

PHYSICAL EVIDENCE MANUAL



OREGON STATE POLICE FORENSIC SERVICES DIVISION

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PREFACE

PREFACE

The purpose of this manual is to give direction to our customers in the Criminal Justice System regarding the services provided by the Oregon State Police Forensic Services Division (OSP FSD), and the recommended methods of collecting and preserving physical evidence. Additionally, this manual contains evidence submission acceptance criteria for items in need of forensic examination. The recommendations and the criteria help to ensure the integrity of the evidence and best analytical results.

Every attempt has been made to make this handbook as current and up-to-date as possible; however, it should be noted that the field of forensic science is changing at a rapid rate. New techniques and procedures are constantly being developed, providing new capabilities or refinements to existing capabilities. Consequently, techniques, procedures and capabilities contained herein may change in the future. All agencies are encouraged to keep in regular contact with their local laboratory to keep abreast of any such changes. This handbook will be stored on the State Police Internet site:

<http://www.oregon.gov/osp/FORENSICS/Pages/OSP%20FORENSICS.aspx>

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1.0 FORENSIC SERVICES DIVISION MISSION STATEMENT

1.0 FORENSIC SERVICES DIVISION MISSION STATEMENT

Founded in 1931, the mission of the Oregon State Police is to serve the State of Oregon with a diverse workforce dedicated to the protection of people, property and natural resources.

The purpose of the Forensic Services Division (FSD) is to serve the people of Oregon with the highest standards of science, ethics and professionalism in recovering, preserving and analyzing physical evidence.

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2.0 INTRODUCTION

2.0 INTRODUCTION

OSP has five laboratories across the state located in Bend, Central Point, Clackamas (Portland Metro), Pendleton and Springfield. The labs provide services in the scientific examination of physical evidence, collection and preservation of evidence, analysis of major crime scenes and expert testimony regarding the scientific examinations. In addition, the FSD manages and administers the CODIS database and the State of Oregon’s breath-testing instruments and officer certification.

All five OSP laboratories are accredited to the ISO/IEC 17025:2005 standard and ASCLD-LAB Supplemental Requirements for Testing Laboratories. Additionally the DNA Unit is accredited to the FBI Quality Assurance Standards (FBI QAS) for casework and database analysis.

The services of the laboratories are available to all local, state, and federal law enforcement agencies in Oregon for the purpose of rendering assistance in criminal investigations and judicial proceedings. Casework will also be conducted for the defense upon court order. Normally, all laboratory examinations, court appearances, and travel expenses are available without charge.

The following is a list of the disciplines and a brief description of the type of forensic services provided.

BIOLOGY PROCESSING

The screening and preliminary processing of physical evidence for biological material (e.g., blood, semen, saliva) and the sampling of Sexual Assault Forensic Evidence (SAFE) kits for DNA analysis. Biology processing will be conducted on person crimes. The biology processing analysis of property crime cases has been temporarily suspended. A person crime case is defined as any case where a victim is physically injured, there is a threat or an attempt to injure (e.g., drive-by shooting at a house), or actions could have reasonably led to the injury of a person (e.g., arson of a church). Additionally, the charge of felon in possession where the suspect is an “armed career criminal” is considered a person crime case.

BREATH ALCOHOL PROGRAM (IMPLIED CONSENT UNIT)

The Implied Consent Unit services Oregon’s Breath Alcohol Program. The unit approves breath alcohol instruments, certifies the instruments, provides instrumentation, training and certification for the users and offers expert testimony. The services of this unit are not accredited.

CONTROLLED SUBSTANCES

Qualitative analysis of physical evidence to determine if a controlled substance is present. Also includes the analysis of evidence collected from suspected clandestine laboratories to determine the identification of chemicals and processes used to manufacture controlled substances. Quantitative

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2.0 INTRODUCTION

(purity) analysis may be performed on an as needed basis only for methamphetamine cases that will be prosecuted in federal court.

CRIME SCENE / FIELD INVESTIGATIONS

The analysis of physical locations or objects suspected to be involved in a crime. Analysis may include recognition, documentation, collection and preservation of evidence and/or performing scientific analysis, interpretation, and reconstruction.

DNA ANALYSIS

The analysis of biological evidence for the presence of autosomal-STR & Y-STR DNA. When an interpretable DNA profile is developed, it can be compared to relevant standards and/or searched in the CODIS database. The DNA unit also manages and administers the State's CODIS database. DNA analysis will be conducted on person crimes. The DNA analysis of property crime cases has been temporarily suspended.

FIREARMS/TOOLMARKS

Screening and comparisons of bullets and cartridge cases, firearm functionality, caliber determination of cartridge cases and projectiles, proximity determination tests and restoration of obliterated markings. Tool mark analysis compares marks left during the commission of a crime to test marks from a tool possibly used in the crime. The IBIS database is used for the correlation of fired cartridge cases to other entered cartridge case evidence in an attempt to provide links to previously unknown related crimes.

LATENT PRINTS

Latent print processing is the physical and chemical processing of evidentiary items to develop and preserve friction ridge detail. Friction ridge detail developed on evidentiary items is subsequently compared to a person or persons of interest. The Western Identification Network (WIN) Automated Biometric Identification System (ABIS) and the FBI's Next Generation Identification (NGI) databases are composed of known fingerprint standards and can be utilized to search latent prints of unknown origin.

TOXICOLOGY

The qualitative analysis of biological fluids (e.g., urine) for controlled substances, common pharmaceuticals and poisons. Quantitative analysis of drugs in blood is performed on postmortem toxicology cases. Volatiles analysis (e.g., blood alcohol determination) is provided for ante-mortem and post-mortem cases.

TRACE EVIDENCE

The screening for and analysis of ignitable liquids, explosives, fibers, glass, paint, hair, footwear and tire impressions, physical match and miscellaneous evidence including but not limited to poisons and inhalants.

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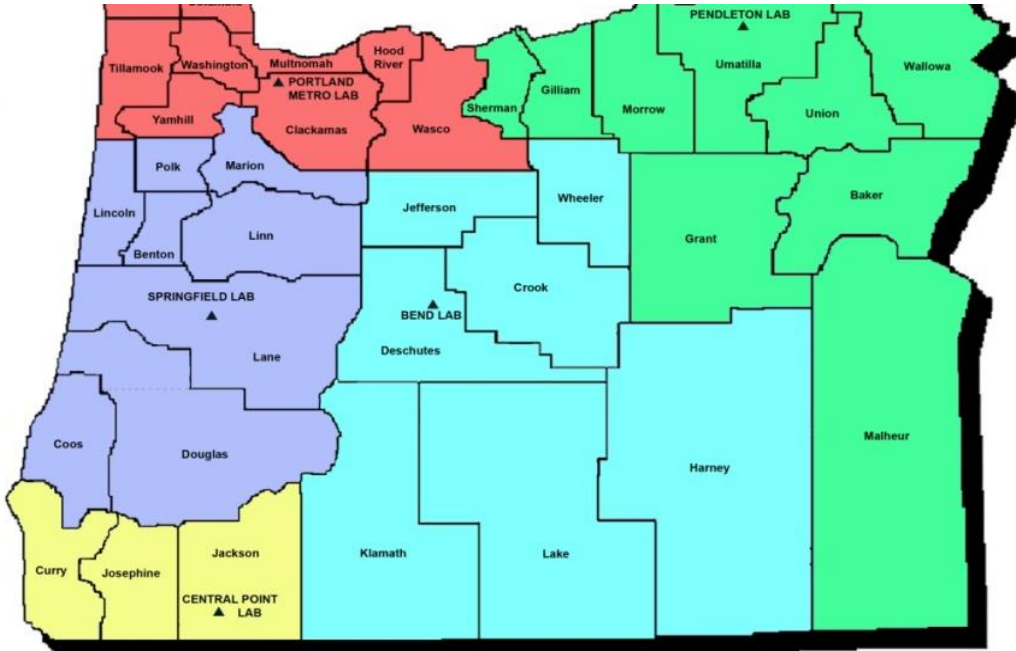
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3.0 LABORATORY LOCATIONS AND SERVICES

3.0 LABORATORY LOCATIONS AND SERVICES

Figure 1: Service Areas for the Oregon State Police, Forensic Services Division Laboratories



Note: Crime Scene response regions differ from the above coverage map as follows:

- Portland Metro response region includes: Polk, Marion, Linn, Benton, and Lincoln Counties
- Springfield response region includes: Curry and Josephine Counties

Agencies submitting crime scene evidence should contact the primary crime scene analyst that responded to the scene **prior to submitting any evidence**. Evidence associated with a crime scene that Forensic Services Division Crime Scene Analysts responded to will be initially submitted to the agency’s regional laboratory as shown in Figure 1 regardless of where the response team was dispatched from. The following is a list of services provided in each laboratory in the Forensic Services Division; however, evidence may be transferred from one lab to another in order to complete the work more efficiently.

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3.0 LABORATORY LOCATIONS AND SERVICES

Portland Metro Lab

Biology Processing
Chemistry

- Controlled Substances
- Clandestine Lab Analysis
- Meth. Quant

DNA

- DNA analysis
- Y-STR analysis
- CODIS

Field Investigations

Firearms/Tool mark analysis
Implied Consent Program

Toxicology

- Post-mortem
- Ante-mortem
- Blood Alcohol analysis

Latent Print Analysis

Trace Evidence analysis

- Arson
- Explosives
- Fibers
- Glass
- Impressions
- Hairs
- Paint
- Trace Processing
- Miscellaneous

Central Point Lab

Biology Processing
Chemistry

- Controlled Substances
- Clandestine Lab Analysis

Field Investigations

Firearms Processing

Latent Print Analysis

Serial Number Restoration

Bend Lab

Biology Processing
Chemistry

- Controlled Substances

Field Investigations

Latent Print Analysis

Pendleton Lab

Biology Processing
Chemistry

- Controlled Substances

Field Investigations

Firearms Processing

Latent Print Processing

Serial Number Restoration

Springfield Lab

Biology Processing
Chemistry

- Controlled Substances

Field Investigations

Firearms Processing

Latent Print Analysis

Toxicology

- Ante-mortem
- Blood Alcohol analysis

Trace Evidence analysis

- Paint
- Trace Processing

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4.0 CASE COMMUNICATION

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The laboratory will communicate with the customer when all or part of the requested analysis is canceled or changed. This will occur either via a two-way conversation or via one-way communication (e.g., laboratory report, email, Evidence Refusal Form, voicemail)

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5.0 CANCELLATION OF REQUESTED ANALYSIS

5.0 CANCELLATION OF REQUESTED ANALYSIS

A request may be canceled by an OSP FSD employee, requesting agency or an employee from the District Attorney's Office. When the request is canceled by an OSP FSD employee, the customer must be notified and the communication will be documented.

The Law Enforcement Agency or District Attorney may cancel the requested analysis at any time. If at the time of the cancellation, the evidence has been opened and the process of analysis and/or examination has begun, a report describing the work completed to date will be issued.

OSP FSD may decide to cancel a request for analysis and return the evidence to the law enforcement agency. The reason for canceling a request for analysis includes but is not limited to the following: For chemistry related cancelations see section 14.2.1

- Information received from the prosecutor that the case has been adjudicated/resolved by dismissal, plea, diversion, etc.
- Evidence was received by certified carrier and did not include a list of the contents sent to the lab
- Evidence is not properly sealed or evidence seal is not initialed. Additional item(s) received with the submission that was not the subject of analysis (e.g. drug paraphernalia, boxes, bags, keys, etc.)
- Evidence received is substantially different than the description in the documentation by the customer (e.g. dramatic difference in color, size or shape, incorrect caliber or make of weapon, more cartridge cases were received than described, wrong name on evidence, etc.)
- Evidence description is too vague and laboratory is unable to determine whether the intended evidence was received
- Evidence is missing or is less than what is described in the documentation
- Property Crime evidence is not accepted for Biology or DNA Analysis
- Sexual Assault Forensic Evidence Kit that meets the definition of anonymous
- Sharp objects were not packaged in a puncture-resistant container

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6.0 GENERAL EVIDENCE HANDLING

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It is important that evidence be collected, handled, and stored in a way that will ensure its integrity.

6.1 General Evidence Handling Guidelines

- Protect yourself and others
- Protect the evidence
- Consider all types of forensic evidence
- Document the chain of custody
- Document the location of evidence recovery with notes, sketches, and/or photographs
- Mark the evidence and/or packaging with a case identifier, description of evidence, initials, and date.
- Evidence seals must be initialed and the initials should cross over the seal in such a way as to provide visual indication of entry into the evidence package.
- Package each item of evidence separately, with the exception of latent lift cards and fingerprint standards.
- Allow wet biological stains to air dry
- Obtain appropriate standards, when needed, for comparison to evidence
- Use packaging that is appropriate for the specific type of evidence, such as paper bags, envelopes, plastic bags (for non-biological evidence), cardboard boxes, metal cans, glass jars, etc.
- Select a sufficiently large package to allow the item to be re-sealed after examination. Conversely, avoid oversized packaging when submitting small quantities of evidence (e.g. residues).

6.2 Evidence Collection

6.2.1 Packaging

Appropriate packaging depends on the type of evidence, the condition of the evidence, and the laboratory examination(s) requested. Use the information in Table 1 below (or consult the section specific to the type of evidence) to select the proper way to package it. All packaging types should be clean and unused (e.g. no grocery bags that have previously been used.).

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6.0 GENERAL EVIDENCE HANDLING

Evidence Packaging	
Packaging Type	Uses
Paper bags or envelopes	Most biological material and clothing (marijuana, psilocybin mushrooms, blood or semen stained items, condoms, etc.). <i>If unable to air dry prior to packaging, submit to the laboratory as soon as possible and notify them that it is a wet sample.</i>
Plastic bags or Ziplocs	Dry, non-biological material such as powder
Metal cans, specialized plastic bags, static-proof bags	Arson evidence, Explosives evidence
Plastic buckets	Samples from clandestine laboratories that are individually packaged in glass vials and set in an absorbent material (e.g. vermiculite, kitty litter, etc.) in the plastic bucket
Glass or plastic container	Liquid drug samples, syringe contents, samples from clandestine laboratory (glass containers only), miscellaneous trace samples, etc.
Paper folds and Post-It notes, then placed into a clean envelope	Small pieces of trace evidence, hairs, fibers, minute glass particles, paint chips, residue amounts of powder drugs, etc. Place inside a larger paper envelope. Use of Post-It notes: use either gloved fingers or a tool (e.g., forceps, tweezers, etc.) to collect the trace evidence, place on the adhesive of a post-it note, and then fold the note over on itself and label.
Cardboard boxes	Firearms, knives, large pieces of plate glass, a piece of flooring with a shoeprint, etc. Offers protection from sharp edges and the depth protects one surface of the evidence from rubbing.
Sharps tube	Syringes, broken glass

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6.0 GENERAL EVIDENCE HANDLING

6.2.2 Evidence Seals

A proper seal ensures that evidence has not been accessed, altered, compromised, or lost during storage/transportation. Evidence seals must be tamper-evident (e.g., heat seals, tamper-evident adhesive seals, tamper-evident tape, combination of packing tape and tamper-evidence tape, etc.) and span the approximate length of the potential opening. Sealed evidence must be initialed and, when possible, the initials(or equivalent unique identifier)should cross over the seal in such a way as to provide visual indication of entry into the evidence packaging if the seal is broken. Staples and other sealing techniques can be used in addition to the acceptable tamper-evident seal

Evidence that is not properly sealed will not be accepted by the laboratory. Evidence that is not properly sealed and delivered via a Commercial Parcel Delivery Provider (UPS, FedEx, USPS) will be shipped back.

Figure 2: Acceptable

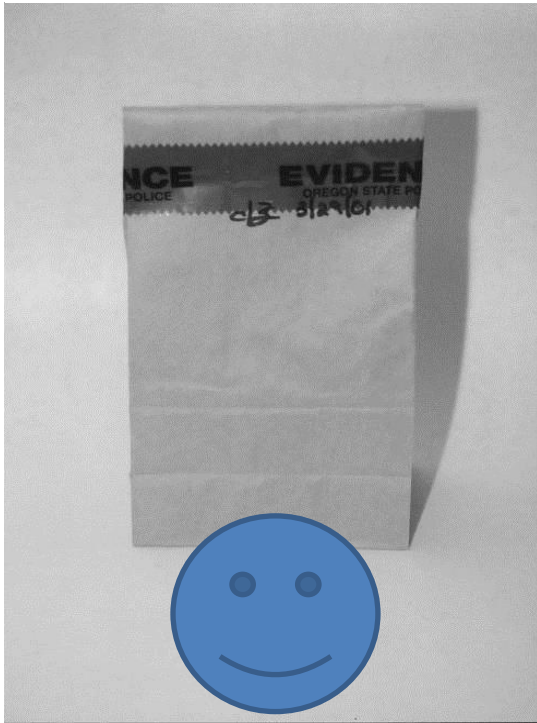


Figure 2: Not Acceptable



Note: Figure 2 – If packing tape was used to seal the length of the paper bag, then evidence tape which is perpendicular to the packing tape and covers its entire width would be considered an acceptable seal.

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6.0 GENERAL EVIDENCE HANDLING

6.3 Chain of Custody (COC)

The FSD maintains a chain of custody for all evidence from time of receipt at the lab to when it is returned to the agency. Each laboratory utilizes a secure electronic chain of custody record through the JusticeTrax Laboratory Information Management System (LIMS) for all evidence submitted to the laboratory regardless of the method of submission. For evidence that is personally delivered, the initial COC (when evidence is received in the laboratory) is documented on the Form 49 with a date, time and signature of person receiving the evidence submission.

6.3.1 Evidence Submission

Evidence should be submitted to your local laboratory, even if your local laboratory does not offer the service you are requesting, unless it falls under one of the exceptions listed below or there is verbal approval to send the evidence directly to another lab. For example, although DNA analysis is only performed at the forensic laboratory in Portland, you should still submit all evidence needing DNA analysis, including standards, to your local laboratory.

Exceptions: Arson, blood alcohol, toxicology, and emailed images for footwear or tire make/model search.

