AUDIT OF COMPLIANCE WITH STANDARDS GOVERNING COMBINED DNA INDEX SYSTEM ACTIVITIES AT THE AUSTIN POLICE DEPARTMENT DNA LABORATORY AUSTIN, TEXAS

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EXECUTIVE SUMMARY

The Department of Justice Office of the Inspector General (OIG), Audit Division, has completed an audit of compliance with standards governing Combined DNA Index System (CODIS) activities at the Austin Police Department's DNA Laboratory (Laboratory).

Background

The Federal Bureau of Investigation's (FBI) CODIS program combines forensic science and computer technology to provide an investigative tool to federal, state, and local crime laboratories in the United States, as well as those from select international law enforcement agencies. The CODIS program allows these crime laboratories to compare and match DNA profiles electronically to assist law enforcement in solving crimes and identifying missing or unidentified persons.[1] The FBI's CODIS Unit manages CODIS, as well as develops, supports, and provides the program to crime laboratories to foster the exchange and comparison of forensic DNA evidence.

The FBI implemented CODIS as a distributed database with hierarchical levels that enable federal, state, and local crime laboratories to compare DNA profiles electronically. The hierarchy consists of three distinct levels that flow upward from the local level to the state level and then, if allowable, the national level. National DNA Index System (NDIS), the highest level in the hierarchy, is managed by the FBI as the nation's DNA database containing DNA profiles uploaded by law enforcement agencies across the United States. NDIS enables the laboratories participating in the CODIS program to electronically compare DNA profiles on a national level. The State DNA Index System (SDIS) is used at the state level to serve as a state's DNA database containing DNA profiles from local laboratories and

[1] DNA, or deoxyribonucleic acid, is genetic material found in almost all living cells that contains encoded information necessary for building and maintaining life. Approximately 99.9-percent of human DNA is the same for all people. The differences found in the remaining 0.1-percent allow scientists to develop a unique set of DNA identification characteristics (a DNA profile) for an individual by analyzing a specimen containing DNA.

state offenders. The Local DNA Index System (LDIS) is used by local laboratories.

OIG Audit Objectives

Our audit generally covered the period from July 2008 through July 2010. The objectives of our audit were to determine if: (1) the Laboratory was in compliance with the NDIS participation requirements; (2) the Laboratory was in compliance with the Quality Assurance Standards (QAS) issued by the FBI; and (3) the Laboratory's forensic DNA profiles in CODIS databases were complete, accurate, and allowable for inclusion in NDIS.

Our review determined the following:

- The Laboratory was in compliance with the NDIS participation requirements we reviewed. Specifically, we found that CODIS access is properly safeguarded, Laboratory personnel requirements are being fulfilled, and policies and procedures related to NDIS are available and followed by Laboratory staff.

- We reviewed the Laboratory's policies and procedures related to sample security, sample processing, sample retention, and contamination. In addition, we examined the Laboratory's most recent internal and external audits. We found the Laboratory to be in compliance with the QAS areas we tested.

- We reviewed 100 of 667 forensic profiles the Laboratory had uploaded to NDIS as of July 1, 2010. Of the 100 forensic profiles sampled, we found that 97 of the sampled forensic profiles were complete, accurate, and allowable for inclusion in NDIS. We identified three forensic case samples that were not permissible for upload to NDIS because they were not forensic unknowns. Also, one additional unallowable profile, which was not part of our sample, was identified as a result of our review. The CODIS Administrator removed the unallowable profiles from NDIS before we completed fieldwork.

The results of our audit are discussed in detail in the Findings section of the report. Our audit objectives, scope, and methodology are detailed in Appendix I of the report and the audit criteria are detailed in Appendix II. We discussed the results of our audit with Laboratory officials and have included their comments in the report as applicable.

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INTRODUCTION

The Department of Justice Office of the Inspector General, Audit Division, has completed an audit of compliance with standards governing Combined DNA Index System (CODIS) activities at the Austin Police Department DNA Laboratory (Laboratory).

