

Drug Chemistry (CHEM)

Technical Leader: Jennifer Watson, watsonj@mcoho.org, 937-496-7037

Overview:

Drug Chemistry performs analysis for the presence of suspected controlled substances and general chemical testing. Unless a specific request is made, evidence submitted to the Chemistry section will be analyzed for the presence of controlled substances.

Reports:

Reports are authored to include the identification, weight, and schedule of a controlled substance. A quantitative result for THC will be provided when necessary.

Required Information to Perform Analysis and Complete a Report:

Drug paraphernalia will not be tested unless indicated by a particular charge. Misdemeanor amounts of cannabis will not be tested if the item is less than 300 milligrams or if other items are present that result in a higher statutory charge.

Additional Information:

Specific requests for general chemical testing include bank dye analysis, harmful intoxicants and poisonings. It should be noted that substances submitted for poison testing require a known standard.

Rush Requests or Report Inquiries:

Rush requests or report inquiries can be made by emailing drugrushes@mcoho.org. Please include the requested due date and other pertinent case information.

Firearms (FA)

Technical Leader: Patrick McLaughlin, mclaughlinp@mcoho.org, 937-496-7298

Overview:

Any firearm submitted to the laboratory will be test fired and, if eligible, entered into the NIBIN system. Microscopic analysis will be performed on requests where a specific request for comparison has been made. However, all homicide related evidence will be examined. All other evidence will be screened and entered into NIBIN.

Fired bullets not associated with other firearm evidence will not be examined unless specifically requested.

If a firearm has an obliterated serial number, a specific request for restoration must be made. Firearms suspected to have barrels shorter than legal length will be measured and the results reported, upon request.

The firearms section does not perform the following analysis: Muzzle to Target Distance Determination, Tool Mark Comparison, Trigger Pull Analysis and Sound Suppressor Examination.

Reports:

Reports are authored to include the results of microscopic analysis of the firearm evidence submitted.

The Firearms Operability/NIBIN Report Worksheet will serve as a simplified report to be disseminated to the appropriate agency. It will communicate to the customer if the firearm was operable and what was entered into NIBIN.

Required Information to Perform Analysis and Complete Report:

Notes should be made for analyses that require specific requests as stated in the Overview section above.

**Officer Involved Shootings will be treated as priority cases. Please notify the Firearms section when an Officer Involved Shooting is submitted.*

Additional Information:

If a firearm cannot be unloaded prior to submitting to the laboratory, then an individual from the Firearms section must be notified to retrieve the firearm immediately.

Due to safety concerns, the Firearms section will not provide witness to test firing of firearms that have not been previously accepted into the laboratory and undergone a thorough safety inspection.

Latent Prints (LP)

Technical Leader: Jennifer Yoak, yoakj@mcoho.org , 937-496-7056

Overview:

The Latent Print Section accepts items of physical evidence, latent print cards with lifted prints, and photographs/digital images of latent prints developed at a scene for the purpose of identifying who touched a particular item or surface. For physical evidence, the appropriate method of physical or chemical processing is selected at the laboratory. Latent print cards and photographs/digital images are analyzed to determine if any latent prints of value are present.

The quality of the latent prints of value dictates which other examinations can be performed. Latent prints may be of no value for further examination, of value for comparison only, or may be suitable for comparison and to search in the Automated Fingerprint Identification System (AFIS).

Latent prints of value are compared to listed suspects for whom known prints can be located or to submitted known prints. Any AFIS quality latent prints remaining after such comparisons, or if no suspects or known prints are provided, will be entered into AFIS. This includes the fingerprint and palmprint databases of MVRCL as well as the Ohio BCI. In high priority crimes against persons cases (homicide, rape, robbery or assault), cases with a described out-of-state connection, or when specifically requested, suitable latent fingerprints may also be searched against the FBI's criminal fingerprint database. If a potential candidate/s is located through these searches, the latent print/s of value in the case will be compared to that individual/s. If the search results in "no hit", the latent print/s can be registered to the unsolved latent database in MVRCL's AFIS system for a continuous search of all new tenprint and palmprint entries. All unsolved latent prints are registered unless specifically noted on the report.

Reports:

Reports are authored to include the analysis of the latent print evidence. If applicable, the report will include processing method/s used, comparisons to listed individual/s, and any database searches conducted and subsequent results.