Prior to submitting a large quantity of evidence in a single case, a triage discussion with a local analyst should occur. Refer to the Chemistry section in this manual for additional guidance specific to submission of a large quantity of drugs. OSP Forensic Scientists are trained to manage the evidence in your case by ensuring that the evidence gets to the appropriate section for examination. That section may be in another laboratory, in which case the evidence is transferred without additional requests by the submitting agency. The analyst managing your case evidence in your local laboratory will be your contact person for status updates.

Methods of Submission

For all methods, care should be taken to ensure that evidence is not lost, damaged, or contaminated, and that the chain of custody on all exhibits can be established and maintained.

Evidence may be submitted to the forensic laboratory by one of the following methods:

- Personal/Individual delivery (please call for an appointment before delivering to the lab)
- A secure drop box
- USPS Mail Delivery
Commercial Parcel Delivery Provider (e.g., Federal Express, UPS)
- Electronic transfer of digital images or data (Latent Print images are not accepted in this manner)

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Content List for Shipped Evidence

Shipped Evidence must include a content list of the evidence being submitted so that the laboratory can verify that it has received the intended item(s). The content sheet must include the agency case number and description of the packages.

Example:

Agency Case Number	Description (Agency Evidence Number, Number and Type of Packages)	Lab Use Only
xx-xxx	#567 - One heat sealed bag #568 – One brown paper bag	

If there are discrepancies between the description and the packages received the evidence will be returned to the agency.

6.4 Forensic Services Request Form

6.4.1 Laboratory Analysis Requests

A Forensic Services Request Form (Form 49) or equivalent documents the agency's request for service and must be submitted with the evidence. A single Forensic Services Request Form may document multiple requests for service in any of the disciplines available through the FSD. Additional requests for service may be generated by the FSD as a result of communication with the submitting agency or DA.

There are different laboratory request forms based on the type of analysis.

- General Request
- Sexual Assault Case
- DRE
- IBIS only request

The forms are available at <http://www.oregon.gov/osp/FORENSICS/Pages/OSP%20FORENSICS.aspx>, or through the local Forensic Laboratory or State Police Office.

The majority of the information on the forms is self-explanatory; however, a description of each line item is described below. On the Sex Assault form, information regarding the questions is provided on the back side of the form.

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- **Rush**—indicate due date and reason for rush (e.g. trial date, public safety concern)
- **Additional Suspect Information Only and Previous Evidence Submitted to this/any Laboratory** – check if either applies.
- **Agency** – fill in your agency and list any secondary agencies
- **Agency Case #** – fill in your agency case number. If a secondary agency is involved in the case, please list that information
- **Case Restriction**—see back of Form 49 for more information.
- **Offense** – fill in the highest offense associated with the case (be specific).
- **Offense Date** –date the crime occurred, *not* the date the evidence was collected or turned into an agency’s property room.
- **County of Venue** – District Attorney’s Office that will have access to a copy of the laboratory report. Fill in the county that the case will be prosecuted in, which may not necessarily be the county your agency is in.
- **Names of Involved Individuals** –all victims, suspects, and other involved individuals. Complete all fields if known.
- **Investigating Officer, phone number, and email** – name, phone number, and email of primary investigating officer
- **Submitting Officer** –individual that delivered, mailed, or shipped the evidence to the laboratory.
- **Agency Exhibit** – fill in your exhibit numbers for the evidence that is being submitted.
- **Description of Evidence** – describe the evidence that is being submitted. The list of evidence should be exactly the same as the evidence being submitted. Do not list additional evidence that was **not** submitted, or submit evidence that is not listed. Indicate from where/whom each evidence item was collected, if known.
- **Exam Requested** – this is what you want the laboratory to do with the evidence. If you are uncertain about what to request contact the Laboratory for guidance. Be as descriptive as possible or use the drop-down menu in the fillable Form 49 (available online). The Forensic Services Division Laboratory reserves the right to select appropriate methods of analysis based on the type of evidence and information provided.
- **LEAVE SHADED AREAS OF THE FORM BLANK.**

6.4.2 Evaluation of the Request for Analysis

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6.0 GENERAL EVIDENCE HANDLING

Prior to initiating the testing of evidence, FSD personnel will evaluate the request(s) for service, the evidence items, and case history provided.

The evaluation will consist of the following:

1. Checking the evidence packaging for an acceptable seal. If evidence is not properly sealed and initialed the evidence will be returned to the agency.
2. Confirm that the case meets the acceptance criteria in the Operations Manual and the Physical Evidence Manual.
3. Forensic Services Request Form (Form 49) will be reviewed to ensure that FSD can provide the services requested (OSP FSD will have initial discretion over the selection of methods for analysis, the totality of the analysis, and the items tested) and that the request meets the laboratory acceptance criteria.
4. The evidence and documentation will be reviewed to ensure the following:
 - A Sexual Assault case does not include a SAFE kit that meets the definition of anonymous.
 - Evidence is not missing or less than what is described in the documentation.
 - Evidence received is not substantially different than the description in the documentation by the customer (e.g. dramatic difference in color, size or shape, incorrect caliber or make of weapon, more cartridge cases were received than described, wrong name on evidence, etc.)

6.4.3 Agency Reports

An agency report specific to the items of evidence submitted should accompany the evidentiary items for all requests with the exception of toxicology, drug chemistry, blood alcohol, methamphetamine quantitation, and anonymous analysis requests.

6.4.4 Rushes

If your request is a "Rush", indicate so in the appropriate location on the Forensic Services Request (Form 49), along with the date the request needs to be completed, if known. Common reasons for "Rushes" are upcoming trial dates, an immediate need for investigative leads and public safety.

For drug evidence, the only accepted routine reasons for designating a case RUSH is an actual court date or custody. All other drug cases will need supervisor approval before it is prioritized as a RUSH.

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7.0 LABORATORY REPORTS

7.0 LABORATORY REPORTS

7.1 Laboratory Online Information System (LOIS)

Electronic reports and case status is accessible through the Laboratory Online Information System (LOIS). Anyone who is a member of an agency serviced by the Oregon State Police Forensic Services Division, and needs access to the work done on behalf of their agency, may request LOIS access. The help button at the following website contains the procedure for accessing LOIS, <http://lois.osp.state.or.us/lois>.

A final report is released electronically to the agency/customer that made the request for service through LOIS. An automatic notification of the report availability is also sent to a designee at the District Attorney's office that serves that agency/customer.

7.2 Forensic Laboratory Evaluation Form and Surveys

Periodically, the Forensic Services Division will send evaluation forms or surveys to its service agencies. The following are the different categories of evaluation forms or surveys that may be sent:

- Intoxilyzer (sent via LOIS)
- Crime Scene Investigation
- Court Room Testimony
- Laboratory Analysis (sent via LOIS)

These evaluations and surveys provide valuable feedback on our goal of providing quality and timely scientific, technical, and investigative support. Should you receive an evaluation form or survey, please take the time to provide your feedback.

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8.0 FIELD INVESTIGATIONS (CRIME SCENES)

8.0 FIELD INVESTIGATIONS (CRIME SCENES)

OSP FSD is available to assist with crime scene investigations at the request of any law enforcement agency, District Attorney’s Office or the State Medical Examiner’s Office. A request can be made during normal business hours (8:00am to 5:00pm, Monday -Friday) by calling your local laboratory (see laboratory contact information).

After hours, call OSP Regional Dispatch Center at 541-776-6111 (Southern Regional Dispatch Center) or 503-375-3555 (Northern Regional Dispatch Center) and they will contact the on-call forensic laboratory supervisor.

Laboratory management will assess each request based upon the crime type, the complexity of the forensic services needed, available resources within the laboratory and the investigating agency, and the anticipated response time. Crime scene response is primarily limited to homicides/attempted homicides, skeletal remains and buried body recovery and officer-involved shootings. If special circumstances exist that require the skills of trained forensic personnel, crime scene assistance may be provided for additional types of crime scenes.

If a search warrant is deemed necessary, it should be procured prior to the arrival of laboratory staff and available for them to review. **It is the responsibility of the investigating agency to provide crime scene security for the duration of the crime scene processing.**

Accident Reconstructionist typically have specialized equipment to diagram the scene. Consider securing response from a reconstructionist in addition to crime laboratory response, if necessary.

8.1 Crime Scene Services Offered

- Evidence identification, documentation, preservation, and collection
- Crime scene photography
- Firearms collection and packaging
- Bullet trajectory determinations
- Bloodstain pattern analysis and reconstruction
- Shooting scene reconstruction
- Biological evidence testing and collection
- Alternate light source processing
- Impression enhancement, casting or lifting (e.g., shoe or tire)
- Metal detection
- Latent print processing
- Trace evidence collection
- Body processing
- Buried body excavation and scattered remains recovery
- Vehicle processing
- Autopsy photography and assistance

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8.0 FIELD INVESTIGATIONS (CRIME SCENES)

Crime scene reconstruction

8.2 Crime Scene Photography

Photographing a crime scene should be performed in a systematic manner to ensure that all necessary photos are taken. Photographs should to be taken before any evidence is moved. The best approach to crime scene photography is to sequentially take overall, midrange and close-up photographs.

- **Overall Photographs**

These photographs show the relationship of evidence in an area (e.g., photographs of a living room showing a body and numerous other items of evidence), or document the location of a crime scene (e.g., a photograph of the outside of a house showing the street number).

Overlapping photos are recommended to ensure that the entire area is documented. If placards are utilized to identify the location of evidence at the scene, photos should be taken before and after their placement.

- **Midrange Photographs**

These photographs document the relationship of evidence items to other items within an area.

- **Close-up Photographs**

These pictures show the detail of an individual item of evidence. Close up photographs should be taken with and without a scale.

- **Examination-quality Photographs**

High-resolution, close-up photographs containing a scale and taken at 90 degrees of specific items in a manner to capture maximum detail. Examination-quality photographs are required for footwear and tire impressions and latent print comparisons.

8.3 Vehicle Examinations

Note the following information about the vehicle:

- Year
- Make
- Model
- License plate
- VIN
- Color
- Damage

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8.0 FIELD INVESTIGATIONS (CRIME SCENES)

Below is a list (not all-inclusive) of things to consider, based on the case circumstances, when examining a vehicle. It may help to divide the interior into quadrants and search each quadrant from ceiling to floor.

- Examine the exterior of the vehicle. Look for transfer evidence relevant to the case (e.g., paint from a hit-and-run vehicle, clothing impressions on the plastic of a front bumper, hair caught on the broken edge of windshield glass).
- Document tire information for all tires including manufacturer, type, and size. If the tires need to be compared to tire track evidence the forensic laboratory should be contact to assist in collecting to an exemplar from each tire.
- Note the position of seat(s), tilt wheel, accelerator and brake pedals, and rearview mirror.
- Examine the interior of the vehicle and the trunk for potential evidence.
- Examine the engine compartment and undercarriage of the vehicle for potential evidence.
- Take known standards from the upholstery, carpet, or other vehicle for possible later comparisons.
- If paint or glass damage is apparent, take known standards from the broken glass and areas of damaged paint.

8.4 Body Processing

To prevent potential loss of fragile biological evidence, it may be necessary to collect swabs from the body at the crime scene prior to transporting it to the medical examiner’s office for autopsy. Take into consideration the position of the body, the context of the scene and the case scenario in deciding when to collect. To achieve optimal collection of the evidence listed below, a total of **two** water-moistened swabs should be used. Information about what evidence was collected at the scene should be disseminated to the deputy medical examiner or agency representative so that additional collection of the same swabs is not duplicated during autopsy.

Evidence of:

Collect the Following:

Manual strangulation

Swabs from neck and behind ears

Ligatures/bindings

Swabs from ends of ropes/ties

Dragging

Swabs from ankles/arms/wrists, as applicable

Pocket-rifling

Swabs from turned-out pockets

Stretched/torn clothing

Swabs from stretched areas/around torn areas

Possible sexual assault with exposed genitalia

Swabs from inner thighs

8.5 Postmortem Examinations

Photograph the following:

- Full body photographs of victim as delivered to the postmortem examination.
- Full body photographs of victim unclothed.

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8.0 FIELD INVESTIGATIONS (CRIME SCENES)

- Mid-range and close-up photographs of exterior wounds, bloodstain patterns, and/or identifying marks (e.g., tattoos) with and without a scale.
- Photograph any body parts or evidence requested by the Medical Examiner (e.g., bullets, bullet paths)

It is recommended that the following evidence be collected during a postmortem examination. Remember that the postmortem examination may be the only (or last) chance to collect this evidence, so it is prudent to collect more than you think you need, rather than less, in these situations.

- DNA standard. Two to four oral swabs should be collected. If oral sodomy is suspected, a blood standard should also be collected using sterile swabs, filter paper, or one lavender/purple-stoppered EDTA tube.
- Blood sample for blood alcohol and/or toxicology. Collect at least two (2) gray-stoppered tubes. Femoral blood is preferred; however, blood drawn from other sources can also be analyzed.
- Urine sample for toxicology. Collect at least one (1) red-stoppered tube.
- Head hair standard from various areas on the head. Standards must be pulled, not cut.
- Pubic hair standard from various areas in the pubic region. Standards must be pulled, not cut.
- Sexual Assault Forensic Evidence (SAFE) kit¹
- Penile Swabbing Forensic Evidence (PSFE) kit
- Fingernail scrapings
- Clothing, one item per bag
- Evidence items located in or on the body
- Fingerprint, palm print, and/or major case prints² (for elimination purposes and identification)

8.6 Decomposed Remains

If the human remains are too badly decomposed, it may be impossible to obtain an adequate oral or blood standard and thus necessary to collect an alternate type of DNA standard. Consult with the forensic pathologist performing the postmortem examination to determine the most appropriate sample for a DNA standard. Alternative tissue samples include deep muscle tissue or bone.

¹ Consider collecting this evidence even when sexual assault is not immediately suspected. If it is not collected and becomes relevant later in the investigation, the samples may be difficult or impossible to recover. See "Biological Evidence – Sexual Assault Evidence Kits and Penile Swabbing Evidence Kits" for further information.

² Major case prints include recording standards from all areas of friction ridge skin (i.e. finger tips, fingerprints, finger joints, edges of the fingers, palms, and edges of the hands).

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9.0 MISSING PERSONS

9.0 MISSING PERSONS ('MP')

If a Missing Person case remains active and unresolved after 30 days have elapsed, a DNA sample directly associated with the missing person should be obtained. DNA Analysis on the majority of missing person cases will be performed by OSP. The law enforcement agency that accepted the missing person report shall attempt to obtain a DNA sample directly associated with the missing person (Direct Reference Sample, described below) and from biological family members of the missing person (Family Reference Standard, described below). Documentation necessary to enable the agency to use the sample in conducting searches of DNA databases must be provided and the necessary forms can be found on the OSP website.

9.1 Secondary Standards or Direct Reference Sample

Agencies should attempt to obtain DNA samples known to be from the missing person. Known sources of DNA may include:

- Previously collected medical specimens (which may have been stored at a hospital or clinic).³
- Personal items, items used only by the missing person or rarely used by anyone else (e.g., a toothbrush, lipstick, or other item containing saliva or blood). A family reference standard (see below) must also be submitted to confirm the personal item is from the missing person.

Other Secondary Standards (not preferred)

- Hairs are not the preferred direct reference sample because of various concerns and contamination. OSP discourages hair submission if at all possible and asks agencies to work to get a better sample.
- Baby teeth are not preferred due to the potential for mix-ups with other children's teeth and the possible lack of mitochondrial DNA.

9.2 DNA from the Missing Person's Relatives (Family Reference Standards)

When medical specimens and the personal items mentioned in the section above are not available, DNA testing can be done on samples from biological (blood) relatives. DO NOT collect DNA samples from adoptive parents, adopted children, stepparents and other non-biological relatives. DNA from these relatives cannot be used to identify the missing person. The closer the family relationship to the missing person the more likely a match can be made. It is more difficult to make a match between decedent remains and distant relatives. In some cases, it is useful to have DNA samples from specific relatives. If

³ Include information from the medical facility detailing how the sample was stored (i.e., was a fixative like formaldehyde or formalin used). The use of fixatives may compromise the ability to obtain a usable DNA profile.

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9.0 MISSING PERSONS

DNA from the missing person's children is used, it is helpful to have DNA from the children's other biological parent (mother or father).

Preferred Family Reference Samples in order of preference

1. Both parents or known identical twin
2. One parent, spouse and children
3. Children and spouse
4. One parent and sibling
5. Siblings (two or more)

9.3 Family Reference Standard Collection

For information on how to collect oral swabs standards, please refer to section 11.7.1 Collecting Oral Swab Standards.

Family Reference Standards will be collected by the law enforcement agency involved in the missing person investigation, and entail collecting oral cells on swabs, packing the swabs correctly and fully completing the proper documentation provided. Oregon State Police provides the required paperwork in a fillable, on-line format on its website at

<https://www.oregon.gov/osp/FORENSICS/Pages/MissingPersons.aspx>.

Family Reference Standards should be collected separately for each biological family member sets of standards may need to be collected. All Family Reference Standards should be sent directly to the Oregon State Police Portland Metro Forensic Laboratory for analysis. The Oregon State Police DNA Laboratory has the capability to enter the completed DNA profiles into the appropriate CODIS databases. For more information on the CODIS database go to the following website:

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

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10.0 UNIDENTIFIED REMAINS

10.0 UNIDENTIFIED REMAINS

Refer to ORS Chapter 146 - Investigations of Deaths, Injuries and Missing Persons.

10.1 Unidentified Remains

“Unidentified human remains” do not include human remains that are part of an archaeological site or suspect of being Native American. Archaeological remains are covered under ORS chapters 97 and 390 and ORS 358.905 to 358.961.

All unidentified human remains will be initially processed by the Medical Examiner’s Office. The OSP Forensic Laboratories will not accept human remains with the exception of human hands for identification purposes.

10.2 Identifying the Deceased

The State Medical Examiners (ME) Office is responsible for identifying deceased persons. The Forensic Services Division may on occasion be requested to assist the Medical Examiner’s Office, or another agency, with these identifications. Requests of this type should be made or coordinated through the State ME’s Office. Friction ridge impressions obtained from unknown deceased persons may be compared with known standards and/or searched through ABIS for the purpose of individualization or exclusion.