Background

The Federal Bureau of Investigation's (FBI) CODIS provides an investigative tool to federal, state, and local crime laboratories in the United States using forensic science and computer technology. The CODIS program allows these laboratories to compare and match DNA profiles electronically, thereby assisting law enforcement in solving crimes and identifying missing or unidentified persons.[2] The FBI's CODIS Unit manages CODIS and is responsible for its use in fostering the exchange and comparison of forensic DNA evidence.

OIG Audit Objectives

Our audit generally covered the period from July 2008 through July 2010. The objectives of our audit were to determine if: (1) the Austin Police Department DNA Laboratory was in compliance with the National DNA Index System (NDIS) participation requirements; (2) the Laboratory was in compliance with the Quality Assurance Standards (QAS) issued by the FBI; and (3) the Laboratory's forensic DNA profiles in CODIS databases were complete, accurate, and allowable for inclusion in NDIS. Appendix I contains a detailed description of our audit objectives, scope, and methodology, while the criteria used to conduct our audit are presented in Appendix II.

[2] DNA, or deoxyribonucleic acid, is genetic material found in almost all living cells that contains encoded information necessary for building and maintaining life. Approximately 99.9-percent of human DNA is the same for all people. The differences found in the remaining 0.1-percent allow scientists to develop a unique set of DNA identification characteristics (a DNA profile) for an individual by analyzing a specimen containing DNA.

Legal Foundation for CODIS

The FBI began the CODIS program as a pilot project in 1990. The DNA Identification Act of 1994 (Act) authorized the FBI to establish a national index of DNA profiles for law enforcement purposes. The Act, along with subsequent amendments, has been codified in a federal statute (Statute) providing the legal authority to establish and maintain NDIS.[3]

Allowable DNA Profiles

The Statute authorizes NDIS to contain the DNA identification records of persons convicted of crimes, persons who have been charged in an indictment or information with a crime, and other persons whose DNA samples are collected under applicable legal authorities. Samples voluntarily submitted solely for elimination purposes are not authorized for inclusion in NDIS. The Statute also authorizes NDIS to include analysis of DNA samples recovered from crime scenes or from unidentified human remains, as well as those voluntarily contributed from relatives of missing persons.

Allowable Disclosure of DNA Profiles

The Statute requires that NDIS only include DNA information that is based on analyses performed by or on behalf of a criminal justice agency — or the U.S. Department of Defense — in accordance with QAS issued by the FBI. The DNA information in the index is authorized to be disclosed only: (1) to criminal justice agencies for law enforcement identification purposes; (2) in judicial proceedings, if otherwise admissible pursuant to applicable statutes or rules; (3) for criminal defense purposes, to a defendant who shall have access to samples and analyses performed in connection with the case in which the defendant is charged; or (4) if personally identifiable information (PII) is removed for a population statistics database, for identification research and protocol development purposes, or for quality control purposes.

