

Procedure for DNA Database

1.0 Purpose – The purpose of this document is to outline the procedures for the operation of the DNA Database Unit.

2.0 Scope – The procedures in this document apply to the DNA Database Unit of the Forensic Biology Section at the State Crime Laboratory.

3.0 Definitions

- **AOC (Administrative Office of Courts)** – Automated files containing information with regard to District and Superior Court cases. Queries can be performed by defendant name, check digit number, county and docket number. Results returned indicate status of case: pending, disposed, and unserved. Additional information includes: offense, general statute, disposition date, plea and verdict. Sentence and probation information are listed, along with special conditions as directed by the presiding Judge. Each county Clerk of Court enters the criminal process papers once served and tracks the record throughout the entire judicial process.
- **Audit Trail** – A historical sequence recorded in SpecMan of status transitions pertaining to a specimen record, batch record, manifest record, expunction request record, or CODIS hit record. Contains the status changes, SpecMan user who changed the status, and date/time of status changes.
- **Batch** – A group of specimen records in SpecMan. Samples are stored or analyzed in batches.
- **Batch Record** – A record representing a group of samples in SpecMan which contains information including batch status, batch type and other characteristics, specimens contained within, audit trail, and notes.
- **Buccal/Cheek Swab Collector** – A device designed to collect cell samples from inside the cheek. The device contains filter paper, which is used to collect a cheek cell sample, a handle, and slider cover, which may be used to cover the filter paper and protect it from contamination.
- **CCH (NC Computerized Criminal History File)** – Criminal records of individuals who have been arrested and for whom the North Carolina State Bureau of Investigation has received a fingerprint card. These records are identified by a SID number ending with an “A.” These files contain the criminal history of an individual including arrest, court, and incarceration information for which an individual was arrested and fingerprinted. Search is performed by SID number or FBI number. Additional results returned are FBI rap sheet and out of state criminal information.
- **Check Digit Number** – An alphanumeric identifier assigned to each arrest. One of the primary functions of this number is to link criminal disposition data to the computerized criminal history file and specific arrest cycle contained within.
- **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 forensic DNA laboratories.
- **CODIS Hit Record** – A record representing a CODIS hit in SpecMan which contains information including the CODIS Hit status, specimen number of the database sample the hit is in reference to, the evidence agency, the CODIS match ID, case number in FA, crime type, audit trail, and notes.
- **Contract/Vendor Laboratory** – A commercial laboratory that has been reviewed and approved by the State Crime Laboratory to perform analysis on DNA Database samples based on a written contract.
- **Database Sample** – A convicted offender or arrestee DNA sample.
- **DNA Databank** – The State repository for physical DNA Database samples.
- **DNA Database** – The State repository for DNA profiles.
- **DOC (Department of Correction)** – Contains information on North Carolina active inmates, probationers, and parolees. Results returned include active and inactive status. Information includes most recent period of incarceration record, including sentence begin date and

release date. County of conviction, docket number, offense and felony or misdemeanor status is provided. Search is performed by offender name or various offender identification numbers including DOC number, SID number, docket number, driver's license number and jail transport number.

- **EFN Number (Electronic Fingerprint Number)** – Electronic fingerprinting number used by Criminal Justice/Law Enforcement Agencies within North Carolina during the submission of LiveScan fingerprints in relation to the arrest process.
- **Expunction Request Record** – A record representing an expunction request in SpecMan which contains information including expunction request status, AOC file number, subject name and address, specimen number of the database sample the hit is in reference to, expunction request type, requesting agency, audit trail, and notes.
- **Expungement** – Removal of a DNA profile from the DNA Database, destruction of a convicted offender or arrestee sample from the DNA Databank, and a deletion of the DNA profile in CODIS.
- **FA (Forensic Advantage)** – The laboratory information management system for casework, used for tracking cases, evidence, reviews and CODIS confirmations.
- **FBI Number (Federal Bureau of Investigation Number)** – Unique alphanumeric identification number assigned to each individual who has a record within the FBI's Integrated Automated Fingerprint Identification System (IAFIS). A matching FBI number is a means of identifying a positive match between two individuals because it is tied to the submission of fingerprints.
- **Linked Rejected Specimen Number** – The specimen number of a rejected database sample that appears on the specimen record of the resubmitted sample.
- **Manifest** – A group of batches in SpecMan that are sent to an outsourcing lab.
- **Manifest Record** – A record representing a manifest in SpecMan which contains information including manifest status, manifest type and other characteristics, batches contained within, corresponding QC batches, vendor agency, audit trail, and notes.
- **NDIS Specimen Manager** Module– The CODIS program used to gain access to samples that have been uploaded to CODIS.
- **OPUS/DOC Number** – A unique seven digit numeric identifier assigned by North Carolina Department of Correction. This number is given to active/inactive inmates, probationers, and parolees.
- **Plate Position** – A two to three alphanumeric that is assigned to any sample being analyzed in-house. This sample corresponds to the well number on a 96-well plate when the batch is run robotically.
- **QC (Quality Control) Sample** – A specimen record created in SpecMan that represents a quality control sample. The QC sample specimen number is present in the specimen record of any database sample that is selected for QC reanalysis.
- **Qualifying Event** – An arrest or conviction that makes a database sample qualified for inclusion in CODIS pursuant to Article 13 of Chapter 15A of the North Carolina General Statutes.
- **Sequence Number** – A number (usually between one and eighty) assigned to a database sample after it has been assigned a batch. This number becomes part of the storage envelope number and is used for location purposes.
- **SID Number (State Identification Number)** – An alphanumeric identifier assigned by the North Carolina State Bureau of Investigation's Criminal Information & Identification Section. Fingerprint submission is required in order to establish a North Carolina Computerized Criminal History record. A matching SID number is a way to identify a positive match between two individuals because it is tied to the submission of fingerprints.
- **Specimen Record** – A record representing a database sample in SpecMan which contains information including specimen status, personal identifiers (name, date of birth, gender, race), numerical identifiers, sample collection information, offense information, processing information, audit trail, and notes.
- **SpecMan** –The identification data management system for convicted offenders and arrestees, used for tracking and automating the processing of database samples up to the point that they are uploaded to CODIS.