Skeletal remains with all case documentation may be mailed to the Oregon State Medical Examiner’s Office for anthropological examination. All agencies should contact the OSP-ME Anthropology Section/Dr. Nici Vance at 971-673-8202 for instructions prior to sending the remains. All investigative processes (e.g., dental record comparison, history/healed fracture comparisons, personal effects) will be utilized in order to identify remains before DNA analysis will be attempted. The decision for DNA analysis will be made by the Oregon State Medical Examiner’s Office.

Contact information:

Oregon State Medical Examiner’s Office
13309 SE 84th Avenue, Suite 100
Clackamas, Oregon 97015
971-673-8200

Additional online resources:

The Oregon State Police Medical Examiner Division has all of the necessary paperwork for law enforcement to successfully submit Direct Reference Samples or Family Reference Standards to OSP: <http://www.oregon.gov/OSP/SME/pages/index.aspx>.

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10.0 UNIDENTIFIED REMAINS

Access these forms under the heading, "DNA Submission Forms for Law Enforcement & Families".

These forms can also be found on the OSP Forensic Services Division website, located under the heading "Law Enforcement Agency Resources: National Missing Persons Programs", found here: <http://www.oregon.gov/osp/FORENSICS/Pages/OSP%20FORENSICS.aspx>

The National Missing and Unidentified Persons System (NamUs) is the first national online repository for missing persons records and unidentified decedent cases. For more information on NamUS go to the following website: <http://www.namus.gov/>.

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11.0 BIOLOGICAL EVIDENCE

11.0 BIOLOGICAL EVIDENCE

Biological fluids such as blood, semen, and saliva are frequently encountered as physical evidence in many types of criminal investigations such as homicides, sexual assaults, assaults, robberies, and burglaries.

11.1 Safety and Contamination Prevention

Current DNA technology allows for very small amounts of sample to be analyzed. Because of this, inadvertent contamination of the evidence is possible if you do not take proper precautions. Individuals who routinely collect biological evidence may want to work with their local laboratory to submit a DNA elimination standard, so that they may be ruled out as possibly having contaminated a particular item of evidence. Precautions to guard against contamination include:

- Wear gloves and, as appropriate, a mask while collecting biological samples.
- Change gloves frequently or anytime your gloves are contaminated with biological material.
- Avoid touching the tips of cotton swabs with your fingers or to other unintended surfaces.
- Avoid talking over swabs, blowing on swabs to make samples dry faster, etc. Consider purchasing individually wrapped sterile swabs (e.g., Bode swabs).
- Do not touch the water dropper bottle tip to any surface or evidence.
- Clean tools (such as scissors or tweezers) that you might use to collect evidence with a dilute bleach solution or product containing bleach. Alcohol (ethanol and methanol are both acceptable) should be used to rinse residual bleach from those items that will come in direct contact with the evidence. Do not use commercial disinfectant products (such as Clorox wipes) for the purposes of decontamination unless they contain bleach or are designed specifically for laboratory surface decontamination.
- Do not lick envelope seals.

11.2 General Collection Guidelines

In general, wet or moist biological evidence should be dried and packaged into clean and previously unused paper containers (e.g., envelopes, bags, cardboard boxes). Do not wrap the evidence first in plastic and then inside paper (or vice versa) as these conditions could cause the evidence to degrade. Package each item separately and properly label and seal the container. All evidence containing known biological fluids should be marked with appropriate biohazard labels.

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Biological evidence is best maintained dried at temperature controlled room temperature (preferably individually packaged in paper containers). If evidence cannot be air dried, liquid evidence should be refrigerated (never frozen), and wet evidence should be frozen.

Biological Material: Storage and Laboratory Submission

	Blood (liquid)	Urine	Bones	Hair	Swabs or items with biological material (including standards)[DRIED]	Swabs or items with biological material that cannot be dried [WET]	SAFE Kits & PSFE Kits	Feces
Frozen	Never	Best	Acceptable			Best	Acceptable	Best
Refrigerated	Best	Less than 24 hours				Acceptable	Acceptable	
Temperature Controlled	Less than 24 hours		Acceptable	Best	Best	Less than 24 hours	Best	
Room Temperature			Acceptable	Acceptable	Acceptable			

Table adapted from *The Biological Evidence Preservation Handbook: Best Practices for Evidence Handlers*

11.3 Alternate Light Source Searches

Use of an ultraviolet (UV) light, Woods lamp, or other alternate light source (ALS) with appropriate colored goggles/glasses/filters may assist in the search for biological stains. Such devices can be helpful in a search, given that many biological stains such as semen, saliva, and urine may fluoresce, or appear bright, when viewed with an ALS in a darkened room.

However, there are three important points to remember when using an ALS to assist with searching for biological stains:

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1. Many other substances may exhibit fluorescence. Examples include but are not limited to food products, beverages, cosmetics, and laundry detergents.
2. Not all semen, saliva, or urine stains will fluoresce with an ALS; lack of fluorescence does not mean body fluids are not present.
3. Blood will *not* fluoresce when viewed with an ALS; rather, it will appear dark.

11.4 Blood Evidence

Blood evidence is common in violent crimes and property crimes. Bloodstains may appear red, red-brown, tan, gray, or yellowish. Bloodstains may be undetectable to the unaided eye depending upon evidence and stain characteristics. In addition to DNA, blood contains cells and proteins that allow the laboratory to perform the following examinations:

- Presumptive blood testing
- Testing to indicate human or non-human origin

11.4.1 Collecting Dried Blood

If it is reasonable to transport the stained object, the entire item may be collected and submitted to the laboratory. Be careful to seal all openings of a package since dried blood may flake off of an object. If the stained object is not being transported, collect the blood by one of the following methods:

11.4.1.1 Swabbing

1. Moisten a sterile cotton swab using 1-2 drops of distilled water or tap water.
2. Gently swab the stain with the moistened swab tip until the swab thoroughly absorbs the blood. Continue collecting the stain until it is either completely collected or a sufficient number of swabs (up to 4) have been saturated. Attempt to concentrate the stain on as few swabs as possible.
3. Allow the swabs to thoroughly air dry.
4. Place the dried swabs in a paper container (e.g., paper envelope or bag). Swabs collected from the same stain should be packaged together and facing the same direction.
5. Properly label and seal the container.
6. When the amount of blood is small, it is advised to select an unstained area adjacent to the suspected bloodstain to collect (known as a substrate control). Repeat steps 1 through 5 on the *unstained* area. Package the substrate control separately.

11.4.1.2 Cutting

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This collection method may be desirable when the dried bloodstain is on an object such as the upholstery of a car seat or carpeting. Use a clean, sharp knife or scissors to cut the stained area, leaving unstained margins surrounding the stain. Package into a paper container and properly label and seal the container.

It is recommended that you consult with the District Attorney’s Office before destroying property since the item may need to be repaired or replaced.

11.4.2 Collecting Liquid or Moist Blood – Large Quantity

1. Saturate up to 4 sterile cotton swabs with the blood.
2. Blood will coagulate so it is important to collect a good mix of clotted cells and serum.
3. Allow the swabs to thoroughly air dry.
4. Place the dried swabs in a paper container (e.g., paper envelope or bag). Swabs collected from the same stain should be packaged together and facing the same direction.
5. Properly label and seal the container.

11.4.3 Collecting Liquid or Moist Blood – Small Quantity

1. Use swabs to collect the blood, concentrating the blood onto each swab. Attempt to concentrate staining on as few swabs as possible.
2. Allow the swabs to thoroughly air dry.
3. Place the dried swabs in a paper container (e.g., paper envelope or bag). Swabs collected from the same stain should be packaged together and facing the same direction.
4. Properly label and seal the container.

11.5 Saliva Evidence

Saliva stains are not usually evident from a visual examination. However, certain types of evidence frequently contain traces of saliva (e.g., cigarette butts, drinking containers, adhesive surfaces of envelopes, chewing gum, bite marks, masks, etc.).

11.5.1 Collecting Saliva Evidence

If the stained object is transportable, the item may be collected and submitted to the laboratory. If it is not transportable, such as bite marks on a body, collect the saliva stain using the double swab technique:

1. Moisten a sterile cotton swab with 1-2 drops of distilled or tap water.
2. Thoroughly swab, with pressure, the suspected saliva stain.
3. While surface is still wet, thoroughly re-swab, with pressure, the same area with a dry sterile swab to collect any remaining moisture.
4. Label the swabs as “wet” and “dry”.
5. Allow the swabs to thoroughly air dry.
6. Place the dried swabs in a paper container (e.g., paper envelope or bag). Swabs collected from

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the same area should be packaged together and facing the same direction.

- 7. Properly label and seal the container.

11.6 Semen Evidence

When the perpetrator of a sexual offense is a male, semen stains may be found on the victim as well as on clothing, bedding, rags, upholstery and other objects. Semen stains may appear white, off-white, yellow, tan or colorless and may have a crusted appearance. Semen stains may be undetectable to the unaided eye depending upon evidence and stain characteristics.

Consider collecting the suspect’s underwear, pants, or other clothing items, as victim DNA could also be transferred to the suspect or the suspect’s clothing.

11.6.1 Collecting Semen Evidence

Collect all suspected stained material (e.g., bedding, underwear or other clothing, etc.). Each item of evidence should be packaged separately and carefully to prevent loss of any trace evidence (e.g., hairs) that may be present.

Evidence with damp stains should be air dried. Consider marking the location of a damp stain by circling it with permanent marker, as it may not be visible once it has dried.

Clean paper should be spread under the item to catch any debris, which may be dislodged during the drying process. Clean paper should be placed between items hanging next to each other to prevent cross-contamination. Package each item *separately* in paper bags or envelopes, along with any paper used.

If the semen stain is on an object that cannot be easily submitted to the laboratory, contact your local laboratory for collection instructions.

11.7 Adult and Child Sexual Assault Forensic Evidence (SAFE-A and SAFE-C) Kits

Biological evidence associated with the body of a potential sexual assault victim needs special attention. The victim needs to be transported to a medical facility for a sexual assault examination. This should be done as soon as possible in order to preserve what remains of the biological evidence and to document any physical trauma. Consider having photographs taken of any physical trauma and collecting blood and/or urine for toxicology testing as well. Attending medical personnel should collect the evidence by using the appropriate Sexual Assault Forensic Evidence Kit provided by the Forensic Services Division.

In general, if more than 120 hours has elapsed from the time of the sexual assault to the time of the medical examination, the chances of finding semen evidence in the body of a living victim are greatly diminished, although it may still be possible to detect male DNA. However, it may be prudent to collect a SAFE Kit if you have any doubts or concerns about the timeline. This time range does *not* apply to

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deceased victims; it is recommended that you collect a SAFE Kit from deceased victims regardless of the elapsed time.

Bathing, showering, and douching by the victim does not necessarily eliminate the possibility of finding semen, saliva, or trace evidence on the body. A SAFE Kit should still be collected under these circumstances.

Undergarments, worn by the victim during and/or immediately after the assault, are also good sources for collecting biological and trace evidence. Package each clothing item separately.

11.8 Penile Swabbing Forensic Evidence (PSFE) Kits

The purpose of the PSFE kit is to collect DNA that may have been transferred to the male subject as a result of sexual contact. In the absence of a PSFE kit provided by the Forensic Services Division, evidence may be collected using sterile cotton swabs and envelopes.

Step 1: Collect four oral swabs.

- Swab the inside of the mouth with four sterile cotton swabs.
- Air-dry the swabs and place in the provided envelope.

Step 2: Collect two penis shaft swabs.

- Using the double swab technique (see section 11.5.1), collect two swabs from the entire penis shaft, avoiding the penile orifice.
- Air-dry the swabs and place in the provided envelope.

Step 3: Collect two scrotum swabs.

- Using the double swab technique (see section 11.5.1), collect two swabs from the entire scrotum.
- Air-dry the swabs and place in the provided envelope.

Step 4: Collect two pubic hair swabs.

- Using the double swab technique (see section 11.5.1), collect two swabs from the entire pubic hair area.
- Air-dry the swabs and place in the provided envelope.

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11.0 BIOLOGICAL EVIDENCE

Step 5: Collect head hair standards.

- Collect 24 pulled and shed hairs from various areas of the head.
- Place the hairs in the provided envelope.

Step 6: Collect pubic hair standards.

- Collect 24 pulled and shed hairs from various areas of the pubic region.
- Place the hairs in the provided envelope.

Step 7: Collect any additional evidence.

- Rectal/anal area, bite mark, hickey, fingers, or other sites of possible evidence transfer.
- Use four swabs to collect evidence from internal body sites (e.g., rectum).
- Use two swabs via the double swab technique (see section 11.5.1) to collect evidence from external body sites (e.g., bite mark, hickey, fingers)
- Air-dry the swabs and place in “Other Swabs” envelope. Label the envelope with the area of collection and the purpose of collection (e.g., “bite mark on neck for saliva”)

Step 8: Complete forms and package evidence.

- Fill out the *Forensic Laboratory Information Form* with as much information as is available.
- Place the *Forensic Laboratory Information Form* and the evidence samples in the PSFE kit envelope. Seal with the provided red evidence tape and initial across the seal.

Step 9: Collect the subject’s underwear.

- If the subject was not wearing underwear at the time of sexual contact or afterward, collect the subject’s pants.
- Package clothing in a paper bag separate from the PSFE kit. Seal the bag with evidence tape and initial across the seal.

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12.0 DNA ANALYSIS

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Since blood, semen, and saliva originate as liquids, they can quickly coat or penetrate surfaces on which they are deposited and may be difficult to remove once dried. Because no two humans are genetically the same (except for identical twins), these body fluids are unique to the person from which they originate. Performing DNA analysis on these fluids or stains can result in a genetic profile which can then be compared to DNA profiles obtained from reference standards or from other items of evidence.

The nature of DNA analysis lends itself to a computerized identification system; thus, DNA profiles from qualifying items of evidence can be compared to the COmbined DNA Index System (CODIS), a database that maintains qualifying DNA profiles from convicted offenders, items of evidence, unidentified human remains, and missing persons. In Oregon, this information is maintained at the state level. Searches of the database also occur at a national level.

The type of DNA analysis currently performed at the Oregon State Police Forensic Laboratories can yield much information.

DNA analysis <u>can</u>:	DNA analysis <u>cannot</u>:
Provide an association between an item of evidence and an individual (or individuals) and give an estimate of the rarity of the evidentiary profile in support of the association.	Determine the age or race of the person who deposited DNA on an item
Exclude a person from being the donor of an evidentiary DNA profile	Determine how old a sample is
Determine the gender of an individual who deposited DNA on an item	Determine how a sample was deposited (see "Crime Scene Investigations - Bloodstain Pattern Analysis")
Determine that biological material is from a human	Differentiate between consensual and non-consensual sexual contact

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12.1 Body Fluid Analysis

DNA analysis can be highly successful when the sample in question originates from a body fluid (blood, semen, and/or saliva), although other types of evidence (described below) are also appropriate for DNA testing. Items suspected to contain body fluids should be submitted to the laboratory for examination.

12.2 Wearer DNA

Wearer DNA evidence results from repeated contact from (mostly) the same individual's skin, and includes items such as clothing items, baseball caps, and gloves. Items considered for wearer DNA analysis should be submitted to the laboratory for examination. Note that the definition of wearer DNA evidence can also be extended to items routinely handled by an individual but not necessarily worn, such as backpacks and duffel bags, or tools brought to and left at a scene by a suspect.

12.3 Aggressive Handling DNA

Aggressive handling DNA evidence results from contact that is limited but not casual, which includes items such as ligatures or victim's clothing where the suspect groped or grabbed violently, or contact that is casual but not limited, which includes items such as the steering wheel in a stolen vehicle. Items considered for aggressive handling should be submitted to the laboratory for examination.

12.4 Touch DNA

Touch evidence is the category of DNA evidence originating from an item that has had both limited and casual contact with an individual's skin. This category primarily includes objects touched by an individual's hand for a short period of time, such as keys, door handles, gun triggers, light switches, drawer handles, countertops, etc. If there is some ambiguity with respect to whether the item falls under the touch or aggressive handling category, the DNA Unit should be contacted for more guidance.

Touch evidence will only be analyzed with prior approval from the DNA Unit Supervisor. The case should meet all of the following criteria:

1. The case is a rape, attempted rape, homicide, or attempted homicide.
2. All other forensic avenues to identify a suspect or link a known suspect to the crime have been exhausted.
3. A DNA result, possibly in conjunction with the CODIS database, is necessary to identify a suspect or link a known suspect to the crime. Evidence items will not be processed to determine, establish, or corroborate path of travel or location.
4. There should be a reasonable expectation that the suspect handled the item.
5. Every reasonable effort has been made to collect elimination standards from individuals who

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have routine or recent contact with these items.

If a case does not meet the above criteria, a private DNA laboratory may be of assistance if a suspect standard is also available. If there is no suspect, analysis by a private laboratory may be of limited value unless the OSP DNA laboratory is involved in the submission process. Unless arrangements are made between the private laboratory and the OSP DNA unit in advance of the private laboratory's analysis of the evidence, the OSP DNA Unit is unable to accept profiles generated by private laboratories for entry into CODIS.

12.4.1 Collecting Aggressive Handling or Touch DNA Evidence

Whether touch evidence or aggressive handling evidence, an abundance of caution should be used when swabbing or packaging an item for submission. Touch and aggressive handling evidence should be collected prior to the use of any latent print processing techniques on the item.

1. Moisten a sterile cotton swab with 1-2 drops of distilled or tap water.
2. Gently swab the area suspected of having been touched or handled.
3. Follow with a dry swab to collect any remaining moisture.
4. Label the swabs as "wet" and "dry."
5. Allow the swab to thoroughly air dry.
6. Place the dried swabs in a paper container (e.g., paper envelope or bag). Swabs collected from the same area should be packaged together and facing the same direction.

12.5 Criminal Paternity

The DNA Section of the Oregon State Police (OSP) Portland Metro Forensic Laboratory provides paternity testing services on criminal cases. Please note, we do not perform testing for civil paternity matters.

Criminal Paternity Test Kits are available from all OSP forensic laboratories. This kit includes instructions and the materials required to collect the samples. For live births, oral swabs will be collected from the mother, child and alleged father.

