

Procedure for CODIS – DNA Casework

- 1.0 Purpose** – The purpose of this document is to define the responsibilities of CODIS Users, to provide procedures for profile management in CODIS, to explain CODIS systems operation, and to outline CODIS hit procedures. The goal of the CODIS system is to provide a means for known DNA profiles to be searched against unknown DNA profiles potentially providing investigative information that could solve a crime.
- 2.0 Scope** – The procedures in this document apply to all CODIS related functions performed by CODIS Users in the Forensic Biology Section of the State Crime Laboratory. In addition, the procedures contained herein are established to comply with the National DNA Index System (NDIS) Acceptance Standards Operational Procedures.
- 3.0 Definitions**
- **Arrestee** – A known sample from an individual ARRESTED for an offense in North Carolina that is specifically obtained pursuant to North Carolina law. The DNA record for this specimen category is stored in the Arrestee Index.
 - **Candidate Match** – A possible match between two or more DNA profiles discovered by CODIS software. A qualified Forensic Scientist must verify that the DNA profiles from a candidate match could possibly come from the same individual.
 - **CODIS** – Combined DNA Index System, the FBI’s national DNA identification system that allows for the storage and exchange of DNA records submitted by federal, state, and local DNA forensic laboratories.
 - **CODIS User** – An individual employed by the State Crime Laboratory/NCDOJ IT who has passed an FBI background check and who has access to computers which have CODIS software installed.
 - **Composite Profile** – A DNA profile generated by combining typing results from different loci obtained from multiple injections of the same amplified evidentiary sample and/or multiple amplifications of the same DNA extract. When separate extracts from a given item are combined prior to amplification, the resulting DNA profile is not considered composite. Unless there is a reasonable expectation of samples originating from a common source (e.g., duplicate vaginal swabs, known reference samples, or a bone), allelic data from separate extractions shall not be combined into a composite profile.
 - **Convicted Offender** - A known sample from an individual CONVICTED of a felony and certain misdemeanors in North Carolina that is specifically obtained pursuant to North Carolina law. The DNA record for this specimen category is stored in the Convicted Offender Index.
 - **Core Loci (Expanded)** – 20 loci including D8S1179, D21S11, D7S820, CSF1PO, D3S1358, TH01, D13S317, D16S539, vWA, TPOX, D18S51, D5S818, FGA, D1S1656, D2S441, D2S1338, D10S1248, D12S391, D19S433 and D22S1045.
 - **Core Loci (Original)** – 13 loci including D8S1179, D21S11, D7S820, CSF1PO, D3S1358, TH01, D13S317, D16S539, vWA, TPOX, D18S51, D5S818, FGA.
 - **Deduced Profile** – The application of peak height ratios or a known reference sample to determine the individual contributors of a mixture. If the individual contribution can be resolved, the resulting DNA record shall be stored in the Forensic or Forensic Partial Indices.
 - **DNA Profile** – See Forensic Biology Section Definition List.
 - **DNA Record** - A database record that includes the DNA profile as well as the data required for managing and operating LDIS/SDIS/NDIS, i.e., the Originating Agency Identifier which serves to identify the submitting agency; the Specimen Identification Number; and DNA personnel associated with the DNA profile analysis.
 - **Elimination** - A known sample from an individual known not to be a suspect in a case. Examples

include consensual sex partners, a witness who was injured at a scene, officers who may have inadvertently left DNA on evidence, etc. Elimination profiles SHALL NOT be entered into any CODIS Index.

- **Forensic Mixture** - A DNA profile that originates from a forensic sample that contains DNA contributed from more than one source attributable to a putative perpetrator(s) and is eligible for upload to NDIS. The DNA record for this specimen category is stored in the Forensic Mixture Index.
- **Forensic Partial** - A DNA profile that originates from a single source forensic sample attributable to a putative perpetrator(s) with either locus or allelic dropout at any of the 20 core CODIS loci and is eligible for upload to NDIS. A DNA profile may also be considered a Forensic Partial if a locus (or loci) is not used for interpretation. The DNA record for this specimen category is stored in the Forensic Partial Index.
- **Forensic Sample** – A biological sample originating from and/or associated with a crime scene and whose source is attributable to a putative perpetrator. These are not reference samples from known individuals.
- **Forensic Targeted –State** – A Forensic Mixture or Forensic Partial DNA profile that is not eligible for routine query at SDIS or NDIS. The DNA record for this specimen category is stored in the Forensic Targeted Index.
- **Forensic Unknown** - A DNA profile that originates from a single source forensic sample attributable to the putative perpetrator. The DNA record for this specimen category is stored in the Forensic Index.
- **LDIS** – The local DNA Index System (LDIS) contains the detailed DNA records of a local DNA laboratory (e.g., Charlotte-Mecklenburg Crime Lab for NC).
- **Mass Screening Samples** - Samples submitted from known individuals that have been obtained by police DNA dragnets in an effort to solve a crime. The donors of these samples have not been identified as suspects in the case. These samples shall not be uploaded to any Index of CODIS.
- **Match Estimation** – A calculation that produces the moderate or high stringency match rarity estimate for a Forensic Mixture or Forensic Partial DNA profile. The results of this calculation aid in determining eligibility of a sample within the CODIS hierarchy.
- **Match Rarity Estimate (MRE)** - The multiplication product of the individual-locus random match probabilities. The MRE is dependent on the stringency specified at each locus and the presence of obligate alleles.
- **Missing Persons** - The known reference sample from an individual who is missing. The source of the DNA has been verified as originating from the missing person and is stored in the Missing Person Index.
- **Mixture – State** - A DNA profile that originates from a forensic sample that contains DNA contributed from more than one source attributable to a putative perpetrator(s) and is eligible for upload to SDIS, but not NDIS. The DNA record for this specimen category is stored in the Forensic Mixture Index.
- **Moderate Match Estimate (MME)** – The inverse of the Match Rarity Estimate when all loci are evaluated at moderate stringency.
- **Multi-allelic Offender** – An offender (arrestee, convicted offender, detainee, or legal index specimen) DNA record having three or more alleles at two or more loci. The DNA record for this specimen category is stored in the Multi-Allelic Offender Index.
- **NDIS** – The National DNA Index System (NDIS) is the FBI administered centralized system of DNA identification records contributed by all state and local participating laboratories. NDIS receives selected eligible records from every lower level index and supports the searching function of CODIS.
- **Obligate Allele** - An allele marked with a “+” that is foreign to the victim/elimination standard in a mixture.
- **Partial-State** - A DNA profile that originates from a single source forensic sample attributable to putative perpetrator(s) with either locus or allelic dropout at any of the 20 core CODIS loci and is eligible for upload to SDIS, but not NDIS. The DNA record for this specimen category is stored in the Forensic Partial Index.

