FORENSIC KENTUCKY STATE POLICE LABORATORIES

Focus on Forensics

DECEMBER 2022

SPECIAL POINTS OF INTEREST:

- **Toxicology Turnaround Times**
- **Breaking Down Barriers to Polygraph Examinations**
- **Drug Chemistry Packaging & Priority**

INSIDE THIS ISSUE:

Drug Chemistry-Evidence Packaging & Testing Priority

The drug chemistry section analyzes various forms of evidence suspected to contain controlled or non-controlled substances. This evidence includes plant material, tablets (illicit or pharmaceutical preparations), powders, solids, liquids, clandestine laboratory evidence, and various items of paraphernalia (residues). As with all types of evidence, there are certain ways in which these items need to be packaged in order to maintain the integrity of the item(s), as well as for the safety of all persons who may be exposed to it (officer, mail currier, evidence tech, analyst, and court personnel).

Detailed instructions on proper evidence packaging may be found in the Physical Evidence Collection Guide. However, it is worth noting here how to properly package some evidence types that we see in the lab most often. All powders/solids need to be placed into sealable plastic bags. If using a gum seal plastic bag or an envelope, please place the powder/solid into a ziplock plastic bag before placing into the gum seal plastic bag or envelope. Gum sealed plastic bags and envelopes are not completely sealed containers, and powders/solids leak from them. This poses a safety issue as the powder/solid could contain a dangerous substance such as fentanyl. It also will affect the weight if some of the evidence is lost in transport.

Plant material needs to be packaged in paper or cardboard only, unless the plant material has been dried and/or vacuumed sealed. This is especially important if you are sending samples of a suspected cultivation operation. Fresh cut plant material contains water. If placed into a plastic bag of any sort, it will mold and degrade sometimes to the point that we are no longer able to detect the presence of possible cannabinoids.

Liquids need to be packaged in a leak proof container. If the liquid is already in a plastic bottle of some sort, the bottle needs to be placed into a sealable plastic bag as an extra precaution before being placed into whatever outer container your agency prefers (envelope, gum seal plastic bag, heat sealed plastic bag, etc).

All sharps, including syringes and glass items such as pipes, need to be packaged in puncture proof containers. Syringes will only be accepted in sharps tubes designed specifically for syringes. All other potentially sharp items need to be placed into a container in which they cannot be broken (small boxes preferred). Glass pipes have been mailed (which does go against our policy), and brought to the lab in bags or envelopes. By the time the analyst has received them, they are nothing but shards of glass that are no longer suitable for testing.

If you have multiple pieces of evidence in a case, it is best to package them separately. This can mean one outer container with multiple plastic bags inside each containing a separate item, or you can submit multiple outer containers each containing only one item. Please note however, that just because multiple items are submitted to the drug lab, it does not mean all will be tested.

Continued on Page 4

Breaking Down Barriers to Polygraph Examinations

The Kentucky State Police Polygraph Section is accessible to every police agency in the Commonwealth of Kentucky. This section of the Central Forensic Laboratory is available to help police agencies solve cases that may have little or no physical evidence. Many times when it comes to polygraph, we hear a multitude of reasons why investigators do not like to use polygraph; investigators will say results are not accurate, they cannot be used in court, medical issues prohibit testing, and the testing locations are too far to drive.

In 2011, the American Polygraph Association published a meta-analytic survey of validated polygraph techniques. The results of that survey showed polygraph accuracy rates of up to 95%. The Kentucky State Police Polygraph Section uses those same validated techniques shown to have a mean accuracy rate at or about 90%, with a 95% confidence interval. In most cases, the confidence in the decision of an examination is very high.
Consider medical tests we rely on every day that have similar accuracy rates, such as the colonoscopy. The colonoscopy is the gold standard in the detection of colon cancer, and has an accuracy rate of up to 94%. The rapid streptococcus test has a similar accuracy rate, and when individuals get the favorable results from these and other medical tests, they tend to take those results at face value without questioning their validity.

