

The Lab Report

Volume 4, Issue 2

July 2014

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Attention All Who Receive the NSP Quarterly Newsletter!

The Lab Report quarterly newsletter is disseminated to the most current contact information for all of the Police Chiefs, Sheriffs, County Attorneys, as well as other individuals who have requested they be added to the distribution list throughout the years. It is important to disseminate the newsletter to everyone in the agency who may come into contact with forensic evidence (road officers, investigators, crime scene investigators, attorneys, etc.) as the newsletter contains information regarding laboratory analysis, proper evidence handling and scene documentation, database information/requirements, staff contact information, among other things.

Please take the time to send updated contact information for departmental staff who may be the best contact for disseminating training/educational material. Contact information can be emailed to: Amy.Weber@nebraska.gov - I will add the contact to my list for distribution purposes of The Lab Report along with any other training opportunities the NSP Crime Laboratory may offer in your area of the state.

If you have any questions/concerns regarding the topics related to this issue of The Lab Report, please do not hesitate to contact us (laboratory staff contact information - pg. 11).

Enjoy!

Amy Weber (Firearm/Toolmark Section Analyst - editor, The Lab Report)

The Backlog Corner

Biology Unit: 137 assignments (approx. 4 month turnaround time)

Physical Sciences Unit:

Firearm/Toolmark cases: 32 assignments (approx. 7 month turnaround time)

Footwear/Tire cases: 8 assignments (approx. 6 month turnaround time)

NIBIN: 42 assignments (approx. 4 month turnaround time)

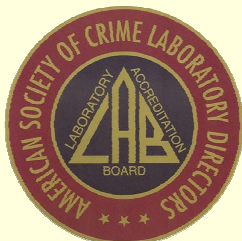
Latent Fingerprints Section: 70 assignments (approx. 3.5 month turnaround time)

Chemistry Unit:

Controlled Substances: 996 assignments (approx. 4 - 4.5 month turnaround time)

Toxicology: 127 assignments (approx. 3 month turnaround time)

Trace: 8 assignments (approx. 2 month turnaround time)



ASCLD/LAB accredited since 2004.



Backlog/Turnaround Times and Re-Accreditation Preparation

As was previously covered in the April 2014 issue of The Lab Report (volume 4, issue 1), the Nebraska State Patrol Crime Laboratory staff is preparing for the American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB) re-accreditation the week of July 21, 2014. The laboratory has been accredited under the national standards of the ASCLD/LAB Legacy Program since 2004. **The re-accreditation process July 21-25, 2014 will move the NSP Crime Laboratory to the ASCLD/LAB - International (ISO) Program, ensuring that the laboratory meets all of the rigorous standards currently in place for forensic crime laboratories on an international level.** In order to maintain accreditation status, laboratories are re-accredited every 4 years to ensure the continued compliance of the lab with accreditation requirements.

Due to the amount of time that is required to prepare for the forthcoming accreditation assessment by laboratory staff, some backlog and turnaround times will be impacted. During the process, laboratory staff are continuing to work high priority cases as well as making every attempt to balance time between unit accreditation requirements and the ever-increasing caseload. After the completion of the accreditation assessment process, laboratory staff plans to refocus efforts on backlog reduction!

If you have any questions/concerns regarding the NSP Crime Lab re-accreditation process and how it might affect your agency, please do not hesitate to contact either our Quality Assurance Manager, Vicki Hopkins (Vicki.Hopkins@nebraska.gov) or our Laboratory Director, Pam Zilly (Pam.Zilly@nebraska.gov)

Just a Reminder (How Agencies Can Assist in Backlog Reduction)

When cases are submitted to the laboratory for analysis, the analysts do not know what is happening on the investigative/legal side of things that may affect whether cases do or do NOT need to be worked (e.g. cases being closed out prior to prosecution, case dismissals, settlements through the court system). Oftentimes, cases sit stagnant in a backlog that have been dismissed for one reason or another without the knowledge of the lab. These cases that are no longer needed for analysis can greatly affect backlog numbers and turnaround times that are reported to you, the submitting agency.



