LPU – 3

Training to Competency

3-1 Training Sequence

3-2 Training Outline Requirements

3-3 Comparative Analysis Competency Test Requirements

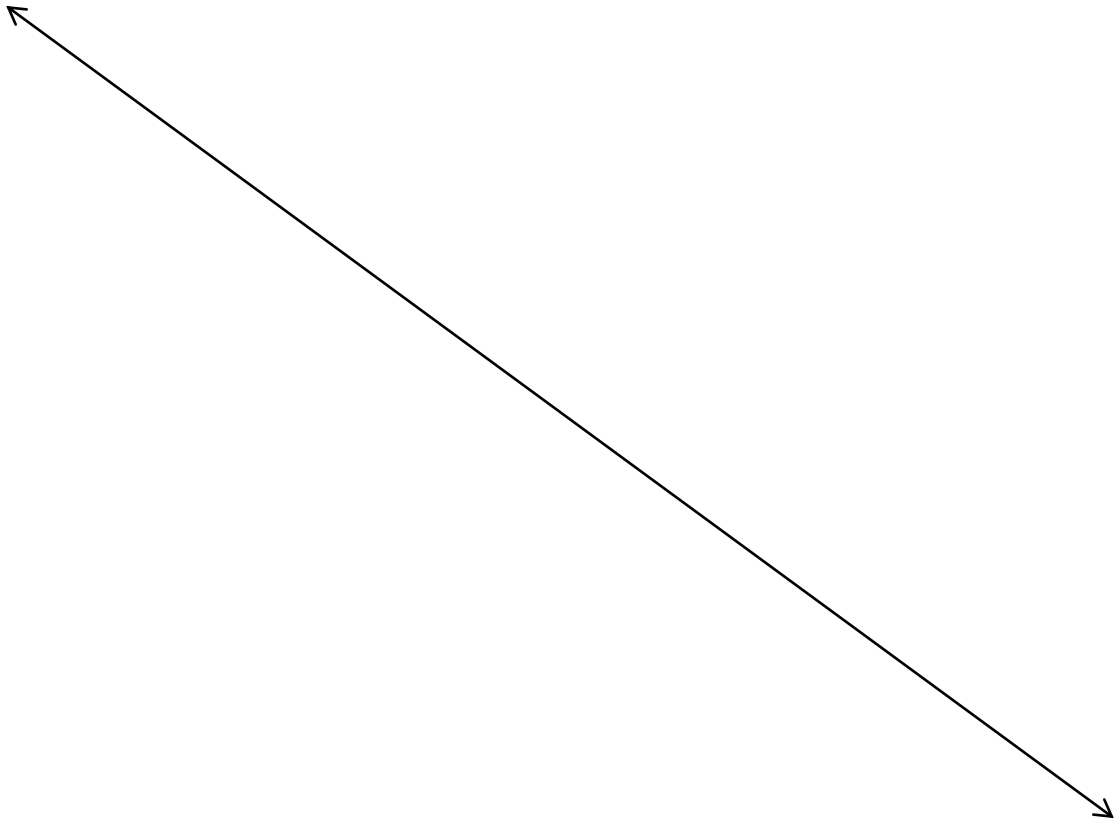
3-4 Evidence Processing Competency Test Requirements

3-5 Photography-Imaging Competency Test Requirements

Purpose

The purpose of this policy section is to provide the minimum requirements that shall be met during the training process of new Latent Print Examiners. This outline provides the recommended training program to achieve competency as a Latent Print Examiner Trainee. A Latent Print Examiner conducts analysis, comparison, and evaluation on impressions from the raised portion of the epidermis on the palmar or plantar skin. Complex friction ridge examinations occur in latent print environments.

This section shall apply to individuals hired after the release date of this SOP. The minimum requirements for selection are described in the Job Descriptions maintained by the City of Charlotte Human Resources Division. This section shall apply to non certified examiners and trainees recruited from related disciplines such as crime scene sections. Examiners holding a current certification as a Certified Latent Fingerprint Examiner issued by the International Association for Identification, or possessing at a minimum, 5 years of recent independent latent print casework shall be exempt from this section and shall progress directly to competency testing. Instructors and mentors must have demonstrated competency in the topic areas they instruct with final approval for independent case work being authorized by the Section Administrator.