Polygraph gets a bad rap when it comes to the results of a test. Bottom line, polygraph has proven a very reliable investigative tool. In general, nearly every major law enforcement agency, every state police organization, and every large or mid-size city police department has a polygraph operation. While many small cities and rural sheriff's offices also have examiners, others depend on state assistance. Public defenders' offices are often staffed with examiners, as are states attorney's offices and other agencies in the criminal justice system.

Entities in the federal government regularly use polygraph as well, including the Federal Bureau of Investigation, the Drug Enforcement Agency, the United States Secret Service, Customs, and similar agencies. The divisions involved in criminal investigations and intelligence of the Army, Navy, Air Force and Marine Corps use the polygraph, as do the major intelligence agencies such as the Central Intelligence Agency. The use of polygraph is not limited to the United States. It is regularly used by law enforcement agencies in Canada, Japan, Israel, and to a lesser extent by law enforcement agencies in more than twenty other nations.

The admissibility of polygraph testing results has been debated since its invention in the 1930s. The United States Supreme Court has ruled it is up to individual states to determine if polygraph is admissible in local courts. In a 1984 court case, Ice v. Commonwealth, the Kentucky Supreme Court excluded both the evidence of polygraph examiners and mentioning the taking of a polygraph during the jury trial. The purpose of which was to bolster the claim of credibility or lack of credibility of a particular witness or defendant. An earlier decision by the Kentucky Supreme Court in Silverburg v. Commonwealth held that a polygraph examination was properly administered and the defendant had the mental capacity to voluntarily submit to the test. The defendant failed the test, and it was determined there was no improper influence which would constitute a coercive effect with respect to his subsequent admission by being advised that he had failed the test.

The important takeaway is that information gained during a polygraph examination can be brought into evidence at trial. While specific polygraph results cannot be given as evidence, nor can the word polygraph be used at trial, the polygraph examiner can testify to admissions the examinee makes during the examination. The court also allows that after the examinee is told the results of the test, there is no coercive effect that would cause any admissions made by the examinee to be suppressed at trial. So, information gained can be used to further the investigation and be brought into evidence at trial.

Continued on Page 4

Toxicology Turnaround Times— Shining the Spotlight on Drug & Blood Alcohol Analysis

Drug Analysis-by Brandon Standifer

Turnaround times for Toxicology cases involving suspected drug use while operating a motor vehicle have historically been a problem in the Commonwealth of Kentucky. Looking back to 2016, it wasn't surprising for such cases to have an average turnaround time of six to eight months, if not longer. As recently as March 2020, the average turnaround time for a DUI-D Toxicology case was approximately 162 days. Tremendous strides have been made since then to bring this number crashing down to a more reasonable timeframe. As of this writing, **the average turnaround time for DUI-D cases in 2022 has been reduced to 61.5 days**.

Several factors have played into this success:

1) Limited Instrument Down Time. In the past, instrument down time has been the single largest contributing factor to an increase in Toxicology turnaround time. The instruments themselves are very expensive, which in turn makes repairing them a pricey venture as well. Financial approval for such a repair is always a slow and tedious process that could take anywhere from weeks to months to receive. Thankfully, the Kentucky Legislature set aside funding in the budget allowing service contracts for our most expensive, and highest throughput instrumentation. Now when (not if) a repair is needed, the work can be completed in a matter of days instead of weeks to months.
2) Working Remotely. The ability to complete the peer review process and work through previously generated data remotely has increased efficiency when analysts are in lab. Tasks required to be completed in lab now take priority when analysts are in lab, where more administrative tasks can be performed remotely.
3) A Cohesive Staff. The most important factor has been keeping our incredible staff together with little turnover. The importance of maintaining an experienced staff, dedicated to organizational success, and who have made a commitment to bringing the backlog number down to a reasonable number of days cannot be overstated. Credit for the success of the Toxicology section's DUI-D turn around improvement goes to Alycia Wilson, Bailey Gill, Ciara Goodrich, Courtney Carver, D.W. Eversole, Jason Berry, Jodie Snodgrass, Joey Wiley, Julie Patterson, and Sarah Mwale.

