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7 Process Requirements

7.1 Review of Requests, Tenders and Contract

7.1.1

Policies [LOM 1.2 Laboratory Services](#) and [LOM 2.15 Consultants and Contracts](#) provide guidance for the review of requests for examinations. These practices ensure that:

- There is sufficient detail provided in the request so that it may be understood by the laboratory;
- The laboratory is capable of conducting the requested examinations.
- Examiners select an appropriate technical procedure, to the extent possible, that is dictated by the nature of the evidence and a contributor's request.

Reviews of requests on any work that is subcontracted by the FSD will be conducted by the appropriate personnel as listed in [LOM 2.15 Consultants and Contracts](#).

7.1.2

The selection of technical procedures is dictated by discipline specific procedures manuals. The FSD-007 and FSD-093 Request for Laboratory Examination communicates to the requestor that the laboratory shall select and use the most appropriate testing method procedure(s).

7.1.3

Determining conformity to a specification refers to using a measurement result to decide if an item of interest conforms to a requirement. The requirement typically takes the form of one or two tolerance limits that define an interval of permissible values (tolerance interval) of a measurable property of the item, and the statement of conformity is typically binary and takes the form of "in tolerance/out of tolerance" or "pass/fail." The mechanism by which the pass/fail or in tolerance/out of tolerance decision is made is called the decision rule.

When the customer requests a statement of conformity to a specification or standard for the test or calibration, the specification or standard and the decision rule shall be clearly defined. The discipline procedure manual will identify tests that are used for conformity assessment and will, for each test, specify the standard and the decision rule to be used when the customer requests a statement of conformance. If the selection of the tolerance interval and decision rule is made by the laboratory, the procedure will state how the specification and decision rule are communicated to the customer. Examples of acceptable reporting of conformity assessment are:

- specification and decision rule communicated prior to testing by contract or clarification of request.
- providing a detailed description of the specification and decision rule in the laboratory report or annex to the report.
- reference to a commonly accepted and published standard (ASTM, MCL, EPA, etc.) with a concise statement of the decision rule in the laboratory report.

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Whether reported or not, the following measurements and results do not, in and of themselves, imply a statement of conformity:

- Estimates of trigger-pull weight
- Qualitative identification
- Measurement of weight, length, volume, density, or purity (concentration)

The following measurements and results may result in a statement of conformity. Refer to the applicable procedure manual for discipline-specific tests:

- Measurement of physical or chemical properties to classify a material or item as meeting (or not meeting) a requirement or specification.

7.1.4

Policies [LOM 1.2 Laboratory Services](#) and [LOM 2.15 Consultants and Contracts](#) provide guidance for the review of requests for examinations. These practices ensure that:

- Unanswered issues determined by a review of the request for laboratory examination (RFLE) form FSD-007 or FSD-093 are resolved by the examiner prior to the commencement of work.
- Deviations requested by the customer do not impact the integrity of the laboratory or the validity of the results

7.1.5

FSD personnel shall communicate any significant deviations from a contributor's request to the contributor and shall document that communication in the case details object repository. A copy of the email correspondence or a written summary of a verbal communication may be used to document this change (an additional FSD-007 is not required). The email or summary document shall be uploaded to the case details object repository, with a notation in the case details case comments to refer to the case details object repository.

7.1.6

If a contributor contacts a laboratory regarding a change in the request of an analysis, laboratory personnel will review the request according to this policy and communicate the change to the affected laboratory personnel. Evidence of this communication shall be documented in the case details object repository.

7.1.7

Members of the Michigan State Police Forensic Science Division shall work with customer agencies to:

- determine their respective needs
- offer guidance and assistance where appropriate
- maintain open lines of communication on the status of their submissions
- answer questions or address concerns that may arise concerning the submission

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This shall be accomplished by seeking feedback, both positive and negative, from customer agencies through customer satisfaction surveys, expert witness testimony evaluations, crime scene response evaluations and attendance at regularly scheduled meetings with customers. Customer satisfaction surveys shall be distributed through electronic means with each published laboratory report. Expert witness testimony evaluations and crime scene response evaluations shall be requested each time the service is provided. Meetings held with customers where feedback is provided shall be documented. Customer satisfaction surveys (FS-59), expert witness testimony evaluations, Crime scene response evaluations and meeting notations shall be retained on the Forensic Science Division document management site for evaluation during the management review and used to implement changes as appropriate.

7.1.8

The FSD-007 or FSD-093 is reviewed during case review. Any significant changes to a laboratory analysis will be documented by the examiner and shall be maintained in the electronic case record (e.g. the Forensic Advantage case details object repository) and subsequently reviewed during case review according to [LOM 2.6 Case Review](#).

Communication with the customer shall be documented and retained in the laboratory case file in the case details object repository.

Release of information (e.g. verbal communication of results) shall follow [LOM 2.6 Case Review](#).

7.1.9

The extent of database searches (e.g. CODIS/AFIS/NIBIN, local/national searches and how long the record will be maintained in the database) shall be communicated via the laboratory report. If changes occur to the status of the item(s) as they relate to a database (e.g. subsequent associations or removal from the database), customers shall be notified, and documentation of the notification shall be retained in the laboratory case file.

7.2 Selection, Verification and Validation of Methods

7.2.1 Selection and Verification of Methods

7.2.1.1

Laboratory personnel shall employ appropriate technical procedures and standard operating procedures (SOPs) in the examination process that are both scientifically validated and accepted for use within the scope of the forensic science field. These procedures and methods include the transport, handling and storage of evidence and the preparation and sampling of evidence in analysis. Where appropriate, they shall also contain an estimation of the uncertainty of measurement and statistical techniques for the analysis of the test data.