- **Pending** – A DNA profile that is generated during casework and is pending technical review and verification of CODIS eligibility. The DNA record for this specimen category is stored in the Unreviewed Casework Index and shall not be uploaded or searched until technical review is approved.
- **Person of Interest** - A known sample from an individual identified as a person of interest, and listed as such on the evidence submission form by the submitting agency. Profiles developed from persons of interest shall not be uploaded to any CODIS Index.
- **Quality Control** – A single source DNA profile sample that originates from a proficiency test sample or un-attributable exogenous DNA introduced to a forensic sample or control. The DNA record for this specimen category is stored in the Employee/QC Index.
- **Required Allele Designation** - When entering a mixture into CODIS, a “+” shall be placed after any obligate allele in the mixture. This “+” informs the CODIS software of the alleles required to return a candidate match.
- **SDIS** - The State DNA Index System (SDIS) contains the state-level DNA records available for searching by local DNA laboratories within the state. SDIS, the state’s repository of DNA identification records, is under control of state authorities and typically serves as the central point of contact for access to NDIS. The North Carolina State Crime Laboratory located in Raleigh, NC, shall be the designated SDIS Laboratory.
- **Staff** – A DNA profile obtained from an employee, vendor, or visitor of the State Crime Laboratory. For quality control purposes, DNA samples shall be collected from anyone who enters Laboratory space in the Forensic Biology and/or Database Sections. The DNA record for this specimen category is stored in the Employee/QC Index.
- **Suspect** - A known sample from an individual identified as a suspect, and listed as such on the evidence submission form by the submitting agency. Suspect profiles may be entered into LDIS and SDIS, but not NDIS.
- **Targeted Forensic –State** – A Forensic Mixture or Forensic Partial DNA profile that is not eligible for routine query at SDIS or NDIS. The DNA record for this specimen category is stored in the Targeted Forensic Index. DNA records stored in this Index shall be not routinely queried but may be searched with CODIS Administrator written approval.
- **Unidentified Human Remains** - The DNA profile developed from the recovered deceased or an individual who is unidentified (e.g., children who can’t and others who can’t or refuse to identify themselves). The DNA record for this specimen category (Unidentified Person) is stored in the Unidentified Human Remains Index.
- **Victim** - A known sample from an individual identified as a victim on the evidence submission form by the submitting agency. Victim profiles shall not be uploaded to any CODIS Index unless the DNA profile is generated for inclusion into the Missing Person or Unidentified Human Remains Indices.
- **Y STR Profile** – A haplotype obtained from DNA analysis testing of the Y chromosome.

4.0 Equipment, Materials, and Reagents – computers with CODIS software, CODIS server, external media storage device, Forensic Advantage (FA) system, PopStats software, SpecMan, Armed Xpert software, STRmix software.

5.0 CODIS Responsibilities

5.1 Casework Forensic Scientists Responsibilities

5.1.1 The Casework Forensic Scientist generates DNA profiles and determines whether those profiles are suitable for entry into CODIS.

5.1.2 The Casework Forensic Scientist is responsible for documenting all CODIS related information into the FA System. Documentation of CODIS eligibility shall meet NDIS standards (e.g., in the case of a B&E, the item collected from the scene is clearly identified

as not belonging to the victim.)

- 5.1.3 The Casework Forensic Scientist is responsible for the entry/upload of CODIS eligible profiles.
- 5.1.4 The Casework Forensic Scientist assigned as DNA technical reviewer shall verify results of all samples prior to their entry into a searchable and/or up-loadable specimen category of CODIS.
- 5.1.5 After approved technical review, the Casework Forensic Scientist shall designate the correct specimen category for the DNA record.
- 5.1.6 If a Casework Forensic Scientist uploads a sample to SDIS that is not suitable for upload to NDIS, the Casework Forensic Scientist shall ensure that the specimen is unmarked for upload.
- 5.1.7 The Casework Forensic Scientist is responsible for deleting samples that no longer meet CODIS eligibility requirements.
- 5.1.8 The Casework Forensic Scientist assigned as combined technical/administrative reviewer shall verify that the appropriate samples and results have been entered properly into CODIS by reviewing the Specimen Detail Report.
- 5.1.9 All qualified CODIS Users are responsible for successfully completing the FBI/NDIS Annual Eligibility Training, as assigned.

5.2 Local/Casework CODIS Administrator

- 5.2.1 The Casework CODIS Administrator is responsible for ensuring that the Forensic Biology Section is in compliance with NDIS sample acceptance policy.
- 5.2.2 The Casework CODIS Administrator is responsible for all operations of the Local CODIS system with the exception of entering profiles into LDIS and SDIS.
- 5.2.3 The Casework CODIS Administrator is responsible for administering the Laboratory's Local CODIS network.
 - 5.2.3.1 This responsibility includes, but is not limited to, the following: software updates, user maintenance, national and state uploads, processing of incoming and outgoing search requests, and communication with other laboratories and law enforcement agencies.
- 5.2.4 The Casework CODIS Administrator (or designee) is responsible for evaluating candidate matches to determine if they may have come from the same individual. The Casework CODIS Administrator (or designee) shall view every match that occurs in Match Manager as a result of a state or national upload and shall disposition the matches according to the NDIS operational procedures.
- 5.2.5 The Casework CODIS Administrator shall inform the Casework Forensic Scientists of any CODIS considerations related to new procedures and software upgrades.

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- 5.2.6** The Casework CODIS Administrator shall be responsible for the maintenance and completion of all paperwork required for NDIS participation such as the addition of new users, changing user names, and termination of users no longer employed by the State Crime Laboratory or involved with CODIS. The Casework CODIS Administrator shall ensure that all external audit documentation and Laboratory responses shall be provided to the FBI within 30 days of the Laboratory's receipt of the audit documents or report.
- 5.2.7** The Casework CODIS Administrator shall be responsible for ensuring that the security of the DNA profiles stored in CODIS is in accordance with state and/or federal law and NDIS operational procedures.
- 5.2.8** The Casework CODIS Administrator shall be responsible for the oversight of CODIS computer training. This includes scheduling and documenting computer training of all casework CODIS users in the laboratory.
- 5.2.9** The Casework CODIS Administrator shall be responsible for ensuring that the quality of data stored in CODIS is in accordance with state and/or federal law and NDIS operational procedures.
- 5.2.9.1** This is accomplished through the review process, review of internal and external audit documents, and any non-conformities that impact DNA records entered into CODIS.
- 5.2.9.2** The Casework CODIS Administrator shall have the authority to remove any profiles that do not meet NDIS requirements.
- 5.2.10** The Casework CODIS Administrator shall have the authority to terminate the North Carolina laboratory's participation or that of any user if it is determined by the Casework CODIS Administrator that unreliable data is being uploaded and/or the security of the computer data is not ensured.
- 5.2.11** The Casework CODIS Administrator shall be responsible for preparing documentation required for NDIS participation.
- 5.2.12** The Casework CODIS Administrator shall successfully complete CODIS software training as well as the FBI's QAS auditor training.

5.3 Casework CODIS Assistant Administrator

- 5.3.1** Shall meet the same minimum requirements as the Casework CODIS Administrator.
- 5.3.2** Shall perform the duties of Casework CODIS Administrator in his/her absence.
- 5.3.3** Shall perform the duties listed above as delegated by the Casework CODIS Administrator.
- 5.3.4** Shall complete CODIS software training as well as the FBI's QAS auditor training.