- **Storage Envelope Number** – A number assigned to a sample after it has been batched. This number contains the batch number and a sequence number. Samples received during or after 2011 are stored in the DNA Databank by storage envelope number.
- **Vendor Batch Number** – An alphanumeric identifier that is assigned to a group of database samples by an outsourcing lab. Vendor batch numbers may not correspond with batch numbers of the NC State Crime Laboratory.

4.0 Equipment – N/A

5.0 Procedure

5.1 Goals/Objectives

- 5.1.1** Provide a repository for DNA samples from individuals pursuant to Article 13 of Chapter 15A of the North Carolina General Statutes.
- 5.1.2** Analyze samples in the Databank (repository) to develop DNA profiles for entry into the Combined DNA Index System (CODIS) operated by the FBI.
- 5.1.3** Perform confirmation analysis on CODIS hits.
- 5.1.4** Process expungement requests as received within the statutorily required period as cited in N.C.G.S 15A-266.3A.

5.2 Responsibilities

5.2.1 DNA Database Manager

- 5.2.1.1** Supervise Database employees.
- 5.2.1.2** 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.
- 5.2.1.3** Authorize removal of Database samples from databank.
- 5.2.1.4** Disseminate CODIS hits among DNA Database Forensic Scientists, request subject information assessments, and perform administrative reviews of CODIS hits.
- 5.2.1.5** Ensure the initiation of the processing of expungement requests upon receipt of the AOC-CR-640 verification form by creating the expunction request record in SpecMan for compliance within the statutorily required period.
- 5.2.1.6** Ensure the assignment of expungement requests to Information Processing Technicians and DNA Forensic Scientists, verify the removal of the DNA record from all applicable locations, witness the destruction of samples and collection cards which qualify for expungement, and complete the final verification step within SpecMan confirming completion of the expungement process.
- 5.2.1.7** Ensure the notification of the vendor laboratory in writing of samples approved

to be expunged and attach the written request as well as the vendor reply documenting compliance to the expunction request record for the specimen in SpecMan.

5.2.2 DNA Database Forensic Scientists

- 5.2.2.1 Respond to requests from criminal justice/governmental agencies as to whether a DNA sample from a particular person is on file.
- 5.2.2.2 Receive and process Database samples.
- 5.2.2.3 Perform analysis of Database samples.
- 5.2.2.4 Interpret data and develop DNA profiles from Database samples.
- 5.2.2.5 Complete CODIS confirmations and perform verification and technical reviews.
- 5.2.2.6 Enter profiles into CODIS.
- 5.2.2.7 Process approved expungement requests; remove the DNA profile of the sample from the DNA Database, destroy the sample retained within the Databank, and delete the DNA record from all applicable locations within the statutorily required time period.

5.2.3 Information Processing Technicians

- 5.2.3.1 Respond to requests from criminal justice/governmental agencies as to whether a DNA sample from a particular person is on file.
- 5.2.3.2 Receive and process Database samples.
- 5.2.3.3 Generate subject information assessment reports upon request from DNA Database Manager or designee.
- 5.2.3.4 Process assigned expunction requests to completion and generate approval/denial expunction letters for mailing within the statutorily required time period.

5.2.4 In-House Contract Employees

- 5.2.4.1 Respond to requests from criminal justice/governmental agencies as to whether a DNA sample from a particular person is on file.
- 5.2.4.2 Receive and process Database samples.
- 5.2.4.3 Qualified contract employees are previous full time employees fully trained in Database and proficiency tested. These employees are permitted to perform technical reviews of outsourced Database samples.

5.2.5 CODIS Administrator

- 5.2.5.1 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.

5.2.5.2 Obtain CODIS hits and notify DNA Database Manager of CODIS hits.

5.2.5.3 Expunge profiles of individuals who do not have a qualifying event.

5.2.5.4 Send letter to requesting NDIS/LDIS laboratory upon completion of a CODIS hit.

5.2.5.5 Verify the deletion of profiles entered into CODIS which qualify for expunction within the statutorily required time frame.

5.2.6 Laboratory Legal Counsel

5.2.6.1 Review the subject information assessment report and supporting documentation when there is a CODIS hit to a sample that may not have a qualifying offense.

5.2.6.2 Review the assigned expunction requests and provide legal review/recommendation for the approval or denial. This recommendation shall be documented in SpecMan.

5.3 Procedures for the Receipt and Processing of Database Samples

5.3.1 Sample Origin

5.3.1.1 Database samples originate from DOC and law enforcement agencies throughout the state. DNA samples received shall be in one of the following forms: a buccal collector or a purple-top tube of blood. Alternate DNA samples (in the form of a fingerstick kit) shall be allowed for submission on individuals from whom it is difficult to draw blood.

5.3.1.2 Database samples are not evidence. These samples are used as a reference library. The chain of custody in Forensic Advantage (FA) shall reflect that these samples are consumed in analysis as database samples.

5.3.2 Receipt of Database Samples

5.3.2.1 Database samples shall be collected by use of State Crime Laboratory standardized, approved kits.

5.3.2.2 Database samples may be received in the Laboratory either in person via hand delivery, through the U.S. mail, or through other delivery methods (i.e., courier service, inter-office mail).

5.3.3 Documentation

5.3.3.1 Corrections to collection cards shall be made with a single strike through of the record and shall be initialed and dated.

5.3.3.2 Any additional information added to the collection card shall also be initialed and dated.

5.3.3.3 Any typed notes added to a specimen record in SpecMan shall be initialed and dated. Comments are not required for attachments that are scans of documents from the agency.

5.3.3.4 Any telephone call made to the submitting agency to obtain information about a sample shall be documented in the note section of the specimen record. At a minimum, the following shall be included: the name of the individual and agency, the date of call, and a summary of the conversation. The note shall be initialed and dated by the individual making the call.

5.3.4 Electronic Records

5.3.4.1 Information regarding the processing of Database samples including accessioning, analysis, review, CODIS hit confirmations, and expunction requests shall be stored electronically in SpecMan. An audit trail for each sample shall be maintained in this system.