Please be mindful of others whose ACTIVE cases are waiting in backlog to be worked behind an INACTIVE case that may have been dismissed/settled - notify the laboratory when cases no longer need analysis! This small act of notification can affect backlogs and the use of time/resources in a positive manner for analysts and submitting agencies/attorneys.

CODIS and Rapid DNA

Definitions (CODIS and Rapid DNA)



CODIS is the Combined DNA Index System database that was developed and is controlled and regulated by the FBI.

Rapid DNA is the **fully automated** (hands free) process of developing a CODIS Core STR profile from a **reference buccal swab**. The “swab in – profile out” process consists of automated extraction, amplification, separation, detection and allele calling without human intervention.

As of April 2014, NO Rapid DNA instruments have been approved by the FBI to allow for the technology to be integrated with CODIS.

The Goal of the Rapid DNA Initiative

The goal of the FBI’s Rapid DNA initiative is to work with private industry to develop commercial instruments capable of producing a CODIS-compatible DNA profile within two hours and to integrate those instruments effectively within the existing CODIS structure to **search unsolved crimes while an arrestee is in police custody during the booking process**. The FBI has been working on how to integrate this technology first into CODIS laboratory operations and then into police booking locations.

CODIS

Jason Linder (Mgr.)

Katie Rector (Sup.)

Heidi Young

Hillary Duin





CODIS and Rapid DNA

How Does This Affect Nebraska?

As the only CODIS participating laboratory in Nebraska, the Nebraska State Patrol Crime Lab will be working closely with the FBI as Rapid DNA is implemented. Although Nebraska does not currently collect DNA samples from arrestees, it is important to work with and educate law enforcement agencies along with other critical stakeholders so we as a state are prepared for Rapid DNA implementation should Nebraska require the collection of DNA samples from arrestees in the future.

Rapid DNA implementation would affect numerous agencies and require statutory changes, time, and funding. The Nebraska State Patrol Crime Lab will be contacting critical stakeholders to schedule meetings to define roles in the implementation process, answer questions, and prepare for the future. Rapid DNA is coming, but without proper technology, statutory changes, and integration with critical stakeholders, Nebraska will not be able to implement this technology integrated with the CODIS database and reap the benefits it potentially may offer.

To find current information regarding the FBI's initiative on Rapid DNA development please go to:

<http://www.fbi.gov/about-us/lab/biometric-analysis/codis/rapid-dna-analysis>.

Please contact Katherine Rector (Katherine.Rector@nebraska.gov), State CODIS Administrator, if you have any questions about the overall Rapid DNA initiative and the progress of Rapid DNA implementation in the state of Nebraska.

The Nebraska State Patrol Crime Lab will also be posting updates in future issues of The Lab Report.



CODIS

Jason Linder (Mgr.)

Katie Rector (Sup.)

Heidi Young

Hillary Duin

CODIS News

Special Note: Due to the ever-increasing utilization of CODIS within the law enforcement and legal communities, The Lab Report is going to include a special section devoted to all things CODIS in this, and future issues!



For all of our Offender DNA Collection Agencies:

- **Please check the Offender DNA Collection Kit Expiration Dates.** The kits containing buccal SWABS will be expiring next year. Please use them up, or contact the Databank Unit of the Nebraska State Patrol Crime Lab to make arrangements to ship them back and receive new kits.
- **FREE TRAINING** will be provided in **Fall 2014** to go over proper collection techniques for offender DNA samples. **Dates and times are yet to be determined and they will be announced in the October 2014 issue of The Lab Report.**

For all Casework Submitting Law Enforcement Agencies:

- As time goes by, schedules get busier and new personnel transition through your respective agencies. We understand that some information may be forgotten or not passed on to others in an agency. **Some key points to consider that are important when dealing with CODIS are as follows:**
- **DO NOT USE** the state Offender DNA Collection Kits for collecting a reference DNA sample that you are submitting to be compared to evidence. This is clearly marked on the exterior of the kit Shipping Envelope. If you submit a casework reference sample using this kit you will be contacted to re-collect the sample due to the chain of custody being broken.

CODIS

Jason Linder (Mgr.)

Katie Rector (Sup.)