5.4 Access to Data and Information

- 5.4.1** Access to information in the Database and Databank is permitted only as specified in Article 13 of

Chapter 15A of the North Carolina General Statutes. All other requests for information shall be denied. Requests for information shall be accepted only from law enforcement or criminal justice agencies, or governmental forensic science laboratories. Requests from private forensic laboratories shall not be honored.

5.4.2 Analysts with access to SpecMan, may respond to requests from criminal justice/governmental agencies regarding Database information and release information only as specified in Article 13 of Chapter 15A of the North Carolina General Statutes.

5.4.3 The identity of any person/agency making a request for information shall be verified prior to the release of any information. To verify the identity of the person requesting the information, the analyst shall obtain the individual's name and agency name.

6.0 General Procedures

6.1 Procedure for CODIS Systems Operations

6.1.1 Procedure for CODIS Backups

6.1.1.1 NCDOJ IT shall schedule and initiate the backup of CODIS data according to the most current version of the NDIS Security Requirements procedure (CODIS website).

6.1.1.2 A full backup shall be run automatically once a week and incremental backups shall be run on the remaining days of the week.

6.1.1.3 A monthly full backup shall also be run.

6.1.1.4 Monthly backup sets shall be kept offsite.

6.1.1.5 Backups shall be scheduled to occur during off peak hours.

6.1.2 Procedure for CODIS File Storage

6.1.2.1 Case analysis files shall be stored in accordance with guidelines set forth in the State Crime Laboratory procedures.

6.1.3 Procedure for CODIS Security

6.1.3.1 All CODIS users are responsible for security of the software.

6.1.3.2 When a user is finished with a CODIS work session, the user shall log out of CODIS and out of the Network.

6.1.3.3 CODIS Helpdesk users shall be monitored by the Casework CODIS Administrator while using Windows Remote Desktop on the State Crime Laboratory CODIS network.

6.1.3.4 In regards to the physical security of servers/workstations, accessibility to hardware/software, password requirements, timeout features, and firewall requirements refer to the most current version of the NDIS Security Requirements procedure (CODIS website).

6.2 Procedure for Profile Management

6.2.1 Procedure for Acceptance of DNA Records at SDIS and NDIS

6.2.1.1 DNA records submitted to SDIS and NDIS shall be *interpretable*.

6.2.1.2 A forensic unknown, forensic mixture, or forensic partial DNA record submitted to SDIS or NDIS shall originate from and/or be associated with a crime scene; the source of which is attributable to a putative perpetrator. For purposes of SDIS and NDIS eligibility, an item taken directly from a suspect shall be considered a suspect standard, not a forensic sample.

6.2.1.2.1 If the Forensic Scientist does not have adequate information to make a determination of eligibility, he/she shall contact the investigating officer to seek additional information about the evidence submitted.

6.2.1.2.1.1 This conversation shall be documented in the communication log in FA.

6.2.1.2.2 If the Forensic Scientist has additional questions about the eligibility of a sample, he/she may consult the Casework CODIS Administrator.

6.2.1.2.2.1 This conversation shall be documented in the communication log in FA.

6.2.1.3 A forensic unknown DNA record originating from a single source submitted to SDIS or NDIS having all 20 core CODIS loci shall not have more than 3 alleles at one locus while the remaining loci can have up to 2 alleles.

6.2.1.4 A forensic mixture DNA record submitted to NDIS shall not have more than 4 alleles at any locus. A forensic mixture DNA record submitted to SDIS shall not have more than 8 alleles at any locus.

6.2.1.5 A forensic partial DNA record originating from a single source with either locus or allelic dropout at any of the 20 core CODIS loci submitted to SDIS or NDIS shall not have more than 3 alleles at one locus while the remaining loci can have up to 2 alleles.

6.2.1.5.1 When using a binary approach for interpretation, any loci with a homozygote allele below stochastic threshold shall be considered partial for CODIS purposes.

6.2.1.5.2 When using COSTaR for CODIS entry, loci will be marked as partial for profiles that include a genotype with the potential for dropout (Q).

6.2.1.6 Forensic mixture and forensic partial DNA records submitted to SDIS shall be reviewed to ensure that the DNA records have a minimum of 8 Original CODIS Core Loci and satisfy a MME value of fifteen thousand (1.5000E004).

- 6.2.1.6.1** If the MME value is less than fifteen thousand (1.5000E004), then the forensic mixture and forensic partial DNA records may be entered as “Forensic Targeted – State” with CODIS Administrator written approval.
- 6.2.1.7** Forensic mixture and forensic partial DNA records submitted to NDIS shall be reviewed to ensure that the DNA records have a minimum of 8 Original CODIS Core Loci and satisfy a MME value of ten million (1.0000E007).
- 6.2.1.7.1** If the MME value is less than ten million (1.0000E007), but is eligible for SDIS, the forensic mixture and forensic partial DNA records shall be entered as “Partial – State” or “Mixture – State.”
- 6.2.1.8** A DNA record submitted to the Forensic, Forensic Mixture or Forensic Partial Indices at SDIS or NDIS shall only offer those alleles that are attributed to the putative perpetrator(s). Alleles that are unambiguously attributed to a victim or individuals other than the putative perpetrator(s), such as an elimination standard, shall not be offered to SDIS or NDIS.
- 6.2.1.9** A suspect DNA record originating from a single source submitted to SDIS having attempted all CODIS core loci shall have no more than 3 alleles at one locus while the remaining loci can have up to 2 alleles.
- 6.2.1.9.1** Suspect DNA records with complete representation (no potential allelic or locus dropout) at the Original 13 Core loci may be offered to LDIS/SDIS.
- 6.2.1.10** Profiles matching the victim or human reference samples from a victim shall not be offered to **any** CODIS Index unless the DNA record is generated for inclusion into the Missing Person or Unidentified Human Remains Indices.
- 6.2.1.11** Composite DNA records may be submitted to SDIS or NDIS.
- 6.2.1.12** Y STR data are accepted at SDIS.
- 6.2.1.12.1** If there is an associated autosomal profile, there is no minimum autosomal CODIS Core Loci requirement for entry of DNA records containing YSTR data at SDIS. Minimum quality requirements must be met in order for the profile to be searched.
- 6.2.1.12.2** If there is no associated autosomal profile (only YSTRs are being ran for either a question or suspect sample), the YSTR profile may be entered at SDIS. These profiles will not be searched.
- 6.2.1.13** Y STR data are accepted at NDIS.
- 6.2.1.13.1** DNA records at NDIS containing Y STR data shall meet specimen category specific CODIS Core Loci requirements.
- 6.2.1.13.2** Y STR data are searched with the missing person-related indexes only.

6.2.2 Procedure for CODIS DNA Records

6.2.2.1 Originating Agency Identifier: Every DNA record submitted to LDIS, SDIS or NDIS shall have an Originating Agency Identifier (ORI) assigned that is associated with the DNA lab in which the DNA record is generated.