5.3.4.2 DNA profiles shall not be stored in SpecMan.

5.3.4.3 CODIS hit confirmations shall be entered and stored in FA. Analysis of Database samples not related to CODIS hits performed by the Database Unit shall not be entered or stored in FA.

5.3.5 See the Forensic Biology Section Procedures for DNA Database Stain Room for unit policies on handling, processing, and retention of Database samples.

5.4 Access to Data and Information

5.4.1 General Operating Procedures

5.4.1.1 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.

5.4.1.2 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 Database employee shall obtain the individual's name, agency name and a contact telephone number. The Database employee shall obtain the requested information and then call the requesting individual back with the information.

5.4.1.3 Analysis files shall not be removed from the Laboratory except with prior written approval from the DNA Database Manager (e.g., review of sample data from the vendor laboratory). Additionally, all files removed for review shall be signed out by the reviewing DNA Database Forensic Scientist using the designated spreadsheet on the shared drive.

5.5 Analysis of Database Samples to Develop DNA Profiles

5.5.1 Removal of Samples from Databank

- 5.5.1.1** The DNA Database Manager may authorize removal of database samples from the Databank under the following circumstances: routine testing of samples for inclusion in the Database, confirmation of CODIS hits, punching extra samples for QC testing or random reanalysis, and verification of duplicate samples. Only sufficient specimen for testing purposes shall be removed. Removal of samples for any purpose other than those designated above shall be done only with the written approval of the DNA Database Manager.
- 5.5.1.2** When removed from the Databank for analysis, the pouch containing the sample shall be opened, and sufficient sample for testing shall be removed. Aseptic technique shall be used to cut/punch one sample at a time.
- 5.5.1.3** Resealed pouches shall be returned to the DNA Databank.

5.5.2 Removal of Ineligible and Duplicate DNA Profiles from CODIS

- 5.5.2.1** If a database sample is determined to be ineligible for collection after the profile has been entered into CODIS, the following steps shall be taken to remove the profile from CODIS:
 - 5.5.2.1.1** The DNA profile shall be deleted by the CODIS Administrator/Assistant CODIS Administrator from CODIS using the NDIS Specimen Manager Module. The reason for the deletion of the profile shall be noted by the CODIS Administrator/Assistant CODIS Administrator and a comment made in the comments section of the SDIS Specimen Delete Report.
 - 5.5.2.1.2** The CODIS Administrator/Assistant CODIS Administrator shall update the status of the database sample in SpecMan from “Stored – Entered in CODIS” to “Stored-Removed from CODIS” and make a note in the notes portion of the specimen record in SpecMan regarding the deletion.
 - 5.5.2.1.3** A designated DNA Database Forensic Scientist shall either assign the sample to the appropriate batch type as described in the Analysis Batch Assignment Section in the Procedure for DNA Database Stain Room and change the status to “Stored-Rejected” or change the status to “Rejected-Pending Return” and process the sample as described in the Rejection Processing Section in the Procedure for DNA Database Stain Room.
- 5.5.2.2** If a routine search of CODIS indicates a potential duplicate database sample, the guidelines as outlined in 5.4.9.5 in the Forensic Biology Procedure for CODIS shall be followed.
 - 5.5.2.2.1** When notified by the CODIS Administrator/Assistant CODIS Administrator of a potential duplicate sample that is unable to be resolved, the Database Manager shall assign the two samples to an

Information Processing Technician (IPT) for review. The IPT may access law enforcement databases and/or resources to verify the identifiers/information located in each specimen record in SpecMan to determine if the samples are from the same individual.

- 5.5.2.2.2 If the samples are determined to be from different individuals, the CODIS Administrator/Assistant CODIS Administrator shall be notified and the specimen category in CODIS shall remain unchanged. The IPT shall update the notes of each specimen record in SpecMan with the appropriate documentation.

5.5.3 Database Samples Analyzed In-House

- 5.5.3.1 Database samples shall be processed in batches. Each Database sample shall be assigned a batch after its eligibility has been verified. This batch number shall be located on all documents generated as part of that batch process, along with the date the document was produced and the initials of the person generating the record. Any batch in the “Stored – Pending Analysis” status (“Pending QC Prep” status for internal QC batch types or “Open” for rerun batch types) shall be available for analysis.
- 5.5.3.2 Before analysis, the DNA Database Forensic Scientist shall complete the following steps:
 - 5.5.3.2.1 Change the batch status to “Extraction and Amplification.” SpecMan assigns plate positions. SpecMan does not allow a batch to be saved in “Extraction and Amplification” status if the eligibility of any Database sample within that batch has not been verified.
 - 5.5.3.2.2 Print the Batch 80-Cell report. If multiple batches are to be analyzed on the same robotic plate, ensure that the plate position is updated before printing the Batch 80-Cell report.
 - 5.5.3.2.3 Retrieve the Database samples from storage. If this is a QC batch type, the QC Batch report shall also be printed.
- 5.5.3.3 The Database Unit shall process Database samples using a robotic platform or manually.
 - 5.5.3.3.1 When processed using a robotic platform, the lab work shall be performed following standard section procedures found in the Forensic Biology Section Procedure for Qiagen BioRobot® Universal. Positive and negative controls shall be run in duplicate on each 96-well plate.
 - 5.5.3.3.2 When processed manually, punches shall be taken using a flame-sterilized ¼” hole-puncher and flame-sterilized forceps. Utensils shall be flame-sterilized by passing the utensils over the hottest part of the flame for two or more seconds to ensure every surface is exposed to the flame. The lab work for manual runs shall be

performed following standard Section procedures. Worksheets for extraction and amplification may be found on the Section shared drive.

Note: For manual runs, the Batch 80-Cell report shall be used only as a list of the samples to be analyzed. Manual runs do not utilize 96-well plates for extraction.

- 5.5.3.4 Once the lab work has been completed, the batch status shall be changed to “In Analysis.” Database samples run in-house shall be analyzed, reviewed, and uploaded per procedures in the Forensic Biology Section Procedure for Database Analysis and Technical Review of Database Samples.

