



WEST VIRGINIA STATE POLICE
FORENSIC LABORATORY
THE LAB REPORT
VOLUME 7 NO. 2 — FALL 2021



**SPECIAL POINTS
OF INTEREST:**

- Summer Audit
- Addressing
Laboratory
Feedback
- National
Forensic Science
Week! (NFSW)

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A MESSAGE FROM THE DIRECTOR

Greetings!

As we begin to close out 2021 and prepare for 2022, I wanted to share some of the successes of the Forensic Laboratory over the past year. Despite the many challenges COVID has brought, the Laboratory was able to accomplish many objectives we established for the year. We are working to scan all paper case files to electronic format to expedite retrieval, link the files to our Laboratory Information Management System (LIMS) and ensure preservation of the documentation for years to come. This project has been incredibly successful thus far with 5 years of files electronically archived for the DNA/Serology and Seized Drug Sections over the past year. Additionally, we continue to incorporate additional services under Laboratory management including the WVSP Breath Alcohol Calibration Section and Digital Evidence Units and plan to continue that process along with Crime Scene Investigation in the coming year. Lastly, we successfully completed an internal audit and off-site external assessment by our accrediting body and participated in activities celebrating our staff and National Forensic Science Week (Sept. 19-25th). As always, it is an honor to provide quality forensic services to the state of West Virginia.

Respectfully,
Sheri Lemons
Laboratory Director



Links:

[WEST VIRGINIA STATE POLICE FORENSIC LABORATORY FIELD MANUAL](#)
[FORENSIC LABORATORY EVIDENCE SUBMISSION FORM](#)
[CURRENT JOB POSTINGS](#)
[FEEDBACK SURVEY](#)

The Laboratory and the Internal Audit Process

Koren Powers
Quality Assurance Manager

"We can't improve what we don't assess." – M. Hyatt

Each year, usually in the summer, the laboratory conducts an internal audit as part of our accreditation requirements. The audit includes all sections of the laboratory and assesses standards set forth in the International Organization for Standardization/International Electrotechnical Commission (ISO/IEC) documents 17025:2017, American National Standards Institute – National Accreditation Board (ANAB) 3125 Supplemental Requirements, the FBI Quality Assurance Standards (QAS) documents for DNA casework and databasing, the ATF Minimum Required Operating Standards (MROS) documents for the National Integrated Ballistic Information Network (NIBIN), as well criteria set forth in the West Virginia State Police Forensic Laboratory Quality Assurance and Procedures Manual. It typically includes a review of case files from each section, a review of section specific procedure and training manuals, direct observation of laboratory work in each section, and personnel interviews. Members of the laboratory are selected to participate on the audit team based on their experience and training and each are assigned specific standards or sections to assess. The Quality Assurance Manager plans and organizes the audit and compiles the information gathered to determine if the laboratory is in accordance with accred-

itation standards. If any discrepancies or issues are noted, these are further researched and corrected as necessary.

Although the audit has a defined process, there were some new additions to this year's audit including assessment of the NIBIN unit of Firearms/Toolmarks Section and the Breath Alcohol (Calibration) Section. This year, management also elected to interview all laboratory personnel concerning standards, safety, and laboratory culture where in the past only a portion of the staff are interviewed each year. Once personnel interviews, case file reviews, audit trails, standards compliance, and direct observations were completed, management also met with each supervisor to discuss any recommendations or improvement opportunities identified.

Overall, the 2021 internal audit was successful and the feedback from the audit team was very positive. Several recommendations for improvement were identified and are being researched and considered to both maintain and continually improve the quality of work in our laboratory. The personnel interviews provided a vast amount of information on the current culture of our laboratory allowing us to implement changes to improve employee retention and satisfaction. This process, although tedious and time consuming, allows for new ideas, better efficiency, and constant growth of the laboratory.

National Forensic Science Week (NFSW)

Jared Vititoe
Seized Drugs Technical Leader

September 19-25, 2021, marked the Eighth Annual National Forensic Science Week, a week dedicated to the recognition of forensic scientists and the critical role they play in the legal and criminal justice systems. The West Virginia State Police Forensic Laboratory, as part of the National Forensic Science Week activities, conducted a canned food drive competition to support a local food bank.

Each section of the laboratory was encouraged to decorate a receptacle to collect its donations, and then to collect canned food donations throughout the week. At the end of the week, the laboratory section that had collected the most canned food donations per person was awarded the honor of selecting the food bank to receive all the laboratory's canned donations.

After the week of collecting donations, the winning laboratory section was Latent Prints, which donated an astounding ninety cans per person. The laboratory, as a whole, collected a total of 1505 canned goods (as well as several other non-perishable items) for donation during the 2021 National Forensic Science week. The Latent Prints Section, as the winner of the food drive competition, chose Manna Meal of Charleston as the organization to receive these donations.