The standard operating procedures are maintained in the Laboratory Operations Manual and discipline specific procedure manuals on the Forensic Science Division document management site.

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7.2.1.1.1

Discipline specific procedure manuals will describe how a comparison of an unknown item to a known item shall be carried out to ensure the evaluation of the unknown item(s) identifies characteristics that are suitable for comparison and, if applicable, characteristics that are suitable for statistics rarity calculations. The evaluation of the unknown shall occur prior to comparison to one or more known item(s).

Characteristics suitable for comparison may include, but are not limited to:

- alleles in a DNA profile;
- friction ridge detail in a latent print;
- criteria for evaluation of mass spectrometry fragments and ratios in seized drug or toxicology sample extracts.

When an unknown item needs to be assessed to identify evidence that will be the subject of further comparison, it may be appropriate to perform a preliminary characterization of the known sample first.

7.2.1.1.2

All test methods involving the comparison of questioned (unknown source) evidence to a known exemplar shall require the evaluation of the questioned item(s) to identify characteristics suitable for comparison and, if applicable, characteristics suitable for statistical rarity calculations, prior to comparison to one or more known item(s). The affected discipline procedure manuals shall contain protocols to meet this objective.

7.2.1.1.3

The Forensic Science Division does not have calibration included on the scope(s) of accreditation.

7.2.1.2

Discipline procedure manuals shall include instructions on the operation of all instruments and relevant equipment, on the transport, handling and storage of evidence, and on the handling and preparation of items of evidence for testing. All relevant instructions, standards, manuals, and reference data shall be kept up-to-date and readily available.

All methods shall be documented and the documents readily available for review by laboratory personnel. The standard operating procedures are maintained in the Laboratory Operations Manual and discipline specific procedure manuals on the Forensic Science Division document management site. Manuals shall be made available to personnel on the document management site or at the work site.

Appropriate controls and reference standards shall be specified in the discipline specific procedures manuals and their use documented in the electronic case file.

7.2.1.3

The FSD shall confirm that it can properly use a standardized procedure prior to introducing it for forensic examinations. If the standard procedure changes, the validation and/or verification shall be repeated. Analysts shall select appropriate technical procedures to meet the needs of the contributor while considering the nature of the evidence and the facts of the case.

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The reliability of a validated technical procedure that is new to the FSD will be confirmed in-house against any documented performance characteristics of that procedure prior to first use. Records of performance checks conducted during the validation process shall be maintained for future reference [LOM 2.9 Validation and Verification](#).

Technical Leaders will ensure that all methods operate properly before using them for testing.

[LOM 2.12 Document Revision and Control](#) ensures only the current procedure is available to staff members. Historical revisions of procedures can be made available to staff members upon request.

7.2.1.4

The technical procedures utilized shall either be internally developed by the FSD ([LOM 2.9 Validation and Verification](#)), have been published in international, regional or national standards, by reputable technical organizations, in relevant scientific texts or journals, or as specified by the manufacturer of the equipment. The most current version of a procedure shall be used.

By submitting items for testing to the laboratory, the submitting agency agrees that the laboratory will select the most appropriate methods (see QM 7.1.2). The content of the laboratory reports, including customer notification of the method used, shall follow [LOM 3.3 Laboratory Reports](#).

7.2.1.5

When validating a technical procedure, the scope and accuracy will be assessed to ensure that the procedure meets the requirements of a given application ([LOM 2.9 Validation and Verification](#)). The validation shall be summarized and retained for future review/inspection on the Forensic Science Division document management site.

Methods validated outside of the laboratory will be evaluated prior to implementation through a documented in-house verification. The verification shall be summarized and retained for future review/inspection on the Forensic Science Division document management site.

Revisions to methods by the issuing body require further validation and/or verification as detailed in [LOM 2.9 Validation and Verification](#).

7.2.1.6

When a new technical procedure is necessary, the validation shall be a planned activity that is assigned to competent individuals with adequate resources following [LOM 2.9 Validation and Verification](#). Any significant changes occurring during the implementation of the procedure shall be communicated to all affected personnel.

7.2.1.7

Submission of a test item to the Laboratory constitutes approval of test methods selected by the Laboratory. When deviations from test methods are necessary, the deviation shall be technically justified and authorized by the discipline Technical Leader (or designee). The deviation and its approval shall be documented in the electronic case file.

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7.2.2 Validation of Methods

7.2.2.1

The laboratory shall validate non-standard procedures, laboratory-designed/developed procedures, procedures used outside their intended scope, and applications and modifications of procedures to confirm that they are fit for the intended use. The validation shall be as extensive as is necessary to meet the needs of the given application or field of application. The laboratory shall record the results obtained, the procedure used for the validation, and a statement as to whether the procedure is fit for the intended use ([LOM 2.9 - Validation and Verification](#)).

7.2.2.1.1

Disciplines that perform method validation shall summarize the successful validation that includes the studies completed, evaluation of data, establishes the data required to report a result, opinion, or interpretation, and identifies any limitations of the method, reported results, opinions, and interpretations. Validation summaries shall be permanently stored on the document management site for future review/inspection.

7.2.2.2

Validated technical procedures shall be used; however, this does not prevent the examiner from deviating from a procedure if the nature of the evidence precludes the use of a standard procedure. Changes to or deviations from a technical procedure must be evaluated to determine the influence of such changes and if they affect the original validation. If found to affect the original validation, a new method validation shall be performed according to the [LOM 2.9 - Validation and Verification](#).

7.2.2.2.1

The associated data interpretation is considered part of a validated method. When changes are made, refer to 7.2.2.2.