Heidi Young

Hillary Duin

FROM: _____

AFFIX
POSTAGE
HERE



SAMPLE

TO: DNA LABORATORY
Nebraska State Patrol
Crime Laboratory
1233 Arapahoe St.
Lincoln, NE 68502



****DO NOT USE FOR THE COLLECTION OF CASEWORK SAMPLES****



CODIS News (continued)

For all Casework Submitting Law Enforcement Agencies:

- Even if you know that your suspect's DNA profile is already in CODIS, you **must STILL collect the suspect reference sample**. Not all evidence DNA profiles are eligible to be entered into CODIS, and if the evidence DNA profile isn't eligible to go into CODIS the comparison will never be made. The **best practice** for law enforcement agencies is to collect the suspect's reference sample and submit it along with the evidence. If you are unable to collect the reference sample please document this along with the reason on the NSP 750 Submittal Form.
- **DNA profiles obtained from the UNMC HDI Laboratory are NOT automatically submitted into CODIS.** You **must** fill out an **NSP 751 CODIS Search/Upload Request Form** and submit it to the Nebraska State Patrol Crime Laboratory if you want DNA profiles obtained from the UNMC HDI Laboratory to be reviewed for CODIS eligibility and entry.
- It is **important to note** that if you have submitted evidence to the Nebraska State Patrol Crime Laboratory for analysis, the profiles automatically get entered into CODIS if they are eligible so you do not need to complete the NSP 751 request form described above when submitting evidence.

CODIS

Jason Linder (Mgr.)

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Please contact Katherine Rector (Katherine.Rector@nebraska.gov), State CODIS Administrator, if you have any questions or concerns regarding CODIS.



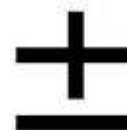
NEW! Reporting Uncertainty of Measurement



Forensic labs accredited to (or applying for accreditation to) ISO/IEC 17025:2005 and the ASCLD/Lab - *International Supplemental Requirements for the Accreditation of Forensic Testing Laboratories* are required to estimate a measurement uncertainty for all reported quantitative measurements that may have a direct impact on legally defined parameters for that criminal offense. For this reason, submitting agencies will begin seeing a +/- uncertainty factor included in some of the results reported by the NSP Crime Lab. All measurements vary due to a variety of influencing factors: environmental conditions, operational capabilities of equipment, differences in staff implementation and use of equipment, difficulty measuring a given sample due to dimension/characteristics, uncertainties determined through measurement traceability of standards, etc. For example, if one bag of marijuana was weighed 100 times on the same balance each time, it is unlikely the resulting weight will be the same each time. In reality, the analyst will probably observe a range of weights that tend to cluster around an average weight. Due to this variability in measurement (weight, length, etc.), an uncertainty of measurement must be calculated to report out along with the critical measurement on laboratory reports.

The NSP Crime Lab analytical sections that have critical measurements identified by ASCLD/Lab - *International* (ISO) are: the Controlled Substances section (drug weights) and Firearm/Toolmark section (barrel length and overall firearm length). The coverage probability percentage that will appear along with results for drug reports and firearm reports ONLY pertains to either the WEIGHT of the drug or the LENGTH of the firearm - this percentage does NOT pertain to the identity of the drug. This is not to be confused with DNA probability percentages reported with their type of analysis.

As of this publication, the NSP Crime Lab has already transitioned to this form of reporting critical measurements plus expanded uncertainty values. The following two sections in The Lab Report will expand on how each analytical section (controlled substances and firearm/toolmark) will report their uncertainty values and how the submitting agency can interpret those values.





Reporting Uncertainty of Measurement - Drug Reports

The Controlled Substances section will begin reporting what's called an "uncertainty," alongside all drug weights. This "uncertainty" will be expressed as a number and will be qualified with a coverage probability. The total net weight of all items containing the same controlled substance will be listed under the **RESULTS** section of drug reports. Weights of individual items and their associated uncertainties will be listed in an attachment to the report. **Below are some examples of what you'll see from now on in drug reports:**

Example 1: One item containing a controlled substance

RESULTS:

Item 1: Confirmed marijuana, Schedule I. Total Net Weight= 28.35 ± 0.10 grams at a coverage probability of 99.73%.