For products of conception (abortion or miscarriage), it is the responsibility of the health care provider to separate fetal tissue from maternal tissue. Fetal tissue must be submitted in the provided sample tube. If the fetal tissue has not been appropriately separated prior to submission, OSP will not accept the case. Therefore, it is important that the provider have the kit and instructions at the time of the procedure.

Kits should be submitted directly to the Portland Laboratory. Please ensure the form included in the kit is completed and submitted along with the F49. Missing information will result in a delay in analysis.

12.6 Y-STR Analysis

Y-STR testing, which involves the analysis of genetic material on the Y-chromosome (male chromosome), is useful in DNA mixtures where there is an abundance of female DNA relative to the

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amount of male DNA in a sample. Suspect standards are needed for comparison, as Y-STR profiles are not entered into CODIS. Because the Y-chromosome is passed from father to son, men in the same paternal lineage (fathers, sons, brothers, uncles, etc., all having a common male ancestor) will generally have exactly the same Y-STR profile. Traditional nuclear DNA analysis will be prioritized over Y-STR analysis.

12.7 DNA Standards

DNA standards should be obtained from all listed individuals in a case who may have contributed DNA to evidentiary items if those items will be referred for DNA analysis. This includes victim and suspect standards, and, in sexual assault cases, standards from any recent (within 5 days) consensual sexual partner(s). Elimination standards are especially critical when an item of evidence is collected from person who can reasonably be assumed to have left their own DNA behind on an item, such as standards from the wearer of an item of clothing (when a profile foreign to the wearer is the goal of analysis) or standards from the regular driver(s) of a vehicle when submitting swabs from the steering wheel of a stolen vehicle. These standards are compared to the DNA profiles obtained from the evidence to determine inclusions and exclusions. DNA profiles from convicted offenders will not be used in lieu of DNA standards for direct comparison to evidence profiles.

For living individuals, oral swabs (also referred to as buccal swabs) are recommended for routine use as a DNA standard; however, blood samples are also acceptable. Blood standards are preferred as a DNA standard for deceased individuals that are not severely decomposed or have not recently received a blood transfusion. For recently transfused decedents, an oral swab standard is an appropriate DNA standard.

It is not recommended to swab the bleeding wounds of a living individual for submission as a DNA standard in lieu of collecting oral swabs. Depending on the activity that led to the wounds, this type of sample could yield a mixture of DNA from more than one individual, no longer qualifying the sample for use as a DNA standard.

12.7.1 Collecting Oral Swab Standards

1. Vigorously swab the inside of the mouth until 2-4 swabs are collected. The individual may do this him/herself under your direct supervision.
2. Allow the swabs to air dry thoroughly.
3. Seal in a paper envelope labeled with the individual's name, date, and "Oral Swab Standard." The swabs collected from one individual should be packaged together.

12.7.2 Collecting Blood Standards

1. Collect at least one vial of blood into a lavender top tube, which contains the preservative EDTA. If the blood is being collected from a decedent,

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2. Up to 4 swabs of blood may be collected instead of a vial of blood.
3. Label the vial with the individual's name and date collected, and then seal it in a box or padded envelope to prevent breakage. Label the outer packaging with the individual's name, date, and "Blood Standard."
4. Never store liquid blood tubes in the freezer. Refrigerate them instead.

12.8 Decomposed Remains

If the human remains are badly decomposed, it may be impossible to obtain an adequate oral or blood standard and thus be necessary to collect an alternate type of DNA standard. Contact your local laboratory for instructions on other collection and preservation options.

12.9 Secondary Standards

When a person of interest is unable to be located (e.g., missing person, fled area, etc.) or a standard can otherwise not be obtained (e.g. lack of probable cause for a warrant), secondary standards may be used. Suitable secondary standards include cigarette butts, drinking containers, or personal care items (e.g., toothbrush, razor, etc.) known to have been used only by the person in question. Note that if a mixture of DNA from more than one individual is returned from a secondary standard, it is no longer suitable for use as a secondary standard.

12.10 No Available Suspect Standards

Evidentiary items may still be referred for DNA analysis even if no suspect standards are available, as the DNA profiles from the evidence may be suitable for comparison to the CODIS database. It is important to note that in the event of a probative association to a CODIS profile, a known standard (e.g., oral swabs) will be required for confirmation.

12.11 High Throughput Property Crimes Program

This program has been temporarily suspended.

12.12 Private Laboratory Analysis

The Oregon State Police Forensic Services Division is unable to offer DNA analysis for urine, mitochondrial DNA, drug paraphernalia associated with possession of a controlled substance (PCS), and cases in which there is no victim.

For information regarding private laboratories available to conduct DNA testing, please contact your local forensic laboratory. Please note that if evidence analysis by a private laboratory is performed without prior consultation with the Oregon State Police Forensic Services Division, it may be impossible to search any profiles resulting from the private laboratory's analysis within the CODIS database.

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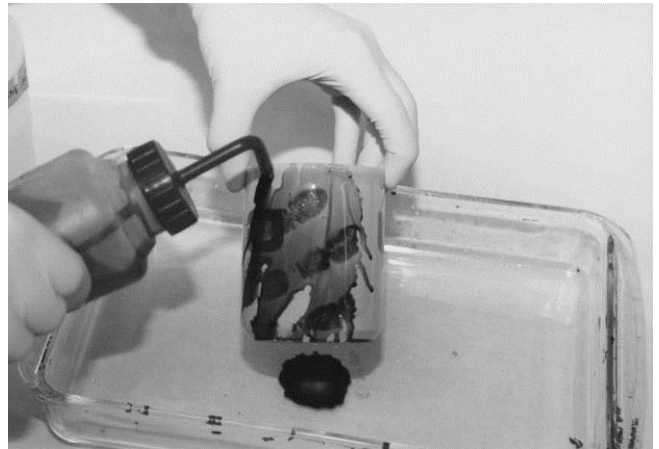
13.0 LATENT PRINT EVIDENCE

13.0 LATENT PRINT EVIDENCE

Friction ridge detail, also referred to as latent prints, is a widely recognized means of identification. Most crime scene evidence has the potential to reveal comparable latent print impressions; therefore, one should handle all evidentiary items with caution (i.e. with gloves and minimal contact). The chemical composition of latent print residue is such that chemical techniques can be used to visualize latent prints on both porous and non-porous substrates.

The services the Laboratory provides include the following:

- Examination and processing of evidence for latent prints.
- Determination as to whether latent prints are of comparison quality.
- Comparison of these latent prints in an attempt to identify a source.
- Search for a possible source by utilizing the Automated Biometric Identification System (ABIS) and/or the FBI's Next Generation Identification (NGI) database.



13.1 Collection, Packaging, and Submission of Evidence

In most circumstances, smaller items of evidence should be collected and submitted to the Lab for full sequential processing. In this case, no processing (photographs with scales, dusting, etc.) should be conducted by the agency unless absolutely necessary. Latent print evidence should be packaged in a way to minimize the movement of the object without being too restrictive to cause wiping/rubbing (this may destroy latent prints present on the object). Latent print evidence should never be in direct contact with “packing peanuts.”

If items have been processed *prior* to submission to the laboratory, information regarding what type of processing was performed should be documented and submitted with the evidence. Chemical processing of evidentiary items should only be done in a laboratory setting.

Evidence exposure to water or dampness should be avoided. However, this exposure does not necessarily destroy all latent prints. It is important that any wet or damp object be air-dried before it is packed for shipment.

Paper items may be placed in a single envelope package for submission

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13.0 LATENT PRINT EVIDENCE

Guide to Collection and Packaging of Latent Print Evidence

ACCEPTABLE

DO use gloves to pick up items of evidence being careful not to wipe possible latent prints off the surface.

DO minimize handling of evidence.

DO fasten down large articles to a rigid surface to prevent shifting and contact with other items.

DO put latent lift cards in envelopes and mark and seal.

DO take complete and legible inked fingerprint and palm print standards of all subjects without SID numbers and/or FBI UCN numbers who may have handled the evidence.

DO include full name, date of birth, and SID numbers for all involved persons on the Form 49.

DO place evidentiary papers and documents in manila envelopes, seal and submit to the laboratory

NOT ACCEPTABLE

DON'T apply powder to obviously greasy, wet or bloody surfaces, or to prints left in dust or soft putty. Please photograph these latent prints or submit the items to the laboratory for processing.

DON'T wrap nonporous items in cotton or cloth as they may damage or destroy latent prints.

DON'T use "packing peanuts" directly in contact with the evidence.

DON'T directly cover evidence to be examined for latent prints with evidence tape.

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13.1.2 Digital Imaging

Visible latent prints can also be preserved via digital imaging. All digital images must be captured in a lossless format (e.g., TIFF or RAW), contain a visible measuring device and have a resolution of at least 1000 pixels per inch (ppi) whenever possible. An overall photograph (in addition to the close-up image of the impression) should be taken of the item (or scene) such that the latent print can be re-located on the item (or within the scene). Images should be physically submitted to the laboratory via disk or thumb drive.

13.1.1 Latent Print Lifts

Larger objects that cannot be easily transported or packaged may be processed in the field. Processing may be performed by powdering the surface with an appropriately colored fingerprint powder and lifting any visible latent prints. If possible, an image of the latent should be acquired prior to lifting. Multiple prints in close proximity should be collected on the same lift, if possible. In some instances, one may need to perform multiple lifts of the same print to obtain the best quality lift. The location, orientation and any other pertinent information (e.g. multiple lifts of the same impression) should be recorded clearly on the back of the lift card. If it is unlikely that the latent print can be lifted, then attempt to collect and package the evidence for submission to the Laboratory

13.2 Submission of Inked Prints for Comparison Purposes

The investigator should take inked prints from all persons known to have handled the evidence (elimination prints) to permit comparison with any latent prints located on the submitted evidence. If the individual already has prints on file, their **full name, date of birth, and SID number or FBI/UCN number** must be listed on the Form 49.

Often latent prints found at the scene of a crime involve areas of the palms, second and third joints of the fingers, and the finger sides and tips. For this reason, the analyst may request that the investigator take clear and complete inked standards (major case prints) of all ridges on the hands of suspects or persons known to have legitimately handled the evidence to aid in comparisons. Palm prints should always include recordings of the lower finger joints, as well as the outer edge of the palm (writer's palm). Inked standards should be submitted with the evidence.

13.3 Automated Biometric Identification System (ABIS)

After comparisons are conducted with any known suspect's prints, victim prints or submitted inked standards, the remaining unidentified latent prints may be evaluated for ABIS quality and may be searched against the Western Identification Network (WIN) ABIS and/or the FBI's Next Generation Identification (NGI) database. Latent prints that remain unidentified after a search in ABIS may be registered in the Unidentified Latent Database (ULD) for future searches against new standards as they are added to the database. The agency will be notified via a report if a registered print in the ULD is later individualized. In the event the submitting agency should identify any latent prints the agency should notify the laboratory so these latent prints can be purged from the ULD.

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13.4 Identifying the Deceased

Refer to “Unidentified Remains” section in this manual.

Routine identifications for the purpose of clearing a Computerized Criminal History (CCH) record are made through the Identification Services Section in Salem.

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14.0 DRUG CHEMISTRY

14.0 DRUG CHEMISTRY

Drug chemistry analysis is the identification of specific chemicals that are designated as controlled by the Oregon Administrative Rules.

14.1 Analysis of controlled substances

There are three categories of analysis related to controlled substances:

- **Controlled substance analysis** – Qualitative analysis and identification of controlled substances. In general, non-controlled substances are not identified (though exceptions do exist) and Oregon law requires only the presence of a controlled substance be determined, not its purity. Evidence can be found in both liquid and solid samples (e.g. tablets, powders, plant material, syringe contents, etc.), varying in size from a residue to multi-kilogram submissions.
- **Clandestine laboratory analysis** - Samples (controlled and non-controlled) are analyzed to determine the method being used to manufacture an illegal drug. Theoretical drug yields based upon the quantity of chemicals and precursors seized may also be possible. Typical clan lab analyses involve methamphetamine and MDMA production – please contact your laboratory if you suspect a substance other than one of these.
- **Methamphetamine Quantitation** – Quantitative (purity) testing is performed for federal sentencing in methamphetamine cases only. Request by a US Attorney is required prior to laboratory analysis.

14.2 Chemistry Submissions

Refer to section [5.0 Cancellation of Requested Analysis](#) for incorrect submissions that will result in the evidence being returned to the agency.

14.2.1 Cancellation of Chemistry Requested analysis

- Evidence was received by certified carrier and did not include a list of the contents sent to the lab
- Evidence was not properly sealed or evidence seal was not initialed
- More than 2 pharmaceutical pills, capsules or tablets were submitted
- Pills, capsules or tablets were not submitted in a container that allows the viewing of the evidence. (e.g. Plastic bag, manila envelope with a window)
- Additional item(s) received with the submission that was not the subject of analysis (e.g. drug paraphernalia, boxes, bags, keys, etc.)
- Sharp objects were not packaged in a puncture-resistant container
- Syringe was included that does not meet the submission requirements.

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14.2.2 Up to two items per defendant

Each laboratory normally limits analysis up to two items per defendant, so the investigating officer should use discretion and submit only those two items that are essential to the case. Based on case circumstances the analyst has the discretion to analyze one or both of the items unless otherwise noted. Exceptions can be made by District Attorney's Office request to the laboratory. In cases with multiple suspects, an indication should be made as to what evidence belongs to which suspect. If no indication is given, the laboratory reserves the right to choose the items for analysis. Further, if an item is specifically related to a probable cause issue, it should be designated as such.

14.2.3 Large Quantities of Controlled Substances (for marijuana, see 14.2.4)

Prior to the submission of large quantities of controlled substances (e.g., more than 500 grams of heroin, cocaine or methamphetamine), it is recommended that the officer contact the laboratory to make arrangements for testing. These arrangements will ensure that the analysis is completed in a timely manner and that the agency picks up this evidence shortly after testing.

14.2.4 Large Quantities of Plant Material (marijuana)

The material should not be submitted directly to the laboratory. A small sample of the material should be removed, packaged, and submitted for analysis. In certain circumstances where a seizure's entire weight is needed, laboratory personnel can assist with the weighing of large submissions. In such circumstances, it is recommended that the submitting officer contact the laboratory prior to submission to discuss analytical needs.

14.2.5 Pills, Capsules and Tablets

- If the capsules or tablets are commercially produced pharmaceuticals, no more than two of each type should be submitted to the laboratory for confirmation of the contents.
- Clandestinely produced or suspected counterfeit tablets may contain controlled substances which are affected by sentencing enhancements. More than two of this type of item may be submitted to the laboratory.
- The number and description (e.g., color, shape, imprint) of pills, capsules and/or tablets should be listed on the Laboratory Request Form (Form 49)
- The pills, capsules and/or tablets should be sealed in a clear plastic bag or other container that permits viewing of the evidence so that they can be seen when submitted to the laboratory.

14.2.5.1 Suspected Fentanyl Evidence (Pills, Capsules and Tablets)

Law enforcement agencies have the following options when requesting analysis of pills that are suspected of containing Fentanyl or a Fentanyl derivative:

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- The agency may submit suspected fentanyl evidence following regular laboratory submission guidelines of two pills per case.
 - The evidence must be submitted in clear packaging and double bagged to minimize risk of exposure.
 - The evidence will be clearly labeled as containing “SUSPECTED FENTANYL DERIVATIVE” or equivalent.
- The agency may contact the laboratory and schedule a repackaging of the evidence prior to submission. This task will be performed by an analyst in the presence of the agency representative. This will allow the evidence to be prepared for submission in a controlled environment in a manner that meets our existing guidelines (i.e. two-pill policy).
- The agency may submit the suspected fentanyl evidence without regard to the pill submission guidelines if they determine that the condition of the substance presents an elevated risk to their safety (disintegrating pills, fine powder, etc.). The following conditions must be met:
 - The evidence must be double bagged in plastic.
 - The evidence will be clearly labeled as containing “SUSPECTED FENTANYL DERIVATIVE” or equivalent.

14.2.6 Syringes (With or Without Needles)

Syringes, regardless of whether they have a needle or not, must be individually packaged in a puncture-resistant container. If the evidence is submitted in improper packaging, the syringe will be returned to the agency for proper packaging.

14.2.7 Razors and Other Sharp Objects

Razors and other sharp objects should be separated from other evidence that requires analysis and must be adequately labeled and packaged in such a manner as to protect personnel during handling. The packaging must be protective enough to ensure *no* possibility of being injured or punctured. Commercially manufactured puncture-resistant containers are available for purchase. Contact your local laboratory for information.

14.2.8 Biohazards

Items removed from a body orifice as well as syringe contents should be labeled with a “BIOHAZARD” label and the Form 49 should indicate from where the item originated as well as any identification of known concerns (e.g., “suspect positive for hepatitis C”). Please do not label typical drug submissions as “biohazard” unless there truly is cause for concern.

14.3 Collection and Packaging

- A description (number, color, etc.) of all submitted items must be written on the Laboratory Request Form (Form 49).

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- Drug evidence must be separated from non-evidentiary items prior to submitting evidence for analysis.
- Care should be exercised when packaging more than one exhibit in the same package to prevent cross contamination.
- Evidence that is loose, open, leaking, or has cut corners/unsealed edges must be individually secured to prevent loss.
- If latent prints analysis on the packaging is requested please distinguish the internal agency bags from the actual evidentiary bags.

The following will not be accepted:

- Miscellaneous drug paraphernalia (must separate and submit only items to be analyzed)
- Purse with drugs (must separate the drugs from the purse)
- Multiple bindles (must include the number of bindles)

14.4 LSD

Suspected LSD should be kept away from direct light. This can be accomplished by storing in dark packaging or wrapping in foil. Additionally, LSD has a very low dosage activity, so extra care should be taken to avoid exposure.

14.5 Plants/Wet Evidence

Live plant material and other damp/wet evidence should be dried prior to submission. This includes marijuana, mushrooms, peyote, or opium poppies. Fresh plant material, when packaged in airtight containers such as plastic bags, decays rapidly and can inhibit or possibly eliminate the chance for detecting a controlled substance. Suspected fresh khat should be frozen and submitted as soon as possible. Potentially spiked liquids should be submitted in a timely manner.