7.2.2.3

Validation of new technical procedures shall include testing using samples that cover the range expected in actual casework and shall provide results consistent with specified requirements.

7.2.2.4

Disciplines considering conducting a validation shall submit a validation plan to the Technical Leader for review and approval. The validation plan shall include the intended purpose/need of the method, method specifications and anticipated performance characteristics. If approved by the Technical Leader and the validation is completed, a validation summary shall be generated that includes the procedure used, requirements, performance characteristics of the method, validation results obtained and statement as to the validity of the method and its fitness for the intended purpose. The validation summary shall be authorized by the respective Technical Leader.

7.3 Sampling

7.3.1

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Plans and procedures for the sampling of evidence shall be included in the applicable, discipline specific procedures manuals. Sampling plans shall be based on statistical methods when reasonable and shall address the factors to be controlled to ensure the validity of the examination results.

7.3.2

The sampling method included in the discipline specific procedure manuals shall include:

- the selection of samples or sites;
- the sampling plan;
- the preparation and treatment of samples from a substance, material or product to yield the required item for subsequent testing or calibration.

7.3.2.1

The sampling method defined in the discipline specific procedure manuals shall meet each of the following criteria, as applicable:

- require an evaluation of the overall homogeneity of the item(s)
- require the item(s) to have a reasonable degree of homogeneity
- require the use of a probability and provide an opinion of the interpretation with a minimum confidence level of 95.45% (approximately 95%)
- require each selected item from the sampling plan meet the level of confidence to be tested completely
- provide procedures regarding the course of action to take if one or more of the selected items demonstrate a lack of homogeneity

7.3.3

Discipline specific procedure manuals shall be in place for recording appropriate sampling data and activities relating to the forensic examination process. These records shall include:

- the sampling procedure used;
- date and time of sampling;
- data to identify and describe the sample;
- the identification of the individual performing the sampling;
- identification of the equipment used
- any relevant environmental and transport conditions;
- diagrams of the sampling location as necessary; and
- deviations, additions to or exclusions from the sampling method and sampling plan.

If the contributor or the nature of the evidence requires deviation from the sampling plan described in the applicable discipline specific procedure manual, the deviation shall be documented by the examiner in the electronic case record communication log.

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7.4 Handling of Test or Calibration Items

7.4.1

The FSD shall have procedures for the transportation, receipt, handling, protection, storage, retention and/or disposal of evidentiary items. These procedures shall protect both the integrity of the evidence and the interests of the contributor. The FSD shall ensure the integrity of evidence by protecting items from loss, cross-transfer or deleterious change during storage, handling and preparation.

- [LOM 4.1.1 Evidence Submission](#)
- [LOM 4.2 Receiving and Handling Evidence](#)
- [LOM 4.3 Marking and Sealing of Evidence and Containers](#)
- [LOM 4.4 Chain of Custody](#)
- [LOM 4.5 Transfer of Evidence](#)
- [LOM 4.6 Return of Evidence](#)
- [LOM 4.7 Destruction of Evidence](#)
- [LOM 4.8 Evidence Collected at Crime Scenes](#)

Appropriate handling instructions provided with an item shall be followed. When evidentiary items must be stored or handled under specified environmental conditions, these conditions shall be maintained, monitored and recorded.

7.4.1.1

All items received and considered as evidence shall:

- Be marked to ensure that it is uniquely identified and traceable to the laboratory case number. If the evidence does not lend itself to marking, its proximal container or identifying tag shall be marked ([LOM 4.3 Marking and Sealing of Evidence and Containers](#));
- Be placed in a container to protect it from loss, cross-transfer or contamination and stored under proper seal ([LOM - 4.3 Marking and Sealing of Evidence and Containers](#)) when not in the process of examination;
- Be maintained in a secured, limited-access storage area when not in the process of examination;
- Have a chain-of-custody. Evidence in cases that are subjected to frequent requests for comparison may be treated as evidence in the process of examination and may be stored unsealed in a secure, limited access area for no more than 90 days ([LOM 4.4 Chain of Custody](#)).
- Have a chain-of-custody that securely and accurately identifies the individual(s) or location(s) receiving or transferring item(s), the item(s) being transferred and the chronological order of all transfers that include the date.
- As necessary, operation of individual characteristic databases (ICD) shall be included in the discipline specific procedure manuals. The FSD will establish whether ICD samples are treated as evidence, reference materials, or examination documentation ([LOM 4.1.1 General Evidence Submission](#)).
 - ICD samples treated as evidence shall be tracked and handled the same as other evidence received in the laboratory.

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- ICD samples not treated as evidence and under the control of an FSD laboratory will be uniquely identified. They will also be protected from loss, cross transfer, contamination and/or deleterious change.
- Each individual characteristic database sample under the control of the laboratory shall be uniquely identified.
- Individual characteristic database samples under the control of the laboratory shall be protected from loss, cross transfer, contamination and/or deleterious change.
- Access to individual characteristic database samples shall be restricted to those persons authorized by the Laboratory Director.
- Be addressed in a laboratory report as to their disposition. Additionally, laboratory reports shall include notification to the customer regarding items collected or created and preserved for future testing.

When evidence, such as latent prints and impressions, can only be recorded or collected by photography or digital capture and the print or impression itself is not recoverable, the photograph, negative or digital image of the print or impression shall be treated as evidence.

Evidence collected by FSD personnel from a crime scene shall be protected from loss, cross-transfer, contamination and/or deleterious change whether in a sealed or unsealed container during transportation to the laboratory.