5.5.4 Database Samples Sent to Outsourcing Vendor

- 5.5.4.1 Database samples shall be sent to the outsourcing vendor in manifests consisting of batches. Each database sample shall be assigned a batch after its eligibility has been verified. Only regular batches in the “Stored – Pending Analysis” status and externally processed QC batches in the “Pending QC Prep” status may be sent to an outsourcing vendor. See the “Analysis Batch Assignment” section of the Forensic Biology Section Procedures for Database Stain Room for regular batch definitions.

- 5.5.4.1.1 Each batch for outsourcing shall be added to an open manifest with the appropriate manifest reason (convicted or arrested), manifest type (blood or buccal), the appropriate vendor agency to which the samples are to be sent, and the appropriate QC processing method (internal or external). SpecMan does not allow a batch to be assigned to a manifest if the eligibility of any sample within that batch has not been verified.

- 5.5.4.1.2 No more than 1,600 samples shall be placed in any one manifest to ensure QC sampling is performed properly. If more than 1,600 samples are to be sent to an outsourcing vendor in the shipment, two different manifests shall be created and sent.

- 5.5.4.2 Once all batches have been added to the manifest, the manifest status shall be changed to “Stored – Pending Analysis.”

- 5.5.4.3 At least 5 % of all samples sent to the outsourcing vendor shall be selected for QC/reanalysis prior to shipment. The identity of the QC samples shall be known only to Database employees in that a unique identifier shall be assigned to each sample. The QC samples may be integrated into the samples provided to the outsourcing vendor or processed in-house.

Note: If the QC samples are processed externally, at least 5 % of the shipment shall additionally be randomly selected for analysis in-house. These specimens shall be created and processed in the same manner as an outsourcing vendor rerun (5.5.5.3). The profile from the reanalysis shall be compared to the original profile to ensure concordant results are obtained.

- 5.5.4.3.1** The manifest status shall be changed to “Pending QC Prep.” SpecMan creates the QC samples and batches automatically by taking a 5 % random sample from each batch of the manifest.
- 5.5.4.3.2** If the manifest type is blood and QC processing is external, the QC batch listed in the batches tab of the manifest record shall be prepared by the following steps:
 - 5.5.4.3.2.1** The Specimen Coin Envelope Labels report shall be printed. The labels shall be affixed to unused coin envelopes.
 - 5.5.4.3.2.2** The QC Batch Report shall be printed. Retrieve the Database samples that require QC preparation from storage.
 - 5.5.4.3.2.3** Using the QC Batch Report, identify the coin envelope with the corresponding QC number for the sample. Once the numbers have been verified, initial the label on the coin envelope. Obtain a cutting of the sample using procedures found in the “Cutting” section of Forensic Biology Section Procedures for DNA Database Stain Room.
 - 5.5.4.3.2.4** This process shall be witnessed by another, qualified DNA Database Forensic Scientist who has completed the DNA Database Training Program. A note shall be added to the QC batch record stating the initials of the cutting and witnessing DNA Database Forensic Scientist along with the date that the samples were cut.
- 5.5.4.3.3** If the manifest type is buccal and QC processing is external, the QC batch listed in the batches tab of the manifest record shall be prepared by the following steps:
 - 5.5.4.3.3.1** The Specimen Tube Labels report shall be printed. The labels shall be affixed to autoclaved 1.5 mL tubes.
 - 5.5.4.3.3.2** The QC Batch Report shall be printed. Retrieve the database samples that require QC preparation from storage.
 - 5.5.4.3.3.3** Using the QC Batch Report, identify the tube with the corresponding QC number for the sample. Once the numbers have been verified, initial the label on the tube. Obtain one to two ¼” punch of the sample using procedures in 5.5.3.3.2.
 - 5.5.4.3.3.4** This process shall be witnessed by another qualified DNA Database Forensic Scientist, or qualified contract

employee who has completed the DNA Database Training Program. A note shall be added to the QC batch record stating the initials of the punching and witnessing DNA Database Forensic Scientist along with the date that the samples were punched.

5.5.4.3.4 If the manifest type is blood or buccal and QC processing is internal, the QC batch listed in the batches tab of the manifest record shall be prepared before shipment by the following steps:

5.5.4.3.4.1 The batch status shall be changed to “Extraction and Amplification.”

5.5.4.3.4.2 The QC Batch Report shall be printed. Retrieve the database samples that require QC preparation from storage.

5.5.4.3.4.3 Print the Batch 80-Cell report. If multiple batches are to be analyzed on the same plate, ensure that the plate position is updated before printing the Batch 80-Cell report.

5.5.4.3.4.4 The QC samples shall be punched following procedures found in Forensic Biology Section Procedure for Qiagen BioRobot® Universal if the samples are to be processed robotically. The QC samples shall be punched using procedures in 5.5.3.3.2 if the samples are to be processed manually. The QC Batch Report shall be used to identify the correct well number for the corresponding QC number for the sample.

5.5.4.3.4.5 This process shall be witnessed and a note shall be added to the QC batch record stating the initials of the punching and witnessing DNA Database Forensic Scientist along with the date that the samples were punched.

5.5.4.3.4.6 The QC batch shall be processed in the same manner as other batches, as outlined in the section of this document titled Database Samples Analyzed In-House.

5.5.4.4 If the manifest type is blood, the non-QC batches of the manifest shall be prepared by the following steps:

5.5.4.4.1 The Specimen Coin Envelope Labels report shall be printed. The labels shall be affixed to unused coin envelopes.

5.5.4.4.2 Verify that the specimen number on the coin envelope, pouch, card, and bloodstain match. Once the numbers have been verified, initial the label on the coin envelope. Obtain a cutting of the sample using

procedures found in the “Cutting” section of Forensic Biology Section Procedures for DNA Database Stain Room.

Note: The samples may be prepared for shipment (i.e., cut) before the QC samples are calculated; however, the batch shall be added to the manifest before the Specimen Coin Envelope Labels report is printed.