6.2.2.2 User ID: Every DNA record submitted to LDIS, SDIS or NDIS shall have a User ID assigned that identifies the DNA personnel that generated or has taken ownership of that DNA profile.

6.2.2.3 Specimen ID Number: Every DNA record submitted to LDIS, SDIS or NDIS shall have a unique Specimen ID Number. Forensic Scientists shall use the laboratory case number and item number separated by a “#” symbol for each profile to be entered into CODIS. Forensic Scientists shall not use dashes to separate the year and case number when entering forensic samples into CODIS. Additional descriptors shall be used in order to make the Specimen ID Number unique.

Examples:

- Known reference: R200019951#2-2
- Sperm Fraction: R200019951#1-4SP
- Non-sperm fraction: R200019951#1-4NS
- Questioned item (diluted): R200019951#3_1to10
- Major contributor: R200019951#1-1_MAJ
- Minor contributor: R200019951#1-1_MIN
- Mixture w/ assumed known: R200019951#1-1_DED

6.2.3 Procedure for Forensic Mixtures in CODIS

6.2.3.1 The Forensic Scientist shall designate the “Forensic Mixture” and “Mixture – State” specimen categories for indistinguishable mixtures only. Derived single source profiles from mixtures (i.e., majors, minors, derived) shall be entered as “Forensic Unknown,” “Forensic Partial,” or “Partial - State.”

6.2.3.2 For purposes of CODIS entry only, the Forensic Scientist may use an “owner’s” DNA profile on a non-intimate item to further deduce out a putative perpetrator.

6.2.3.2.1 Obligate alleles, which are alleles that have been determined to not have originated from the victim or elimination standards, may be manually designated with a “+” symbol. Obligates are used by COSTaR to increase MME values when needed.

6.2.4 Procedure for Entering Casework Profiles into CODIS

6.2.4.1 DNA profiles may be imported into CODIS directly from GeneMapper ID-X, COSTaR, or ArmedXpert.

6.2.4.1.1 In GeneMapper ID-X go to the Samples tab. Ensure that there is nothing entered into the “UD1” column. Click on CODIS Export Table from the drop down menu of the Table Setting view.

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- 6.2.4.1.1.1 Under Specimen Category, select “Pending” for export.
 - 6.2.4.1.1.2 Go to File, select Export Table for CODIS.
 - 6.2.4.1.1.3 Choose CMF 3.3 (.xml) from the drop down menu for Export File As.
 - 6.2.4.1.1.4 Under CODIS Laboratory IDs, ensure the Source/Destination IDs are set to NCBCI0094.
 - 6.2.4.1.1.5 Save the file to an external media storage device.
- 6.2.4.1.2 In ArmedXpert, generate an allele call table report using your mixture interpretation.
- 6.2.4.1.2.1 Click on CMF button in toolbar.
 - 6.2.4.1.2.2 In the “Samples & Sources” column (on the left), expand the plus sign so that the names of the mixture components are visible. Select the mixture components (major, minor, etc.) that are to be entered into CODIS. Click on the arrow to add them to the “selected samples & sources” column.
 - 6.2.4.1.2.3 Ensure the Destination/Source Lab IDs are set to NCBCI0094 (Raleigh) and NCJUS0081 (Western). Enter in your CODIS user ID.
 - 6.2.4.1.2.4 In the “selected samples & sources” column, select the sample name to expand the packet attributes field.
 - 6.2.4.1.2.5 Select “Pending” as the specimen category. Indicate partial and source ID (yes/no). In the comment field, indicate the specimen category in which the sample will ultimately be entered as.
 - 6.2.4.1.2.6 Save file to external media storage device.
- NOTE:** Loci designated with obligate alleles (*) will not import into CODIS at this time – these will have to be hand entered. Loci designated as Allele, Any are able to be imported into CODIS
- 6.2.4.1.3 When STRmix is used, any profile being entered into CODIS other than a full, single source profile (e.g. Forensic Unknown, Unidentified Human Remains, Missing Person, Suspect, etc.) shall be entered into COSTaR in order to generate a CODIS profile for upload (See Procedure for the Use of COSTaR).
 - 6.2.4.1.4 Open Analyst Workbench and select the Specimen
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- 6.2.4.1.6.4** For Source ID, select “Yes” or “No” (Yes = a solved case, No = an unsolved case).
 - 6.2.4.1.6.5** Alleles may need to be edited to reflect the intended CODIS profile (i.e., addition of obligates or removal of minor alleles.)
 - 6.2.4.1.6.6** Click Save to populate the MME value. Based on this value and the profile type, determine the specimen category in which the profile will eventually reside (i.e., Forensic Unknown, Partial - State.) This specimen category shall be noted in the comments box.
 - 6.2.4.1.6.7** If it is determined that the profile does not meet eligibility based on MME values, the profile shall be deleted. The analyst may evaluate the profile for a one-time search.
 - 6.2.4.1.6.8** Print the Specimen Detail Report (short) for the FA case record object repository.
 - 6.2.4.1.6.9** Once the technical review has been approved, the Forensic Scientist shall set the DNA record to the appropriate specimen category. Query the specimen via Specimen Manager and right click to select “Set Specimen Properties.” Select the appropriate Specimen Category. In addition, the Casework Forensic Scientist shall mark eligible profiles for upload. An updated Specimen Detail Report shall be printed.
- 6.2.4.2** DNA profiles may be hand-entered into CODIS using STR Data Entry.
- 6.2.4.2.1** Open Analyst Workbench and select STR Data Entry.
 - 6.2.4.2.2** Enter/Select information for the following categories/boxes:
 - 6.2.4.2.2.1** Enter Specimen ID.
 - 6.2.4.2.2.2** Select “Pending” as the Specimen Category.
 - 6.2.4.2.2.3** For Source ID, select “Yes” or “No” (Yes = a solved case, No = an unsolved case).
 - 6.2.4.2.2.4** For Partial Profile, select “Yes” or “No” for both profile and individual locus (Yes = a sample that is missing one or more alleles or loci, No = a sample which contains all alleles at all loci).
 - 6.2.4.2.3** Enter correct allelic values for Reading #1 for all loci.

- 6.2.4.2.4 Enter correct allelic values for Reading #2 for all loci.
- 6.2.4.2.5 Click on the Save to populate the MME value. Based on this value and the profile type, determine the specimen category in which the profile will eventually reside (i.e. Forensic Unknown, Partial - State.) This specimen category shall be noted in the comments box.
- 6.2.4.2.6 If it is determined that the profile does not meet eligibility based on MME values, the profile shall be deleted. The analyst may evaluate the profile for a one-time search.
- 6.2.4.2.7 Print the Specimen Detail Report (short) for the FA case record object repository.
- 6.2.4.2.8 Once the technical review has been approved, the Forensic Scientist shall set the DNA record to the appropriate specimen category and shall mark eligible profiles for upload. An updated Specimen Detail Report shall be printed.