Results of comparisons will be reported as identified, excluded or inconclusive to a specific individual. If the result is inconclusive, additional known standards may be necessary to complete the analysis. The report will indicate which area/s of the fingers, palms or feet should be recorded and submitted for further comparison.

Latent Print reports include a "Terms and Definitions" page that explains terminology, reported conclusions, and their significance.

Required Information to Perform Analysis and Complete a Report:

A scale should be present in any submitted photographs/digital images of latent prints.

Please include the name and demographic information of any suspect in the case so that a direct comparison can be performed. An AFIS search will occasionally “miss” the correct candidate, even if the individual has known prints on file.

Please include if a search of the FBI’s criminal fingerprint database is requested for cases that are not crimes against persons (burglary, theft, weapons charge, etc.)

Additional Information:

Examinations are performed automatically based on the suitability of the latent prints of value. For non-member agencies, comparisons and AFIS searches incur additional costs. Please see the current fee schedule for non-member examinations. If you do not want one of these examinations conducted, or if you would like to provide authorization before an additional examination is performed, please indicate that on your request.

While most items or surfaces can be processed for latent prints, the following are examples of unsuitable items that will not routinely be processed: cloth, gel capsules, small pieces of broken glass and syringes. If both DNA and LP analysis is requested on a small, smooth item, it may be necessary to select only one exam. Please contact the Latent Print Section if you have questions about the suitability of a particular item.

Serology/DNA (BIO)

Technical Leader: Kristin Nestor, nestork@mcoho.org , 937-496-7029

Overview:

The serology/DNA unit examines evidence for body fluids (semen and blood) and performs DNA analysis on those samples. The section also conducts DNA testing using STR analysis on other items of evidence, including “touch DNA” samples. The section will determine the necessity for Y-STR analysis on a case-by-case basis. DNA comparisons are made between forensic unknowns and DNA standards/knowns. DNA profiles meeting the guidelines for CODIS eligibility will be entered and searched in the database. Examples of cases submitted to the serology/DNA section include: sexual assaults, homicide, assaults, property crimes, paternity (criminal offense), identification of remains, narcotics, weapons charges, etc.

Reports:

Reports are authored concluding the result of analyses, and in the instance of a DNA comparison, a statistical calculation is provided on probative samples of inclusion. CODIS hits are confirmed and reports are authored alerting the agencies involved of the investigative lead.

Required Information to Perform Analysis and Complete a Report:

Sexual Assault Guidelines:

Only the sexual assault kit from the victim and/or the suspect is permitted during the initial submission. Additional items from the incident may be requested or submitted once the sexual assault kit has been tested. If no kit was collected, an exception can be made and is at the discretion of the DNA section.

DNA Analysis Requirements:

Documentation providing a link between the evidence items submitted and a possible perpetrator must be provided during submission. Descriptive information is necessary in order to determine and support CODIS entry of obtained DNA profiles.

All standards from suspects, victims, or individuals for elimination (including consensual sex partners) are required prior to conducting DNA analysis.

Items from possession-related offenses are not eligible for CODIS entry, thus DNA testing will only be performed if DNA standards are submitted. These cases include, but are not limited to, CCW, Narcotics, Weapons Under Disability, Shooting into a Dwelling, etc.

Items/samples from items that are considered touch DNA require elimination standards prior to entry into CODIS, and in most cases, before comparisons are made. Examples are: standards from all vehicle occupants/owners to eliminate from a DNA profile developed from the steering wheel of a stolen vehicle, standards from the residents to eliminate from a DNA profile developed from the door knob from a burglarized home, etc.

Additional Information:

Samples submitted to the section will be consumed when deemed necessary for DNA testing.

Rush requests can be made by emailing dnarushes@mcoho.org. Please include the requested due date and other pertinent case information.

*Rush fees may apply.

Toxicology (TOX)

Technical Leader: Heather Antonides, antonidesh@mcoho.org , 937-225-5058

Overview:

The toxicology section analyzes biological samples for the presence of alcohol, prescription/over the counter medications, and drugs of abuse for the purpose of OVI, drug facilitated crime, or probation/parole violations. Toxicology also analyzes alcoholic beverages to determine alcohol content. The unit will accept blood, urine, serum, plasma, or suspected alcoholic beverages.

Reports:

Reports are authored concluding the result of the analysis. Reports will contain the identification of substances detected and may contain the concentration of each substance. Measurement uncertainty will be reported when a drug with a specification limit (defined legal limit) is detected and will be available upon request for all other analytes.