Where relevant, further processing to preserve, evaluate, document, or render evidence safe shall be accomplished prior to final packaging. Additionally, crime scene evidence shall be properly identified, packaged and entered into the FSD laboratory case management system (LCMS) as soon as practical.

7.4.2

Items of evidence shall be uniquely identified ([LOM 4.3 Marking and Sealing of Evidence and Containers](#) and [LOM 3.2 Using Forensic Advantage](#)). This identification of evidence will remain in place while the items are in the laboratory. These practices ensure that items of evidence are uniquely identified and provide for subdivided and derivative evidence. Evidentiary items shall be transferred within and from FSD laboratories ensuring protection of the integrity of the evidence as well as the interests of the contributor ([LOM 4.5 - Transfer of Evidence](#)).

7.4.2.1

The procedure for uniquely identifying items shall cover all items received.

7.4.3

Upon receipt of the evidence, the condition of the evidence shall be evaluated and any conditions adverse to quality shall be recorded in the electronic case file. When the suitability of an item of evidence for examination is questionable, or there is a discrepancy between the evidence and the request for examination, or the request for examination is unclear, the examiner having custody of the evidence shall contact the contributor for clarification prior to proceeding with any testing. This communication shall be documented in the case file case details object repository.

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When the evidence evaluation has identified potential adverse conditions and the contributor wants the item tested anyway, a disclaimer statement shall be placed in the laboratory report indicating the results may have been affected.

7.4.4

When evidence items need to be stored under specified environmental conditions, these conditions shall be maintained, monitored and recorded. Specified environmental conditions are defined in the discipline specific procedure manuals.

7.5 Technical Records

7.5.1

Retention of the laboratory case records shall be in conformance with MSP Official Order 5 and the [LOM 1.3 Records Retention](#) policy.

Technical records for each laboratory activity should be in the Laboratory Case Management System (LCMS-Forensic Advantage) which includes the results, laboratory report and any necessary information to facilitate, if possible, the identification of factors that may affect the measurement result and its associated measurement uncertainty (as applicable). The appropriate unit's procedure manual shall contain adequate information to identify factors affecting the uncertainty of measurement, if applicable. The details of the technical records shall be sufficient to allow repetition of the laboratory activity under conditions as close to the original laboratory activity as possible.

Each technical record shall include the date of the activity and the identity of the laboratory personnel responsible for the activity. The technical record shall include the date and individual responsible for checking data and results.

Original observations, data and calculations shall be recorded at the time they are made and identifiable to the specific examination performed.

7.5.1.1

As appropriate, dates shall be recorded throughout the case documentation to indicate when work was performed.

Case records shall contain, at a minimum, the following records:

- The FSD-007 or equivalent request, containing administrative information from the agency.
- Examination documentation which includes analyses/examinations performed on evidence and the results documented. Examination documentation includes, but is not limited to, references to procedures followed, tests conducted, standards and controls used, diagrams, printouts, photographs, documentation of observations, results of examinations, and all information required on the discipline-specific worksheet. Additional examination documentation requirements may be found in the discipline-specific procedures manuals.
- All communication logs or records concerning the testing performed on the case.
- The test report(s).

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- Documentation of technical and administrative reviews.

When instrumental analysis is conducted, operating parameters of the instrument shall be recorded in the case record and/or discipline specific procedure manuals.

Object repository file names shall include the case laboratory number.

7.5.1.2

Abbreviations and symbols are not permitted in examination documentation unless the meanings of the abbreviations and/or symbols are found in the American Heritage Dictionary or they are defined in the applicable discipline specific procedure manual.

7.5.1.3

Examination documentation shall be such that, in the absence of the examiner, another qualified examiner could evaluate the examinations performed and interpret the data.

7.5.1.4

Records shall be created or maintained in a permanent manner.

7.5.1.5

Examination notes will include observations, data and calculations. If an observation or result is rejected by the analyst the reason, the individual taking the action and the date must be documented in the examination documentation.

7.5.1.6

The Laboratory does not conduct calibration activities within an accredited discipline.

7.5.2

Amendments which occur in case documentation shall be marked with an initialed single strike-out that is dated, and the correction entered alongside. No part of case documentation or records can be erased or otherwise made illegible. In the case of electronically stored records, equivalent measures shall be taken to avoid loss or change of original data.

Additional notations made to case documentation shall be initialed (or secure electronic equivalent) by the person making the addition.

Changes made to examination records are automatically tracked by Forensic Advantage. This includes changes to worksheets, reports, and files in the Object Repository of Forensic Advantage.

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7.6 Evaluation of Measurement Uncertainty

7.6.1

Estimation of uncertainty of measurement will be based on knowledge of the performance of the method, previous experience and validation data as well as all significant parameters that affect the measurement result, including sampling.

7.6.1.1

Evaluation of the Measurement Uncertainty shall:

- Require the specific measuring device or instrument used for a reported result to have been included in or evaluated against the estimation of measurement uncertainty for the method as defined in the discipline specific procedure manual;
- Include the process of rounding the expanded uncertainty;
- Require the coverage probability of the expanded uncertainty to be a minimum of 95.45%; and
- Specify the schedule to review and/or recalculate the measurement uncertainty as defined in the discipline specific procedure manual.

7.6.2

The Laboratory does not perform calibration services and thus does not have a procedure for estimating measurement uncertainty for calibrations.

7.6.3

Technical procedures for controlled substances, toxicology, and firearms will include considerations for estimating the uncertainty of measurement as required. If the nature of the examination procedure precludes a metrologically and statistically valid calculation of uncertainty of measurement, the procedures will attempt to identify all the components of uncertainty and produce a reasonable estimate ([LOM 2.13 Traceability of Measurement](#)). Additional information specific to the uncertainty of measurement may be available in the discipline specific procedure manual.