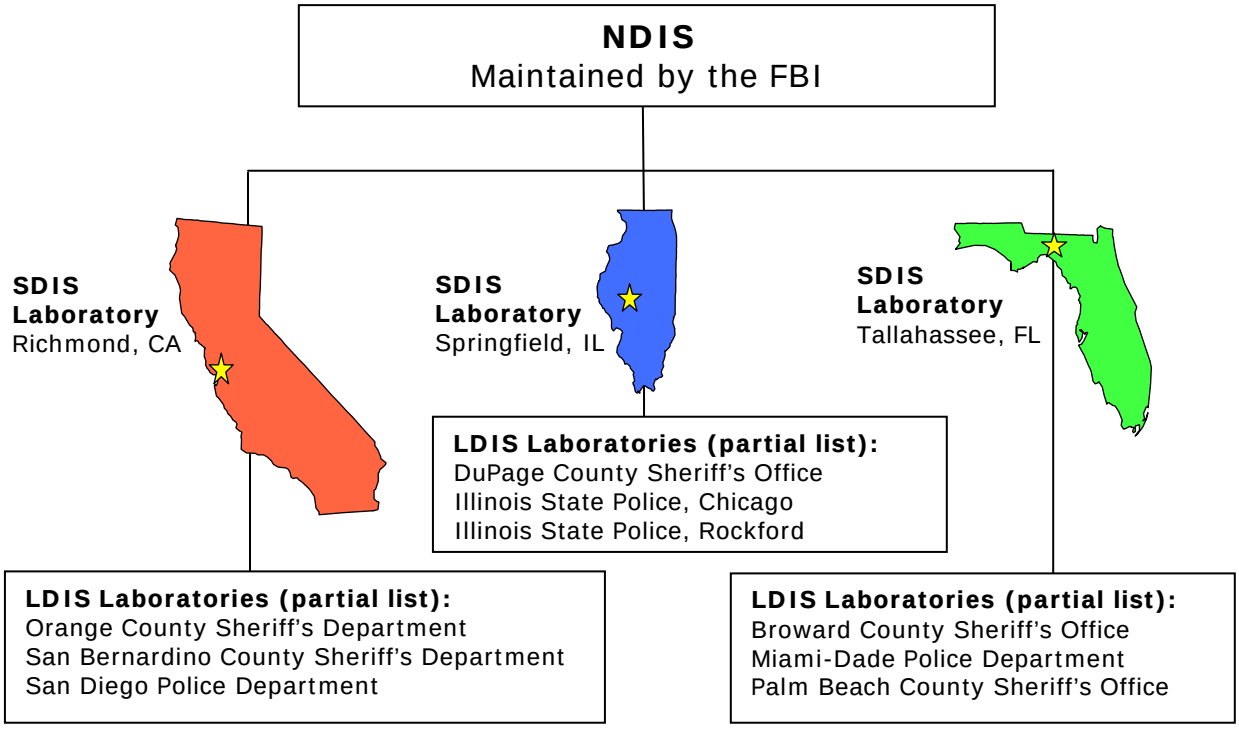
CODIS Structure

The FBI implemented CODIS as a distributed database with hierarchical levels that enables federal, state, and local crime laboratories to compare DNA profiles electronically. CODIS consists of a hierarchy of three distinct levels: (1) NDIS is managed by the FBI as the nation's DNA database containing DNA profiles uploaded by participating states, (2) the State DNA Index System (SDIS) is used at the state level to serve as a

[3] 42 U.S.C.A. § 14132 (2006).

state's DNA database containing DNA profiles from local laboratories within the state and state offenders, and (3) the Local DNA Index System (LDIS) is used by local laboratories. DNA profiles originate at the local level and then flow upward to the state and, if allowable, national level. For example, the local laboratory in the Palm Beach County, Florida, Sheriff's Office sends its profiles to the state laboratory in Tallahassee, which then uploads the profiles to NDIS. Each state participating in CODIS has one designated SDIS laboratory. The SDIS laboratory maintains its own database and is responsible for overseeing NDIS issues for all CODIS-participating laboratories within the state. The graphic below presents an example of how the system hierarchy works.

Example of System Hierarchy within CODIS



National DNA Index System

NDIS is the highest level in the CODIS hierarchy and enables the laboratories participating in the CODIS program to electronically compare DNA profiles on a national level. NDIS does not contain names or other PII about the profiles. Therefore, matches are resolved through a system of laboratory-to-laboratory contacts. Within NDIS are eight searchable indices discussed in the following paragraphs.

- Convicted Offender Index contains profiles generated from persons convicted of qualifying offenses.[4]

- Detainee Index consists of DNA records from non-United States (U.S.) persons detained under the authority of the U.S. and required by law to provide a DNA sample.

- Arrestee Index is comprised of profiles developed from persons who have been arrested, indicted, or charged in an information with a crime.

- Legal Index consists of profiles that are produced from DNA samples collected from persons under other applicable legal authorities.[5]

- Forensic Index profiles originate from, and are associated with, evidence found at crime scenes.

- Missing Person Index contains known DNA profiles of missing persons and deduced missing persons.

- Unidentified Human (Remains) Index holds profiles from unidentified living individuals and the remains of unidentified deceased individuals.[6]

- Relatives of Missing Person Index is comprised of DNA profiles generated from the biological relatives of individuals reported missing.

Although CODIS is comprised of multiple indices or databases, the two main functions of the system are to: (1) generate investigative leads that may help in solving crimes and (2) identify missing and unidentified persons.