The National Forensic Science Week canned food drive conducted by the Forensic Laboratory was part of a larger Fall canned food drive being held among Midwestern Association of Forensic Scientists (MAFS) affiliated laboratories. MAFS is a regional forensic science organization; however it includes participants from across the United States, as well as international participants.



SOME OF THE CANNED FOOD DONATED
BY THE WVSP FORENSIC LABORATORY

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National Forensic Science Week (NFSW)

As part of the MAFS Fall Canned Food Drive, participating laboratories collected food donations, selected a food bank to receive those donations, and submitted a photograph of a forensic-related design created with their donations. Voting on submissions will occur at the MAFS Fall Meeting (November 1 - 5, 2021) with a prize to be awarded for best design. Therefore, the West Virginia State Police Forensic Laboratory's National Forensic Science Week activities also included a design competition, where forensic-related design entries were submitted, and a lab-wide poll was conducted to select the laboratory's design for submission to the MAFS competition. After the competition of the design competition, the donations were arranged into the selected design for submission.

National Forensic Science Week Activities culminated on Friday, September 25, 2021, with a lab-wide picnic luncheon that included pizza, popcorn, a photobooth, and the inaugural National Forensic Science Week Cornhole Tournament. This double elimination tournament featured eleven teams, with the winning team, "The Digitals", of Dave Miller (Biology/Processing) and Tanner Roney (Digital Evidence), claiming the title in a hard-fought battle against the "Blood Brothers" team of Joel Harvey (Biology/Processing) and Josh Haynes (Biology DNA/Databasing). Congratulations to 'The Digitals', Dave and Tanner!



THE WINNING LABORATORY DESIGN!



WINNERS OF THE FIRST INAUGURAL
CORNHOLE TOURNAMENT

Special thanks to the Southridge Center Chick-fil-A in Charleston for generously donating breakfast to the Laboratory on September 23, for National Forensic Science Week!

“But I Saw Prints”: An Explanation Why It Doesn’t Mean What You Think It Does

Stephen C. King
Latent Print Section—Supervisor

The West Virginia State Police Forensic Laboratory always seeks ways to improve our service to the law enforcement and criminal justice communities we serve. One way that has been in place for several years now is the Laboratory Feedback Form. Use of this form has brought both praise and criticism to our efforts. While it is only human to want praise, criticism is often more instructive.

The laboratory earlier this year received a Laboratory Feedback Form in which criticism was leveled at several sections, including the Latent Print Section. The criticism of the Latent Print Section was not specific to any examiner or even to a specific case, but rather a general one that was not at all unfamiliar to our ears. In fact, it is such a common criticism that I wanted to address it as broadly as possible. It is a criticism that does not stem from poor work on our part, or even from poor work on the part of the collector of the latent print evidence; rather, it stems from a general, but long-lived, misunderstanding about how latent print evidence is evaluated by investigators in the field and those trained as latent print examiners in the laboratory. It is a misunderstanding that almost always concludes with a police investigator saying “But I saw prints on the can (or bottle, or window, or vehicle, or...). How come the report says that there weren’t any!”. I can explain.

Police investigators in West Virginia have limited training in the collection of evidence from crime scenes. Most of this training occurs at the West Virginia State Police Academy and is conducted, for the most part, by laboratory personnel. Though the training is as good as we can make it given the very limited time we are provided, it is not nearly enough to turn an officer into a highly skilled crime scene investigator. This would require many, many more hours of specialized training. What we emphasize at the academy are the basic things police investigators need to know to properly secure, collect, package, and submit to the laboratory the various types of evidence that can be left at a crime scene. And while these efforts are not always perfectly performed, most of the time they will suffice enough to allow us to do our jobs here at the laboratory.

One of the types of evidence most often left at a crime scene and collected are latent prints, those transfers of residue from the bare fingers and hands (and sometimes feet) of individuals having access to the scene. Most everyone, from professional to novice, can recognize these lined marks once developed. Depending on the circumstances, there can be anywhere from just a few to hundreds at a scene. We train officers not to analyze, but to use the proper techniques to develop latent prints and to collect what they develop. Analysis of latent prints requires specialized training that often takes years to master.

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CONT: "But I Saw Prints"

Without this knowledge, the police investigator's best move is to collect and submit the latent print evidence to the laboratory for analysis. And this is what routinely occurs.

The communication breakdown, if one occurs, will happen when the police investigator receives his or her report, which reads "There were no latent prints of comparison value developed on the submitted evidence that was processed" or "There were no latent prints of comparison value contained in the submitted lifts or images." If we analyzed and evaluated lifts or images, we know the investigator developed and preserved what he or she saw. If we receive items collected from the scene for us to process, we know the police investigator had reason to believe that these items may have been touched by a person of interest. It is also quite possible that the investigator actually saw prints on the objects. We know the police investigator saw what he or she saw. The lifts, images, and items all contain definitive proof of touching. So why the negative report?