We aren't sitting back on our laurels however, and believe with a few improvements to certain extraction procedures the turnaround time to provide results could become even lower. Stay tuned!

Blood Alcohol-by Ryan Johnson

I was recently asked to submit an article to this newsletter illustrating the drastic reduction in turnaround times for Blood Alcohol (aka volatiles analysis). It has always been clear that there were two major issues in Toxicology preventing us from lowering turnaround times. The first was the constant turnover in personnel, and the second was the time to repair instruments.

Employee turnover, as many of you know, causes a great amount of disruption in a section. Not only do you have to find, hire and train new people, but also work backs up while the new trainees come onboard. It is a vicious cycle that not only creates a backlog, but places additional stress on the current staff, which leads to more turnover! We have been truly blessed over the last several years to bring on a levy of hard workers who wanted to be at the lab and have made this section their home - 9 of the last 11 hires are still with the section. This is an amazing feat especially during the lean times of the past. This staff retention has allowed the caseload to be evenly distributed, which in turn lets analysts put more focus not just on case completion, but on quality as well. Toxicology runs on its personnel, and we have an amazing staff of analysts to drive that engine.

The second issue was similarly the nemesis to quick case resolution. Over time, the equipment and techniques we were using became more sophisticated. Higher accuracy and a comprehensive test panel became a real boon for our section. We got new Gas Chromatographs, Mass Spectrometers, and Liquid Chromatographs, but this newer equipment came with its unseen side effects.

Continued on Page 4

Breaking Down Barriers to Polygraph Examinations continued from page 2

Sometimes medical issues can cause an examinee to not be suitable for testing. Many times the polygraph examiner can still test individuals who have medical issues as long as those issues are controlled by medications or corrective surgeries. Detectives should always tell the examinee to take their medications as prescribed. The examinee should also get a good night's sleep and have a light meal before the polygraph examination. These suggestions to the examinee help in obtaining good physiological data during the polygraph examination.

The Kentucky State Police Polygraph Section is committed to being a more user friendly and accessible resource for all state and local agencies. We are a more mobile unit, and in some cases can travel to the agency or post location. Due to employee allocations this may not always be possible, but if we have an examiner available, we will do our very best to accommodate an agency. To conduct a polygraph examination, a certain environment is needed to be conducive to producing good polygraph results; the polygraph examination needs to be conducted in a room with a small table or desk that is free of clutter and noise distractions. Many agencies will have an interview room that is in a quiet location at their facility, and these rooms are usually suitable. It is KSP policy that every polygraph examination conducted must be recorded with both audio and video. If your interview room is equipped with the recording equipment, we may be able to test at your location. If an agency has the proper environment and equipment in place, an individual from the polygraph section may want to come inspect the location to ensure suitability prior to scheduling any test.

For questions or more information on polygraph testing and how it can be utilized by your agency, you can contact me, Marvin Hayden, Polygraph Program Manager (marvin.hayden@ky.gov).

Drug Chemistry-Packaging & Priority continued from front page

Upon initial submission to the lab, the three highest charges will be tested. For example, if three separate bags of powder/solid, a bag of suspected marijuana, and a pipe are submitted, only the three bags of powder/solid will be tested (unless no controlled substances are found; then the additional items will be tested). When a trial is set and the attorney needs any additional items tested, they may be submitted to the lab for testing. We ask that enough time be provided for additional testing to be completed, at least two weeks before trial, and that the analyst is contacted so we can be aware of it before it comes back into the lab. The testing priority of the drug lab can be found in detail in the Physical Evidence Collection Guide.

If ever you have a question or if a special circumstance may arise, please do not hesitate to contact a drug analyst at your respective laboratory. We are here to help.