6.2.5 Procedure for Marking/Unmarking Profiles for NDIS Upload

- 6.2.5.1 Only samples that are eligible per NDIS guidelines shall be marked for transfer beyond SDIS.
 - 6.2.5.1.1 To mark/unmark a specimen for upload in CODIS, perform the following steps:
 - 6.2.5.1.1.1 Open Analyst Workbench and select the Specimen Manager module.
 - 6.2.5.1.1.2 Select File, then select Edit or you may use the “Edit” icon in the tool bar (looks like a wrench).
 - 6.2.5.1.1.3 Beside Specimen ID, click on the drop down arrow and select (=).
 - 6.2.5.1.1.4 Enter the Specimen ID of the sample of interest and then click on OK.
 - 6.2.5.1.1.5 Right click on the specimen of interest and select either Mark or Unmark Specimen for Upload.

6.2.6 Procedure for Changing/Deletion of Profiles

- 6.2.6.1 A Casework Forensic Scientist may change a specimen if they are considered to be the “Assigned To” user or owner of that specimen.
 - 6.2.6.1.1 Renaming - The specimen name may be changed unless it has already been uploaded (e.g., SDIS to NDIS). After upload, if a specimen needs to be renamed, the specimen will need to be

deleted and re-entered.

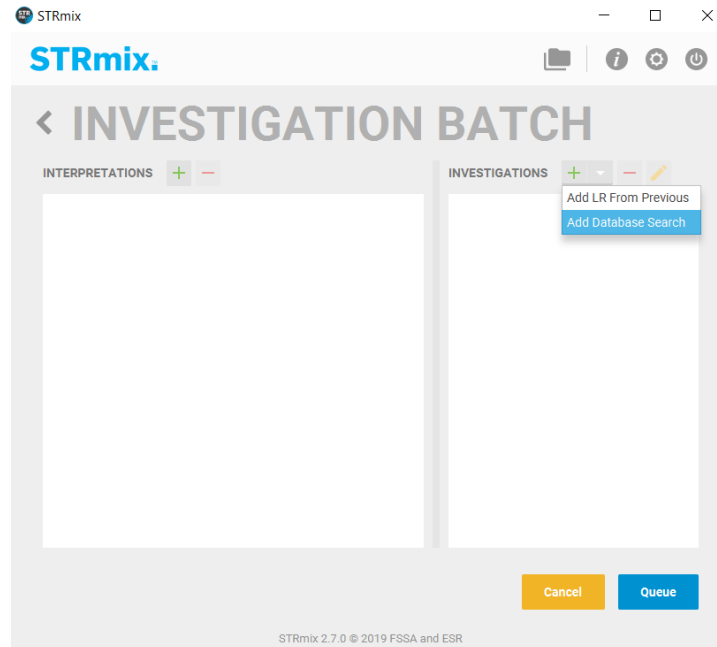
- 6.2.6.1.2** Source ID, Partial Flag, Specimen Category, Alleles – May be changed by the “Assigned To” user at any time by using Specimen Manager or STR Data Entry. Please note that changes to alleles may affect the MME value and/or the Specimen Category.
- 6.2.6.1.3** The Casework Forensic Scientist shall place a copy of the updated Specimen Detail Report in the FA case record object repository.
- 6.2.6.2** A Casework Forensic Scientist may update a specimen if additional loci are developed (e.g., re-testing of an older sample with a current amplification kit or testing of a sample with a YSTR amplification kit). Note: The “Assigned To” user does not need to be the same.
 - 6.2.6.2.1** Additional loci may be added to the specimen via import or STR Data Entry.
 - 6.2.6.2.2** The specimen category shall remain “Pending” until the technical review is complete.
 - 6.2.6.2.3** Once the technical review has been approved, the Forensic Scientist shall set the DNA record to the appropriate specimen category.
- 6.2.6.3** The Casework Forensic Scientist may delete a specimen if the scientist is considered to be the “Assigned To” user or owner of that specimen.
 - 6.2.6.3.1** The Casework Forensic Scientist shall note the reason for deletion in the comments section of the specimen record (i.e. a specimen matches an elimination standard that was subsequently analyzed.) Comments shall be added prior to deleting the profile via Specimen Manager or STR Data Entry.
 - 6.2.6.3.2** The Casework Forensic Scientist shall query the specimen via Specimen Manager, right click on the specimen, and then select “Delete Specimen.”
 - 6.2.6.3.3** The Casework Forensic Scientist shall place a copy of the Delete Summary in the FA case record object repository. The Casework Forensic Scientist shall view the Delete Report generated in CODIS Message Center.
- 6.2.6.4** The Casework CODIS Administrator shall make changes to or delete specimens if the “Assigned To” user or owner of the specimen is not available or able to do so.

6.2.7 Procedure for Comparison and Searching of Unknown DNA Profiles

6.2.7.1 Prior to technical review, all *interpretable* unknown DNA profiles shall be manually compared to any DNA profiles generated in cases that were batched with the case in question.

6.2.7.2 All *interpretable* unknown DNA profiles (including mixtures) shall be subject to an Employee/QC Database search using the STRmix Database searching function of the STRmix software. This search may be done with the analyst's entire batch or may be performed separately for each case.

6.2.7.2.1 . In the STRmix software, select “Investigation” and then “Investigation Batch” from the STRmix menu.



6.2.7.2.1.1 Drag and drop the appropriate evidence results folders from the batch into the “Interpretations” window.

6.2.7.2.1.2 In the “Investigations” window, select “Add Database Search” from the dropdown.

6.2.7.2.2 Select the .csv database (STRmix Staff QC DB (date).csv), add the date and analyst's initials to “DBSearch_1” in the search ID box (03102024_AFO_DBSearch_1), and click Save.

The screenshot shows the 'DATABASE SEARCH BATCH' configuration window in the STRmix software. The window title is 'STRmix'. The main title is 'DATABASE SEARCH BATCH'. The configuration fields are as follows:

- Database File: C:\Users\ccowan\Desktop\STRmix Staff DB 01-25-2024.csv (with a 'Browse' button)
- Minimum LR: 50,000
- Population For Search: NIST1036_Comb (dropdown menu)
- Extended Output: (unchecked)
- Type of Search: Standard (dropdown menu)
- FST For Search: 0.0b(1.0, 1.0)
- Assign Sub-Source LR: (checked)
- Search ID: DBSearch_1

At the bottom right, there are 'Cancel' and 'Save' buttons.