14.6 Latent Prints

Drug packaging that needs processing for latent fingerprints should be separated from the drugs when possible. The evidence for latent fingerprint processing is then submitted separately from the drugs.

14.7 Field Test Kits

When using commercially purchased field test kits, remember that a positive result with the kit only indicates the possible presence of a drug. There can be other substances that give a similar reaction (e.g. marijuana resin can turn brown in a test that normally turns orange in the presence of amphetamines). Generally, the colors of a positive reaction indicated on the test kit are very apparent and interpretation of the result is usually not necessary.

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The field test kits should be discarded after use. DO NOT submit them to the laboratory. Many of the kits contain concentrated acids that can leak, creating a chemical hazard and can potentially destroy evidence or packaging. In addition, drugs subjected to these kits cannot be further analyzed.

Officers should not use field test kits on a residue amount of drug. In cases where quantities are limited, omit the field test and submit the evidence directly to the laboratory for analysis.

14.8 Clandestine Drug Laboratories

Clandestine Laboratory analysis is only performed in the Central Point and Portland Metro Laboratories and should be hand delivered by the agency when submitting. When it comes time to return the evidence all agencies will be required to pick up the evidence in person. Due to the nature of the samples the Oregon State Police Forensic Services division is not allowed to ship this type of evidence via a common carrier. Once the analysis is complete the agency will be notified to schedule a pickup time.

Clandestine drug laboratories range from crude makeshift operations to sophisticated and technologically complex facilities. They can be set up anywhere and are often found in private residences, hotel and motel rooms, trailers, barns and outbuildings, and commercial buildings. At these locations sophisticated surveillance equipment and booby-traps may be set up to deter intruders and law enforcement personnel from entering.

There are usually two situations when a clandestine laboratory is encountered. The first is when police or fire agency personnel encounter a previously unknown lab. When this occurs the personnel should secure the scene, allow no unauthorized or unnecessary entry, and contact the local specialized unit or trained personnel to process clandestine laboratories.

When clandestine drug laboratory chemicals are detected during a vehicle stop, treat the site as a crime scene. Contact the local law enforcement unit trained to handle this situation for assistance.

The second situation would involve prior knowledge by the local law enforcement agency of the illegal activity. A raid is planned and personnel needed for the proper shut down and dismantling of the laboratory have been contacted.

14.8.1 Types of Clandestine Drug Labs

Although methamphetamine is by far the most commonly encountered clandestinely manufactured drug in Oregon, the OSP clan lab analysts are prepared to analyze samples from other types of manufacture. These include but are not limited to amphetamine, methcathinone, MDMA & related compounds, and other compounds in the phenethylamine, tryptamine and piperidine classes.

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14.0 DRUG CHEMISTRY

14.8.2 Collection of Clandestine Drug Lab Samples

Extreme care and caution should be exercised whenever investigating or processing a clandestine drug lab site. The chemicals and substances used in the manufacturing process can be caustic, explosive, carcinogenic, poisonous, irritating, and/or flammable. Personnel participating in clandestine drug laboratory investigations should have specialized training in the use of protective equipment and the appropriate health and safety procedures.

Clandestine laboratory samples and reagents include highly corrosive acids, caustic bases, volatile respiratory irritants, flammable liquids and many other dangerous substances. The appropriate use of personal protection equipment is strongly recommended. In addition, samples must be packaged in a safe manner for long term storage and transport.

The processing of clandestine drug laboratories also involves the sampling, removal, and proper disposal of hazardous toxic chemicals. For forensic purposes, representative samples of all substances that could be used for the synthesis of a controlled substance should be submitted to the lab. In the case of multi-layer liquids, be sure the submitted sample contains sufficient material from both layers. Alternately, layers may be submitted in separate containers, but be sure to appropriately label which container is the top/bottom layer. Such information can be extremely important to the analyst.

In addition, photographs of the scene depicting any glassware along with any officer's report should also be submitted. If at any time the investigating personnel have questions about what should be sampled on scene, it is encouraged that they contact their local forensic laboratory for assistance. The transportation and disposal of all chemicals at the scene is regulated by state and federal environmental protection agencies and as such, any questions regarding disposal procedure should be directed to them.

14.9 Methamphetamine Quantification

Quantitative analysis on solid dose methamphetamine requires a separate request, by a federal attorney, and is conducted when cases are being prosecuted at the federal level.

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15.0 ANONYMOUS ANALYSIS PROGRAM OF SUSPECTED CONTROLLED SUBSTANCES

15.0 ANONYMOUS ANALYSIS PROGRAM OF SUSPECTED CONTROLLED SUBSTANCES

The Oregon State Police Anonymous Analysis Program was established to assist parents/guardians in the event they should find suspected drugs or other drug paraphernalia in their minor’s possession. Anonymous Analysis is not performed at the request of employers.

15.1 Submission of Substances for Anonymous Analysis

Suspected drugs/paraphernalia can be submitted for controlled substance analysis by delivering the item(s) to any local law enforcement agency or participating Oregon State Police Forensic Laboratory. Samples submitted as part of the OSP Forensic Services Division's Anonymous Analysis Program will not be used for criminal or civil charges and are not considered evidence.

Anonymous Analysis cases will be worked in a timely manner and will be dependent on staff availability and caseloads. The findings will be reported verbally to the submitting agency or individual making the request.

The report posted in LOIS will be titled Anonymous Analysis and will indicate the following: “The results of anonymous analysis requests are reported verbally to the customer. Please contact the agency/customer directly if you require information regarding this request.”

Anonymous Analysis samples will be destroyed by following the Division’s Policy for the destruction of a controlled substance.

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16.0 TOXICOLOGY

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During investigations when there is cause to believe that an individual may have been under the influence of alcohol and/or drugs, efforts should be made to obtain blood and/or urine for toxicological analysis.

16.1 Type of Sample

Alcohol - In cases where it is necessary to determine the level and effect of alcohol on the individual, blood is the specimen of choice. Urine may be tested for the *presence* of alcohol, however it is not a legally recognized testing medium for blood alcohol determinations and therefore a percentage of alcohol will not be reported.

Drugs - In cases where the use of controlled substances or other drugs is in question, urine is the specimen of choice.

The laboratory is also able to determine the alcohol concentration of unknown liquid samples.

Many drugs leave the blood very rapidly and may be difficult or impossible to detect unless the blood is collected expeditiously. Generally, drugs are present in the urine in greater abundance than in blood, and are therefore more readily detected. When there is a question as to which medium is best, collect both blood and urine.

The Forensic Services Division is not able to test blood for the presence of drugs other than alcohol at this time. If blood-drug analysis is required, the laboratory may be able to assist you in locating an outside laboratory that is able to perform the work.

16.2 Triaging

If both urine and blood are submitted, the laboratory will test the blood for alcohol and the urine for drugs.

Cases that have pending criminal charges are prioritized higher than those that do not have pending charges.

16.3 Blood Alcohol

16.3.1 Collection, Packaging, and Storage

At least 4 milliliters of blood should be collected in a commercially available gray-top tube that contains sodium fluoride and potassium oxalate or EDTA. Ideally, two 10 milliliter tubes will be collected at the

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same time. Normally, the analyst will test one and leave the other unopened so it is available for additional testing if desired.

When gray-stoppered tubes are not available, other types of blood samples may be submitted (serum or plasma samples or tubes with other-colored stoppers).

The Forensic Services Division does not recommend the collection of multiple sequential blood draws. Testimony given at the time of trial will be the same whether there is one blood draw or several.

Blood Alcohol Specimen Kits can be purchased for packaging and securing the blood tube. To order kits go to the following link: <http://www.oregon.gov/osp/FORENSICS/Pages/KitOrders.aspx>

A specimen labeling system must be employed which assures unequivocal matching of the specimen with the person from whom it was collected. The tube(s) should be labeled with the individual's name, date, and time of the blood draw. If two or more Vacutainer tubes are collected consecutively during the same blood draw, they should be labeled with the same time.

Do not place evidence tape or other seals over the stopper of the vial, as the tape can obstruct the information on the vial label, and can interfere with resealing of the tube. Instead, the packaging containing the blood tube(s) should be securely sealed with evidence tape.

Care must be taken to maintain proper chain of custody. Blood should be submitted to the laboratory as soon as reasonably possible, and should be refrigerated during any delay in submission. Blood evidence returned to the submitting agency should be stored under refrigeration.

16.4 Urine

Only qualitative analysis (identification of drugs) is performed on urine specimens. Quantitation of a drug in a urine sample is not performed because urine drug concentrations cannot be correlated to a concentration of the drug in blood or to impairment. It should be noted that the mere presence of a drug in the urine cannot, by itself, support a determination that the subject was under the influence of the drug at a particular time. Likewise, the laboratory may be unable to detect drugs that are actively impairing a person due to limitations of the analytical methods or because the drug has not yet been metabolized to reach a sufficient concentration in the urine.

If a Drug Recognition Evaluation (DRE) has been completed, please include a copy of the DRE face sheet when submitting the evidence to the Laboratory.

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If drug use is known or if the suspect has offered statements regarding drug use, it is recommended to include that on the request form. Detection of some drugs (see below) requires specialized analytical techniques beyond the routine analysis and it is useful for the analyst to know about those in advance of testing.

16.4.1 Drugs Tested in Routine Toxicological Analysis

All urine samples generally undergo screening by EMIT (Enzyme Multiplied Immunoassay Technique) and confirmation by Gas Chromatograph/Mass Spectrometer (GC/MS) and/or Liquid Chromatograph-Quadrupole/Time-of-Flight (LC-QTOF). The analyst looks for the following types of drugs in a routine toxicology analysis:

- Opiates/Narcotic analgesics (e.g. morphine, Vicodin, codeine, etc.)
- Amphetamines/Stimulants (e.g. amphetamine, methamphetamine, MDMA, etc.)
- Barbiturates (e.g. butalbital, phenobarbital, etc.),
- Benzodiazepines (e.g. Valium, Klonopin, etc.)
- Marijuana metabolite
- Cocaine and its metabolites
- Methadone
- Other prescription drugs (e.g. Prozac, Soma, Ambien, etc.)
- Other potentially impairing over the counter drugs (antihistamines, dextromethorphan, etc.)

The laboratory is currently unable to test for inhalants (e.g. paint thinner, “Dust Off,” etc.).

If synthetic cannabinoids (e.g. “K2” or “Spice”), fentanyl derivatives, psilocin, or LSD are suspected, it is important to include that information on the request form. If any of these types of drugs is suspected, it is recommended to also collect a blood sample, store it in a cool, dark place, and contact the laboratory for help in locating a lab to analyze the sample.

If you suspect that lorazepam (Ativan), psilocin (mushrooms), or a date rape drug (e.g. GHB, etc.), was used, this should be specifically noted on the Forensic Services Request (Form 49). These drugs may not be detected in a routine toxicology analysis, and notice ensures that specialized detection methods can be utilized if necessary.

16.4.2 Collection, Packaging, and Storage

Urine Collection Kits are provided by the Oregon State Police and should be available at all Intoxilyzer locations. To order these kits go to the following link:

<http://www.oregon.gov/osp/FORENSICS/Pages/KitOrders.aspx>

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Urine samples should be collected in the plastic screw-top container provided in the kit. Be sure the lid is **tightly** secured and **label the container** with the following information:

- The individual's name (not just initials)
- The date of collection
- The time of collection

If there is a reason to suspect tampering, try to obtain another sample from the subject, and send both samples to the laboratory.

Do not place evidence tape over the lid of the container, as this can obstruct the information on the label and interfere with reclosing. Secure the urine cup in the plastic bag provided. It should be noted that urine that leaks into the plastic bag will not be analyzed. The packaging containing the urine specimen should be securely sealed.

Care must be taken to maintain proper chain of custody. Urine should be submitted to the laboratory as soon as reasonably possible, and should be refrigerated during any delay in submission. Urine evidence returned to the submitting agency should be stored in a secure freezer or in a refrigerator if freezer space is limited.

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17.0 FIREARMS EVIDENCE

17.0 FIREARMS EVIDENCE

Firearm examinations compare marks or impressions which result when two objects make contact with each other. These resulting impressions are characteristic of the “tool”, which is usually the harder of the two objects. When a bullet, which is composed of relatively soft metals, travels through the harder barrel of a firearm the barrel leaves markings on the bullet. These markings are unique and can often be associated with a specific firearm. Fired cartridge cases can also be identified to a firearm in a similar manner.

Some examples of analysis of physical evidence by Firearm Examiners include:

- Determining functionality/operability of a firearm.
- Determining if a firearm has been altered/modified into a machine gun.
- Determining the presence/functionality of a sound suppressor.
- Generating a list of possible firearm(s) based on the class characteristics found on fired bullets and/or cartridge cases.
- Comparison of bullets, cartridge cases, or fired shot shells to determine if they were fired in a particular firearm.
- Serial number restorations.
- Determination of distance from muzzle to target proximity based upon gunshot residues and/or shot patterns.
- Manufacturer and type of ammunition.
- Examinations and conclusions regarding the identification of gunpowder.

For Trajectory analysis refer to the Crime Scene section in this manual.

17.1 Integrated Ballistics Identification System (IBIS)

IBIS is a system that captures and compares images of known test-fires and unknown fired cartridge cases. These images are searched against a database. When similarities are observed a notification report will be sent to the agency about the potential for links to other cases within the database. If the agency requires a physical confirmation for a search warrant, court, etc. the agency must notify the lab and resubmit the evidence for comparisons. All firearms on the IBIS eligible list are automatically entered at into IBIS, regardless of whether the examination is requested.

To request entry of evidence into IBIS, contact your local Forensic Laboratory for information on how to submit. Firearms eligible for IBIS entry generally include the following:

- Centerfire and rimfire semiautomatic pistols
- 7.62x39mm, 5.56x45mm/223 REM, and 22 LR caliber semiautomatic rifles

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17.2 Collection and Packaging of Firearms Evidence

The primary concerns when packaging firearms are safety and the preservation of the evidence including blood, trace evidence, and latent prints that may be present.

- When submitting loose cartridges, cartridge cases, bullets, fired bullets, waddings, shell, etc., the number of each type needs to be included on the Form 49. Refer to Appendix B for photos and firearms terminology.
- Never insert anything into the barrel of a firearm.
- Minimize handling because it is possible to recover latent prints from firearms and ammunition.
- Do not remove cartridges from magazines when latent prints will be requested; however, do remove the magazine. Ensure magazines and recovered ammunition are both submitted with the firearm. The submission of ammunition used with the firearm is essential to give accurate results in muzzle-to-target proximity test. When latent prints is not needed, remove the cartridges from the magazine to obtain a count for the Form 49.
- Absent special circumstances, recovered firearms and ammunition components should not be physically marked in any manner (see exception listed below). Label the packaging instead.
- Mark the position of the cylinder on both sides of the top strap before opening the cylinder of a revolver and make note of the position of fired and unfired cartridges in the cylinder. This is so the position of the cylinder, as recovered, can be determined after the cylinder is opened.

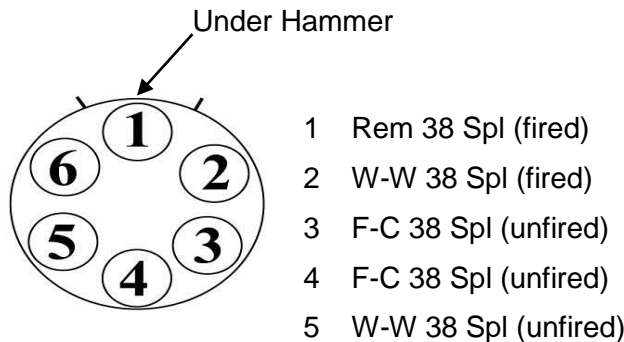


Figure 5: Example of how to note the positions of cartridges and cartridge cases in the cylinder of a revolver.

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- Store and transport firearms unloaded and rendered safe. If unable to do so, hand-deliver the firearm to the laboratory and inform lab personnel immediately of the firearm's condition.
- Any evidence with possible blood or body fluids should be air-dried, then packaged in paper bags, envelopes, or cardboard boxes labeled as containing a biohazard. It is preferred that a "BIOHAZARD" label is attached.
- For firearms recovered from bodies of water, submit the firearm in a container that will keep it submerged in the water it was recovered from. **Do not** dry the firearm out prior to submitting to the lab.

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18.0 SERIAL NUMBER RESTORATION

18.0 SERIAL NUMBER RESTORATION

The obliteration of serial numbers and manufacturer's marks is often done to prevent tracing ownership of articles. The laboratory uses mechanical and chemical processes that may restore the original marking in whole or part. Firearms, bicycles, motorcycles, chainsaws, boats, and cameras are all evidence items where serial numbers have been restored.

18.1 Collection and Packaging of Evidence

Package the evidence in a manner that will protect the area where the serial number has been obliterated. Contact the laboratory prior to delivering large items.

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19.0 TOOL MARK EVIDENCE

19.0 TOOL MARK EVIDENCE

Tool marks are impressions or marks produced when a tool comes into contact with an object; the tool is generally the harder of the two objects. Physical contact between a tool and the surface of an object produces marks not only characteristic of the type of tool used, but marks that may be unique to a single tool.

In the absence of a suspect tool, tool mark impressions can be examined in an attempt to determine the type of tool(s) that may have produced them. Examples of tools that may be encountered include: hammers, screwdrivers, pry bars, knives, bolt cutters, pliers, tin snips, pipe wrenches, axes, and hatchets.

Do not attempt to determine if a found tool fits in the tool mark. This may alter or obliterate the tool mark and trace evidence may be lost or added.

19.1 Collection and Packaging of Evidence

The recovered tool should be carefully packaged to prevent the prying blade or cutting edges from having contact with any other objects that may cause an alteration of the tool.

Send the whole object containing the tool marks to the laboratory. If this is not possible, photograph the tool mark, then cut out the area with the tool mark or make a cast of the mark. Information about casting material that is appropriate for tool marks may be obtained by contacting the laboratory.

Mark the cast or cut object with appropriate information indicating its orientation such as up/down, inside/outside, and left/right directions. Package the object containing the tool mark in such a manner as to prevent alteration or damage during shipment and storage.

