suggs Digitally signed by Timothy G. Suggs DN: cn=Timothy G. Suggs, o=North Carolina State Crime Laboratory, ou=Quality Manager, email=tsuggs@ncdoj.gov, c=US Date: 2021.07.16 12:36:59 -04'00'	Date	07/16/2021

B. Requested Deviations:

3.0 -Change “identification/individualization” to "identification" and replace the definition to:

" A determination by a forensic scientist that there are sufficient features in agreement to conclude that two areas of friction ridge impressions originated from the same source. An identification is reached when the friction ridge impressions have corresponding ridge detail and the forensic scientist would not expect to see the same arrangement of details repeated in an impression that came from a different source."

-Replace the definition of Exclusion to:

“A determination by a forensic scientist that there is sufficient data and disagreement present within a friction ridge impression to conclude that it was not made by the same source as a set of known exemplars.”

-Replace the definition of Inconclusive to:

“A determination by a forensic scientist that an identification or exclusion cannot be determined based upon a lack of sufficient data/detail present within a set of known exemplars.

Add these definitions:

> **Latent Resubmission:** A previously analyzed latent lift or photograph that contains one or more prints of value for comparison purposes that is resubmitted in order for a comparison to be conducted with a new set of known impressions not previously submitted or available, or a search of the SAFIS/FBI databases based upon SAFIS search policy.
>
> **Latent Re-Examination:** A previously analyzed lift or photograph that is resubmitted in order for a new analysis of the lift or photograph.

Remove 6.1.2.3.4

8.4.4 Change the second sentence to "All friction ridge impression value, identifications, exclusions, and inconclusive determinations shall be verified. Take out the third sentence that states "Additionally, in cases involving a death, all latent print determinations of value shall also be verified." Add the sentence "For cases where physical evidence was processed and no sub-items were created, the value determination verification is based on the review of the evidence after the last applicable processing step.

9.8 change to “**Reverse SAFIS Hits and SAFIS Migration Hits”**- Reverse SAFIS Hits and SAFIS Migration Hits shall be reported using the Latent Evidence Reverse SAFIS Search memo.

Remove: 9.8.1 through 9.8.5

Change 9.8.6 to 9.8.1

Remove section 10.6

Change 12.0 to "**Latent Resubmissions and Re-examinations"**

Add:

12.1 For all resubmissions the case record shall be assigned to the original working analyst if at all possible. If the original analyst is no longer available then the case may be assigned to the original reviewer or an analyst currently working in the laboratory where the case originated.

12.1.1 Approval of a cold case for resubmission is not an automatic approval for a re-examination. Unless otherwise noted, all cold-case re-submissions shall adhere to the prohibition of re-evaluation of "value" determinations.

12.1.2 Latent Resubmissions (cases originally worked once the value verification policy took effect): In the instance that a new analyst, including the original reviewer, is assigned the case then the new analyst shall not re-evaluate the "value" determinations of the original analyst (and reviewer). All latent prints that were previously determined to be "of value" shall be compared to any new known standards and/or entered and searched in the SAFIS/FBI databases when applicable.

12.1.3 Latent Resubmissions (cases that were originally worked prior to the value verification policy): All resubmissions that are assigned to an analyst that did not originally work the case shall initially be treated as a standard resubmission. In the instance where the original examiner's markings are no longer visible or there is a latent print whose initial non-value determination differs from what is readily observed by the working analyst, then the working analyst shall consult with the Latent Technical Leader to determine the most appropriate course of action based on the current laboratory policy and procedure for re-examinations.

12.2 Pursuant to NCSCL lab-wide **Procedure for Ensuring the Quality of Test Results (4.7.1)** all re-examinations shall require the approval of the laboratory director or a court order. Documentation of the approval shall be placed in the CROR. See the lab-wide policy for additional reporting and review requirements.

12.3 In a case with multiple submissions, where there is an identification effected as a result of a SAFIS Hit, (if that fingerprint card is not resubmitted) then that fingerprint card shall be pulled for comparison purposes in the subsequent submissions.

Change effected numbering after 12.0

Technical Procedure for Friction Ridge Analysis and Comparison

1.0 Purpose – This procedure shall be followed for the analysis, chemical and physical processing, comparison, and documentation of cases submitted for friction ridge examination.