- 5.5.4.5** If the manifest type is buccal, the non-QC batches of the manifest shall be prepared by the following steps:
 - 5.5.4.5.1** The white transport pouch containing the buccal swab shall be sealed with tape.
 - 5.5.4.5.2** The seal shall be initialed before the sample is sent to the vendor.
 - 5.5.4.5.3** Collection cards shall not be sent to the vendor.
- 5.5.4.6** Once the batches have been prepared for the outsourcing vendor, the Manifest Report shall be printed. The samples and report shall be shipped and the manifest status shall be changed to “Sent to External Lab.”
- 5.5.4.7** When the vendor has completed analysis of the manifest, they shall notify the Database Unit and provide the results. Buccal collectors and cuttings from blood samples sent to the vendor shall be returned.
- 5.5.4.8** Upon receipt, the vendor shipment number shall be added to the manifest record by a designated DNA Database Forensic Scientist.
- 5.5.4.9** Samples returned with the current manifest that were originally sent on a prior manifest shall be identified. For these samples, the status shall be changed to “Analysis Complete – Pending Review” by a designated DNA Database Forensic Scientist.
- 5.5.4.10** Samples returned with the current or prior manifest that were not reported shall be identified (e.g., no profile obtained, partial profile obtained, mixed profile). For these samples the following steps shall be completed:
 - 5.5.4.10.1** A note shall be added to the specimen record describing, in detail, the reason for rejection.
 - 5.5.4.10.2** The specimen status shall be changed to “Rejected – Reprocess.”
 - 5.5.4.10.3** The batch field shall be cleared, thereby removing them from the manifest.
 - 5.5.4.10.4** The designated DNA Database Forensic Scientist shall be notified that the sample requires reprocessing.
- 5.5.4.11** Samples not returned with the current manifest and held by the vendor for

further analysis shall be identified and reconciled in SpecMan by clearing the batch field (thereby removing the sample from the manifest). A note shall be added to the specimen record indicating the original manifest name, date, and initials of the DNA Database Forensic Scientist as well as any other appropriate information.

- 5.5.4.12** The vendor batch numbers may be imported using the data management function of SpecMan or entered manually. This process may take up to 30 minutes for a large number of samples and the associated samples shall stay assigned to the current user until the update has completed in order for it to be successful.
- 5.5.4.13** If the QCs associated with the manifest were processed externally, the QC samples shall be reviewed by a designated DNA Database Forensic Scientist using the Forensic Biology Section Procedure for Database Review of Contractor Data.
- 5.5.4.14** If the QCs associated with the manifest were processed internally, the designated DNA Database Forensic Scientist shall ensure that the associated QC batches are in “Reviewed – Ready to Use in QC” status.
- 5.5.4.15** The manifest status shall be changed to “Analysis Complete – Pending Review.”
- 5.5.4.16** After QC samples have been reviewed, DNA Database Forensic Scientists shall conduct review of the outsourcing vendor’s data per procedures in Database Review of Contractor Data.
- 5.5.4.17** Once review of each sample in the manifest is complete, a designated DNA Database Forensic Scientist shall review the Outsourcing Technical Review Sheets for completeness and ensure that all QC samples have been verified. The associated QC batch status shall be changed to “QC Complete.” The status of all samples that have passed review shall be changed to “Reviewed – Pending CODIS Upload” using the “Change Specimen Status to Reviewed Pending CODIS Upload” workflow. The workflow takes a moment to run and may be monitored by clicking the refresh button in the top right of the screen. Once the workflow has completed, the manifest status shall also be changed to “Reviewed – Pending CODIS Upload.”
- 5.5.4.18** Samples shall be uploaded using procedures in Database Review of Contractor Data.
- 5.5.4.19** If a second sample for the same donor has been inadvertently uploaded, it may be deleted from CODIS by the CODIS Administrator as described in CODIS Procedures. In these cases, the specimen status of the deleted sample may be changed to “Stored – Confirmed” in SpecMan. The date removed shall be added as well. A note shall be added to the specimen record in SpecMan noting the reason for deletion and the CODIS Administrator’s initials. In addition, the same note shall be made in the NDIS Specimen Manager program by the CODIS Administrator.

5.5.5 Rerun Samples

5.5.5.1 Database samples that fail analysis and are in a status of “Rejected – Reprocess” shall be handled by a designated DNA Database Forensic Scientist. These samples may be a result of in-house analysis, analysis by an outsourcing vendor, or QC samples.

5.5.5.2 In-House & QC Reruns

5.5.5.2.1 The DNA Database Forensic Scientist shall examine the reason for rejection located in the note section of each specimen record. It shall be determined if the sample shall be assigned to robotic batch or a manual batch, or if resubmission is required.

Note: If a confirmation sample is rejected, see **5.5.6.4.2**.

5.5.5.2.2 If resubmission is required, a rejection reason(s) for the sample shall be selected. A DNA Database Forensic Scientist designated to handle resubmissions shall be notified to contact the appropriate agency so that a new sample can be obtained. If there is an associated batch number or an associated vendor batch number with this specimen record, it shall be removed by the DNA Database Forensic Scientist. Proceed with the “Rejection Processing” section of the Forensic Biology Section Procedure for the DNA Database Stain Room.

5.5.5.2.3 If resubmission is not required, and is not a QC sample, it shall be assigned to an open batch with batch reason rerun, appropriate rerun method (robotic or manual), and appropriate batch type (blood or buccal).

5.5.5.2.4 If the sample can be assigned to another batch and is a QC sample, it shall be assigned to a “Pending QC Prep” status batch with batch reason QC, appropriate rerun method (robotic or manual), and appropriate batch type (blood or buccal).

5.5.5.2.4.1 A note shall be added to the batch record for all QC batches stating that it was created for the rerun of QC samples. This same note shall be added to the QC specimen record as well.

5.5.5.2.4.2 If a QC rerun batch is associated with a manifest, the QC batch number shall be added to the appropriate QC rerun batch fields in the associated manifest record.

5.5.5.2.5 Once the samples have been assigned a batch, the batches shall be processed as outlined in the section of this document titled “Database Samples Analyzed In-House” starting with **5.5.3.2**.