Crime Laboratory – Latent Fingerprint Unit	
Standard Operating Procedure Manual	
SOP # 3-1	Subject: Training Sequence
Approved: David C. Schultz	Matthew Mathis

1. Prior to beginning this training to competency requirement all Latent Print Examiners shall read and sign the model policy for Friction Ridge Examiner Professional Conduct. The signed document shall be placed in their permanent training file maintained by the Quality Assurance Manager.

2. The trainee shall read and acknowledge the content of the SOP in its entirety.

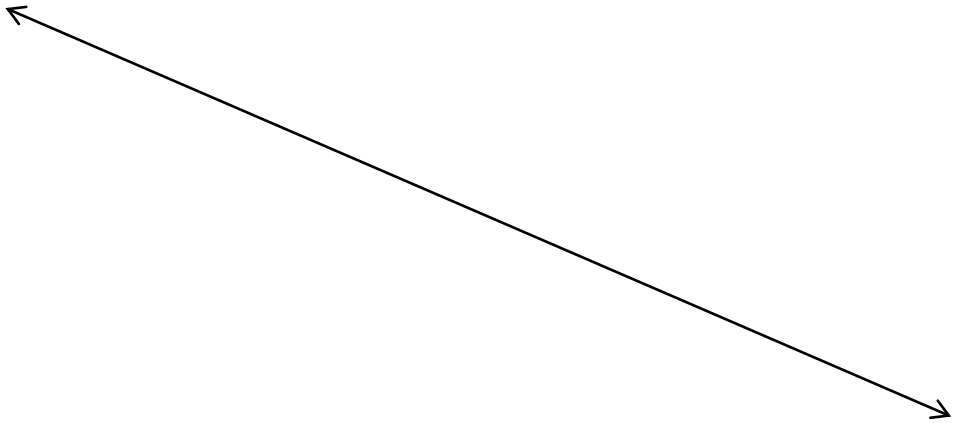
3. The trainee shall read and acknowledge the content of the CMPD Crime Lab Quality Manual, Policy Manual, Operations Manual and Safety Manual.

4. The trainee shall complete the Latent Print Training Outline and have all achievements acknowledged by the examiner certifying the competence in that area.

5. The Examiner shall testify as an expert witness in a moot court and have his skills evaluated by the Section Administrator.

6. The Examiner shall be competency tested in all disciplines that they shall work.

7. The Examiners training documentation shall be approved and signed off by the Section Administrator and turned over to the Quality Assurance Manager.



Crime Laboratory – Latent Fingerprint Unit	
Standard Operating Procedure Manual	
SOP # 3-2	Subject: Training Outline Requirements.
Approved: David C. Schultz	Matthew Mathis

1. The following documentation is the minimum required that must be successfully completed by the examiner prior to moving forward. All sections must be certified by the trainer with final certification by the Section Administrator.

2 Upon release for independent case work the unit supervisor shall forward a record of the release with supporting documentation to the Quality Assurance Manager.

This outline provides the recommended training program to achieve competency in friction ridge examination. The student must demonstrate knowledge of required objectives by passing written tests and/or practical exercises, and by communicating an understanding of the objectives and underlying principles. It is also strongly recommended that students demonstrate knowledge of supplemental objectives. *Prior to independent casework this program must be successfully completed and the Analyst must be competency tested.*

1. Principles and Foundations

1.1 Required Objectives

1.1.1 An understanding of the basic foundations for friction ridge examination (Permanence and individuality) as a means of identification.
Verified:_____ Date:_____

1.1.2 An understanding of the biology/physiology of friction ridge skin.
Verified:_____ Date:_____

1.1.3 An understanding of scientific methodology and its application to friction ridge examination.
Verified:_____ Date:_____

1.1.4 A knowledge of the history of fingerprints.
Verified:_____ Date:_____

1.2 Supplemental Objectives

1.2.1 An understanding of early methods of personal identification, such as scars, marks, and tattoos.
Verified:_____ Date:_____

1.2.2 An understanding of personal identification methods other than friction ridge skin, e.g., iris scan, hand geometry, flexion creases.
Verified:_____ Date:_____

1.2.3 An understanding of fingerprints, palm prints, and footprints for criminal and civil applications.
Verified:_____ Date:_____

1.2.4 An understanding of the applications of friction ridge impressions for manual and/or automated repositories for 'single print' and 'unidentified latent prints'.
Verified:_____ Date:_____