2.0 Scope – This procedure applies to all friction ridge cases in Latent Evidence.

3.0 Definitions

- **Non-porous -** Any item of evidence, or part of an item of evidence, that does not absorb fingerprint residue.
- **Porous -** Any item of evidence, or part of an item of evidence, that may absorb fingerprint residue.
- **Semi Porous/Mixed -** Any item of evidence that exhibits the qualities of both porous and non-porous evidence.
- **ACE-V** – Friction ridge comparison methodology.
- **Of Value/Sufficient –** A friction ridge impression that contains sufficient qualitative and quantitative data to be utilized for comparison purposes.
- **Identification/Individualization –** The decision by an examiner that there are sufficient features in agreement to conclude that two areas of friction ridge impressions originated from the same source. Identification of an impression to one source is the decision that the likelihood the impression was made by another (different) source is so remote that it is considered a practical impossibility.
- **Exclusion –** A determination by a forensic scientist that there is sufficient data and disagreement present within a friction ridge impression to conclude that it was not made by the same source as a set of known exemplars.
- **Inconclusive –** An identification or exclusion cannot be determined based upon a lack of sufficient data/detail present within a set of known exemplars.
- **Verified/Verification –** The indication of agreement with an examiner's conclusion as a result of an independent application of the ACE methodology.

4.0 Equipment, Materials, and Reagents

4.1 Equipment and Materials

- Alternate Light Sources (ALS) (CrimeScope, Mini-CrimeScope, TracER Laser)
- Image Processing System
- Comparator, Magnifier, Dome
- Cyanoacrylate processing equipment
- Humidity aided development equipment
- Protective Clothing
- Gloves
- Forensic Advantage (FA)
- Scanner
- Photoshop (currently utilized version)
- SAFIS Latent Search Station
- Photographic equipment
- SAFIS/AFIT computer station

- SAFIS/AFIT printers

4.2 Reagents

4.2.1 Non-porous Processing Reagents

4.2.1.1 **Fingerprint Powder(s)** – Any of the commercially prepared fingerprint powders that are maintained within Latent Evidence (ex: black, bi-chromatic, magnetic, etc.).

4.2.1.2 **Cyanoacrylate Ester** – Any of the commercially prepared cyanoacrylate ester products that are maintained within Latent Evidence (ex: vials, HotShot, wand tips).

4.2.1.3 **Fluorescent Dyes** – Any of the approved fluorescent dyes currently utilized in Latent Evidence (ex: Rhodamine 6G, Ardrox, etc.).

4.2.2 Porous Processing Reagents

4.2.2.1 Any of the approved porous reagents currently utilized in Latent Evidence, to include:

- 1,2 Indanedione-Zinc
- Ninhydrin and Ninhydrin-HFE
- Zinc Chloride and Zinc Chloride-HFE
- DFO
- Physical Developer

4.2.3 Adhesive Processing

4.2.3.1 Any of the approved adhesive processing reagents currently utilized in Latent Evidence, to include:

- Crystal Violet
- Sticky-Side Powder
- TapeGlo

4.2.4 Blood Print Processing

4.2.4.1 Any of the approved blood print processing reagents currently utilized in Latent Evidence, to include:

- Amido Black
- Coomassie Blue
- Merbromin
- LCV

4.2.5 Miscellaneous Processing Reagents

4.2.5.1 In some instances, reagents that are reactive to a specific medium are required. These reagents include, but may not be limited to:

- Sudan Black (grease print processing)
- Small Particle Reagent (wet print processing)
- Acidified Hydrogen Peroxide (brass cartridge casings/live rounds)

5.0 Standards and Controls (Positive Controls/Test Prints)

5.1 Test prints, also called control samples or positive controls, shall be performed on all prepared reagents as well as during all chemical processing steps. The test print shall be prepared on a substrate similar to the actual item of evidence and shall be tested and verified at the time a specific reagent is made and contemporaneously with evidence that is to be processed utilizing that reagent. The results of the test print shall be recorded in the case record in the FA System. A positive result is defined as the presence/development of friction ridge detail within the test print.

6.0 Evidence Processing Procedure

6.1 Physical and Chemical Processing - Processing for the presence of latent prints is broken down into three general categories: non-porous, porous, mixed/semi-porous. Additionally the evidence received may contain adhesive surfaces and/or be contaminated by blood, body fluid(s), and/or other biohazardous material. Prior to beginning any processing technique, the forensic scientist shall note the category/categories of the evidence to be examined to determine the most appropriate course of action.

At any step during the course of the examination and/or processing of an item of evidence the forensic scientist shall evaluate the sufficiency of any friction ridge detail observed. If the forensic scientist deems it appropriate based on training and experience, the friction ridge detail may be documented photographically, via a scanned image, and/or lifting the ridge detail prior to proceeding to the next processing step.

Note: Forensic scientists shall wear gloves while handling all evidence that is to be physically or chemically processed for latent prints.

6.1.1 Non-porous Processing – Analytical Approach

6.1.1.1 Examine the item of evidence under ambient lighting conditions. Document any observations.

6.1.1.2 Examine the item of evidence utilizing an alternate light source, including all wavelength filters available on the chosen ALS. Document the ALS used and any observations.

6.1.1.3 Chemically process the item(s) of evidence. Document any observations.

6.1.1.3.1 The following is a list of the recommended and available processing procedures for non-porous items of evidence that are submitted for analysis.

