

## LFU02 – SOP Factors Affecting the Examination of Latent Prints

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### 1. Scope

- 1.1. Distortions such as uneven substrates, normal skin distortions and lateral deposition pressure are factors that affect the quality of the latent prints.

### 2. Background

- 2.1. To establish the practices for documenting the examination of evidence to conform to the requirements of the Department of Forensic Sciences (DFS) Forensic Science Laboratory (FSL) *Quality Assurance Manual*, the accreditation standards under ISO/IEC 17025:2005, and any supplemental standards.
- 2.2. A qualified Specialist will have knowledge of these factors and how they influence the deposition of friction ridge prints and recognize them as they occur. These factors may cause dissimilarity in a print, such as bifurcations appearing as an ending ridge, causing a spatial relationship to differ and may dictate the color and/or position of friction ridge prints. Failure to properly assess the occurrence and influence of these factors in the analysis of an impression could result in the misinterpretation of dissimilarity or a discrepancy and result in an incorrect conclusion.

### 3. Safety

- 3.1. Not applicable

## **4. Materials Required**

- 4.1. Latent Lifts
- 4.2. Known Tenprint

## **5. Standards and Controls**

- 5.1. Not applicable

## **6. Calibration**

- 6.1. Not applicable

## **7. Procedures**

- 7.1. The following factors affect the qualitative/quantitative aspects of unknown and known friction ridge prints and must be considered in all phases of the ACE-V methodology, when applicable and available:

- 7.1.1. Anatomical Aspects

- 7.1.1.1. Possible areas
    - 7.1.1.2. Condition of the skin

- 7.1.2. Transfer Conditions

- 7.1.2.1. Pressure applied during transfer
    - 7.1.2.2. Slippage or twisting
    - 7.1.2.3. Sequence of deposition

- 7.1.3. Transfer Medium

- 7.1.3.1. Blood
    - 7.1.3.2. Oil/Grease
    - 7.1.3.3. Dirt
    - 7.1.3.4. Other

7.1.4. Substrate

7.1.4.1. Porous

7.1.4.2. Non-Porous

7.1.4.3. Rough, corrugated or textured

7.1.4.4. Smooth

7.1.5. Environment

7.1.5.1. Wet

7.1.5.2. Dry

7.1.5.3. Hot/Humid

7.1.5.4. Protected

7.1.5.5. Unprotected

7.1.6. Preservation

7.1.6.1. Lifting

7.1.6.2. Photography

7.1.6.3. Digitally captured

7.2. Other factors which are associated with friction ridge prints (e.g., creases, scars, warts, paper cuts blisters):

7.2.1. May be permanent or temporary

7.2.2. May exist as level one, level two and/or level three detail

7.2.3. May be used in conjunction with friction ridge detail to individualize or exclude

## 8. Sampling

8.1. Not applicable

## 9. Calculations

9.1. Not applicable

## 10. Uncertainty of Measurement

10.1. When quantitative results are obtained, and the significance of the value may impact the report, the uncertainty of measurement must be determined. The method used to determine the estimation of uncertainty can be found in the *FSL Quality Assurance Manual – Estimation of Uncertainty of Measurement (Section 5.4.6)*.

## 11. Limitations

11.1. Not applicable

## 12. Documentation

12.1. LFU Examination Worksheets

12.2. LFU Report of Results

## 13. References

13.1. Galton, F. Finger Print DeCapo Press, New York.

13.2. SWGFAST - Friction Ridge Examination Methodology for Latent Examination

13.3. SWGFAST - Quality Assurance Guidelines for Latent Print Examiners

13.4. SWGFAST - Standards for Conclusions.

13.5. *Forensic Science Laboratory Quality Assurance Manual (Current Version)*

13.6. *FSL Departmental Operations Manuals (Current Versions)*

13.7. *FSL Laboratory Operations Manuals (Current Versions)*