5.5.5.3 Outsourcing Vendor Reruns

- 5.5.5.3.1** The DNA Database Forensic Scientist shall examine the reason for rejection located in the note section of each specimen record. It shall be determined if the sample needs to be analyzed manually or if resubmission is required.
- 5.5.5.3.2** If the outsourcing vendor did not report the sample, the sample shall be processed in one of the two following ways:
 - 5.5.5.3.2.1** The sample shall be assigned to a rerun batch (manual rerun) as outlined in **5.5.5.2.3** to attempt to obtain a profile in-house. If a profile was not obtained after the in-house rerun, a resubmission may be required if there is not another acceptable sample for the donor on file. A rejection reason(s) for the sample shall be selected. If there is an associated batch number or an associated vendor batch number with this specimen record, it shall be removed. Proceed to the “Rejection Processing” section of the Forensic Biology Section Procedure for DNA Database Stain Room.
 - 5.5.5.3.2.2** If the outsourcing vendor had difficulty in obtaining a profile or obtained a mixed profile, the sample may be rejected without an in-house rerun. A resubmission may be required if there is not another acceptable sample for the donor on file. A rejection reason(s) for the sample shall be selected. If there is an associated batch number or an associated vendor batch number with this specimen record, it shall be removed. Proceed to the “Rejection Processing” section of the Forensic Biology Section Procedure for DNA Database Stain Room.
- 5.5.5.3.3** If the outsourcing vendor did report the sample and a DNA Database Forensic Scientist requested a rerun of the sample during the review process to confirm final allelic designations (e.g., triallele vs. artifact), the sample shall be analyzed manually in-house in one of the two following ways:
 - 5.5.5.3.3.1** Remove the batch number and vendor batch number from the specimen record. Add a note to the specimen record describing, in detail, the reason for rejection. Assign the sample to a re-run batch as outlined in **5.5.5.2.3**.
 - 5.5.5.3.3.2** The “Create Vendor Confirmation QC Specimen” workflow shall be run for the sample. The workflow can be monitored by clicking the Workflows tab on the left of the specimen screen. The new QC sample can be viewed by clicking the QC Specimens tab on the left of the specimen screen. Note: The associated batch number

and associated vendor batch number do not need to be removed if the sample shall be rerun prior to upload of the manifest.

5.5.5.3.3.2.1 The new QC sample shall be assigned to a batch in “Pending QC Prep” status with batch reason QC, manual rerun method, and appropriate batch type (blood or buccal). Note: The confirmation option shall be selected as “no.”

5.5.5.3.3.2.1.1 A note shall be added to the batch record for all QC batches created stating that it was created for the rerun of outsourced database samples. This same note shall be added to the QC specimen record as well.

5.5.5.3.3.2.1.2 The QC batch number shall be added to the appropriate QC rerun batch fields in the associated manifest record.

5.5.5.3.3.2.1.3 Once the samples have been assigned a batch, the batches shall be processed as outlined in the section of this document titled “Database Samples Analyzed In-House” starting with **5.5.3.2**.

5.5.5.3.3.2.1.4 Once the samples have been analyzed and the batch has reached “Reviewed – Ready to Use in QC” status, the results of the reanalysis shall be recorded in the note section of the specimen record (not the QC specimen record). The note shall include whether the in-house or

outsourcing vendor's results are being used. The specimen status of the original sample shall be changed to "Reviewed" and then follow the normal process for a Reviewed outsourcing specimen. The specimen status of the QC sample shall be changed to "QC Complete."

5.5.5.3.3.2.1.5 The sample may be uploaded to CODIS using the CMF file provided by the vendor and any necessary changes may be made to CODIS manually.

5.5.5.3.3.2.1.6 If the sample requires resubmission, follow procedures in **5.5.5.3.2.2**.

5.5.5.3.3.2.1.7 Once all samples have been processed, the QC batch status shall be changed to "QC Complete."

5.5.6 Confirmation Testing

5.5.6.1 Database samples that are in a status of "Stored – Pending Confirmation" shall be processed by a designated DNA Database Forensic Scientist (e.g., suspected duplicate samples).

5.5.6.2 Samples shall be assigned to confirmation batches using procedures in Confirmation Batches in Forensic Biology Section Procedures for DNA Database Stain Room.

5.5.6.3 Confirmation batches shall be processed manually or robotically as outlined in the section of this document titled "Database Samples Analyzed In-House" starting with **5.5.3.2**.

5.5.6.4 Once the batch is in "Review Complete" status, each profile from the reanalysis shall be compared to the corresponding original profile to ensure concordant results are obtained.

- 5.5.6.4.1** If a suspected duplicate has been found to have originated from a different person other than the original specimen, the specimen status for the suspected duplicate shall be changed to “Reject – Reprocess.” It shall be assigned to an open regular or rerun batch, and appropriate batch type (blood or buccal). The specimen status shall be changed to “Stored – Pending Analysis.” Once the sample has been assigned a batch, the batch shall be processed as outlined in the section of this document titled “Database Samples Analyzed In-House” starting with 5.5.3.2.
- 5.5.6.4.2** If any other two profiles as listed in 5.5.6.4 are not concordant or there are any other problems encountered related to the confirmation, the DNA Database Manager shall be notified. The DNA Database Manager shall determine the correct course of action.
- 5.5.6.5** After comparison, the information in each specimen record shall be examined to determine if the resubmission option shall be changed to “no,” and if so, it shall be changed. Guidance for choosing whether to request a resubmission shall be provided during training in the “Rejection Processing” section of the Forensic Biology Section Procedure for DNA Database Stain Room.
- 5.5.6.6** Once this is complete, the batch status shall be changed to “Stored – Confirmed.”

5.6 CODIS Hit Procedures

5.6.1 Initial Laboratory Procedures

- 5.6.1.1** For each CODIS hit, the CODIS Administrator shall open the specimen record and create a new CODIS hit and record the information into SpecMan. This information may include but is not limited to: specimen (if known), type of hit (offender or forensic), specimen reason (offender or arrestee), SBI search warrant (yes/no), level of hit (NDIS/SDIS), the hit date, the evidence agency, the date of crime, and indication of in-state vs. out-of-state, the crime type, and the Match ID. (Hits occurring to Charlotte-Mecklenburg Police Department (CMPD) are considered in-state in SpecMan.) The status shall be changed to “Pending Assignment” and assigned to a DNA Database Forensic Scientist.
- 5.6.1.2** The DNA Database Manager or designee shall request that a subject information assessment report be generated (see 5.6.3), which shall include at a minimum, verification of the individual’s qualifying conviction or arrest and incarceration status on the date of event in question. This information may be obtained by accessing databases including, but not limited to, the North Carolina Department of Corrections (DOC) website, the Administrative Office of the Courts (AOC), the Computerized Criminal History records (CCH), and any law enforcement database resource containing criminal record information. The report may include a complete criminal history on the individual.