Note: The forensic scientist has the authority to determine the most appropriate method by which to process a particular item based upon his or her training and experience.

- Cyanoacrylate Fuming
- Fingerprint Powder(s)
- Fluorescent Dye(s)
- Alternate Light Source (specific to fluorescent dye utilized)
- Blood Print Processing (if needed)
- Adhesive Surfaces Processing (if needed)
- Wet Item Processing (if needed)
- Grease Print Processing (if needed)
- Acidified Hydrogen Peroxide (brass cartridge casings/live rounds)

6.1.1.3.2 Based on the condition of the evidence at the time of submission, some processing steps may be omitted. If omitting the visual examination, inherent luminescence, powder processing, cyanoacrylate fuming, fluorescent dye stain, and/or post-dye alternate light source examination, the Forensic Scientist shall note in the FA worksheet a reason that the step was omitted.

6.1.1.3.3 When processing with a fluorescent development technique that requires the use of an ALS, document which ALS was used, the wavelength, and any observations. When processing items of evidence in all cases involving a death, the use of the TracER laser or additional alternate light sources may be used at the discretion of the forensic scientist. The alternate light source shall be documented.

6.1.2 Porous Processing – Analytical Approach

6.1.2.1 Examine the item of evidence under ambient lighting conditions. Document any observations.

6.1.2.2 Examine the item of evidence utilizing an alternate light source, including all wavelength filters available on the chosen ALS. Document the ALS used and any observations.

6.1.2.3 Chemically process the item(s) of evidence. Document any observations.

6.1.2.3.1 The following is a list of the recommended and available processing procedures for porous items of evidence that are submitted for analysis.

Note: The forensic scientist has the authority to determine the most appropriate method by which to process a particular item based upon his or her training and experience.

- 1,2-Indanedione-Zinc
- DFO
- Ninhydrin/Ninhydrin-HFE
- Zinc Chloride/Zinc Chloride-HFE
- Alternate Light Source (specific to the fluorescent reagent utilized)
- Blood Print Processing (if needed)
- Adhesive Processing (if needed)
- Grease Print Processing (if needed)
- Physical Developer/Modified Physical Developer (if needed)

Note: Several of the reagents utilized for porous processing may be enhanced by exposing the treated item of evidence to increased humidity levels. The forensic scientist may utilize a zip-sealed plastic bag, steam iron, microwave, or commercial humidity chamber for this purpose. See Latent Evidence Technical Procedures for the individual porous processing chemicals for additional information.

6.1.2.3.2 Based on the condition of the evidence at the time of submission, some processing steps may be omitted. If omitting the visual examination, inherent luminescence, and/or alternate light source examination, the forensic scientist shall note in the FA worksheet a reason that the step was omitted.

6.1.2.3.3 When processing with a fluorescent development technique that requires the use of an ALS, document which ALS was used, the wavelength, and any observations.

6.1.2.3.4 When processing porous items of evidence in cases involving a death, the use of physical developer is required, providing the item of evidence is conducive to the multi-step process. If physical developer is not utilized, the forensic scientist shall document the reason in FA.

6.1.3 Semi-porous/Mixed Processing – Analytical Approach

6.1.3.1 Examine the item of evidence under ambient lighting conditions. Document any observations.

6.1.3.2 Examine the item of evidence utilizing an alternate light source, including all wavelength filters available on the chosen ALS. Document the ALS used and any observations.

6.1.3.3 Chemically process the item(s) of evidence. Document any observations.

6.1.3.3.1 Semi-porous/Mixed items of evidence may be processed utilizing methods that are determined by the forensic scientist to be most appropriate for the surface. The method and order of processing may be determined based on the training and experience of each forensic scientist. See **6.1.1** and **6.1.2** for the steps for non-porous and porous processing.

6.1.4 Adhesive Processing – Analytical Approach

6.1.4.1 Adhesive surfaces are often found in conjunction with standard porous and/or non-porous surfaces. In the instances where adhesive surfaces are present, it is prudent to process the porous/non-porous surfaces first. Additionally, the use of adhesive processing reagents on the non-adhesive portion of tape may lead to further development of friction ridges.

6.1.4.2 Chemically process the adhesive surfaces utilizing Crystal Violet, Sticky-Side Powder, or TapeGlo. The Forensic Scientist has the authority to determine which processing technique to use. The method and order of processing may be determined based on the training and experience of each forensic scientist. Document any observations. See **6.1.1** and **6.1.2** for the steps for non-porous and porous processing.

6.1.5 Blood Print Processing - Analytical Approach

6.1.5.1 Surfaces contaminated with blood or other biohazardous materials are often found in conjunction with standard porous and/or non-porous surfaces. It is at the discretion of the forensic scientist, based on his or her training and experience, as to the order by which the item will be processed. See **6.1.1** and **6.1.2** for the steps for non-porous and porous processing.