Blood Alcohol Turnaround Times continued from page 3

The age-old tradition in toxicology of repairing our own instruments, born of necessity, became impossible. A high-level overhaul of the instruments was no longer practical, and we therefore became more dependent upon outside service calls by the manufacturers' engineers. As the cost of repairs increased, the time to get them approved increased as well. Waiting two or three months to get an instrument up and running was not unusual, and as each instrument went down the section would move toward a complete stoppage in casework. However, in recent years money has been allocated in the state budget for maintenance contracts which has led to dramatic decreases in instrument downtime.

It is my belief that these two factors paved the way for the drastic reduction in turnaround times for Toxicology. The 30-day turnaround times for volatiles analysis, once a distant dream is now achieved on a regular basis. Maybe in the not too distant future we will see 20-day completions.

CONTACT US

Laboratory Management

Lt. Col. Larry C. Newton Jr, Office of Technical Services (larry.newton@ky.gov)

Laura Sudkamp, Division Director (laura.sudkamp@ky.gov)

Lt. Joey Adams, Western Commander (joey.adams@ky.gov)

Sgt. Benjamin Campbell, Southeastern Commander (benjamin.campbell@ky.gov)

Laboratory phone numbers and contact info

AFIS, 502-782-9821

Fred Crane, Forensic Fingerprint Supervisor (fred.crane@ky.gov)

Central Laboratory, 502-564-5230 or 800-326-4879

Jeremy Triplett, Laboratory Director (jeremy.triplett@ky.gov)

Eastern Laboratory, 606-929-9142

Larry Boggs, Laboratory Director (larry.boggs@ky.gov)

Jefferson Laboratory, 502-426-8240

Julie Ferguson, Laboratory Director (julie.ferguson@ky.gov)

Northern Laboratory, 859-441-2220

Jeanna Oxenham, Laboratory Director (jeanna.oxenham@ky.gov)

Polygraph, 502-782-2023

Marvin Hayden, Polygraph Program Manager (marvin.hayden@ky.gov)

Southeastern Laboratory, 606-877-1464

Beverly Wagoner, Laboratory Director (beverly.wagoner@ky.gov)

Western Laboratory, 270-824-7540

Julie Ferguson, Interim Laboratory Director (julie.ferguson@ky.gov)

We want to hear from you!

Please take a moment to fill out our KSP Forensic Laboratories 2022 Customer Satisfaction Survey

https://www.surveymonkey.com/r/KSP_LAB

Central Laboratory Section Supervisors:

Matthew Clements, Firearms/Toolmark Supervisor (matthew.clements@ky.gov)

Davey McCann, Supervisor (DNA/Violent Crimes) (davey.mccann@ky.gov)

Lyle Hall, Supervisor (DNA/Property Crimes/Serology) (jonathan.hall@ky.gov)

Steven Barrett, Supervisor (DNA/Sexual Assaults) (steven.barrett@ky.gov)

Whitney Collins, Administrative Supervisor (whitney.collins@ky.gov)

Katrina Featherston, Quality Assurance Supervisor (katrina.featherston@ky.gov)

Ryan Johnson, Toxicology Supervisor (ryan.johnson@ky.gov)

Brandon Standifer, Toxicology Supervisor (brandon.standifer@ky.gov)

Helena Johnson, Photo Lab Supervisor (helena.johnson@ky.gov)

Stuart Mullins, Breath Alcohol, Systems Technician Specialist IT (stuart.mullins@ky.gov)

Jack Reid, Trace Supervisor (jack.reid@ky.gov)

Allison Standifer, Drug Chemistry Supervisor (allison.standifer@ky.gov)

Regina Wells, DNA Database Supervisor (regina.wells@ky.gov)

Do you have topics you would like to see in future editions? Do you have questions you would like to see addressed? Please contact Danielle Jensen (danielle.jensen@ky.gov) with comments or suggestions.