6.2.7.2.3 Database Search Setup

6.2.7.2.3.1 Minimum LR: 50,000

6.2.7.2.3.2 Population: NIST1036_Comb

6.2.7.2.3.3 Type of Search: Standard

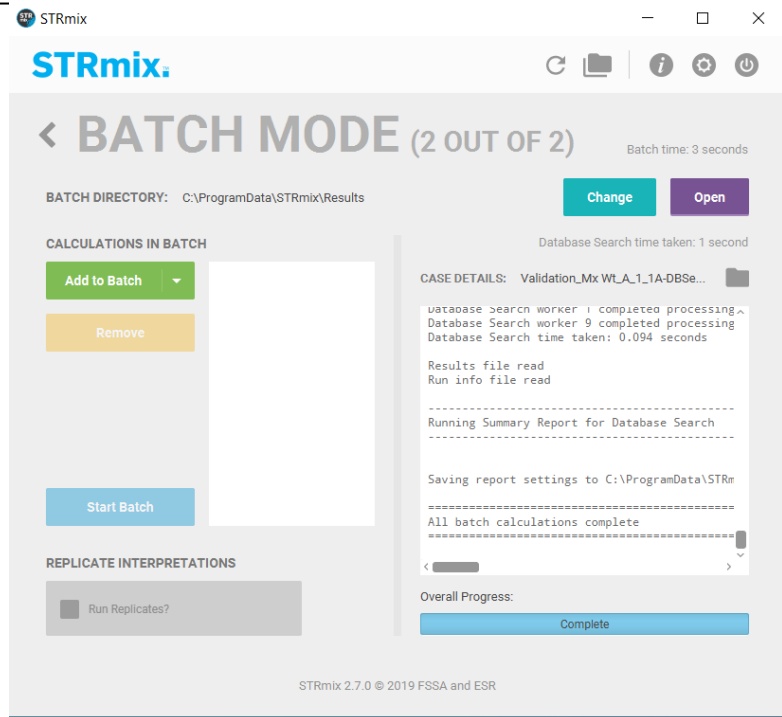
6.2.7.2.3.4 FST: 0.0b(1.0,1.0)

6.2.7.2.3.5 Assign sub-source LR: Y (check the box)

6.2.7.2.3.6 Extended output: N (do not check)

6.2.7.2.4 Click "Queue" and then "Start Batch."

6.2.7.2.5 Once complete, click "Open." Review results on the "Database Search Report" found in the "Reports" folder for that case.



6.2.7.2.6 Scroll down to the “LR RESULTS” section to see any candidate samples that are returned.

6.2.7.2.6.1 If there are no candidates, no further action is required.

LR RESULTS

No matches found at specified Minimum LR cutoff level

6.2.7.2.6.2 Any candidates that are returned in the “LR RESULTS” section must be evaluated by a CODIS Team member.

6.2.7.2.6.3 CODIS Team members will follow the appropriate portions of the “Use of COSTaR for CODIS match evaluation” section of the Procedure for the Use of COSTaR for their evaluations.

6.2.7.2.6.4 The Forensic Biology Technical Leader will be consulted for resolution of any matches that are not resolved to be no matches based on the CODIS Team member’s evaluation of the data.

6.2.7.3 After technical review, all *interpretable* profiles entered into CODIS, shall be autosearched against the Employee/QC Database.

6.2.8 Procedure for Conducting One-Time/Keyboard Searches

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- 6.2.8.1** Keyboard searches are permitted, with written Casework CODIS Administrator approval, on unknown profiles that have been technically reviewed and meet eligibility requirements for SDIS and/or NDIS. If the keyboard search results in a CODIS hit, the results of the keyboard search shall not be released (written or orally) until the completion of the CODIS hit confirmation.
- 6.2.8.2** The following procedure shall be used when there is a request from an outside agency to search an NDIS eligible profile against the NC SDIS or there are exigent circumstances that require a search to be completed prior to the next scheduled autosearch:
- 6.2.8.2.1** Open Analyst Workbench and select the Searcher module.
 - 6.2.8.2.2** Enter the Lab ORI Number (NCBCI0094).
 - 6.2.8.2.3** Enter the Specimen ID Number and the alleles for each locus. If the profile was previously entered, it may be retrieved from the database.
 - 6.2.8.2.4** A keyboard search shall be conducted as follows: the Forensic, Forensic Partial, Forensic Mixture, Offender, Arrestee, Suspect, Missing Person, and Unidentified Human Remains Indices shall be searched at moderate stringency, with a minimum of eight (8) core loci, and allowing for zero (0) mismatches or six (6) Y STR loci and allowing for zero (0) mismatches.
 - 6.2.8.2.4.1** The stringency parameters of a keyboard search may be modified on a case-by-case basis. This modification shall be based solely on the completeness of the DNA profile.
 - 6.2.8.2.5** Click on the Search button.
 - 6.2.8.2.6** Once the search is completed, review the Match Details window.
 - 6.2.8.2.7** The Casework Forensic Scientist shall print the Match Detail Report(s) and shall be saved in the FA case record object repository.
 - 6.2.8.2.7.1** If a match occurs which requires a confirmation, the Casework Forensic Scientist shall provide the Casework CODIS Administrator a copy of the Match Detail Report.
 - 6.2.8.2.8** The Casework Forensic Scientist shall save these matches to Match Manager by selecting the Save Results to Match Manager icon.

6.2.9 Procedure for Conducting Routine Searches

6.2.9.1 All eligible forensic profiles shall be searched routinely by the Casework CODIS Administrator using Autosearcher.

6.2.9.1.1 The “State – High Stringency” Autosearch shall be set conducted as follows: the Forensic, Offender, Arrestee, and Suspect Indices shall be searched at high stringency, with a minimum of eight (8) core loci and allowing for one (1) mismatch or six (6) Y STR loci and allowing for one (1) mismatch.

6.2.9.1.2 The “State-Moderate Stringency” Autosearch shall be set conducted as follows: the Forensic, Forensic Partial, Forensic Mixture, Offender, Arrestee, Multi-allelic Offender, Suspect, Missing Person, and Unidentified Human Remains Indices shall be searched at moderate stringency, with a minimum of eight (8) core loci and allowing for zero (0) mismatches or six (6) Y STR loci and allowing for zero (0) mismatches.

6.2.9.1.3 The “Employee/QC” Autosearch shall be conducted as follows: the Employee/QC Index shall be searched at moderate stringency against the Arrestee, Forensic, Forensic Mixture, Forensic Partial, Missing Person, Offender, Multi-allelic Offender, Suspect, and Unidentified Human Remains Indices, with a minimum of eight (8) core loci and allowing for zero (0) mismatches or six (6) Y STR loci and allowing for zero (0) mismatches.

6.2.9.1.4 The “State-Forensic Targeted” Autosearch shall be conducted as follows: the Forensic Targeted Index shall be searched against the Forensic, Offender, Arrestee, Suspect, and Employee/QC Indices at high stringency, (partial loci and loci with >2 alleles will be searched at moderate stringency) with a minimum of eight (8) core loci and allowing for zero (0) mismatches or six (6) Y STR loci and allowing for zero (0) mismatches.

6.2.10 Procedure for Interstate, Interpol, and Manual NDIS Search Requests

6.2.10.1 Casework Forensic Scientists may ask the Casework CODIS Administrator to request that a profile be searched against another database. These requests may be made if the unknown profile in question may help identify the perpetrator of a serious, violent, or serial crime.

6.2.10.2 The unknown profile shall be technically and administratively reviewed. If the unknown profile is NDIS eligible, a minimum of one routine search with no matches returned must be conducted prior to requesting any of the following searches:

6.2.10.2.1 For Interstate Search Requests, the Casework Forensic Scientist shall fill out the “Laboratory to Laboratory DNA Search Request” form (CODIS Website). The Casework CODIS Administrator shall review and submit the request to the appropriate NDIS participating laboratory. This request and any responses shall be documented in FA.