6.1.5.2 Chemically process the item(s) of evidence utilizing Amido Black, Coomassie Blue, Merbromin, or LCV. Document any observations.

Note: It has been noted that Ninhydrin-HFE is also effective at developing friction ridge detail in blood or other biohazardous material on porous surfaces. Ninhydrin may be utilized in conjunction with other blood print processing methods.

6.1.6 Miscellaneous Processing - Analytical Approach

6.1.6.1 At times, items of evidence are submitted that have unique processing needs. Items that have been submerged in water and items that contain greasy friction ridge stains (ex: soda or greasy food residue stains) require special processing considerations. When it becomes apparent that either of these circumstances exists, it is at the discretion of the forensic scientist, based on his or her training and experience, as to the most prudent processing technique to be

utilized. See **6.1.1** and **6.1.2** for the steps for non-porous and porous processing.

6.1.6.2 Examine the item of evidence under ambient lighting conditions. Document any observations.

6.1.6.3 Examine the item of evidence utilizing an alternate light source, including all wavelength filters. Document the ALS used and any observations.

6.1.6.4 **Wet Items –** Chemically process the item(s) of evidence utilizing Small Particle Reagent.

6.1.6.4.1 When processing items that are submitted to the laboratory submerged in water, a visual examination, ALS examination, and the use of Small Particle Reagent shall be required. Additional processing steps are at the discretion of the forensic scientist, based on his or her training and experience.

6.1.6.5 **Sticky and/or Greasy Items –** Chemically process with Sudan Black.

6.1.6.5.1 In instances where Sudan Black is utilized, it is also prudent to process the item(s) of evidence utilizing non-porous and/or porous processing techniques. It is at the discretion of the forensic scientist, based on his or her training and experience, as to the order by which the item will be processed. See **6.1.1** and **6.1.2** for the steps for non-porous and porous processing.

7.0 Foundations for Comparison

7.1.1 All comparisons performed within the Latent Evidence discipline shall be independent with conclusions based on scientifically sound premises. The Laboratory recognizes the following concepts:

7.1.1.1 No two individuals have been found to have the same fingerprint.

7.1.1.2 The fingerprint does not change naturally from before birth until after death, barring scars or mutilation.

7.1.1.3 An identification is effected when sufficient unique identifying characteristics are present in both the known and questioned impressions without any unexplained differences.

7.1.1.4 There is no scientific requirement of a minimum number of identifying characteristics in order to effect a positive identification.

8.0 Friction Ridge Comparison Procedure – Analytical Approach

8.1 Friction ridge impression comparisons in Latent Evidence are conducted utilizing the Analysis, Comparison, Evaluation, and Verification (ACE-V) methodology. All ACE-V examinations involve the gathering and use of both qualitative and quantitative data present within a friction ridge impression in order to reach a conclusion. These examinations include comparisons of developed impressions captured photographically or via a scanner, impressions submitted on latent lifts, impressions submitted in photographs, impressions submitted via digital media (CDs, DVDs, and portable storage devices), SAFIS and reverse SAFIS hits, as well as CODIS verifications.

8.2 Forensic scientists in Latent Evidence have multiple tools available for conducting comparative examinations. Based on the training and experience of each individual forensic scientist an optical comparator, any of the various magnifying magnifiers/glasses available, and/or a comparison on a computer may be used.

8.3 All comparisons that fall into the criteria set forth in 8.1 shall be documented in the Latent Evidence ACE-V worksheet. The ACE-V worksheet shall be retained in the case record object repository (CROR).

8.4 ACE-V

8.4.1 **Analysis** includes the assessment of each individual friction ridge impression to determine its suitability/sufficiency for comparison. The assessment includes examination and documentation of the matrix (if known), substrate (if known), and the presence of level 1, level 2, and if present, level 3 detail. The forensic scientist may document any additional relevant information that is deemed pertinent to the comparison, to include, but not limited to: impression type (finger, palm, and impression), scars, creases, distortion, movement, pressure differentials, and background interference.

During the analysis phase the forensic scientist shall determine and document if the friction ridge impression is sufficient (of value) for comparison purposes. Any friction ridge impression that is determined to be insufficient for comparison (not of value) will end the ACE-V process for that particular impression.

The analysis phase is completed prior to entering the comparison phase.

8.4.2 **Comparison** of a friction ridge impression is a side-by-side, direct comparison of the impression with a known standard. Known standards may be submitted by a law enforcement agency and/or obtained via SAFIS/AFIT. See segment **9.0** below for instructions on how to obtain known exemplars via SAFIS/AFIT.