5.6.1.2.1 During the generation of the subject information assessment report, if it is determined that the individual may not have a qualifying conviction or arrest, follow the procedures described in 5.6.4.

5.6.1.3 If a database sample has had a previous CODIS hit, the bench notes and raw data generated from the original confirmation may be used in lieu of a second confirmation. However, a new case record, confirmation keyboard search, lab report, subject information assessment report, latent fingerprint verification memo, and CODIS letter (out-of-state/CMPD hit) shall be created.

5.6.2 CODIS Hit Confirmations

5.6.2.1 Upon assignment in SpecMan, the DNA Database Forensic Scientist shall obtain the Individual Specimen Report and update the CODIS Hit status to Hit Confirmation Pending.

5.6.2.2 The DNA Database Manager or designee shall retrieve the database sample from the DNA Databank.

5.6.2.3 The DNA Database Forensic Scientist shall create a case record in FA. The DNA database card including the thumb prints from the convicted offender/arrestee shall be scanned into the case record object repository in FA for the hit. Once scanned in, the prints are accessible to the Latent Evidence Section, and the latent analyst assigned may perform analysis and generate the latent memo needed for verification of the prints.

5.6.2.3.1 An in-state hit occurs between the State Crime Laboratory forensic unknown and a convicted offender/arrestee in the NC database. The case number assigned to the confirmation in FA is the same number as the original case number assigned to the evidence.

5.6.2.3.2 An out-of-state or CMPD hit occurs between a forensic unknown from another state or CMPD and a convicted offender/arrestee in the NC database. A case number shall be generated in FA for the confirmation. (Hits occurring to (CMPD) are considered in-state.)

5.6.2.4 The DNA Database Forensic Scientist shall take a punch from the database sample and perform the confirmation analysis. Punches shall be taken in the same manner as in 5.5.3.3.2. The lab work for a CODIS hit confirmation shall be performed following standard section procedures. If multiple hits are extracted together, a CODIS hit batch number shall be used on the associated paperwork. It shall consist of the DNA Database Forensic Scientist's initials followed by an underscore, "CH" followed by an underscore, and the date the extraction was started (e.g., ABC_CH_1.1.2011). Each set of hits processed together and assigned a batch number as described above shall be further separated into individual Genemapper projects and the title shall consist of the DNA Database Forensic Scientist's initials followed by an underscore, the sample id number followed by an underscore and the date of extraction (e.g., ABC_2010-00001_1.1.2011).

Note: When performing lab work for a CODIS hit, re-extraction of a triallelic sample is not required. The CODIS confirmation itself serves as the second, confirmatory analysis of the original analysis.

- 5.6.2.5** The bench notes from the confirmation analysis shall be imported into the Case Record Repository in FA in a non-editable format. The allele calls shall be verified by another qualified DNA Database Forensic Scientist and a verification review completed in FA by the reviewer.
- 5.6.2.6** After the verification review is complete, the DNA Database Forensic Scientist shall perform the confirmation keyboard search of the profile in CODIS and generate the lab report. The confirmation keyboard search shall allow verification of concordant profiles from the original analysis of the profile and secondary reanalysis due to the hit confirmation. The confirmation keyboard search of CODIS shall be imported into the case record object repository in FA for the confirmation in a non-editable format.
 - 5.6.2.6.1** If the confirmation keyboard search of the convicted offender/arrestee profile does not match the original convicted offender/arrestee profile within CODIS, then the DNA Database Forensic Scientist shall notify both the DNA Database Manager and the CODIS Administrator who shall determine the correct course of action. The CODIS Hit record status shall be changed to "CODIS Hit Not a Match" in SpecMan as determined by the CODIS Administrator and DNA Database Manager.
- 5.6.2.7** Once the latent fingerprint verification and subject information assessment report (for out-of-state or CMPD hits) have been completed, the case record shall be scheduled for technical review. Using the FA mail system, the latent analyst shall notify the DNA Database Forensic Scientist of the completed latent verification. The technical review shall be completed in FA and shall include at a minimum:
 - 5.6.2.7.1** A review of all notes, all worksheets, the confirmation keyboard search, the lab report and any canceled lab reports, and all electronic data (used and unused).
 - 5.6.2.7.2** A review of the allele call table to ensure only the profile associated with the hit is present.
 - 5.6.2.7.3** A review of all DNA types to verify that they are supported by the raw or analyzed data (electropherograms or images). Raw data must be present in the case record object repository.
 - 5.6.2.7.4** A review of all controls, internal lane standards, and allelic ladders to verify that the scientifically expected results were obtained.
 - 5.6.2.7.5** A review for any reworked samples to confirm that the samples have appropriate controls.

- Page 21 of 27

notification report to the investigating agency. In conjunction with the release of the notification report, the CODIS Administrator will request via FA mail that the latent analyst and DNA Forensic Scientist release their completed case records in FA. This ensures that all pertinent information regarding the hit is released at approximately the same time.

5.6.2.9.3 For out-of-state hits/CMPD hits, after the administrative review by the DNA Database Manager or designee, the DNA Forensic Scientist shall release the lab report for the confirmation case record in FA. A letter is subsequently generated by the DNA Database Forensic Scientist to the requesting NDIS/LDIS laboratory. The CODIS Administrator shall perform a combined technical and administrative review on the letter for clerical accuracy and sign the letter. . The signed letter shall be scanned into the case record object repository in FA. The individual's identifying information including the match detail report, and the subject information assessment report (without the attachments) is then mailed to the requesting NDIS/LDIS laboratory with the letter.