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20.0 GUNPOWDER AND SHOT/PELLET PATTERNS

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When ammunition is fired, a mixture of partially burned/unburned gunpowder, and vaporized primer compounds are expelled out of the firearm’s muzzle, in addition to the bullet, shot pellets and wad(s).

Examination of the evidence may reveal the following:

- Proximity, which is the distance from muzzle to target determined by gunshot residue and/or shot pellet patterns
- Ammunition type
- Ammunition manufacturer
- Firearm condition
- Bullet or pellet entry angle
- Stippling or sooting around the entrance

20.1 Collection of Gunpowder Evidence

Submit the clothing or other object(s) that may have gunshot residue or bullet/pellet holes. Carefully handle and package the evidence to avoid losing deposited gunpowder and/or other residue(s).

If possible, collect and submit ammunition of the same type used in the crime (e.g., ammunition from the firearm’s magazine, unused ammunition from a box at the scene, etc.)

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21.0 ARSON AND FIRE DEBRIS

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Many times it is difficult to ascertain whether a fire was accidental or arson. Flammable liquids readily evaporate and thus arson evidence should be collected and packaged in an air tight container to prevent loss by evaporation and possible contamination. *Moisture is not a problem; do not dry arson evidence.*

An arson investigator should be contacted with specific questions regarding the type of scene being worked, what evidence collection is appropriate, and how to package/preserve evidence for submission to the laboratory.

21.1 Arson Scene Indicators

- Multiple fires in unrelated areas of the fire scene
- Odor of petroleum products, paint solvents, alcohol, etc.
- Stains on floor or other material
- Evidence of explosions not due to heat (shattered glass)
- Rapid spread of fire not explainable by structure, weather, or other conditions
- Smoke not explainable by building materials
- Fire trails such as cloth or paper trails, burn trails on carpeting, or deep charring in hardwood
- Removal of household property and valuable items
- Evidence of another crime which the fire might conceal (items stolen, evidence of violence)
- Recent similar fires in the vicinity

21.2 Collection of Evidence

- Charred debris and related material from the origin where the accelerant was placed
- Igniting devices (fuses, rags, candles, etc.) including mechanical and electrical devices
- Samples of upholstery, drywall, plaster, wood, or other material that may have been penetrated by flammable liquids
- Samples of soil that may have been penetrated by flammable liquids (freezing these samples prevents degradation that can hamper analysis)

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21.0 ARSON AND FIRE DEBRIS

- Trace evidence possibly left by the arsonist such as hairs, broken glass, tool marks, shoe impressions, clothing fibers, matches, etc.
- Suspect clothing worn at time of crime, including shoes (nylon fire debris bags are the preferred packaging for clothing items. Paper bags should be avoided as they allow potential evidence to evaporate.
- Liquids containing possible accelerants (for comparison to unknown samples) and containers that may have been used to transport them
- Comparison sample - a sample of uncontaminated carpeting and/or padding, drywall, wood, etc. should be collected and packaged separately
- Material used as a wick (shirt, sock, towel, etc.) from an incendiary device. This material may be analyzed for DNA comparisons.
- Control samples – new, unused gauze, bags, swabs, etc.

21.3 Packaging of Evidence

- Use airtight containers. Unused, clean metal paint cans are preferred. Lined or unlined cans work equally as well, but the lined cans will not rust through over time. Heat sealed bags specifically manufactured for flammable evidence collection may also be used. When these bags are used, submit an unused bag as a control. Contact the laboratory for information on where to purchase these packaging supplies.
- Do not use paper bags (these allow volatile liquids to escape)
- Do not put gloves (used by the investigator while collecting evidence) in the container with the evidence. Throw them away.
- Gauze pads can be used to soak up or collect residual liquid. Do not use cotton swabs, as they do not collect enough material to test effectively. Using swabs to collect ignitable liquid residues does not equate to collecting blood or biological material.
- Seal each collected item separately and securely.
- Mark all containers with appropriate identifiers.
- Document locations from which evidence samples were collected by notes, sketches, and/or photographs.

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22.0 EXPLOSIVES

22.0 EXPLOSIVES

The Forensic Services Division accepts limited amounts of bulk explosives (less than 1 oz.) and post-blast residues for laboratory analysis. A wide variety of chemicals and energetic materials may be encountered in an explosives investigation scene. Analysis of some of these materials may be beyond the capability of the OSP Forensics Services Division. It is recommended your agency consults with an Explosives Analyst in the Portland Forensic Laboratory at (971) 673-8230 before collection and submission of any evidence for Explosives analysis. Evidence from a post-blast explosives scene should be collected by individual with specialized training. It is recommended that you call ATF or your agency's bomb squad for the contact information.

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23.0 GLASS EVIDENCE

23.0 GLASS EVIDENCE

Glass is one of the more important types of physical evidence that is commonly overlooked. Glass is frequently encountered in burglaries and hit and run cases, and glass fragments may be found adhering to garments, hair, embedded in shoe soles, or may be transferred to other property belonging to the victims and suspects.

Glass evidence cannot be individualized to a single source, however, there are some instances where two fragments can be physically matched together and a common origin can be conclusively established.

Glass examinations may demonstrate the following:

- The presence and number of glass particles recovered from clothing or other surfaces.
- Whether or not fragments of recovered evidence glass are similar to glass from a known source of broken glass
- The type of glass found (e.g., tempered glass, container glass, etc.)
- The direction of force (from inside or outside) used to break a window
- The order of shots fired into a window or windshield

Consider that large glass pieces may have latent fingerprints present and the broken edges of glass may have other trace evidence present such as blood, hair, traces of bullets, or snagged fibers.

23.1 Collection and Packaging of Glass Standards

A comparison of evidence glass to a possible source requires the submission of glass standards. A separate glass standard should be submitted for each broken glass item at the scene. **For each glass standard, submit at least ten fragments of broken glass from that item.** These fragments should represent the entire broken area of the item (i.e. taken from different areas of the broken item, if possible) since physical properties may vary even within a single glass object.

For window glass standards, collect the glass that is still adhering to the window frame whenever possible. Collecting glass standards from the ground increases the likelihood of introducing contaminant glass into the standard. A second comparison standard may be collected from the ground and submitted separately.

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23.0 GLASS EVIDENCE

Some structural glass may be double paned, meaning that two different panes of glass are present. A standard should be collected from multiple areas on *each* glass pane. Package the standards from each pane separately, if possible.

Vehicle windshields are double-paned with a polymer sheet between them. To collect a windshield standard, cut out a square (2"x2") of the double-thickness windshield from the center area of the windshield. Mark the interior (IN) and exterior (EX) sides with a permanent marker. Repeat by cutting out and marking a second square near the driver's or passenger's side edge of the windshield. Both squares can go into the same bag.

Submit glass evidence in packaging that reduces the chance for further breakage.

23.2 Collection and Packaging of Recovered Glass Evidence

- Package glass pieces from different locations into different containers, clearly marking the outside packaging as to the location and description of the evidence.
- Collect and submit *all* glass pieces if you believe numerous glass pieces were from the same object (e.g. a window, a bottle, vehicle headlights, etc.) and request the laboratory to attempt a physical match.
- Label large glass pieces with orienting marks (e.g. up/down, inside/outside) when applicable.
- Collect and package a large glass piece in a rigid container such as a cardboard box. Protect the broken or fractured edges of the glass from any additional damage or breakage.
- Depending on the size, small glass pieces can be packaged in envelopes, bags, paperfolds, or on Post-It notes. For very small glass particles, place the particle onto the adhesive of a Post-It note and use a pen to circle around it. Fold the note in half, covering the glass particles, and then put the labeled folded Post-It note in a paper envelope. See Appendix A for paperfold instructions.
- Tape over any holes in the packaging through which small glass particles could be lost.
- Glass pieces that are slightly bigger can be packaged in envelopes or bags, and then secured in a padded envelope to protect from further breakage or injury to those handling the evidence.

23.3 Clothing Items and Hair Combing

An individual who breaks a window with force or who is in contact with or nearby a breaking glass object may have very small particles of glass on his/her clothing and hair.

Collect clothing items, taking care not to shake or handle the clothing more than necessary. Doing so may dislodge these small glass particles. If the clothing is not stained with biological material (e.g. blood), package in a paper bag carefully sealing all possible openings. If the clothing is stained with biological material, allow the clothing to air-dry on a clean, dry surface and package in a paper bag. If this is not possible, collect *and submit to the lab ASAP*.

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23.0 GLASS EVIDENCE

To collect glass particles from hair, have the person stand or lean over a large clean sheet of examination or butcher paper. Using a new comb, comb the hair to dislodge any particles so that they will fall onto the paper. Fold the paper to enclose any debris from the hair and tape closed.

23.4 Vacuum Sweepings / Large Objects

In some cases, it is useful to screen large objects such as carpets, car mats/vehicle flooring, or backpacks for glass particles. The entire object may be submitted, or a vacuum sweeping may be made of these objects. Adhesive lifts are not recommended for collection of glass evidence from these surfaces, as the lifts too quickly become saturated and lose the ability to pick up any glass present.

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24.0 PAINT EVIDENCE

24.0 PAINT EVIDENCE

Paints are used as surface coatings for a variety of surfaces such as vehicles, structures, safes, and appliances. Many crimes, such as burglaries, hit and run vehicle investigations, and others involve forceful activities that can result in the transfer of paint from the original source to another place, person, or object. Paint transfer may also occur if wet paint is applied in the commission of a crime.

Paint evidence may be transferred from one object to another from contact or loose paint chips may be collected at the crime scene for later comparison with a suspected source. Paint chips may also fracture in such a way that a conclusive physical match can be made between the loose chips and the object they came from.

Paints contain a multitude of components, many of which may be detected in very small samples such as those encountered as evidence. Analysis and comparison of paint samples can be successful even when they are extremely small in size.

Paint examinations can determine:

- Whether evidence paint sample(s) are similar to a paint standard
- The type of paint (vehicle, architectural, etc.)
- Lists of possible make and model of a vehicle by using the Paint Data Query (PDQ) database
- If a physical matches exists between paint coatings on two pieces of an object that was at one time joined

24.1 Collecting and Packaging Paint Evidence

Paint comparison standards from a known object are required when the laboratory is required to perform a paint comparison. Paint comparisons are performed on a variety of paint types including vehicle paints, architectural paints, spray paints, cosmetic lacquers, etc.

A potential paint source may have one or more different kinds and colors of paint that are present (e.g. vehicles), and the differences may only be apparent using microscopic or instrumental techniques. Because of this, it is important to obtain paint standards that adequately represent all of the paint types present on a potential source. If multiple body panels of a vehicle show damage, a paint standard should be collected from each.

If paint transfer is loosely adhering to a surface, place a loose paper cover or Post-it note over the area to protect it during packaging and transport. Do not place tape directly onto an area of paint transfer. Tape adhesive can contaminate paint evidence.

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24.0 PAINT EVIDENCE

24.1.1 Procedures:

Small Items (Easily Transported)

If an item that is a potential source or recipient of paint transfer is small enough to be easily packaged and transported, then it should be submitted in its entirety (e.g. tools, keys, knives, spray paint cans, etc.). Paint chips should be folded inside a paperfold or a Post-it-type note and then into a larger envelope for submission. See Appendix A for paperfold instructions.

Large Items (Not Easily Transported)

If the potential paint source or paint transfer is on a large object or one not easily transported, such as a vehicle part or a door from a residence, use the following method for sample collection:

1. Locate the area of damage. If paint transfer from one object to another is suspected, collect both the area of suspected paint transfer and a nearby area of a paint standard that shows no paint transfer. Collect a standard from an area as close to the point of damage as possible; on vehicles, they should be from the same body part (i.e. hood, right front quarter panel, driver's door, etc.).
2. When contact between two painted surfaces is suspected, the possibility of cross-transfers must be considered. Collect both objects, or collect areas showing paint transfer and standards from both surfaces.
3. If broken paint edges are present, care should be taken to collect as much of the damaged edge material as possible. The potential for a physical match may exist.
4. Use a clean razor blade, scalpel, or sharp knife to gently pry, carve, or chip the paint from the surface down to the foundation or substrate.
5. Always clean collection tools between each use to avoid cross-contamination of one sample with another.
6. Collect a total of about a nickel-sized amount of paint from each damaged area, when possible.
7. Place each paint sample into a paper fold or small paper envelope. Securely seal all possible openings in the packaging, including seams and corners if necessary.
8. Securely seal and label the package(s) with a description of where the sample came from.
9. Continue to collect paint from each damaged area in the same manner, even if the object appears uniformly painted. Also collect any samples that are visually different. Package and label each area separately.
10. Paperwork should clearly document the locations of collection of any paint evidence to be submitted to the laboratory.

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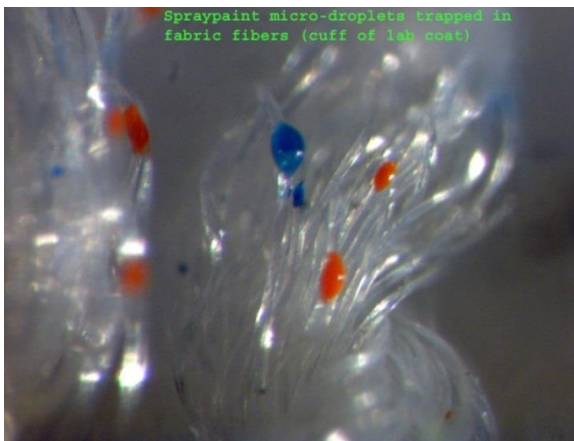
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24.0 PAINT EVIDENCE

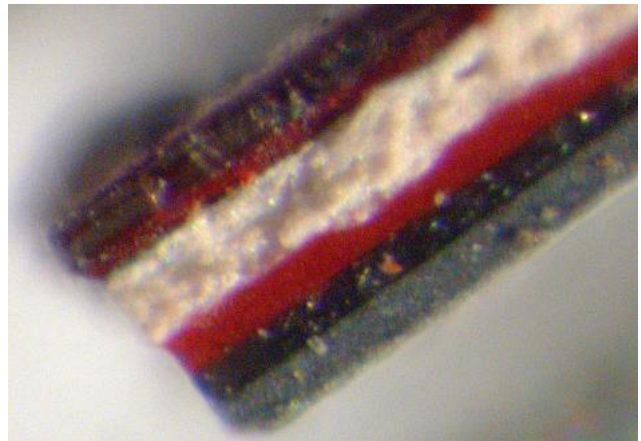
CAUTIONS

- Do not package paint standards in the same envelope as recovered paint evidence. This could allow cross contamination to occur.
- Do not collect paint evidence on tape. The adhesive from the tape may interfere with instrumental analysis of the paint. Post-it-type adhesive notes are acceptable.
- Substantial variations in thickness and layer sequences over short distances can exist across a painted surface. This is particularly true in architectural paint and for vehicle paint where curves, corners, and edges are often impact points and may have been subjected to previous damage, sanding, or over-painting. Known paint samples should be collected from these areas, when recognized.
- Do not use plastic bags (including evidence bags) that have small holes in them. Such bags are manufactured to allow excess air out; however, they are not appropriate for trace evidence collection as small particles may be lost.
- Be aware that when a vehicle's clear topcoat of paint is abraded, it may appear white to the naked eye.
- When observing road debris, be on the lookout for paint chips and plastic parts that may form a physical match with a damaged vehicle. Collect these items now for later comparison to a suspect vehicle.

Micro-droplets of spray-paint on fibers of a sleeve cuff



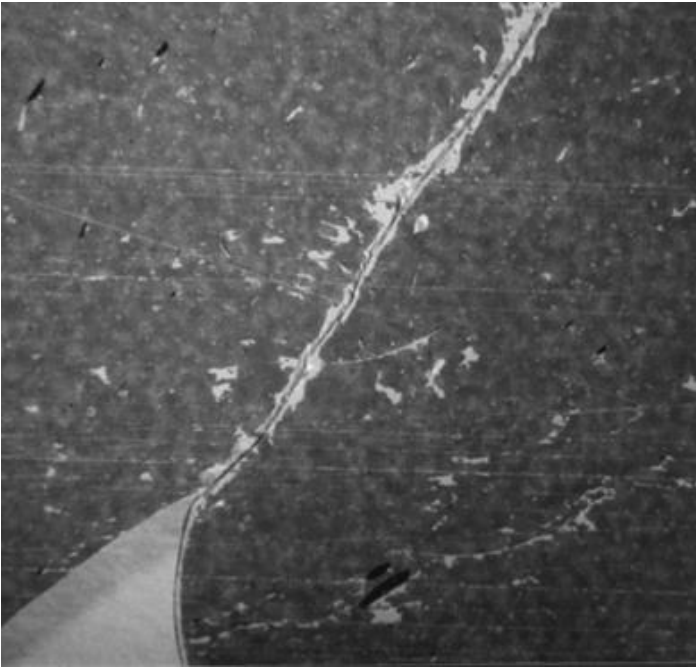
Layers of original and aftermarket paint from a vehicle



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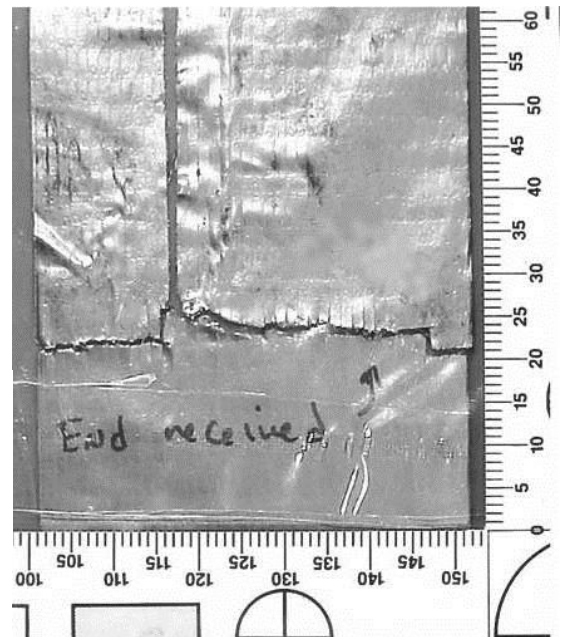
PHYSICAL EVIDENCE MANUAL

24.0 PAINT EVIDENCE



A physical match of two paint chips. Paint chip “A” was recovered from the scene of a hit-and-run; paint chip “B” was collected from the damaged area of a suspect vehicle. Note the microscopic scratches in the paint extending across the break.