Forensic scientists shall conduct the comparison in order to determine if the quantitative and qualitative data observed in the friction ridge impression agrees with the quantitative and qualitative data present within a known standard. The forensic scientist examines the latent and the known exemplar simultaneously for the presence and agreement of unique identifying characteristics, in the same relative position, and containing the same spatial relationship to each other. Each friction ridge impression that is deemed "of value" shall be compared to all available known exemplars until the impression is either identified to one of the individuals compared, it is excluded as having been made by all available involved individuals, or a determination of inconclusive comparison is reached.

8.4.3 **Evaluation** is when the forensic scientist compiles all data that was observed in the analysis and comparison phases and then reaches a conclusion. The conclusions that may be reached and documented in the ACE-V worksheet are exclusion, identification, no additional comparison is required, and inconclusive due to a lack of sufficient detail in the available known exemplars. In cases where multiple subjects are submitted for comparison, or are developed through SAFIS searches, and an identification is made, the Forensic Scientist shall document a result for the remaining/developed subjects on a latent by latent basis. In such cases it is up to the individual conducting the comparison as to which of the following comparison results are appropriate based on the definitions provided:

> **No additional comparison is required:** The latent print has been Identified; therefore, the remaining subjects were not compared.
>
> **Negative results/exclusion:** the remaining subjects were eliminated/excluded prior to the identification.

All conclusions shall be documented in the ACE-V worksheet.

All identifications shall be clearly marked. Information to be recorded on the latent lift, photograph, and/or scanned image shall include the identification symbol (Ø), the finger/palm identified, and the complete name from the known fingerprint standard used. If no name is present, a state identification number and/or FBI number, SAFIS incident number, or other personal identification number (social security number, date of birth, etc.) may be used. Additionally, the identification symbol shall be placed next to the identified finger/palm on the known standard.

Additionally, in each comparison case one friction ridge impression that was determined to be "of value" shall be charted and imported into the ACE-V worksheet. If an identification was effected, the friction ridge impression and the corresponding known impression shall be charted and imported into the ACE-V worksheet. In instances where multiple identifications are made to multiple known individuals, one identification for each individual shall be charted and imported into the ACE-V worksheet. The charting of an identification shall satisfy the requirement of having one charted "of value" impression entered into the ACE-V worksheet.

8.4.4 **Verification** is an independent application of the analysis, comparison, and evaluation phases of ACE-V by another qualified examiner. All friction ridge impression identifications, exclusions, and inconclusive results shall be verified. Additionally, in cases involving a death, all latent print determinations of value shall also be verified.

A verification review shall be scheduled and completed in FA prior to scheduling any additional reviews. The forensic scientist acting as the verifier shall document the verification on the individual item(s) of evidence, the known exemplars, as well as by completing the verification review. For all identification verifications, the verifier shall indicate the number of identifications verified, the date of the verification, and his or her

initials on the item(s) of evidence prior to returning the evidence to the assigned examiner.

When the verifying forensic scientist approves the verification review in FA it means that the verifier has conducted an independent examination utilizing the ACE methodology and that the verifier agrees with the conclusion reached by the forensic scientist assigned to work the case. The verifier shall complete the verification review and include a statement as to what result(s) was/were verified in the review comment box.

Conflicts of opinion between the assigned forensic scientist and the verifying forensic scientist shall be resolved as provided in the lab-wide **Procedure for Reviewing Laboratory Reports.**

9.0 State Automated Fingerprint Identification System (SAFIS) Searches, Reverse SAFIS searches, SAFIS Migration Searches, and Advanced Fingerprint Identification Technology (AFIT) Searches

9.1 The SAFIS/AFIT computer interfaces are tools by which forensic scientists can perform state-wide and national searches of unknown/unidentified fingerprints and palmprints (SAFIS only) as well as search for and obtain known exemplars that are available through the state fingerprint database. The systems are maintained by the North Carolina State Bureau of Investigation Criminal Information and Identification Section (CIIS) and the manufacturer IDEMIA.

9.2 When SAFIS/AFIT is requested, the forensic scientist shall determine, based upon his or her training and experience, which friction ridge impressions are suitable for search on the SAFIS/AFIT.

9.3 Detailed instructions as to the operation and functionality of the SAFIS/AFIT computer terminal may be found in the **Latent Procedure for SAFIS/AFIT.**

9.4 Guidelines for SAFIS searches may be found in the **Latent Procedure for SAFIS/AFIT Searches and Property Crimes.**

9.5 **SAFIS Hits – SAFIS** hits shall be verified in accordance to 8.4.4 and reported in accordance with the **Laboratory Procedure for Reporting Results.**

9.6 Copies of known exemplars may be obtained through the SAFIS system, via communication with the CIIS, and/or via the most current method available for requesting fingerprint cards from the Federal Bureau of Investigation. All communication regarding the request of known exemplars and/or State Identification Numbers (SID) shall be documented in the case record in FA.