Proof of touching is not the goal. Proof of who made the touch is what the police investigator is seeking. And as Hamlet said, "Ay, there's the rub." Telling the difference between a latent print and a usable latent print is where all that additional training comes in. A latent print examiner

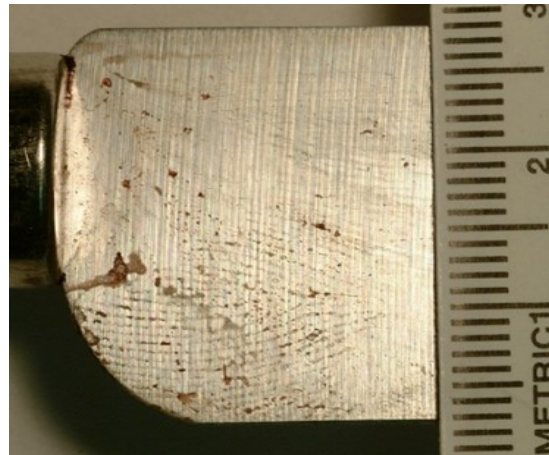


Image 1. Upon first glance, this latent print in blood on a knife appears to be very limited in clarity. It actually contains a wealth of information and was compared and identified in a murder investigation.

spends years trying to understand those differences. Things that impact a latent print such as the surface type on which the print was deposited, the material making up the print, the amounts of vertical and horizontal pressure applied during the touch, the levels of interference created by overlapping from other latent prints, distortion added by the chosen preservation method (lifting or photography), plus many others, are all factors that must be considered during a detailed analysis of a single latent print. A handprint deposited on a window may be obvious as a handprint and certainly by sheer size ought to render up enough information to have comparison value. And while many examples of usable hand and palm prints arrive at the laboratory, there are far more examples of the

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CONT: “But I Saw Prints”

opposite. The size of the latent print does not matter. We regularly see large latent palm prints that are so distorted that the clarity and amount of discriminating information is simply not there. Conversely, we have had small fragments that were left in such pristine condition that clarity and discriminating information was at such a high level that an identification followed (example: Image 1 on page 6). How many small prints were ignored in favor of preserving the larger print? We will likely never know the answer.

Every latent print we receive is analyzed and evaluated on its own merits, with clarity and the amount of distinct, identifying details being the deciding factor as to its value for comparison, the next step in our process. Most of the latent prints that are collected or developed – perhaps as many as two-thirds – do not rise to comparison value. That still leaves many – hundreds in our laboratory – that are of comparison value. And without the knowledge to tell the difference, a police investigator should collect them all.

The average American police officer is asked by society to do dozens of different jobs and to do them to the highest

level. Rarely does that same society provide the resources to that police officer that would allow him or her to do those different jobs to the level expected. There is nothing fair about those expectations, but as any police officer can tell you, that’s the job. When it comes to investigating a crime, however, a few more resources are available, and our laboratory, in a number of ways, can be a valuable one. If a police investigator does his or her job at the scene, we can take care of the interpretation. Working together, we hope to get to the truth of the matter. If misunderstanding our results, however, leads to frustration, which in turn leads to not trying because, “I never get results from the lab,” then we all have failed.

If a police officer doesn’t understand a result – or perhaps doesn’t like the result – a simple phone call or email may provide the information needed for the officer to better understand. Even if the communication is through the Laboratory Feedback Form in the way of a criticism, that is better than no communication at all. None of us want the victim of a crime to be victimized a second time, this time by the very system that is in place to help.



Image 2. These three latent fingerprints were deposited simultaneously on a plastic lid, obviously indicating that the lid had been touched. None of the three fingerprints, however, contain enough clarity or biological information to allow for a comparison. They are not of value.

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Seized Drugs: drugs@wvsp.gov

Firearms/Toolmarks: firearms@wvsp.gov

NIBIN: nibin@wvsp.gov

Latent Prints: latent.prints@wvsp.gov

Toxicology: toxicology@wvsp.gov

Trace Evidence: trace@wvsp.gov

Request for sex crime kits and CODIS kits: (below)
laboratory.kits@wvsp.gov

FEEDBACK

We always welcome feedback for the upcoming newsletter!

Have comments or suggestion?

Want to know how we do something?

Need to know how we recommend to collect a specific type of evidence?

Feel free to contact the editors and suggest topics and provide us with any comments or feedback.

Your Editors,

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Laboratory Mission and Goal

Mission:

It is the mission of the West Virginia State Police Forensic Laboratory to provide accurate and impartial forensic services to all criminal justice agencies operating in the State of West Virginia.

Goal:

The goal of the West Virginia State Police Forensic Laboratory is to generate accurate, impartial, and timely scientific examinations and opinions for the criminal justice system of the State in the interest of public safety.