Required Information:

Please include case history, field sobriety testing results when performed, DRE reports if available, and a list of any drugs suspected in the case.

Additional Information:

For cases with limited sample volume received, the amount of testing performed may be limited and the specimen may be consumed. The preferred specimen for blood analysis is a grey top tube. When submitting samples for drug facilitated crimes both blood and urine are recommended.

OVI

Cases will be initially analyzed for alcohol. If the alcohol is below the per se level, the case will also be tested for drugs. Cases involving death or child endangerment will have both alcohol and drug testing performed.

Drug Facilitated Crimes

Cases will be analyzed for alcohol and drugs. The drug testing will include targeted analysis for low concentrations of drugs and GHB.

Probation/Parole

Targeted confirmation of the drug requested will be performed.

Trace Materials (TRC)

Contact: Rachel Newton, newtonr@mcoho.org , 937-225-5090

Overview:

The trace materials and impression evidence sections of the Miami Valley Regional Crime Laboratory deals with the analysis of both microscopic and macroscopic traces of physical evidence. These may include but are not limited to hair, paint, fracture matches, and impressions. These types of evidence are frequently found at crime scenes such as homicides, rapes, assaults, burglaries and automobile accidents.

Reports:

Reports are authored upon completion of results. NOTE: These services are not part of the lab's scope of accreditation. Analyses within TRC are performed by authorized staff following best laboratory practices.

Required Information:

Hairs

Hair analysis and comparisons may be performed in the Laboratory. An analysis involves examining hair and determining if it is human or animal. If human, analysts may be able to determine if it is head, pubic, or body hair.

A hair comparison may be performed on head and pubic hair. Known standards of head/pubic hair must be submitted along with the questioned hair. Analysts may determine if the questioned hair could have originated from the individual who provided the standard. Analysts may also eliminate that individual from being the source of the questioned hair. * After a comparison, the hair root from the questioned hair may be sent for DNA. (Hair comparisons must be performed first as this DNA test does not always yield results and the DNA testing consumes the hair root.)

Paint

Paint cases are often hit and run cases or burglary cases where a tool was used to pry open a door or window. In any paint case, a known standard must be submitted to compare to the questioned paint. Analysts may determine if the questioned paint could have originated from the source of the standard. Analysts may also eliminate the questioned paint from originating from the source of the known paint.

Other

Trace evidence may include other items that are not mentioned here. Please contact someone in the Trace Evidence Section if you have questions about other items of evidence for analysis. We can assist in sending oil evidence to The U.S. Coast Guard Laboratory. We can also assist in sending Glass and Soil cases to the FBI.

Additional Information:

*Depending on the samples submitted, inconclusive results may also be yielded in all different analyses.

Impression Evidence (TRC)

Contact: Rachel Newton, newtonr@mcoho.org , 937-225-5090

Overview:

The trace materials and impression evidence sections of the Miami Valley Regional Crime Laboratory deals with the analysis of both microscopic and macroscopic traces of physical evidence. These may include but are not limited to hair, paint, fracture matches, and impressions. These types of evidence are frequently found at crime scenes such as homicides, rapes, assaults, burglaries and automobile accidents.

Reports:

Reports are authored upon completion of results. NOTE: Impression evidence services are part of the lab's scope of accreditation. Other analyses within TRC are performed by authorized staff following best laboratory practices.

Required Information:

Impressions

Footwear and tire track impressions may be analyzed at the Laboratory.

These impressions may be analyzed and/or compared to known standards.

For a footwear or tire track comparison, known shoes/tires**must be submitted along with any questioned impressions. Questioned impressions are usually photographed, lifted, or casted. A scale must be present if photographed. The known shoes/tires are compared to any questioned impressions and it may be determined that they were made by that shoe/tire, could have been made by that tire/shoe, or were not made by that tire/shoe.

Questioned impressions may also be analyzed to determine what type of shoe made that impression. The make/model of the shoe may be provided as well as photographs of the shoe. If the investigator discovers the shoes, they may subsequently be sent in for comparison.

Additional Information:

*Depending on the samples submitted, inconclusive results may also be yielded in all different analyses.

**For tire track comparisons, please contact the Laboratory as analysts will come to the location of the vehicle to process and collect known tire tracks.