9.7 Steps for retrieving known exemplars from SAFIS/CIIS:

9.7.1 When the copy of the known exemplars is received, enter the fingerprint card as an item of evidence in FA. Adhere to the State Crime Laboratory **Procedure for Evidence Management** for marking and identifying evidence.

9.7.2 Compare applicable identifiable latent impressions to the known exemplar images as necessary and prepare the required notes and reports.

9.7.3 Enter a scanned copy of the known exemplars with all markings by the Forensic Scientist into the Case Record Object Repository.

Package the known exemplars in an envelope, mark the envelope with the appropriate identifiers and return to the submitting agency with all other evidence.

9.8 Reverse SAFIS Hits – Reverse SAFIS hits and SAFIS Migration hits shall be verified in accordance to the Latent **Procedure for Conducing Reviews** and reported in accordance with the **Laboratory Procedure for Reporting Results** based on the guidelines listed below.

9.8.1 Reverse SAFIS Hits Occurring within One Calendar Year of Initial SAFIS Search

Reverse SAFIS Hits and SAFIS Migration Hits occurring within one calendar year from the initial SAFIS search shall be verified. Any additional identifiable latent prints associated with the reverse hit shall be subsequently compared and a Laboratory Report issued.

9.8.2 Reverse SAFIS Hits/Migration Hits Occurring One Year or more from the Initial SAFIS Search

9.8.2.1 Reverse SAFIS Hits and SAFIS Migration Hits occurring on non-property crime cases entered one year or more prior to the initial SAFIS search shall be verified and a Laboratory Report issued. Any additional identifiable latent prints associated with the reverse hit shall not be automatically compared. The following statement shall be added to the report:

Based on a previous submission (See North Carolina State Crime Laboratory Report (laboratory case number) dated (date the report was generated)) additional unidentified identifiable latent prints remain in this case. If subsequent comparisons are required please resubmit the original latent comparison evidence and the subject fingerprint card returned with this report to the North Carolina State Crime Laboratory.

9.8.2.2 Reverse SAFIS Hits and SAFIS Migration Hits occurring on property crime cases entered one year or more prior to the initial SAFIS search shall not be automatically verified. A Latent Evidence SAFIS Reverse Search Memo shall be generated and a copy of the reverse hit record retained in the Case Record Object Repository (CROR).

9.8.3 If multiple reverse SAFIS and/or SAFIS Migration Hits in one case are made simultaneously then only one reverse hit for each individual will be verified based upon the above listed criteria. The remaining hits shall be compared only if subsequent comparisons are requested by the submitting agency.

9.8.4 A listing of property and non-property crime types are listed in the **Latent Procedure for SAFIS/AFIT Searches and Property Crimes**.

9.8.5 For scenarios where the latent print that was potentially identified during the Reverse SAFIS hit and/or SAFIS Migration hit is not available for comparison, the hit shall be reported using the Latent Evidence Reverse SAFIS Search memo.

9.8.6 In some instances SAFIS entries made prior to the migration to the current SAFIS naming convention may not be able to be linked to a North Carolina State Crime Laboratory case record. After exhausting all search methods in Forensic Advantage and legacy LIMS records the reverse hit shall be dispositioned from the SAFIS system. No further action shall be taken.

10.0 Recording of All Analytical Data

10.1 Information required in Every Case File:

10.1.1 All examination activities.

10.1.2 Activities include the development techniques applied, control or reagent checks used in development techniques, photography/digital imaging used, Image Processing history logs, any SAFIS/AFIT searches conducted, known exemplar capture and/or retrieval, comparisons conducted, and conclusions reached.

10.1.2.1 Photographs and/or scans generated during evidence processing shall be retained based upon the following guidelines:

10.1.2.1.1 Photographs taken during sequential processing steps shall be retained. The one photograph utilized for determining value and/or for conducting the latent comparison shall be treated as a sub-item, documented in the ACE-V worksheet, and shall be retained in the Latent Evidence Image Processing System (LEIPS). The remaining photographs shall be retained for documentation purposes only. The documentation images shall be large enough in size so that the ridge detail present can be clearly seen. A PDF copy of all documentation images shall be retained in the CROR. The images will not be retained in the LEIPS. Documentation photographs shall be documented in the FA Latent worksheet in the appropriate processing table step. These photographs are not required to be documented in the ACE-V worksheet.

10.1.2.1.2 When multiple photographs are taken of the same area of friction ridge detail during a single processing step (e.g. – Rhodamine 6G) only the image containing the most detail must be retained.

10.1.2.2 Any photograph or scan of a latent lift shall be retained if it was enhanced and utilized to conduct the latent print comparison. Any such photograph or scan shall be treated as a sub-item, documented in the ACE-V worksheet, and shall be retained in LEIPS.

10.1.2.3 The necessity for taking a photograph shall be determined by the Forensic Scientist based on his/her training and experience and based on the nature of the evidence.