6.2.10.2.2 For Interpol Search Requests, the Casework Forensic Scientist shall fill out the “Interpol Search Request Form” (CODIS Website). The Casework CODIS Administrator shall review and submit the request to the NC State Interpol Liaison. This request and any responses shall be documented in FA.

6.2.10.2.3 For Manual NDIS Search Requests, the Casework Forensic Scientist shall fill out the “NDIS Keyboard Search Request” form (CODIS Website). The Casework CODIS Administrator shall review and submit the request to the NDIS Custodian. This request and any responses shall be documented in FA.

6.2.11 Procedure for Match Manager and Hit Dispositioning

6.2.11.1 In order to view any matches, open Analyst Workbench and select the Match Manager module.

6.2.11.1.1 Select the Edit icon.

6.2.11.1.2 To sort by Match Date, select (=) and add the date of the search.

6.2.11.1.3 Once the parameters are chosen, select OK.

6.2.11.1.3.1 For single source samples, determine if there are any match candidates of greater than eight (8) core loci at high stringency or greater than six (6) Y STR loci.

6.2.11.1.3.2 Valid moderate stringency matches obtained for single source samples are possible due to allelic/locus dropout.

6.2.11.1.3.3 For mixture profiles, determine if there are any match candidates of greater than eight (8) core loci at high or moderate stringency or greater than six (6) Y STR loci.

6.2.11.1.3.4 If multiple offenders or arrestees cannot be excluded from a mixture profile, the CODIS Administrator can request that the offender/arrestee profiles be re-ran in an attempt to obtain additional information at the expanded loci and/or use COSTaR to assist with match evaluation (See Procedure for the Use of COSTaR). For NC offenders or arrestees, the confirmation shall be completed even if subject information assessment shows the individual to be incarcerated on the date of offense.

6.2.11.1.3.5 Low stringency matches must be evaluated for missing persons and Unidentified Human Remains.

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- 6.2.11.2** The Casework CODIS Administrator (or designee) shall view every match that occurs in Match Manager as a result of a state or national upload and shall disposition the matches according to the NDIS operational procedures.
- 6.2.11.2.1** A match between an unsolved case and a convicted offender shall be dispositioned as an “Offender Hit.”
 - 6.2.11.2.2** A match between an unsolved case and an arrestee shall be dispositioned as an “Arrestee Hit.”
 - 6.2.11.2.3** A match between a solved case and a convicted offender or arrestee, shall be dispositioned as a “Conviction Match.” A name verification shall be performed in order to confirm the match between the offender or arrestee and the solved case. If necessary, the Casework CODIS Administrator (or designee) shall contact the appropriate NDIS participating laboratory in order to verify this information. A confirmation of the arrestee or offender sample shall be performed if there is any discrepancy.
 - 6.2.11.2.4** A match between two (or more) solved cases shall be dispositioned as “Investigative Information” unless the positive association was made outside of CODIS.
 - 6.2.11.2.5** A match between two (or more) solved cases where a positive association was made outside of CODIS (i.e. a related case or the same known suspect) shall be dispositioned as a “Benchmark Match.”
 - 6.2.11.2.6** A casework match where one (or more) of the cases are unsolved shall be dispositioned as a “Forensic Hit” unless there has been an identified Offender or Arrestee Hit.
 - 6.2.11.2.7** A casework match where one (or more) of the cases was associated with a previously identified Offender or Arrestee Hit shall be dispositioned as “Investigative Information.”
 - 6.2.11.2.8** A match between two (or more) arrestee or offender samples that have been confirmed as duplicates shall be dispositioned as an “Offender Duplicate.”
 - 6.2.11.2.9** A hit between two specimens that have been determined not to match shall be dispositioned as a “No Match.” For matches where only one lab/ORI is involved (e.g., NCBCI0094), the reasoning for the “No Match” disposition will be recorded and verified in the “Notes” section of the CODIS Hit Inventory Sheet (i.e., a specific locus/loci, per STRmix, etc. may be notated). A second Casework CODIS Administrator (or designee) will verify this information. The verification shall be documented by adding the initials of the verifier and the date verified to the CODIS Hit Inventory.

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- 6.2.11.2.10** A match between an unsolved forensic sample and a known suspect, at the SDIS level, shall be dispositioned as "Suspect Hit."
 - 6.2.11.2.11** A match between a solved forensic sample and a known suspect shall be dispositioned as "Benchmark Match."
 - 6.2.11.2.12** When a known sample matches to multiple contributor profiles from a mixture, the contributor match that is the best fit shall be dispositioned as the appropriate hit and the contributor match(es) that do not fit will be dispositioned as "No Match(es)."
 - 6.2.11.2.13** A match generated as a result of a routine query between a Y-STR DNA haplotype of known origin (e.g., arrestee, convicted offender, solved forensic unknown, or suspect known) and the Y-STR DNA haplotype from a forensic profile in an unsolved case, where the STR DNA results of each profile would be considered a "No Match" shall be dispositioned as "Familial Hit".
 - 6.2.11.2.14** Additional match situations may occur that shall be dealt with on a case-by-case basis. These matches shall be dispositioned according to NDIS procedures.

6.3 Procedure for CODIS Hits

- 6.3.1** A good faith effort shall be made to perform the internal confirmation process, review the DNA data and notify the appropriate parties within 30 business days of the CODIS hit.

6.3.2 Procedure for Forensic Hits

- 6.3.2.1** In the instance of a Forensic hit, the Casework CODIS Administrator (or designee) shall obtain the information on the North Carolina State Crime Laboratory's cases involved in the hit. If the Forensic Hit is to an NDIS lab the Casework CODIS Administrator (or designee) shall exchange case information with the NDIS laboratory's CODIS Administrator by the use of NDIS' Casework Match Request/Response Forms.
 - 6.3.2.1.1** A CODIS hit record in SpecMan shall be created and the status shall be set to "Hit Confirmation Pending."
 - 6.3.2.1.2** Once the case information has been obtained for all specimens involved, CODIS hit record shall be updated to the status of "CODIS Hit Confirmed."

6.3.3 Procedure for Offender/Arrestee Hits

- 6.3.3.1** In the instance of a NC offender/arrestee hit to a NC State Crime Laboratory case, the Casework CODIS Administrator (or designee) shall request the confirmation of the offender/arrestee.
 - 6.3.3.1.1** A copy of Match Detail Report shall be provided to the assigned

DNA Database Forensic Scientist. The following information shall also be provided: agency name, type of crime, date of offense, and analyst of record.

6.3.3.1.2 SpecMan and FA shall be monitored for completion of the confirmation process; .

6.3.3.2 In the instance of an NDIS offender/arrestee hit to a NC State Crime Laboratory case, the Casework CODIS Administrator (or designee) shall make a written request to the NDIS laboratory for confirmation of the convicted offender or arrestee sample. A copy of the Match Detail Report and the confirmation request shall be included in the FA case record object repository.