Physical match of duct tape pieces. The lower piece was recovered from the suspect’s possession; the upper pieces were recovered from the crime scene.



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25.0 PLASTIC AND TAPE EVIDENCE

25.0 PLASTIC AND TAPE EVIDENCE

Plastics are composed of polymers that are manufactured into a variety of different objects. Plastic evidence that may be encountered includes broken vehicle reflectors, smears on clothing, and small pieces of plastic from tapes and garbage bags.

Laboratory examination may be able to determine the type of plastic and whether or not it is similar to a suspected source. For large, rigid plastic pieces (e.g. broken reflectors), the laboratory can attempt a physical match.

Plastic fusion marks might be present on an individual's clothing as a result of a high-energy impact with a plastic component of a vehicle interior. Because a variety of different plastics may be present on the interior of the same vehicle, it may be possible to establish the position of the individual within the vehicle by comparing the plastic fusion mark to standards from the vehicle interior. Remember that a high-energy impact can cause a plastic component in a vehicle interior to have fibers or a fabric impression from the clothing, as well.

25.1 Collection of Plastic Evidence

Large, rigid plastic pieces may be collected and packaged into paper envelopes or bags, plastic bags, or cardboard boxes.

Small pieces of pliable plastic evidence (e.g. tape pieces, piece of garbage bag, etc.) should be placed into a paper envelope. Tape pieces that are adhesive should be affixed to a clear plastic sheet, *not* to a piece of paper, prior to packaging.

Clothing with possible plastic fusion marks should be packaged separately into paper bags.

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26.0 MISCELLANEOUS TRACE EVIDENCE (INCLUDING POISONS)

26.0 MISCELLANEOUS TRACE EVIDENCE (INCLUDING POISONS)

A number of forensic examinations do not fall neatly into one of the other laboratory categories. These are assigned to Trace Miscellaneous. The most common types include analysis of food for suspected poisons and of cosmetics and household products for harmful tampering.

It is extremely helpful to the examiner to receive a complete police report that details the suspected poison or adulterant and any symptoms of the person(s) exposed. If the type of chemical is unknown, the examiner will perform general screening tests that will include, as appropriate, controlled substances, heavy metals, volatiles, and some pesticides/organics. It is not possible to screen evidence for every possible poisonous substance.

In addition to the item in question, the lab may request the submission of a control sample. For instance, were you to suspect that a beverage had been contaminated with antifreeze, you would submit the beverage in question, plus an untainted sample of the same beverage. If a sample of the contaminant is available, it should also be submitted.

Miscellaneous Trace examination also includes the general chemical identification of unknown solids, inhalants, liquids and gases, measurement of physical, chemical or elemental properties, and the comparison of contents to product labeling. Again, case details should be submitted with the evidence in order that the analysis can proceed efficiently.

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27.0 FIBER EVIDENCE

27.0 FIBER EVIDENCE

Textile fibers can be exchanged between individuals, between individuals and objects and between objects. When fibers are associated with a possible source, such as fabric from the victim, suspect or scene, it can help corroborate case information and/or provide a potential link between items, persons, and/or places.

A fiber that is transferred and detected is also dependent on the nature and duration of the contact between the suspect and the victim and/or scene or object and the persistence of the fibers after they have been transferred.

Research has shown that with few exceptions, the largest quantity of fibers on an object is from the last object to be in contact with it. Therefore, it is advantageous to consider collecting fiber evidence prior to processing for other types of evidence. Caution should be used to prevent cross contamination of evidence collected for fiber examinations, particularly when crime scene personnel will also be responsible for collecting suspect or victim clothing items or for the processing of related scenes or vehicles. Caution should also be used to not add fibers from your own environment and clothing to the evidence (e.g. fleece coat, wool sweater).

Fiber examinations involve a comparison of samples from known and questioned sources to determine whether they are consistent with having originated from the same source (e.g., carpet from a suspect's car compared with fibers removed from the victim's clothing). Laboratory analysts examine various physical, chemical, and microscopic properties of fibers when performing a comparison between evidence fibers and a potential source. Common conclusions include statements regarding the similarity or dissimilarity of the evidence fiber(s) to the possible source or standard. This comparison involves the recognition and evaluation of class characteristics, which associate materials to a group, but never to a single source. Conversely, individual characteristics allow the association between two or more items with each other to the exclusion of all other items. For fiber examiners, this most often occurs when pieces of fabric or cordage are physically matched, but rarely otherwise due to the mass production of textiles in society.

Determining whether a textile has been cut, torn, or otherwise damaged may be a probative question for a piece of evidence. It may be possible to distinguish the type of damage depending on the object used, the textile type, and other factors.

27.1 Fiber Examinations

The following may be determined from fiber examinations:

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- The type of fiber (e.g. natural or synthetic, animal fiber, glass fiber, etc.)
- The possible product uses for the fiber (e.g. carpet fiber, clothing fiber, etc.)
- The degree of similarity between evidence fiber(s) and a fiber source
- Whether a textile has been cut, torn, or otherwise damaged and if a particular object could have been used to create the defect

27.2 Collection of Fiber Evidence

Fiber evidence can be collected in a number of ways. Refer to “Fiber Collection Methods” table.

Fiber Collection Methods			
Method	Description	Packaging	When to Use
Adhesive lifts*	Use an adhesive sheet, fingerprint tape, cellophane tape, or other clear adhesive substrate and pat over the item. Take care not to miss any areas or allow the tape to become “overloaded.” Post-It notes may also be used for small areas.	Stick adhesive tapes onto a clear, colorless plastic sheet (e.g. transparency film). Place into a paper envelope or bag. Fold Post-It notes in half and place into a paper envelope.	For fibers you cannot see, or to be sure you have not missed any. Good on car seats, feet of dumped bodies, surfaces of clothing, and other medium to large surfaces.
“Pick” method	Using tweezers or gloved fingers , carefully retrieve the fiber taking care not to pinch, crush, or stretch it.	Place the fiber into a paper fold, in a folded Post-It note, or paper envelope.	For fibers you can see.

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Vacuum sweepings	Use a portable vacuum cleaner equipped with special traps holding a piece of filter paper. <i>Lightly</i> vacuum the surface of interest. The goal is to collect fiber evidence that is on the surface of the object, not to clean it. Take care not to overload to ensure the filter paper doesn't lift allowing material to pass into the vacuum.	Carefully remove the filter trap, cover with the lid or cap, and package in a paper or plastic bag.	For fibers you cannot see, or to be sure you have not missed any. Good on car seats, sections of carpeting, and other large surfaces.
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* Gridded template for adhesive lifts can be found [HERE](#)

Cautions

- Care should be taken to store adhesive lifting materials in such a way that they will not become contaminated prior to use
- Use of tools, such as forceps and tweezers, may cause damage to the trace evidence.
- Clean any collection tools thoroughly between samples to prevent cross-contamination.
- Avoid serrated tools as they may be more difficult to clean thoroughly.

27.3 Collection of Fiber Standards

A fiber standard (or a possible source) is required when the laboratory is requested to perform a fiber comparison. If the possible source can be packaged and transported to the laboratory with ease, submit the entire object (e.g., clothing items, throw rugs, etc.).

If the fiber source is believed to be from a large object or one not easily transported, such as car upholstery or carpeting from a dwelling or vehicle, cut representative samples from various areas. Be sure to collect samples from areas that are visually different (e.g. different colored areas, faded areas due to sunlight, worn sections, etc.). Samples should be about 1x1 inch unless you see variations in the item that would warrant a larger sample cutting.

Package the garment, object, or sample cuttings in paper envelopes or bags and clearly label with a description of from where the standard came.

Do not package standards with evidence fibers, or allow them to be near or in contact with each other. This could allow cross contamination to occur.

Adhesive lifts are **NOT** acceptable for collection of standards.

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27.0 FIBER EVIDENCE

27.4 Fabric Damage

If it is necessary to determine if textile defects are the result of a cut or puncture by a particular item, the item suspected of creating the defect (e.g. knife, scissors, screwdriver, etc.) should also be submitted.

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28.0 PHYSICAL MATCH

28.0 PHYSICAL MATCH

Physical matches are made when the contours of broken pieces are sufficiently unique and fit together so that it is clear that both pieces were originally one object. Broken pieces left at a scene may be suitable for a physical match request when a suspect is found or a suspect vehicle is developed.

A physical match is the strongest level of association between two objects in the Trace Evidence disciplines. The use of microscopes and specialized lighting conditions allows an examiner in the laboratory to photograph the details of the edge contour that may not be obvious to the naked eye.

If a physical match is unable to be made between evidence items, it may be possible to compare the overall construction and composition of the pieces to determine if they are similar or dissimilar. This analysis of class characteristics would fall under a Trace Miscellaneous exam.

28.1 Evidence Types

Any piece of a rigid or pliable object has the potential to make a physical match to another object. Examples of rigid objects include: paint chips, broken glass, car parts (e.g., taillight, paint chips, bumpers and side mirrors), and weapons. Examples of pliable objects include: paper, tape, fabric, garbage bags, matches from matchbooks, etc.



28.2 Collection and Packaging

Take photographs of objects before packaging to assist the physical match examiner with the analysis. Care must be taken to avoid damaging or altering the edges of the evidence during collection and packaging.

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28.0 PHYSICAL MATCH

Attempt to collect as many broken pieces that appear related as possible. These can be packaged together if found in the same vicinity (e.g., broken lamp base, pieces of vehicle light assembly, several sheets of torn notebook paper in a garbage can). Items collected from different areas or locations should be packaged separately. Housings, such as that from a headlamp or taillight, can be removed from a vehicle and submitted in its entirety to the lab.

Caution: General handling and other laboratory examinations (e.g., processing for latent prints) can alter the edges used in physical match analysis. Communication with lab personnel regarding a possible physical match should be done before other work is performed.

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29.0 HAIR EVIDENCE

29.0 HAIR EVIDENCE

Hair evidence can be obtained from the victim, the suspect, a crime scene, or from other evidence such as clothing. Hair is valuable evidence, particularly in cases where the perpetrator is a stranger to the victim or an environment.

29.1 Hair Examinations

The following may be determined with hair examinations:

- Determination of human or non-human origin
- Limited determination of animal species
- Determination of human body origin (e.g. head hair, pubic hair, etc.)
- Whether there are indications that a human hair was forcibly removed
- Alterations exhibited in a human head hair (e.g. bleached, dyed, etc.)
- Whether the root of a hair appears appropriate to attempt nuclear DNA analysis
- Similarity or dissimilarity between evidence hairs and a hair standards

Whole human head hairs and pubic hairs (where the root is present) generally have enough microscopic features to allow for a meaningful comparison to a standard. Hairs from other parts of the body, or hair fragments (where the root isn't present), are typically *not* well suited for a comparison.

A hair examiner will examine and compare evidence hair to standards, basing their conclusion(s) on the features of the hair samples. Common conclusions include statements regarding the similarity or dissimilarity of the evidence hair to the standard; however, **hair comparisons are not a means of identification**. An inadequate hair standard can affect the significance of hair comparison conclusions. See below for guidance regarding collection of hair standards.

29.2 DNA Analysis of Hairs

Because nuclear DNA analysis of hairs is destructive and does not always end in a useable DNA result, it is the policy of the Forensic Services Division to perform morphological hair comparisons prior to DNA analysis when possible.

The hair examiner will evaluate the hair for nuclear or mitochondrial DNA. The nuclear DNA analysis targets the root section of the hair. Mitochondrial DNA analysis of hairs can be performed on the root or the shaft portion of the hair. The Forensic Services Division does not perform mitochondrial DNA analysis, but can assist with the transfer of evidence to the FBI or a private laboratory when necessary. The amount of DNA in a hair is very small and therefore contamination may occur if precautions are not taken. Do not touch hair evidence with your bare hands or contaminated gloves.

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29.0 HAIR EVIDENCE

29.3 Collection of Hair Evidence

Hair evidence can be collected in a number of ways. The “Hair Collection Methods” table lists the various methods and when they are appropriate.

Hair Collection Methods			
Method	Description	Packaging	When to Use
“Pick” method	Using your gloved fingers or tweezers, carefully retrieve the hair taking care not to pinch, crush, or stretch it.	Place hair into a paper fold, in a folded Post-It note, or paper envelope.	For hairs you can see.
Vacuum sweepings	Use a portable vacuum cleaner equipped with special traps holding a piece of filter paper. <i>Lightly</i> vacuum the surface of interest. The goal is to collect trace evidence that is on the surface of the object, not to clean the object. Take care not to overload to ensure the filter paper doesn’t lift allowing material to pass into the vacuum.	Carefully remove filter trap, cover with the lid or cap, and package in a paper or plastic bag.	For hairs you <u>cannot</u> see, or to be sure you have not missed any. Good on car seats, sections of carpeting, and other large surfaces.
Adhesive lifts*	Use an adhesive sheet, fingerprint tape, cellophane tape, or other clear adhesive substrate and pat over the item. Take care not to miss any areas or allow the tape to become “overloaded.” Post-It notes may also be used for small areas.	Stick adhesive tapes onto a clear, colorless plastic sheet (e.g. transparency film). Place into a paper envelope or bag.	For hairs you cannot see, or to be sure you have not missed any. Good on car seats, surfaces of clothing, and other medium to large surfaces.
Scraping	Use a clean spatula or long, flat tool to scrape the surfaces of an object onto a large, clean piece of paper. For this to work well, the object should be hanging or held up vertically over the paper, scraping downwards.	Carefully shake any trace evidence on the paper to the center and fold the paper. Seal the paper fold and place into a paper envelope or bag.	For hairs you cannot see. Works well on clothing or other pliable objects.

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29.0 HAIR EVIDENCE

* Gridded template for adhesive lifts can be found [HERE](#)

Cautions

- Care should be taken to store adhesive lifting materials in such a way that they will not become contaminated prior to use.
- Use of tools, such as forceps and tweezers, may cause damage to the trace evidence.
- Clean any collection tools thoroughly between samples to prevent cross-contamination.
- Avoid serrated tools as they may be more difficult to clean thoroughly.

29.4 Collection of Hair Standards

Because of the variation in characteristics among different hairs from the same body region of one person, it is important to obtain a sufficient number of hairs in order to adequately represent the ranges of all characteristics (e.g., color, length, etc.) present. If the ranges of characteristics are large, it becomes necessary to obtain a large number of hairs.

Hairs should be collected from the head and pubic area if appropriate. Hairs from different regions have different characteristics. A head hair standard cannot be used for comparison to pubic hair evidence.

Collect hair standards in the following manner:

- Obtain standards from all persons who might reasonably be considered a source of an unknown hair (e.g., suspect, victim, and other individuals common to an environment).
- Obtain standards as soon as possible after the crime occurred. Hair naturally changes in its characteristics over time because it is constantly growing. The standards should reflect the individual's hair as close to the date of the crime as possible.
- It is recommended that a known head hair sample consists of at least 24 hairs collected from 5 different areas of the scalp (center, front, back, and both sides). These hairs should be obtained by both pulling and combing. The recommended procedure for obtaining combed hairs is to use a clean, unused comb and repeatedly comb the hair over a large sheet of clean paper.
- If appropriate to the case, a pubic hair standard should consist of at least 24 hairs obtained by both pulling and combing from different areas of the pubic region
- Gather all the hairs collected from a single body region and place into a paper fold or paper envelope
- Seal and label the envelope with the individual's name, date, and the body region it was collected from.
- Do not package paper folds containing different individual's hair in the same envelope, or package hair standards with hair evidence. This could allow cross contamination to occur.

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29.0 HAIR EVIDENCE

29.4.1 Secondary Standards

A secondary standard is not obtained from an individual directly, but from an object or location where the individual is believed or known to have deposited hair (e.g., a hairbrush). Necessity should be the only reason to obtain secondary hair standards vs. pulled/combed hair standards (e.g., missing person, person buried/cremated before collection could occur).

Secondary hair standards may be acceptable if it can be demonstrated or documented that the hair collected from the object/location is unlikely to include hair(s) from other individuals. The acceptance of a secondary standard for comparisons will be evaluated by the hair examiner on a case-by-case basis.

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30.0 IMPRESSION EVIDENCE

30.0 IMPRESSION EVIDENCE

Shoe, tire and fabric impressions are routinely present at crime scenes. Examination of these impressions may provide the investigator with valuable leads such as the type, make/model, and approximate size of the footwear or tire. If properly documented and collected, almost every impression left by a shoe or tire has value for forensic comparison to a suspected source. Even when suspect footwear is not available, images of impressions from scenes may be submitted to the laboratory for search in the SICAR (Shoeprint Image Capture and Retrieval) database for make/model determination and comparison to impressions from other scenes. The make/model of tire responsible for a tire impression may also be possible. Instructions for submitting SICAR images via e-mail are listed below.

Impressions made by other objects (e.g., weapons) may also be encountered and may be collected/documentated using the methods described below.

30.1 Impression Evidence General Guidelines

- If impression evidence can be collected without damage, it should be photographed, packaged, and submitted to the laboratory for examination under controlled conditions.
- Always include a scale when taking photographs of impressions to be used for examination. The scale should be a two dimensional ruler and should be placed on the same plane as the impression.
- Impressions in soil, sand, snow, or impressions which cannot be sent to the laboratory should be photographed and collected via casting or lifting.