10.1.3 When an individualization or identification is made, a legible digital copy of the latent print and the known exemplar used shall be retained on the Latent Evidence Image Processing System (LEIPS). The images shall remain on the hard drive until archived by the key operator. If the LEIPS is not in service for an extended period of time, the images shall be retained in the case record object repository with the stipulation that the images are of comparison quality (identifiable for comparison purposes).

10.2 Comparison cases and known exemplars:

10.2.1 If the known exemplar is retrieved from the CIIS Fingerprint Repository, then the Comparison Log shall be annotated with the SID, the date of arrest of the known exemplar used (if indicated) and the date the known exemplar was retrieved or printed. A copy of the known exemplar shall be scanned into the Case Record Object Repository. The copy must be comparison quality.

10.2.2 If the known exemplar was submitted as evidence, then a copy shall be scanned into the Case Record Object Repository if it was utilized for comparison purposes. The copy must be comparison quality.

10.3 Latent lifts, photographs/digital images, and/or legible copies of friction ridge impressions:

10.3.1 All photographs, digital images, or legible copies of all latent prints shall be retained in the case record object repository or the LEIPS. The case record includes associated LEIPS entries.

10.3.1.1 All friction ridge impressions determined to be "of value" shall be retained in the LEIPS.

10.3.1.2 Documentation copies of all latent lifts, photographs, or scans of friction ridge impressions, both submitted and/or generated by the working analyst, shall be retained in the case record object repository.

10.3.2 Legible copies of any annotations made on sub-item evidence, such as latent print lifts or photographs/digital images of latent prints, shall be retained as examination documentation in the Case Record Object Repository.

10.4 Databases which generate lists that are reference materials include the following: SAFIS and the AFIT. If a search results in identification, the physical fingerprint card shall be printed and retained as described in section **9.0.**

10.5 SAFIS Match Reports shall be entered into the Case Record Object Repository.

10.6 A full case review shall be conducted on all cases involving deaths (**see Latent Evidence Technical Procedure for Conducting Reviews**). The completed Full Case Review form shall be imported into the Case Record Object Repository.

11.0 Results Statements

11.1 Results statements shall cover all items submitted whether or not processed. In instances where an item of evidence contains multiple pieces and/or additional contents, the scientist shall use the "Edit Custom Description" function in FA to fully describe the individual pieces. Example: One (1) pocketbook, one (1) wallet, one (1) driver's license, one (1) pack of gum, etc.

11.2 Results statements shall include the methodology used in the examination and an accurate interpretation of the actual results of the examination. The results may include one or more of the following statements or a variation approved during the technical review process.

11.2.1 Methodology

11.2.1.1 Processing Case: The methodology utilized includes: visual examination, chemical and physical processing, viewing with an alternate light source, digital retention, and ACE-V.

11.2.1.2 Comparison Case: The methodology utilized includes: visual examination, viewing with an alternate light source, digital retention, and ACE-V.

11.2.2 There were no latent prints noted or developed on Item (Item number).

11.2.3 There were no latent prints noted on Item (Item number).

11.2.4 There were no identifiable latent prints noted or developed on Item (Item number).

11.2.5 There were no identifiable latent prints noted on Item (Item number).

11.2.6 (Number of identifiable latent prints) identifiable latent (fingerprint(s)/palmprint(s)/impression(s)) was/were noted/developed on Item (Item number).

11.2.7 The identifiable latent (fingerprint(s)/palmprint(s)/impression(s)) was/were compared to Item (Item number) and was/were excluded as having been made by the same source.

11.2.8 The identifiable latent (fingerprint(s)/palmprint(s)/impression(s)) was/were compared to Item (Item number) and was/were identified as having been made by the (finger of subject).

An identification is defined as the decision by an examiner that there are sufficient features in agreement to conclude that two (2) areas of friction ridge impressions originated from the same source. Identification of an impression to one source is the decision that the likelihood the impression was made by another (different) source is so remote that it is considered a practical impossibility.

11.2.8.1 For identifications to multiple fingers and/or multiple subjects, a list format may be used.

11.2.9 No known inked palmprint impressions were submitted; therefore, no comparison with Item (Item number) could be conducted.

11.2.10 A search of the SBI Identification Files (or AFIT), based on the information provided, failed to disclose known inked impressions of (subject's name); therefore, no comparison could be conducted between this individual and the (number) identifiable latent (fingerprint(s)/palmprint(s)/impression(s)) noted on Item (Item number).

11.2.11 The identifiable latent/inked (fingerprint(s)/palmprint(s)/impression(s)) was/were of sufficient value for entry into the State Automated Fingerprint Identification System (SAFIS) [or the Advanced Fingerprint Identification Technology (AFIT)].

11.2.12 The identifiable latent/inked (fingerprint(s)/palmprint(s)/impression(s)) was/were of insufficient value for entry into the State Automated Fingerprint Identification System (SAFIS) [or the Advanced Fingerprint Identification Technology (AFIT)].