1.2.5 An understanding of the legal and ethical requirements of latent prints and forensic science such as; Bias, Daubert, Fry, and current case law affecting friction ridge identification.
Verified:_____ Date:_____

2. Friction Ridge Pattern Recognition and Interpretation

2.1 Required Objectives

2.1.1 An understanding of common terminology and definitions associated with friction ridge pattern recognition (arch, loop, whorl).
Verified:_____ Date:_____

2.1.2 An understanding of pattern recognition and interpretation associated with operational needs of the individual agency.
Verified:_____ Date:_____

2.1.3 An understanding of friction ridge formations as they relate to recognition, interpretation and individualization.
Verified:_____ Date:_____

2.2 Supplemental Objective

2.2.1 An understanding of various classification systems (definitions and formulas).
Verified:_____ Date:_____

3. Friction Ridge Examination (Analysis, Comparison, Evaluation and Verification)

3.1 Required Objectives

3.1.1 An understanding of the individual friction ridge structure (i.e., continuity, texture, pore, and edge definition) for determining the existence of individualizing details.
Verified:_____ Date:_____

3.1.2 The ability to analyze friction ridge details to determine the value for comparison.
Verified:_____ Date:_____

3.1.3 The ability to recognize and utilize friction ridge flow, scars, creases, and other friction ridge details for supporting the examination.
Verified:_____ Date:_____

3.1.4 The ability to recognize and properly determine, when possible, the area from which the friction ridges originated.
Verified:_____ Date:_____

3.1.5 The knowledge to properly analyze friction ridge impressions and understand effects such as color reversal, pressure distortion, slippage, and overlays.
Verified:_____ Date:_____

3.1.6 The ability to render a proper conclusion of individualization (identification).
Verified:_____ Date:_____

3.1.7 An understanding of the necessity for verification by another qualified latent print examiner.
Verified:_____ Date:_____

3.1.8 A knowledge of various methods used to record known friction ridge impressions and the ability to properly evaluate ridge structure based on each method.
Verified:_____ Date:_____

3.1.9 A knowledge of the benefits associated with obtaining elimination prints and major case prints.
Verified:_____ Date:_____

3.1.10 The ability to recognize simultaneous or adjacent friction ridge impressions and their value for examination.
Verified:_____ Date:_____

3.1.11 An awareness that different policies and standards exist regarding friction ridge individualization (identification) in the United States and other countries.
Verified:_____ Date:_____

4. Friction Ridge Detection and Preservation

4.1 Required Objectives

4.1.1 Knowledge of the generally accepted techniques for the detection and visualization of friction ridge impressions.
Verified:_____ Date:_____

4.1.2 The ability to assess the effectiveness/results of applied techniques.
Verified:_____ Date:_____

4.1.3 An understanding of generally accepted preservation methods for friction ridge impressions.
Verified:_____ Date:_____

5. Documentation of Examination

5.1 Required Objectives

5.1.1 An understanding of proper procedures for recording examination activities.
Verified:_____ Date:_____

5.1.1.1 Documentation must be in a form such that another qualified latent print examiner could evaluate what was done and replicate any comparisons.
Verified:_____ Date:_____

5.1.1.2 Documentation must include, as a minimum, case identifier(s), identity of examiner(s), date of activities, number and description of items for examination, results/conclusions of the examinations, and the identity of the verifier in the event an identification is made.
Verified:_____ Date:_____

5.1.1.3 A well documented chain of custody must be maintained.
Verified:_____ Date:_____

6. Communication

6.1 Required Objectives

6.1.1 The ability to accurately reflect case examinations and conclusions in written form.
Verified:_____ Date:_____

6.1.2 The ability to present case examinations and conclusions.
Verified:_____ Date:_____

7. Internship

7.1 Required Objective

7.1.1 The ability to practically demonstrate all phases of training under the direction and review of an instructor.
Verified:_____ Date:_____

7.2 Supplemental Objective

7.2.1 Active participation in other educational sources, e.g., seminars, conferences, schools and lectures.
Verified:_____ Date:_____

8 Automated Fingerprint Identification System (AFIS)

The term AFIS as used herein includes automated systems for any friction ridge area.