7.6.3.1

The Laboratory has a procedure to estimate the uncertainty of measurement when values are reported for the weight of controlled substances, the concentration of alcohol in biological samples, the concentration of alcohol in a liquid, the concentration of drugs in blood, and the determination of shooting distance (firearms).

7.6.4

Evaluation and estimation of the measurement uncertainty shall be documented by:

- A statement defining the measurand;
- A statement of how traceability is established for the measurement;
- A list of the equipment or instrumentation used;
- A list of all uncertainty components considered;

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- A list of all uncertainty components of significance and how they were evaluated;
- The data used to estimate the repeatability, intermediate precision, and/or reproducibility;
- Details of all calculations performed; and
- The combined standard uncertainty, the coverage factor, the coverage probability, and the resulting expanded uncertainty.

Documents shall be maintained on the Forensic Science Division document management site.

7.7 Ensuring the Validity of Results

7.7.1

The Forensic Science Division has quality control procedures for monitoring the reliability of forensic examinations. The resulting data shall be recorded in such a way that trends are detectable and, where practicable, statistical techniques shall be applied to the reviewing of the results. Quality control measures include, but are not limited to, the following:

- a) Use of reference materials and/or secondary reference materials;
- b) Use of alternative instrumentation that has been calibrated to provide traceable results;
- c) Functional check of measuring and testing equipment;
- d) Use of check or working standards with control charts where applicable;
- e) Intermediate checks on measuring equipment;
- f) Replicate tests using the same or different methods;
- g) Retesting of retained items;
- h) Correlation of results for different characteristics of an item;
- i) Review of reported results;
- j) Intra-laboratory comparisons;
- k) Testing of blind samples.

7.7.1.g).1

When a verification of a result is carried out:

- a) It shall be conducted by an individual that is currently authorized to perform the testing;
- b) A record shall be made that identifies the individual that performed the verification, when it was performed and the verification result.
- c) Documentation of any discrepancy and its resolution shall be included in the laboratory case file.

7.7.1.l)

The FSD shall establish procedures for the technical review of the examination documentation and reports. The procedures shall ensure that the conclusions of analysts are reasonable, within the constraints of validated scientific knowledge, and supported by the examination documentation. The procedures shall establish the parameters of the review process, specify how technical reviews are documented, and describe a course of action to be taken if a discrepancy is found ([LOM 2.6 Case Review](#)). The scope of the technical review shall be established in the discipline specific procedures manual to ensure conformance with methods and the applicable management system documents. Technical reviews shall include a review of all examination records and the test report. Technical reviews shall be conducted by individuals having expertise gained through training and experience in the task being reviewed. Technical reviews shall not be conducted by the author of the examination records or

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test report under review. The verification of a critical finding does not automatically make an analyst an author. The individual verifying the result may not author the test report but may be the technical reviewer of the case record and test report. A technical review shall not be conducted on an individual's own work. 100% of cases shall be technically reviewed prior to publication. The technical reviewer shall be qualified, or previously qualified, by successfully completing a competency test in the task that is being reviewed.

The FSD shall follow the [LOM 2.7 Courtroom Testimony](#), whereby the testimony of all testifying personnel is monitored and evaluated. Each individual will be given feedback by his/her lab director or designee.

If a discrepancy is found during technical review of case records or testimony that may warrant additional actions, the Laboratory will follow the Corrective Action procedure ([LOM 2.11 Discrepancies and Corrective Action](#)).

7.7.2

The Forensic Science Division has quality control procedures for monitoring the reliability of forensic examinations which includes participation in proficiency testing programs. The FSD has a documented program for proficiency testing ([LOM 2.4 Proficiency Testing](#)).

Each FSD laboratory shall participate annually in at least one external proficiency test for each forensic science discipline in which it conducts examinations. ANAB approved proficiency test providers shall be used where available. If there is not an ANAB approved test provider available for a particular discipline or sub-discipline, the laboratory shall administer a proficiency test according to the ([LOM 2.4 Proficiency Testing](#)).

7.7.2.1

Each laboratory location shall complete at least one external proficiency test each year for each discipline of forensic science for which it provides service in. The results shall be released to ANAB.

7.7.3

The FSD has procedures for evaluating quality control data against defined criteria. When necessary, any detected problems shall be addressed, and appropriate actions shall be taken to prevent incorrect results from being reported ([LOM 2.11 Discrepancies and Corrective Actions](#)).

7.7.4

Each laboratory staff member will successfully complete at least one internal or external proficiency test annually for each forensic discipline that they conduct activities that influence the test results. Observation-based monitoring is an acceptable alternative in the absence of other reasonable alternatives.

7.7.5

The process for monitoring of performance by intralaboratory comparison, interlaboratory comparison, proficiency testing or observation-based testing shall at a minimum:

- a) Ensure that the results are not known or readily available to the participant being monitored;
- b) Ensure the use of approved methods;

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- c) Ensure appropriate technical records are retained;
- d) Establish criteria for determining successful completion prior to the monitoring activity; and
- e) Require a mechanism to ensure the quality of intralaboratory, interlaboratory comparisons and observation-based monitoring prior to the monitoring activity.

The Forensic Science Division is not a calibration laboratory.

7.7.6

There shall be a plan that will:

- a) Demonstrate conformance with the requirements stated in clause 7.7.2.1 b) and 7.7.4; and
- b) Ensure inclusion of a representative sample of the components/parameters, methods, and key equipment/technologies within each discipline listed on the scope of accreditation.

See [LOM 2.4 Proficiency Testing](#).