5.6.2.10 All confirmation analysis and review documentation shall be retained within FA.

5.6.2.11 CODIS hit confirmation analysis shall additionally serve as random reanalysis of outsourced database samples.

5.6.2.12 If a stop work request is received on a CODIS hit confirmation or there is a determination during generation of a subject information assessment report that there is not a qualifying offense, the DNA Database Forensic Scientist shall terminate the CODIS Hit Record in FA and ensure that the Latent Analyst's verification record is also terminated. The status of the CODIS Hit shall be changed to "CODIS Hit Terminated – Confirmed" in SpecMan if confirmed or changed to "CODIS Hit Terminated – Not Confirmed" if it was terminated before analysis was complete in FA. If the CODIS hit confirmation is terminated due to no qualifying offense, the Subject Information Assessment report shall be completed and retained within the hit case record in FA.

5.6.3 Generation of Subject Information Assessment Reports

5.6.3.1 Only Information Processing Technicians or designated DNA Database employees who have completed the required Omnixx, CJ Leads and NCAWARE training shall generate a Subject Information Assessment Report.

5.6.3.2 The request to generate a Subject Information Assessment (SIA) report shall be sent via email to the Information Processing Technician (IPT) by the DNA Database Manager or designee. The email may contain, but is not limited to, the following information:

5.6.3.2.1 Offender or Arrestee Specimen ID number.

- Page 23 of 27

- Page 24 of 27

- 5.6.4.3.2** If the determination is made that the sample does not have a qualifying offense, the CODIS Administrator shall delete the profile from CODIS as described in Forensic Biology Section Procedures for CODIS and a note shall be added to the specimen record in SpecMan explaining the reason for deletion and the CODIS Administrator's initials. In addition, the same note shall be made in the NDIS Specimen ManagerModule.
- 5.6.4.3.3** The CODIS Administrator shall change the specimen status to "Stored – Removed from CODIS" in SpecMan. The DNA Database Manager shall be notified of the profile removal from CODIS.
- 5.6.4.3.4** The DNA Database Manager notifies the designated Database employee who changes the specimen status to "Rejected – Pending Return" or "Stored – Rejected." If returned, the sample is to be returned to the agency as outlined in "DNA Database Stain Room Procedures."

6.0 Limitations – N/A

7.0 Safety - N/A

8.0 References

State Crime Laboratory Safety Manual

Forensic Biology Section Administrative Policy and Procedure

Forensic Biology Section Administrative Procedure for Safety and Hazardous Waste Disposal

Forensic Biology Section DNA Database Training Program

Forensic Biology Section Procedure for Aseptic Technique and Contamination Control

Forensic Biology Section Procedure for DNA Database Stain Room

Forensic Biology Section Procedure for Stain Room Training

Forensic Biology Section Procedure for Organic DNA Extractions

Forensic Biology Section Procedure for DNA Database PCR Amplification with Identifiler™

Forensic Biology Section Procedure for DNA Database Use of the 3130XL Genetic Analyzer

Forensic Biology Section Procedure for GeneMapper ID Technical for DNA Database

Forensic Biology Section Procedure for DNA Database Autosomal DNA STR Interpretation

Forensic Biology Section Procedure for CODIS

Forensic Biology Section Procedure for Expungement of Arrestee and Convicted Offender Samples

Forensic Biology Section Procedure for Qiagen BioRobot® Universal

Forensic Biology Section Procedure for BSD600-Duet Semi-Automated Dried Sample Punch Instrument

Forensic Biology Section Procedure for Database Analysis and Technical Review of Database Samples

Forensic Biology Section Procedure for Performance Check of Qiagen BioRobot® Universal

Forensic Biology Section Procedure for Database Review of Contractor Data

Forensic Biology Section Procedure for DNA Reagent Preparation and Quality Control

Forensic Biology Section Procedure for Performance Check and Equipment Maintenance

9.0 Records – This document provides an overview of procedures written in additional detail in specific Forensic Biology documents. To see records required for particular procedures, reference the appropriate document listed in the references section.

- Subject Information Assessment Report Template
- Database Report Template for Blood Samples
- Database Report Template for Buccal Collector Samples
- CODIS Letter
- DNA Database Training Logs

10.0 Attachments – N/A

Revision History		
Effective Date	Version Number	Reason
09/17/2012	1	Original Document
10/26/2012	2	Added Training logs as a Record. Added 5.5.2 to address removal of ineligible and duplicate samples from CODIS. Specified what to do with the sample based on the status it is placed in (5.5.2.1.3). Added to 5.6.1.2 to define what resources are used. 5.6.2.5 and 5.6.2.6 edited to be a non-editable format. Edited 5.6.2.7.7 to ensure no objects are in an editable format. 5.6.2.8 - added check of supporting documents as requirement for administrative review. 5.6.2.13 changed to allow database to terminate their record and ensure the latent verification record is terminated. Added a 5.6.3 to add guidelines for generating an SIA report. 5.6.4.3.4 - changed to allow samples to be stored.
02/01/2013	3	5.3.1.2 – added wording about chain of custody in FA for database samples; 5.6.2.7.6 – added review requirement to check FA chain of custody for type of sample and disposition of sample.
03/22/2013	4	5.6.2.10.1 - removed email to case analyst requirement, CODIS Administration will notify casework analyst upon hit completion per procedure for CODIS.
07/31/2013	5	Removed “DNA Database Analyst” throughout; 5.5.6.1, 5.5.6.5 – removed example types; 5.6.1.1 – changed assignment from manager to scientist; 5.6.1.3 – removed; 5.6.2.1 – removed obtaining of report,

		previously done; 5.6.2.4 – clarification of wording; 5.6.2.5 – removed “worksheets”; 5.6.2.7 – added latent notify scientist; 5.6.2.7.7, 5.6.2.8.1, 5.6.2.8.2 - removed items from review; 5.6.2.9.1 – removed “release” of DB report; 5.6.2.9.2 – changed to allow use of FA notification; 5.6.2.9.2.1 – added to allow use of FA notification; 5.6.2.9.3 – added designee and changed who performs reviews
09/13/2013	6	5.5.2.2 – updated reference; 8.0 - updated procedure titles