RESULTS:

Item 1: Confirmed methamphetamine, Schedule II. Total Net Weight= 5.0178 ± 0.0013 grams at a coverage probability of 99.73%

Example 2: Several items containing a controlled substance

RESULTS:

Items 1, 2, and 3: Confirmed marijuana, Schedule I. 289.19 ± 0.87 grams at a coverage probability of 99.73%

In an attachment, you will find the following table:

Item #	Weight (grams)	Balance	\pm Expanded Uncertainty (grams) (Coverage Probability of 99.73%)
1	45.63	Top Loader 5.00g-100.00g	0.10
2	5.6785	Analytical 0.0500g-10.0000g	0.0013
3	237.89	Top Loader 100.01g-4,100.00g	0.87

Total Net Weight	289.1985	grams
Propagated Uncertainty	0.8757	grams
Reported Weight	289.19	grams
Reported Uncertainty	0.87	grams

Reporting Uncertainty of Measurement - Drug Reports

What Does Uncertainty Mean to The Submitting Officer?

One important example of how measurement uncertainty is relevant to the criminal justice community is when reported drug weights are compared to a legal cut-off. Where an item of marijuana was identified and weighed to be 28.35 grams \pm 0.10 grams, would the person possessing this marijuana be in violation of Nebraska Revised Statutes 28-416 (11) where it states that “Any person knowingly or intentionally possessing marijuana weighing more than one ounce but not more than one pound shall be guilty of a Class III misdemeanor”? (One ounce is equal to 28.350 grams.)

Such legal interpretations should be left to the jurors, attorneys, and judges responsible for them. **The controlled substances analyst, when presented with the question of uncertainty of measurement in court will simply state that if the analyst repeatedly weighed the item, he/she would obtain results between 28.25 grams and 28.45 grams 99.73% of the time.**

One of the laboratory’s objectives is to “disseminate scientific information and educate the criminal justice community regarding forensic science matters.” We are here to provide you with all the information you need to judiciously apply our test results to your criminal investigations.

Please contact the controlled substances section if you have any questions about drug weight uncertainties.



Controlled Substances

Celeste Laird (Mgr.)

Vicky Cowan

Mandy Dahlberg

Abbey Dodds

Meggan Macomber





Reporting Uncertainty of Measurement - Firearm Reports

The NSP Crime Laboratory Firearm/Toolmark section will begin reporting an estimated “measurement uncertainty,” alongside all barrel length and overall firearm length measurements.

State and Federal statutes designate legal lengths for firearm barrels as well as overall firearm length (e.g. definitions of short rifles/short shotguns). Firearms that fall BELOW the legal length for either barrel or overall length are considered to be illegal per said statutes.

The primary purpose of the uncertainty factor included with reported firearm overall/barrel lengths is to bring to light any measurement variability that could impact the classification of an altered rifle/shotgun as a short rifle or short shotgun. Reports issued by the Firearm/Toolmark section concerning barrel length and overall length measurements for shortened firearms will contain wording similar to one or more of the statements listed below.

Firearm/Toolmark

Section

Kent Weber (Sup.)

Amy Weber

Sarah Zarnick

Example #1: “The barrel length of Item 2 was found to be 17.56 inches +/- .07 inch at a coverage probability of 95.45%”

Example #2: The overall length of Item 1 was found to be 27.06 inches +/- .19 inch at a coverage probability of 95.45%. Taking the estimated measurement uncertainty into consideration, the overall length of the Item 1 firearm is greater than 26 inches in length.

Example #3: The overall length of Item 1 was found to be 25.81 inches +/- .19 inch at a coverage probability of 95.45%. Taking the estimated measurement uncertainty into consideration, the overall length of the Item 1 firearm may be equal to 26 inches in length.

Example #4: The overall length of Item 1 was found to be 25.88 inches +/- .19 inch at a coverage probability of 95.45%. Taking the estimated measurement uncertainty into consideration, the overall length of the Item 1 firearm may be greater than 26 inches in length.

If you have any questions/concerns, please contact the Firearm/Toolmark section supervisor, Kent Weber (Kent.Weber@nebraska.gov)





Laboratory Director:
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Hours of Operation:
Monday-Friday
8am—5pm

Evidence Receipt Hours:
Monday-Friday
9am-4pm

To contact the crime lab
with general laboratory
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phone number or email
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Vicki.Hopkins@nebraska.gov

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