7.7.7

To satisfy the proficiency test requirements in clauses 7.7.2.1 a: and b), the Forensic Science Division shall:

- a) Use, when available, a proficiency test provider that is accredited to ISO/IEC 17043 by an accreditation body that is a signatory to the APLAC, MRA or IAAC MLA and has the applicable proficiency test(s) on its scope of accreditation, or
- b) Gain approval from ANAB for alternative means by which the laboratory's performance can be assessed when a qualified proficiency test is not available or appropriate.
- c) Submit results to the proficiency test provider, if applicable, on or before the agreed upon due date.

7.7.8

The following records shall be maintained for all intralaboratory comparisons, interlaboratory comparison, proficiency tests and observation-based monitoring:

- a) Discipline(s) monitored;
- b) Design of the monitoring activity;
- c) Expected results;
- d) Location of the monitoring activity;
- e) Records submitted to a proficiency test provider, when applicable;
- f) Evaluation of results and action taken for unexpected results; and
- g) Feedback on individual performance provided to the participant.

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7.8 Reporting of Results

7.8.1 General

7.8.1.1

The Forensic Science Division shall have procedures for controlling the release of case report information ([LOM 1.15 Release of Information](#)).

The Forensic Science Division shall have procedures for reviews and authorization of results prior to release ([LOM 2.6 Case Review](#)).

7.8.1.1.1

The author of a laboratory report that contains analytical results shall review the technical record as the authorizer of the results. The review shall be documented by approval of the Case Record Object Repository.

7.8.1.2

FSD personnel shall accurately, clearly, unambiguously and objectively report the results of each examination according to [LOM 3.3 Laboratory Reports](#). FSD Laboratory reports shall include information regarding the examinations conducted and any information necessary for the interpretation of the examination results. Issued reports are maintained in the Laboratory Case Management System.

A report shall be prepared for any evidence submitted to an FSD laboratory. Reports that do not contain analytical results may be prepared by analytical staff or technicians.

7.8.1.2.1

Laboratory reports are provided in a written manner delivered through the Laboratory Case Management System online portal.

7.8.1.2.2

In addition to direction in [LOM 3.3 Laboratory Reports](#), discipline specific procedure manuals provide procedures for the content of laboratory reports. The discipline specific procedure manuals will provide direction on addressing in the laboratory report all items received and created in laboratory. Additionally, discipline specific procedure manuals shall provide direction on laboratory report statements regarding the extent of testing (partial or complete), preserved items for future testing and items not analyzed.

When associations are made, the significance of the association shall be communicated clearly and qualified properly in the report as defined in the discipline specific procedures manual(s).

When comparative examinations result in the elimination of an individual or object, a test report shall clearly communicate the elimination.

When no definitive conclusions can be reached (e.g. results are "inconclusive"), the reason(s) shall be documented in the case report as defined in the discipline specific procedures manual(s).

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When initially entering data into a database (e.g. NIBIN, AFIS, CODIS), discipline specific procedure manuals will provide direction on how to report the entry. When entries into a database result in an association through a database search, discipline specific procedure manuals will provide direction on reporting the association.

7.8.1.2.3

The laboratory does not provide calibration services in an accredited discipline.

7.8.1.3

Laboratory reports generated for internal customers (Michigan State Police Posts) shall adhere to the same policies and procedures as laboratory reports for external customers ([LOM 3.3 Laboratory Reports](#)).

7.8.1.3.1

See QM 7.8.1.3.

7.8.2 Common Requirements for Reports (test, calibration or sampling)

7.8.2.1

[LOM 3.3 Laboratory Reports](#) provides guidance for the content of a laboratory report. FSD provides simplified reports; however, each laboratory report will contain, minimally:

- A title
- The name and address of the laboratory from which it is being published;
- The location where the testing activities were conducted if different than the laboratory from which the report is being published from. The location of activities related to crime scenes will be included in laboratory reports;
- The laboratory number and pagination such that all the report components may be recognized as a portion of a complete report. The author's signature block signifies the end of the report;
- The name of the law enforcement agency and investigator (the contact information is publicly available);
- A brief description of the testing method utilized;
- A brief description of the item, and where necessary, a brief description of the condition of the item. The unambiguous identification of the item may be considered the combination of the laboratory number and item identifier;
- The date of receipt of the item(s) and the date of sampling if necessary to demonstrate the validity and application of the results;
- The date the laboratory report is issued;
- A reference to the sampling plan and sampling method when necessary to demonstrate the validity and application of the results;
- A statement that the results only relate to the item tested or sampled;
- A statement of results with the unit of measurement;
- A statement describing any additions, deviations or exclusions to the method as described in the discipline specific procedure manual;
- Documentation of the individual authorizing the report as presented in the signature block;

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- A statement that describes results provided by external providers such as contract laboratories. This may be accomplished by including the laboratory report from a contract laboratory as an attachment to the FSD laboratory report.

7.8.2.2

The Forensic Science Division shall be responsible for all the information provided in the report, except that information which was provided by the customer. Data provided by the customer shall be clearly identified in the laboratory report and a disclaimer provided when the information can affect the validity of the results. Where FSD has not been responsible for the sampling stage, the report shall include a statement that the results apply as the sample was received.

7.8.3 Specific Requirements for Test Reports

7.8.3.1

A laboratory report may include additional information when it is necessary for the interpretation of the examination results. The additional information may include when applicable and/or relevant:

- Information on specific test conditions;
- A statement of conformity with a requirement or specification;
- A statement regarding measurement uncertainty;
- Opinions and interpretations;
- Additional information that may be required by the customer.