6.3.3.2.1 A CODIS hit record shall be created in SpecMan. The status shall be set to “Hit Confirmation Pending” upon sending the written confirmation request to the NDIS laboratory.

6.3.3.2.2 Once a confirmation response is received from the NDIS laboratory, the status in SpecMan shall be updated to “CODIS Hit Confirmed.” A copy of the NDIS laboratory response shall be included in the FA case record object repository.

6.3.4 Procedure for Notification of the Investigating Agency – Forensic Hits

6.3.4.1 The Casework CODIS Administrator (or designee) shall generate a CODIS Hit Notification report, except in the instance of a forensic hit to a suspect standard or to a solved case. See Procedure for CODIS Reports.

6.3.4.1.1 The status in SpecMan shall be updated to “Pending Notification of Submitting Agency.”

6.3.4.2 The Casework Forensic Scientist shall generate a casework report as a result of the analysis of a suspect standard (if the forensic hit was to a suspect reference standard or solved case previously analyzed by the North Carolina State Crime Laboratory).

6.3.4.2.1 A copy of the Match Detail report shall be provided to the Casework Forensic Scientist.

6.3.4.2.2 The Casework Forensic Scientist shall update the Source ID of the specimen, with the exception of a Y STR match.

6.3.4.2.3 All information in the relevant Casework Forensic Scientist(s)’ case record object repositories pertaining to the CODIS hit shall be shared.

6.3.4.3 Once a CODIS Hit Notification report or casework report is released from FA, the CODIS hit record in SpecMan shall be changed to “Completed.”

6.3.5 Procedure for Notification of the Investigating Agency – Offender/Arrestee Hits

6.3.5.1 The Casework CODIS Administrator (or designee) shall generate a CODIS

Hit Notification report. See Procedure for CODIS Reports.

- 6.3.5.1.1** The CODIS hit record status in SpecMan shall be changed to “Pending Notification of Submitting Agency.”
- 6.3.5.1.2** Once a CODIS Hit Notification report is released from FA, the status in SpecMan shall be changed to “Pending Receipt of Standard.”
- 6.3.5.1.3** The Casework CODIS Administrator (or designee) shall monitor the “Pending Receipt of Standard” queue in SpecMan. The status shall change to “Standard Received” for those cases in which the standard has been submitted.
- 6.3.5.1.4** When the suspect standard has been compared to the forensic unknown specimen, the Casework Forensic Scientist shall update the Source ID of the specimen.
- 6.3.5.1.5** The Casework CODIS Administrator (or designee) shall monitor the “Standard Received” queue in SpecMan. The SpecMan status shall be changed to “Completed” upon analysis of a suspect standard.

6.3.6 Procedure for Notification of the Investigating Agency – Familial Hits

- 6.3.6.1** A CODIS Hit Notification report will be written per Sections 6.3.4 and 6.3.5 of this procedure.
- 6.3.6.2** Upon release of the CODIS Hit Notification report, the investigating agency will be contacted to discuss the results of the Familial Hit.

6.4 Procedure for CODIS Hit Statistics

- 6.4.1** For offender/arrestee hits, the Casework Laboratory will report the number of investigations aided and the Offender Laboratory will report the number of offender/arrestee hits.
- 6.4.2** For forensic hits where one case is solved, the Laboratory with the unsolved case will report the number of investigations aided and the Laboratory with the solved case will report the forensic hit.
- 6.4.3** For forensic hits where neither case is solved, each Laboratory will report the number of investigations aided and the Laboratory with the first entered forensic profile should report the forensic hit.

6.5 Procedure for Preparation of Affidavit

- 6.5.1** The Casework Forensic Scientist shall refer to the example affidavit titled “Application for Search Warrant (Continuation).”
- 6.5.2** The Casework Forensic Scientist shall complete the affidavit utilizing case information in FA and CODIS hit information in SpecMan.

- 6.5.3** The Casework Forensic Scientist shall have the affidavit reviewed for accuracy by the Casework CODIS Administrator (or designee).
- 6.5.4** The affidavit and review correspondence shall be placed in the Case Object repository.
- 6.5.5** The Casework Forensic Scientist may then provide a copy of the affidavit to the requesting officer.

7.0 Limitations – N/A

8.0 Safety – N/A

9.0 References

DNA Database Section Procedure for CODIS Hits

Forensic Biology Section Administrative Policy and Procedure

Forensic Biology Section Definition List

Forensic Biology Section Procedure for Analysis and Interpretation of STR DNA Profiles

Forensic Biology Section Procedure for Analysis and Interpretation of Y-STR Amplification

Forensic Biology Section Procedure for CODIS Reports

Forensic Biology Section Procedure for Use of ArmedXpert™ for Mixture Interpretation

NDIS Operational Procedures, CODIS Website

State Crime Laboratory Quality Manual

Procedure for the Use of COSTaR

10.0 Records – N/A

11.0 Attachments – N/A

Revision History		
Effective Date	Version Number	Reason
05/24/2024	4	Updated definitions – Forensic Targeted – State, Forensic Partial, and Partial-State; 6.2.1.3 – updated to 20 core loci; 6.2.1.4 – updated the number of alleles that can be submitted to SDIS/LDIS; 6.2.1.5 – updated to 20 core loci, 6.2.1.6 – updated to 8 Original core loci; 6.2.1.6.2 – updated specimen category; 6.2.3.2.1 – updated obligate definition; 6.2.1.9.1 – clarification of completeness requirements for suspect profiles; 6.2.9.1.4 – defines the search parameters for Forensic Targeted Searches; 6.2.1.12 and 6.2.1.13 – clarification for entry of YSTR profiles; 6.2.4.1 – changed STRmix to COSTaR; 6.2.4.1.3 – updated sample types used with COSTaR; Deleted 6.2.4.1.3.1 through 6.2.4.1.3.7 and Note – reference to CODIS entry using STRmix; 6.2.6.2 – removed that assigned to user would be reflected in specimen record due to CODIS 11.0; 6.2.7 – employee/QC search procedure modified to incorporate STRmix database searching; 6.2.8.1 – removed exception for employee/QC search; 6.2.8.2.4 – updated to 8 core autosomal and 6 YSTR loci; 6.2.8.2.5 – removed parameters for employee/QC keyboard search since no longer being done; 6.2.8.2.10 – removed reference to next steps; 6.2.9.1 – updated all search parameters to 8 core autosomal and 6 YSTR loci; 6.2.11.1.3.1/6.2.11.1.3.3 – changed eval criteria to 8 core autosomal and 6 YSTR loci; 6.2.11.1.3.4 – updated offender/arrestee confirmation requirements; 6.2.11.2.9 – updated no match documentation; 6.2.11.2.10 – updated disposition to Suspect Hit; 6.2.11.2.11 – updated disposition to Benchwork Match; 6.2.11.2.12 – added dispo for matches to multiple contributors; 6.2.11.2.13 – added dispo for Familial hits; 6.3.6 – added Procedure for Notification of the Investigating Agency – Familial Hits