30.2 Photographing Impression Evidence

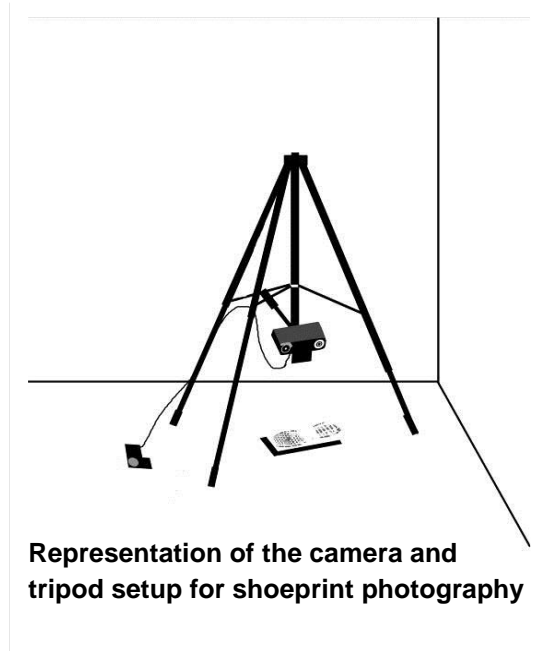
- Photographs of the evidence should always be taken *before* any attempt to collect it.
- Photograph the general scene that contains the impression evidence.
- Impression evidence should be photographed in an uncompressed format (e.g., TIFF or RAW).
- Place the camera on a tripod with the camera directly over and perpendicular to the impression. If the impression is on an angled surface adjust the camera to tilt it to a plane parallel to the impression. It is important to avoid taking the photos at an angle to the impression. This can result in the inability to accurately enlarge the images as needed for comparison.
- Adjust the camera height so the impression and scale fill the frame.
- Use overlapping exposures to record large impressions.

- Use side lighting at various angles and from various directions to illuminate tread design more clearly. This may require shading the camera setup from high, bright sunlight with a makeshift tent and access to a detachable flash unit.

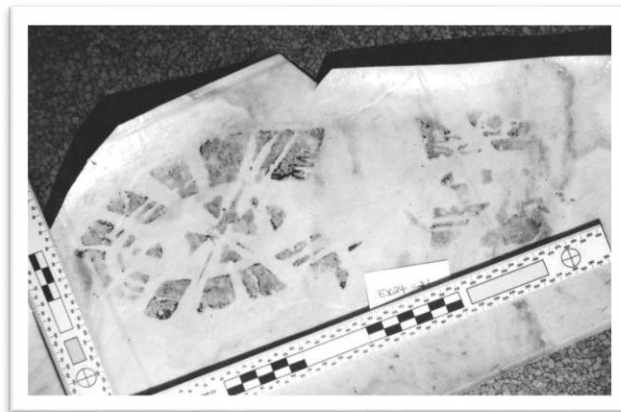
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Photograph of a shoeprint impression. Notice the shoeprint fills the frame, a scale is present, and the camera is directly over the shoeprint, not at an angle.



30.3 Three-Dimensional Impressions

Three-dimensional impressions are those that have a significant depth, in addition to the length and

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width of the impression. Commonly, they may be found in soil, sand, snow or other materials and the detail within the impression may vary according to the substrate. Casting is an effective method of collecting these types of impressions. Impressions should always be photographed prior to casting. Photographs, however, are not considered a substitute for a cast. If a lengthy tire track is encountered, an attempt should be made to cast a section at least three feet in length. Do not clean out debris that is part of the impression or was present when the impression was made.

30.4 Casting Methods

Note: The methods described below are not applicable to casting of impressions in snow. Specialized techniques are required for casting of snow impressions. Should the need arise to cast impressions in snow, please contact the laboratory for assistance or advice regarding the casting of snow impressions.

Dental stone or die stone should be used to cast three-dimensional footwear and tire tread impressions. Plaster of Paris is no longer recommended as an acceptable casting material. Dental stone can be obtained from local dental supply houses or in pre-made ready to use kits at minimal cost.

If using bulk dental stone, two (2) pounds of dental stone may be placed into an 8 x12 inch Ziploc plastic bag; this amount will cast an average sized shoe impression. In preparation for use at crime scenes, numerous two-pound bags can be prepared and stored.

When using a commercially prepared kit, follow manufacturer instructions for mixing.

The following is the procedure for making a cast from a self-made (bulk) dental stone kit:

- Retrieve a two-pound bag, add about 10 ounces of water, and thoroughly mix in the closed bag. The mixture should have the consistency of thin pancake batter. If needed, add more water or dental stone to create the correct consistency.
- Metal forms may be placed around the impression to contain the casting mixture. These are less critical with the advent of dental stone and other forensic casting materials⁴.
- Open the bag and, with the bag at ground level, carefully pour the mixture into or next to the impressions, allowing it to gently flow into it. Fill the impression completely so that the mixture overflows out of the impression.
- When the cast is firm but still soft, scratch identifying marks on the exposed surface or write identifying marks with a permanent marker when the cast is dry.
- Allow the cast to dry for a minimum of twenty minutes in warm weather, longer in cold, wet conditions.
- Carefully lift the cast. **Do not try to clean the cast;** cleaning will occur in the laboratory.
- Package the cast in a large brown paper bag or cardboard box (not plastic) and allow to dry for an additional 48 hours.

⁴ This was more critical when plaster of Paris was used as the casting material. The form was required because the cast had to be about 2 inches thick to be reinforced properly. This is no longer a concern with dental stone and other modern forensic casting materials.

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30.5 Two Dimensional Impressions/Prints

A two-dimensional impression is one where there is no significant depth to the impression. A thin deposit of dust, mud, blood, or other material from a shoe or tire onto a hard surface may create these impressions.

- Floors, glass, desktops, doors, paper items, etc. can retain a dust or residue impression at a scene. Some impressions may be clearly visible while others may be partially or totally latent.
- Latent dust shoeprints can often be located by turning out all lights and shining a flashlight across the surface of interest at a low angle. For example, to search for latent shoeprints on a vinyl floor, place the flashlight on the floor (or near it) and allow the long beam of light to shine across the floor.
- Photograph the impressions before collecting.
- Attempt to enhance or lift the impression **only** if the entire item cannot be retrieved from the scene and submitted to the laboratory.
- Dry dust and residue impressions may be lifted with an electrostatic lifting device, gelatin lift, or adhesive lift. Contact the laboratory for purchasing information.
- Impressions made by wet or damp footwear can sometimes be enhanced by carefully dusting with fingerprint powder. A small portion of the impression should be dusted first to test the success of the powdering technique. The impression is then photographed and can be lifted with a contrasting gelatin or adhesive-lifting material. Contact the laboratory for information on where to purchase lifts.

30.6 Collection and Packaging

- Whenever possible, collect the impressed item and submit it to the laboratory.
- Protect the impressed item so that the impression does not rub off.
- Package in a cardboard box or paper bag. Carefully securing the item to the bottom of a thin cardboard box is a good way to protect flat impressed items.
- Submit the photographs of the impression to the laboratory. These should be properly packaged as evidence and submitted along with any casts or lifts.

30.7 Exemplars and Standards

30.7.1 Footwear Exemplars

There may be several people who have legitimately walked into a crime scene. These include first responders, medical personnel, members of the crime scene team, funeral home or Medical Examiner’s Office personnel, individuals from the District Attorney’s Office, etc. These people may leave shoeprints at the scene and it can become difficult to distinguish evidentiary shoeprints from those that are artifacts of the crime scene processing.

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Exemplars may be collected from people entering the crime scene in a number of ways. A good time to do this is have the person keeping the crime scene log require everybody entering the scene to give a shoeprint exemplar before proceeding into it. This may be accomplished by:

- Taking a photograph of the shoe sole.
- Greasing the soles with a thin film of petroleum jelly and having the individual step onto a clean piece of paper. Dust the grease print with fingerprint powder for visualization.
- Using a commercially available kit consisting of an ink pad with non-visible ink and foot-sized pieces of paper for collection.

30.7.2 Footwear Standards

If a comparison is to be performed, footwear should be submitted to the laboratory as standards from all individuals thought to have left evidence impressions.

30.8 SICAR submission instructions for emailed images

This is for make/model searches only. Comparisons must be submitted to the lab in-person on physical media. These instructions apply for tire tracks too.

- 1) Fill out a Form 49. You can find one at <http://www.oregon.gov/osp/FORENSICS/docs/ospform49sept201.pdf>

Make sure to fill in Agency Case #, Offense, Offense Date, Investigating Officer and their contact information, and information regarding individuals (if known). Select "Footwear (SICAR)" in the Requested Service section for tire tracks as well. Save the form 49 in the following format Casenumber-SICAR.pdf (ex. 14-000546-SICAR.pdf). Fill out the other areas as shown below.

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Oregon State Police Forensic Services Request		Reason: <input type="checkbox"/> Rush	Lab Use Only		Analyst: _____
Date Due: _____		Start Date: _____	Page _____ of _____		
Agency: WCSO		DA Contact: (if known) _____	Lab Case # _____		Sub # _____
Agency Case # XXX		<input type="checkbox"/> Additional Suspect Info Only			
Secondary Agency _____		<input type="checkbox"/> Previous Evidence Submitted			
Secondary Agency Case # _____		Restrict this case to: (Refer to back side of Form 49 for further information)			
		<input type="checkbox"/> Investigating Officer <input type="checkbox"/> Agency <input type="checkbox"/> Lab Staff			
Offense: Burglary		<input type="checkbox"/> FMVA	Offense Date (mm/dd/yyyy): XX/XX/XX	County of Venue: Washington	
Last (Individual # 1) <input type="checkbox"/> No Suspect AFIS Search		First: _____	Middle: _____		
<input type="checkbox"/> Suspect <input type="checkbox"/> Mentioned <input type="checkbox"/> Victim <input type="checkbox"/> Deceased	Race: _____	<input type="checkbox"/> Male <input type="checkbox"/> Female	DOB (mm/dd/yyyy): _____	SID #: _____	FBI #: _____
Breath Test Given? <input type="checkbox"/> Yes <input type="checkbox"/> No		Result: _____			
Last (Individual # 2)		First: _____	Middle: _____		
<input type="checkbox"/> Suspect <input type="checkbox"/> Mentioned <input type="checkbox"/> Victim <input type="checkbox"/> Deceased	Race: _____	<input type="checkbox"/> Male <input type="checkbox"/> Female	DOB (mm/dd/yyyy): _____	SID #: _____	FBI #: _____
Breath Test Given? <input type="checkbox"/> Yes <input type="checkbox"/> No		Result: _____			
Last (Individual # 3)		First: _____	Middle: _____		
<input type="checkbox"/> Suspect <input type="checkbox"/> Mentioned <input type="checkbox"/> Victim <input type="checkbox"/> Deceased	Race: _____	<input type="checkbox"/> Male <input type="checkbox"/> Female	DOB (mm/dd/yyyy): _____	SID #: _____	FBI #: _____
Breath Test Given? <input type="checkbox"/> Yes <input type="checkbox"/> No		Result: _____			
Investigating Officer (Please Print): XXX		Phone # of Investigating Officer: XXX	E-mail of Investigating Officer: XXX		
The Oregon State Police Forensic Services Division reserves the right to select appropriate methods of analysis based on the type of evidence and information provided.					
Lab Exhibit	Agency Exhibit	Description of Evidence (Please associate evidence with appropriate individual, if applicable)	Requested service (Refer to back side of Form 49 for types of Services provided)		
		Digital Images Submitted by Email	Footwear (SICAR)		
Submitted to Lab By (Please Print): _____		Submitted to Lab By (Signature): _____		Date Submitted: _____	
Submitted via: <input type="checkbox"/> UPS <input type="checkbox"/> U.S. Mail <input type="checkbox"/> Certified Mail		LAB USE ONLY			
<input type="checkbox"/> Other					
Date / Time: _____					
Lab Staff: _____					
Evidence Transfer or Referral Received From: _____		Via: <input type="checkbox"/> UPS	Date / Time: _____	Lab Staff: _____	<input type="checkbox"/> Item(s) <input type="checkbox"/> Submission

Blue and Yellow Copies - Lab

White Copy - Agency

Rev 09-2010

FORM 49

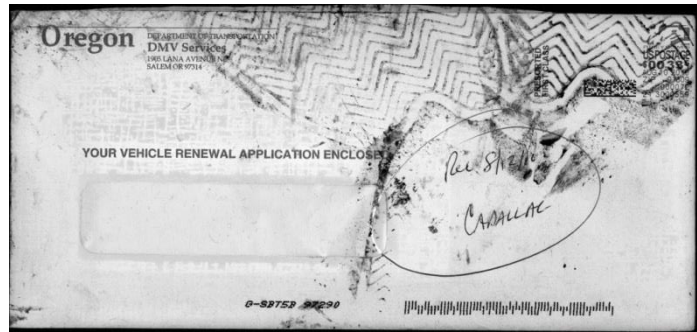
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2) Prepare images: Select one or two images that best depicts a particular outsole design. If there are multiple outsole designs, please send them all under one case number. Check the file sizes of the images. If they are near 20 MB, the OSP email system may strip them from our email. You may need to compress the image to reduce the file size. If you do this, please view before sending to make sure it hasn't become too pixelated. If you are having difficulties with a particular image please contact the laboratory. Below is an example of impressions that depict different parts of an outsole design. Given enough information we can narrow the search down to a particular piece of footwear.



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- 3) Attach the images and Form 49 to an email and send to: OSP.SICAR@osp.oregon.gov
Please indicate if there is other evidence that represents these impressions. Sometimes casts and lifts show better detail of an outsole design. It may be necessary to request these items before completing work on a case. Below is an example where the cast clearly shows the lettering that is present in the outsole design. The lighting used in the image of the impression in soil does not highlight the lettering sufficiently. Please indicate in the body of the email how many images you are sending for a particular case.

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30.9 Tire Exemplars and Standard

It is highly recommended that tires be submitted to the laboratory for the making of tire exemplars and comparison to unknown tire tracks. Whenever possible, tire exemplars should be made with the tire still in place on the vehicle. If it is not possible to transport the vehicle or to collect the tire, please contact your local laboratory for recommendations on how to proceed.

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31.0 COMPUTER EVIDENCE

31.0 COMPUTER EVIDENCE

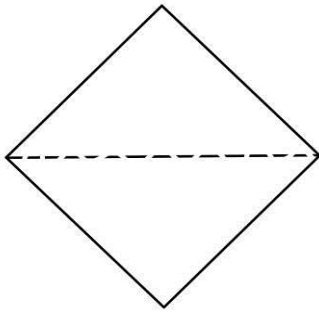
The Forensic Services Division does not examine this type of evidence. The Federal Bureau of Investigation (FBI) accepts this type of evidence at its regional laboratory in Portland, Oregon. Please refer to the FBI's Northwest Regional Computer Forensics Laboratory website: <http://www.nwrcfl.org/>.

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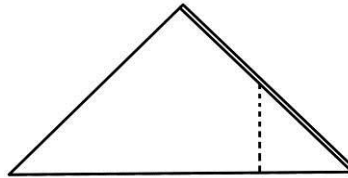
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APPENDIX A: HOW TO MAKE A PAPERFOLD

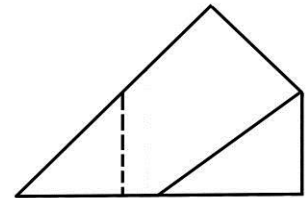
APPENDIX A: HOW TO MAKE A PAPERFOLD



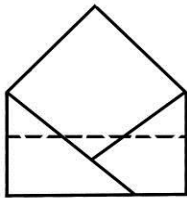
1. Fold a square piece of paper into a triangle. If using a rectangular piece of paper, make the same fold as above and then cut off the excess.



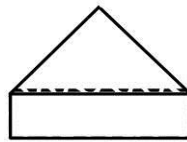
2. Take one corner at the folded edge and bring the corner just past the center point, keeping the two folded edges together.



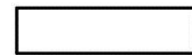
3. Take the second corner at the folded edge and bring the corner just past the center point on the opposite side, keeping the two folded edges together.



4. Bring all folded edges up together to the point where the top of the paper starts to angle.



5. Take the top center point and tuck into the opening created by the folded edges.



6. Fold and tape seal along this opening.

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APPENDIX B: FIREARMS AND TERMINOLOGY

APPENDIX B: FIREARMS AND TERMINOLOGY



Shotshell



Cartridge



Wad



Cartridge Case



Wad



Shot



Bullet

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MANUAL REVISION HISTORY

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PHYSICAL EVIDENCE MANUAL HISTORY				
ISSUING AUTHORITY: OPERATIONS MANAGER				
VERSION NUMBER	SECTION & COMMENTS	DATE	AUTHOR	REVIEWERS
0	Creation and Adoption of Physical Evidence Manual	May 2002		
1	Removed references to Coos Bay Lab, added "gum seal" as ok for use as evidence sealer,	February 2004		
2	Re-write to comply with ISO requirements; changes in programs	January 2006		
3	Removed gum seal w/ dye indicator as an acceptable method of sealing evidence.	October 20, 2006		
4	Updated lab area service map to show all Douglas Co. to Springfield.	December 11, 2006		
5	Added information regarding touch evidence to 6.0; added 25.0 Missing Persons and 26.0 Unidentified Remains. Deleted lab survey card from appendix. Slight changes/corrections/clarifications made to Fingerprints, Firearms	October 26, 2007		
6	Updated/added information to Missing Persons 25.0. Also changed contact info in 25.0 & 26.0 to UNT.	January 31, 2008		
7	Complete revision of entire manual	December 13, 2011	S. Hormann	
8	Complete revision of entire manual	June 3, 2014	Technical Leaders, Odessa Siegel, S. Hormann	
9	Complete review of entire manual. <ul style="list-style-type: none"> • Updates to technical content throughout as needed • 13.2.3 Change in submission policy for pills, tablets, and capsules 	September 10, 2015	Technical Leaders, Operations Manager	See Policy Tech

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MANUAL REVISION HISTORY

10	<p>Updated the following section with acceptance criteria</p> <p>5.0 Cancellation of Requested Analysis</p> <p>6.1 Forensic Services Request Form</p> <p>6.4.2 Evaluation of the Request for Analysis</p> <p>5.2.2 Evidence Seals</p> <p>6.3 Chain of Custody (COC)</p> <p>11.7.1 Sexual Assault Forensic Evidence Kit Acceptance Criteria</p> <p>12.11 High Throughput Property Crimes Program</p> <p>14.2 Chemistry Submissions</p> <p>17.1 Integrated Ballistics Identification System (IBIS)</p> <p>17.2 Collection and Packaging of Firearms Evidence</p>	September 17, 2018	See PolicyTech	
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