7.8.3.1.1

Laboratory reports shall include a statement of measurement uncertainty when it impacts the evaluation of a specification limit stated by a regulatory body, a statute, case law, or other legal requirement. The measurement uncertainty, when included in a laboratory report, shall include the measured quantity value, the associated expanded uncertainty and the coverage probability in the format of $y \pm U$. There will be no more than two significant digits and the same level of significance as the measurement result. Discipline specific procedure manuals provide additional direction on reporting methods for measurement uncertainty.

7.8.3.2

A laboratory report may include additional information regarding sampling, when it is necessary for the interpretation of the examination results as required by ISO/IEC 17025:2017 Standard 7.8.5. Specific requirements for the reporting of sampling activities are found in the discipline specific procedure manuals.

7.8.4 Specific Requirements for Calibration Certificates

7.8.4.1

The laboratory does not issue calibration certificates.

7.8.4.1.1

The Laboratory is not prohibited from providing measurement uncertainty in laboratory reports.

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7.8.4.2

The laboratory does not issue calibration certificates.

7.8.4.3

The laboratory does not issue calibration certificates.

7.8.5 Reporting Sampling-Specific Requirements

An FSD laboratory report may include additional information regarding sampling, when it is necessary for the interpretation of the examination results. The additional information included in a laboratory report is defined in the discipline specific procedure manuals and may contain:

- a) The date of sampling;
- b) Unique identification of the item or material sampled;
- c) The location of sampling, including diagrams, sketches or photographs;
- d) A reference to the sampling plan and sampling method;
- e) Details of any environmental conditions during sampling that affect the interpretation of the results; and
- f) Information required to evaluate measurement uncertainty for subsequent testing or calibration.

7.8.5.d).1

If a sampling plan is used, discipline specific procedure manuals shall provide direction on laboratory report content such that information about the sampling plan, confidence levels and corresponding inference(s) regarding the population are included.

7.8.6 Reporting Statements of Conformity

7.8.6.1

When a statement of conformity is used, the corresponding discipline specific procedure manual shall document the decision rule used and documenting the level of risk accepted by using the decision rule.

7.8.6.2

When a statement of conformity is used, it shall be easily discernible which results the statement of conformity applies to, which specifications, standards or parts are applicable, and the decision rule that was applied. Discipline specific procedure manuals will provide additional direction regarding contents of laboratory reports and the use of statements of conformity.

7.8.7 Reporting Opinions and Interpretations

7.8.7.1

When opinions and interpretations are included, the laboratory shall document the basis upon which the opinions and interpretations have been made. Opinions and interpretations shall be clearly marked as such in a test report. The laboratory shall ensure that only personnel authorized for the expression of opinions and interpretations release the respective statement.

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7.8.7.2

Opinions and interpretations expressed in laboratory reports will be based on the results obtained from the tested item and will be clearly identified as such ([LOM 3.3 Laboratory Reports](#)).

7.8.7.3

Opinions and interpretations directly communicated verbally to the customer shall be documented in the case file as described in [LOM 1.15 Release of Information](#).

7.8.8 Amendments to Reports

7.8.8.1

Issued reports requiring change, amendment or to be re-issued, will have any change of information clearly identified and, where appropriate, the reason for the change included in the report ([LOM 3.3 Laboratory Reports](#)).

7.8.8.2

Once an FSD laboratory report has been issued, any corrections must be made in the form of another report according to the [LOM 3.3 Laboratory Reports](#).

7.8.8.3

Entirely new reports get a unique record number from its original report version. Entirely new reports will contain a reference to the original report it is replacing.

7.9 Complaints

7.9.1

The Forensic Science Division (FSD) has a policy and procedure for the resolution of complaints received from customers or other parties, which is defined in Official Order 1, Article #5, [LOM 1.20 Complaints](#) and [LOM 1.11 Personnel Issues](#).

External Complaints

The Forensic Science Division accepts and addresses all complaints made by individuals, agencies, or organizations. The policy by which external complaints are handled is initiated by categorizing each complaint as either a complaint of employee misconduct or a complaint of system or employee performance.

Complaints of Misconduct

All complaints against a department member shall be accepted at any level to which they are reported. All citizen complaints and complaints by a member made to a commander or supervisor against another member for alleged violations of rules and regulations, Official Orders, Code of Conduct, or law shall be documented via Blue Team. Any subsequent investigation shall be supervised by Internal Affairs, pursuant to Official Order 1, Article 5.

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When a commander initiates corrective action against a member on their own volition, a Blue Team entry is not required to be submitted if the proceedings do not go beyond written sanctions (counseling, written warnings, written reprimands).

District or division commanders may dispose of incidents of misconduct involving complaints of a minor nature only after consultation with the Labor Relations Section. All serious violations of department rules and regulations, Official Orders, the Code of Conduct and established policy directives shall be handled at the Headquarters level.

Complaints of Performance

Commanders may resolve work performance problems involving work unit operation and general work supervision functions after consultation with Labor Relations. Such disposition shall only be made when there is no question that the violation by a department member did in fact take place. Division command shall be notified, through channels, regarding the issuance of any written sanctions (counseling, written warnings, written reprimands).

Internal Complaints

The FSD has a policy and procedure for the resolution of quality-related complaints received from laboratory personnel, which is defined in [LOM 2.2 -- Risks and Opportunities](#) and [LOM 2.11 – Discrepancies and Corrective Actions](#). The FS22 form remains active at all times and can be used by employees to submit ideas, observations, and complaints. Employee input of all types, including complaints, is sent directly to the Division Director for disposition.