11.2.13 The identifiable latent (fingerprint(s)/palmprint(s)/impression(s)) was/were searched on the SAFIS (AFIT) with (results of search).

11.2.14 The (number) identifiable latent/inked (fingerprint(s)/palmprint(s)/impression(s)) was/were entered into and searched by the SAFIS with no identification being effected.

Due to no elimination prints being submitted for comparison purposes, the (number) identifiable latent/inked (fingerprint(s)/palmprint(s)/impression(s)) was/were not retained in the SAFIS database. Elimination prints must be submitted before a subsequent search will be conducted.

11.2.15 The identifiable latent (fingerprint(s)/palmprint(s)/impression(s)) was/were compared to Item (Item number) with no identification(s) being effected. However, the known inked impressions submitted on or on file for (subject) are of insufficient detail to conduct a conclusive comparison; therefore, this cannot be considered a conclusive comparison with the unidentified latent (fingerprint(s)/palmprint(s)/impression(s)). Major case inked impressions, with emphasis on (area needed), will be required to conduct a conclusive comparison.

11.2.16 The identifiable latent (fingerprint(s)/palmprint(s)/impression(s)) remain(s) unidentified.

11.2.17 A records check through the Administrative Office of the Courts (AOC) database and a check with the submitting agency on (date) indicate that this case has been dispositioned. The evidence in this case is being returned unworked. If you have any questions concerning this action, please contact the Forensic Scientist listed below.

11.2.18 Pursuant to a request from (officer and date), no further analysis was conducted on the above listed evidence.

12.0 Limitations – N/A

13.0 Safety

13.1 Working Cases with Putrefied Evidence - The purpose of this section is to minimize the health risk to anyone who may be exposed to biohazards within the Section.

13.1.1 Evidence that is putrefied, wet, or otherwise in a state of decomposition (e.g., a coffin, hands, items that contain body fluids, or the presence of insects related to decomposition) shall be treated as a biohazard. To minimize exposure and time in the section and State Crime Laboratory, the case shall be worked as a PRIORITY. The case shall be worked immediately and the evidence shall be returned to the submitting agency as soon as possible. The Forensic Scientist shall make arrangements with the submitting agency to have the evidence in question picked up at the conclusion of processing.

13.1.2 For extremely contaminated, hazardous and/or putrid evidence, every effort shall be made to process the item(s) at the crime scene. Should the evidence need to be brought to the State Crime Laboratory for processing, the Forensic Scientist Manager or designated In-Charge shall be notified immediately. The Forensic Scientist Manager or designated In-Charge shall ensure that all resources (including additional Forensic Scientists) within the Section are provided to the Forensic Scientist to expedite processing of the evidence.

13.1.3 Additional guidance for handling evidence which may carry infectious disease may be found in the Procedure for Evidence Management.

14.0 References – See associated procedures.

15.0 Records

- ACE-V Worksheet

16.0 Attachments – N/A

Revision History		
Effective Date	Version Number	Reason
07/01/2016	1	Original ISO Document
03/30/2017	2	8.4.3- Added required documentation/markings for Identifications. Added additional comparison conclusion options. Removed elimination in favor of exclusion.
03/07/2018	3	9.0 – Revised procedure to include SAFIS reverse hit guidelines. 10.1.3 – Removed the requirements for retaining photographs taken that are not utilized during the examination/comparison process.

		10.3.1.2 – Removed the requirement to retain documentation copies of latent lifts/photographs/scans that were determined to be not "of value." 12.0 Add section for limitations 13.0 – Added requirements for working with putrefied evidence. Removed "Digital" reference throughout document
02/01/2019	4	4.1: capitalization of Alternate Light Source 4.2.3.1: corrected to say adhesive, not blood print 8.3, 8.4.3. 10.1.2.1.1, 10.1.2.1.2: comparisons documented in ACE-V sheet, not Comp. Log 9.1: Manufacturer is IDEMIA; no longer MorphoTrak Added 11.1: results statement addressing all items and custom description for all items. Added 11.2.1, 11.2.1.1, 11.2.1.2: methodology for all cases
02/04/2020	5	Removed 11.2.11, 11.2.11.1, and 11.2.11.2 due to duplicate information 4.2.5.1 and 6.1.1.3.1: added acidified hydrogen peroxide 6.1.2.3.1: added "if needed" to appropriate chemicals 6.1.1.3.3, 6.1.2.3.3, 6.1.3.2: modified use of TracER requirements to be at the scientist's discretion and documented 3.0: Added definition of "verification" 8.4.4: revised to say all identifications, exclusions, and inconclusives will be verified in all cases 9.7.5 – removed. Procedure archived. 11.2.11 (old) – removed. Duplicative with 11.2.8