8.1 Required objectives related to Ten Print operations

8.1.1 Knowledge of AFIS processes related to acquisition, classification, searching, storage, retrieval, and identification of ten print records.
Verified:_____ Date:_____

8.1.2 Theory of operation - Knowledge of AFIS procedures as an end to end process; e.g., capture through final reporting and storage.
Verified:_____ Date:_____

8.1.3 Knowledge of which friction ridge areas, e.g., how many fingers, which fingers, palms, are used for searching and matching.
Verified:_____ Date:_____

8.1.4 Quality issues - Understand the importance quality assurance has on maintaining the integrity of friction ridge data. Understand quality controls which ensure completeness, image quality and data integrity.
Verified:_____ Date:_____

8.1.5 AFIS Minutiae - Knowledge of the basic concepts associated with minutiae recognition, placement, rotation, ridge counts and other minutiae factors related to searching and matching.
Verified:_____ Date:_____

8.1.6 AFIS compatibility issues - Knowledge that some systems cannot interchange files.
Verified:_____ Date:_____

8.1.7 Electronic transmission standards - Knowledge of ANSI/NIST, IAFIS EFTS, and local standards for exchanging known friction ridge impressions.
Verified:_____ Date:_____

8.2 Required objectives for Latent Prints

8.2.1Knowledge of AFIS processes related to classification, searching and matching of latent prints (fingerprints and palm prints).
Verified:_____ Date:_____

8.2.2 Theory of operations - Knowledge of AFIS text data filtering, pattern classification and referencing, minutiae extraction, searching, comparison, threshold scoring, candidate list comparison and matching.
Verified:_____ Date:_____

8.2.3 System capabilities - Understand latent print v. ten print, ten print v. latent print, latent print v. latent print, ten print v. ten print, and palm print v. palm print search capabilities of the AFIS.
Verified:_____ Date:_____

8.2.4 Encoding - Understand how to manually or automatically position latent print minutiae to emulate the system's automated minutiae extraction.
Verified:_____ Date:_____

8.2.5 Pattern Interpretation - Understand automated classification and how to interpret latent prints in a similar manner.
Verified:_____ Date:_____

8.2.6 Progression - Understand logical search progression, i.e., local AFIS first, then state, regional, national and international.
Verified:_____ Date:_____

8.2.7 Search logic - Understand filtering criteria used to establish logical candidates, i.e., finger position, sex, classification, race, offense, geographic location, etc.
Verified:_____ Date:_____

8.2.8 Candidate list - Understand the search result contents, e.g., ranked order, unique identifier, finger or palm position. Understand the need to ensure that candidates meet the search criteria.
Verified:_____ Date:_____

8.2.9 Score - Understand the significance of the candidate scores, candidate threshold, the meaning of differential scores between candidates, etc.
Verified:_____ Date:_____

8.1.10 On screen examination - Understand the differences between onscreen images and original friction ridge impressions, e.g., magnification of original impressions can show more detail but digital images can never exceed original capture resolution; monitor resolution may prevent pixel for pixel display.
Verified:_____ Date:_____

8.2.11 Hard copy examination - Understand printer technology limitations versus examinations from original friction ridge documents, e.g., inked fingerprint cards.
Verified:_____ Date:_____

8.2.12 Record authentication - Understand the processes for authentication, e.g., correct association of name, unique identifier, friction ridge images and criminal history record.
Verified:_____ Date:_____

9 Digital Imaging

9.1 Required objectives

9.1.1 Knowledge of digital imaging procedures related to friction ridge impression capture, processing, storage, retrieval, transmission and display.
Verified:_____ Date:_____

9.1.2 Historical development and legal precedents, case law.
Verified:_____ Date:_____

9.1.3 Image file formats, e.g., bmp, tif, jpg
Verified:_____ Date:_____

9.1.4 Compression, e.g. jpg, tiff
Verified:_____ Date:_____

9.1.5 Image resolution, e.g., spatial, radiometric, spectral
Verified:_____ Date:_____

9.1.6 Image processing, e.g., sharpening, FFT, histogram equalization 1.5.1.6 Equipment maintenance and calibration, i.e., who does it, how often, and where it is documented.
Verified:_____ Date:_____

9.1.7 SWGFAST Friction Ridge Impression (Latent Print) Digital Image Guidelines
Verified:_____ Date:_____

10. Competency test

Evidence Processing: Pass:_____ Fail:____ Date:_____

Comparative Analysis: Pass:_____ Fail:____ Date:_____

Photography-Imaging: Pass:_____ Fail:____ Date:_____

Approved for independent casework:

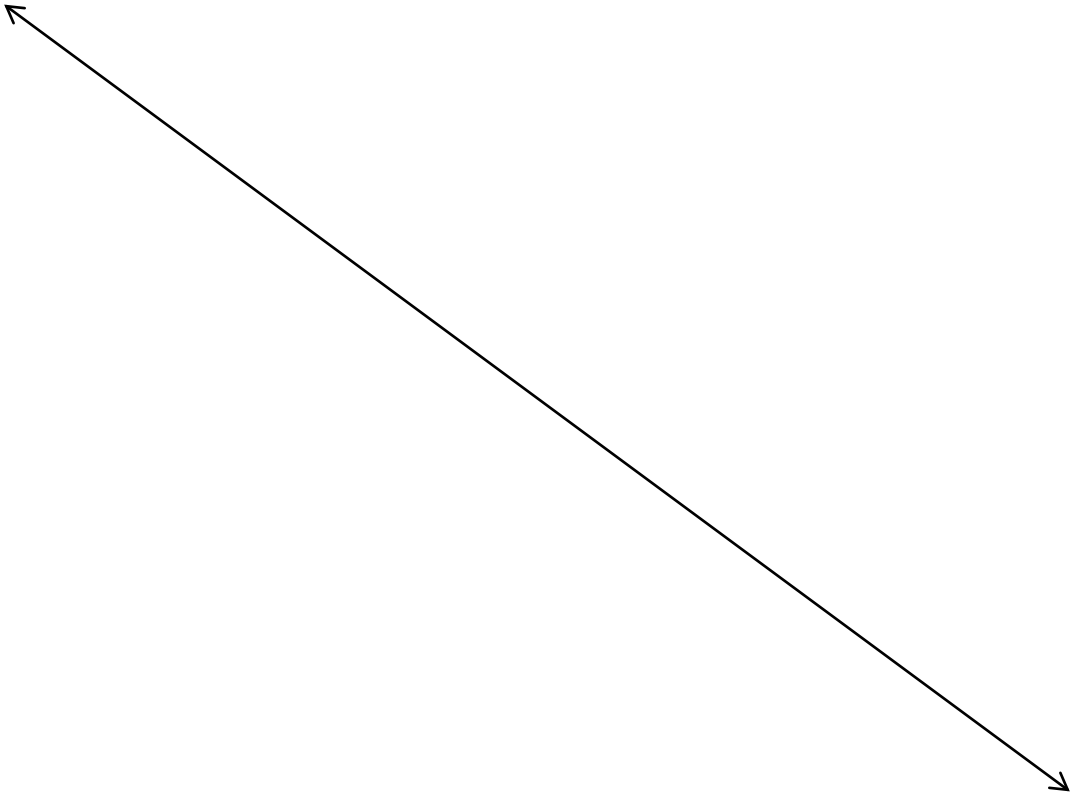
Date_____ Section Administrator _____

Approved for independent comparative analysis casework:

Date_____ Section Administrator _____

Approved for independent Photography-Imaging casework:

Date_____ Section Administrator _____

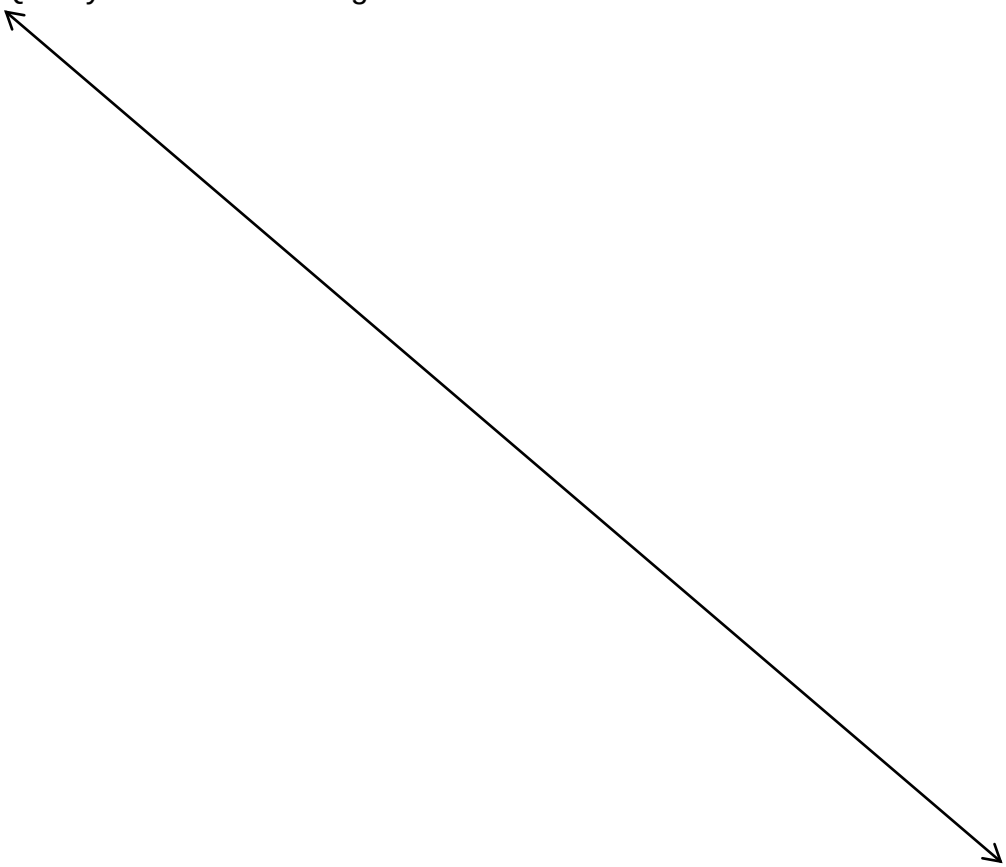


Crime Laboratory – Latent Fingerprint Unit	
Standard Operating Procedure Manual	
SOP # 3-3	Subject: Comparative Analysis Competency Test
Approved: David C. Schultz	Matthew Mathis

1. The Competency test administered to examiners training under this policy section shall be the most recent annual CTS Collaborative Testing Latent Impression Test administered to the Unit Staff and a written test covering various aspects of the discipline.

2. This test shall be administered to the Analyst by the Section Administrator or his designee. The results must be consistent with the manufacturers test results for the year/test administered in order to complete this requirement.

3. Upon release for independent case work the Section Administrator shall forward a record of the release with supporting documentation to the Quality Assurance Manager.



Crime Laboratory – Latent Fingerprint Unit	
Standard Operating Procedure Manual	
SOP # 3-4	Subject: Evidence Processing Competency Test
Approved: David C. Schultz	Matthew Mathis

1. A competency test shall be administered to the Analyst and shall be monitored and evaluated by the trainer with final approval for casework authorized by the Section Administrator.

2. The Analyst will be provided with various items with known intentional latent prints deposited on their surface and a written test. The items will be a combination of all common surface types generally received for processing by the Latent Print Unit. The trainee will have to demonstrate competency by the positive development and visualization of latent impressions on the supplied items and through the use of proper method selection and stock/working solution techniques.

3. Upon release for independent case work the Section Administrator shall forward a record of the release with supporting documentation to the Quality Assurance Manager.

Cyvac Operation	Pass	Fail
Powder	Pass	Fail
ALS Operation	Pass	Fail
Porous techniques	Pass	Fail
Non-Porous techniques	Pass	Fail
Tape	Pass	Fail
Chemical Processing	Pass	Fail
Stock Solutions	Pass	Fail
Lifting Techniques	Pass	Fail
Lab & Safety Procedures	Pass	Fail

Crime Laboratory – Latent Fingerprint Unit	
Standard Operating Procedure Manual	
SOP # 3-5	Subject: Photography-Imaging Competency testing
Approved: David C. Schultz	Matthew Mathis

1. The Photography-Imaging Competency test shall consist of six (6) latent fingerprints contained on various surfaces and a written test. The fingerprints must be imaged according to LPU-10 of this policy. The latents shall be imaged at 1:1 to scale and of sufficient quality and clarity for comparative analysis.

2. The images/photographs shall be evaluated by the trainer and Section Administrator for clarity, size, documentation and technique selection. The Section Administrator shall release the Analyst for independent casework upon a successful result.

3. Upon release for independent case work the Section Administrator shall forward a record of the release with supporting documentation to the Quality Assurance Manager.