7.9.2

The FSD internal policies and Michigan State Police Official Orders are available to interested parties through the State of Michigan Freedom of Information Act process. Additionally, the public may access the policies and procedures at www.michigan.gov/MSP-IA . If the complaint is against a laboratory activity that it is responsible for, the laboratory will handle the complaint and be responsible for all decisions ([LOM 1.20 Complaints](#)).

7.9.3

The Forensic Science Division utilizes the Michigan State Police’s Professional Standards section for investigating and documenting complaints of potential misconduct. The FS22 Internal Complaints process is documented on the FSD server.

All other complaints are handled by the Laboratory Director at the laboratory that receives the complaint. The Laboratory Director is responsible for gathering information and verifying it to validate the complaint ([LOM 1.20 Complaints](#)).

7.9.4

When possible, the complainant is notified of receipt of the complaint, relevant updates and the outcome of the investigation ([LOM 1.20 Complaints](#)).

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7.9.5

Communication with the complainant shall be conducted by the Forensic Science Division Director or their designee. Communication shall not come from an individual involved in the original laboratory activities in question ([LOM 1.20 Complaints](#)).

7.9.6

Whenever possible, the Forensic Science Division Director or their designee shall provide a formal notice of the end of the complaint handling process to the complainant ([LOM 1.20 Complaints](#)).

7.10 Nonconforming Work

7.10.1

The [LOM 2.11 Discrepancies and Corrective Actions](#) policy will be followed when a non-conformity occurs during the examination process. This policy and practice shall:

- Designate the actions to be taken and the individual responsible for managing the nonconformity;
- Provide guidance to determine whether work should be halted by the laboratory or individual;
- Ensure that an evaluation is completed to assess the significance of the nonconformity and its potential impact on prior results and analyses.
- Provides guidance on the acceptability of the non-conforming work;
- Provides guidance on notifications to the customer and other regulatory agents, and whether previously analyzed items should be recalled for further evaluations;
- Defines the individual(s) that are responsible for authorizing the resumption of work by the individual or laboratory.

There are times when deviating from policies, practices and/or procedures is necessary. These changes in procedure shall be developed according to [LOM 2.9 Validation and Verification](#).

7.10.2

State of Michigan maintains policies for retention of documents and the schedule of destruction. Records of nonconforming work shall be maintained according to the State of Michigan retention schedule.

<https://stateofmichigan.sharepoint.com/teams/insidemil/recordsmanagement/Pages/schedules.aspx>

7.10.3

Where the evaluation indicates that the nonconformity could recur, the [LOM 2.11 Discrepancies and Corrective Actions](#) and the policy below shall be promptly followed.

The FSD has established a policy [LOM 2.11 Discrepancies and Corrective Actions](#) that designates appropriate authorities for implementing corrective action when discrepancies, nonconforming work, or departures from the policies and procedures in the management system or technical operations have been identified. Any FSD employee may identify conditions or situations where corrective actions are required.

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The [LOM 2.11 Discrepancies and Corrective Actions](#) includes initiating an investigation to determine the root cause(s) of the nonconformity.

The [LOM 2.11 Discrepancies and Corrective Actions](#) provides guidance for determining the level of the nonconformity. Once the level is determined, the appropriate personnel will select, document and implement the action(s) most likely to eliminate the nonconformity and to prevent recurrence. Corrective actions will be appropriate to the magnitude and risk of the nonconformity.

The Quality Assurance Manager will monitor and verify the results of corrective actions to ensure that they have been effectively resolved.

Where conditions or situations require a corrective action, the Quality Assurance Manager will determine if an additional audit is necessary to assess the effectiveness of the corrective action. If an audit is required, the audit will be conducted in a timely manner.

7.11 Control of Data and Information Management

7.11.1

Data and information needed by laboratory staff members is available in various applications including the Laboratory Information Management System (LIMS) Forensic Advantage, document management system, and the Department's Official Orders.

7.11.2

The Forensic Science Division utilizes two Laboratory Information Management Systems (LIMS), STACS CW and Forensic Advantage. When changes and updates occur to the applications, the Technical Services Unit shall be responsible for reviewing the revision release notes, conducting and documenting a validation based upon the release notes and generating an internal memorandum to the Division's Operations Manager summarizing their findings and authorization for use. [LOM 2.9 Validation and Verification](#).

7.11.2.1

Prior to conducting a validation of software, a validation plan shall be developed and submitted to the Laboratory Operations Manager for review and approval. [LOM 2.9 Validation and Verification](#).

7.11.3

Laboratory Information Management Systems (STACS CW and Forensic Advantage) require login credentials unique to an individual for access. Each user has a unique profile that determines the level of access to each system. User access provides a level of security from outside access as well as a safeguard against tampering and loss of data. LOM 3.0 Laboratory Case Management, and its sub-sections, provide details on the use of STACS CW and Forensic Advantage. These policies describe the manner in which the systems should be utilized. Each system is hosted by the State of Michigan Department of Management, Budget and Technology (DTMB). DTMB is responsible for completing database management and backups for the hosting servers.

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7.11.4

STACS CW and Forensic Advantage are hosted by the State of Michigan DTMB. The Laboratory Operations Manager ensures all aspects of ISO 17025:2017 and AR 3125 are met.

7.11.5

LIMS instruction manuals shall be available to laboratory personnel on the document management system (LOM 3.0 Laboratory Case Management).

7.11.6

Discipline specific procedure manuals will ensure that calculations and data transfers relevant to examinations are systematically checked for accuracy. This may be accomplished through a variety of methods such as during technical reviews ([LOM 2.6 Case Review](#)) and auditing activities.

7.11.6.1

Calculations and data transfers are checked during technical reviews ([LOM 2.6 Case Review](#)). The technical reviewer is documented in the Laboratory Information Management System.