The Forensic Index generates investigative leads in CODIS that may help solve crimes. Investigative leads may be generated through matches between the Forensic Index and other indices in the system, including the Convicted Offender, Arrestee, and Legal Indices. These matches may provide investigators with the identity of suspected perpetrators. CODIS

[4] The phrase "qualifying offenses" is used here to refer to local, state, or federal crimes that require a person to provide a DNA sample in accordance with applicable laws.

[5] An example of a Legal Index profile is one from a person found not guilty by reason of insanity, who is required by the relevant state law to provide a DNA sample.

[6] An example of an Unidentified Human (Remains) Index profile from a living person is a profile from a child or other individual, who cannot or refuses to identify themselves.

also links crime scenes through matches between Forensic Index profiles, potentially identifying serial offenders.

In addition to generating investigative leads, CODIS furthers the objectives of the FBI's National Missing Person DNA Database program through its ability to identify missing and unidentified individuals. Those persons may be identified through matches between indices in CODIS, such as through matches between the profiles in the Missing Persons Index and the Unidentified Human (Remains) Index. Identifications may also be generated through matches between the Missing Persons Index and the Relatives of Missing Persons Index. The profiles within the Missing Persons and Unidentified Human (Remains) Indices may also be vetted against the Forensic, Convicted Offender, Arrestee, and Legal Indices to provide investigators with leads in solving missing and unidentified persons cases.

State and Local DNA Index System

The FBI provides CODIS software free of charge to any state or local law enforcement laboratory performing DNA analysis. Laboratories are able to use the CODIS software to upload profiles to NDIS. However, before a laboratory is allowed to participate at the national level and upload DNA profiles to NDIS, a Memorandum of Understanding (MOU) must be signed between the FBI and the applicable state's SDIS laboratory. The MOU defines the responsibilities of each party, includes a sublicense for the use of CODIS software, and delineates the standards laboratories must meet in order to utilize NDIS. Although officials from LDIS laboratories do not sign an MOU,LDIS laboratories that upload DNA profiles to an SDIS laboratory are required to adhere to the MOU signed by the SDIS laboratory.

States are authorized to upload DNA profiles to NDIS based on local, state, and federal laws, as well as NDIS regulations. However, states or localities may maintain NDIS-restricted profiles in SDIS or LDIS. For instance, a local law may allow for the collection and maintenance of a victim profile at LDIS but NDIS regulations do not authorize the upload of that profile to the national level.

The utility of CODIS relies upon the completeness, accuracy, and quantity of profiles that laboratories upload to the system. Incomplete CODIS profiles are those for which the required number of core loci were not tested, or do not contain all of the DNA information that resulted from a DNA analysis and may not be searched at NDIS. The probability of a false match among DNA profiles is reduced as the completeness of a profile increases. Inaccurate profiles, which contain incorrect DNA information or an incorrect specimen number, may generate false positive leads, false negative

comparisons, or lead to the misidentification of a sample. CODIS becomes more useful as the quantity of DNA profiles in the system increases because the potential for additional leads rises. However, laws and regulations exclude certain types of profiles from being uploaded to CODIS to prevent violations to an individual's privacy and foster the public's confidence in CODIS. Therefore, it is the responsibility of the Laboratory to ensure that it is adhering to the NDIS participation requirements and the profiles uploaded to CODIS are complete, accurate, and allowable for inclusion in NDIS.

Laboratory Information

The Austin Police Department DNA Laboratory is a Local DNA Index System laboratory. The Laboratory serves the Austin Police Department, which covers a population of approximately 800,000. The Laboratory's initial access to CODIS and uploading of forensic profiles into SDIS began in September 2004. The Laboratory received accreditation from the American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB) in August 2005. The Laboratory completed an external audit for their reaccreditation in April 2010.

According to the Austin Police Department DNA Laboratory, a DNA analyst recently made allegations of a hostile work environment, quality assurance issues, and work performance issues. Because of the seriousness of these complaints, the Austin Police Department Human Resource Department reviewed the hostile work environment allegations, and the management of the Forensic Division reviewed the allegations concerning the quality assurance and work performance issues. The management of the Forensic Division found that there was no basis for the quality assurance and work performance issues. The Austin Police Department Human Resource Department concluded that there were no policy violations. According to the Austin Police Department DNA Laboratory officials, they invited the Texas Department of Public Safety Investigators into the Laboratory to investigate these accusations because of the seriousness of the concerns. According to the Texas Department of Public Safety, the Austin Police Department DNA Laboratory was cleared of all DNA related allegations. The OIG is not associated with this review by the Texas Department of Public Safety.

FINDINGS AND RECOMMENDATIONS

I. Compliance with NDIS Participation Requirements

The OIG examined the Austin Police Department DNA Laboratory's compliance with NDIS participation requirements. We found that the Laboratory was in compliance with the 30-day timeframe for submission of the external audit to the NDIS Custodian, the CODIS server and terminal are properly safeguarded, all Laboratory personnel had completed their annual training, and NDIS matches were confirmed in a timely manner. We found that the Laboratory was in compliance with the NDIS participation requirements we reviewed.

The NDIS participation requirements, which consist of the MOU and the NDIS Procedure Manual, establish the responsibilities and obligations of laboratories that participate in the CODIS program at the national level. The MOU describes the CODIS-related responsibilities of both the Laboratory and the FBI. The NDIS Procedure Manual is comprised of the NDIS operational procedures and provides detailed instructions for laboratories to follow when performing certain procedures pertinent to NDIS. The NDIS participation requirements we reviewed are described in more detail in Appendix II of this report.

Results of the OIG audit

We found that the Laboratory complied with the NDIS participation requirements we reviewed. Specifically, we found that CODIS access is properly safeguarded, Laboratory personnel requirements are being fulfilled, policies and procedures related to NDIS are available and followed by Laboratory staff, and NDIS matches are processed in a timely manner. These results are described in more detail below.

- NDIS requires that CODIS be physically and electronically safeguarded from unauthorized use and only accessible to limited approved personnel. Based on our tour of the Laboratory and discussion with the CODIS Administrator, we determined that the Laboratory's one CODIS terminal and server are located in a separate office in the secured Laboratory space and only CODIS users are allowed to use this workstation. Additionally, the CODIS Administrator and Technical Leader are the only Laboratory personnel with keys to this office. All users have their own CODIS user account, and their screens lock after 10 minutes of inactivity. The CODIS Administrator makes backups of

the CODIS server to tape three times a week, to the hard drive once a week, and electronically transfers backups to a secure off-site facility monthly.

- NDIS operational procedures require that CODIS users be aware of the NDIS procedures, know where to find them, and have access to them. We interviewed two of the Laboratory's CODIS users and verified they knew where to find and access the hard copy procedures in the Laboratory and the electronic version available online.

- On an annual basis, CODIS users are required to successfully complete DNA Records Acceptance training. We verified with the FBI that all current CODIS users had completed the web-based training within the last year.

- The FBI requires that the Laboratory submit the appropriate documentation regarding CODIS users. We verified that the Laboratory submitted all required information for each CODIS user.

- NDIS requires that participating Laboratories maintain personnel files for CODIS users, including proficiency testing, training, and other reports, for 10 years. According to Laboratory officials, this analyst information is maintained indefinitely. This information includes analysts' transcript, training, and proficiency-testing documentation.

- When matches are identified in the CODIS system, NDIS procedures describe a required match confirmation process. We judgmentally selected a sample of five NDIS matches and found the Laboratory to be timely in match confirmation requests, match confirmations, confirmation dispositions, and the notification of forensic matches to investigators.

- The NDIS operational procedure titled *Quality Assurance Standards External Audit Review Procedures* requires that external quality assurance review reports be forwarded to the NDIS custodian within 30 days of the Laboratory's receipt of the report. We reviewed the submission of the most recent external review and found that the report was submitted to the NDIS custodian in a timely manner.

Conclusion

We did not identify any deficiencies during our review of the Laboratory's compliance with applicable NDIS requirements. We made no recommendations concerning our review of NDIS participation requirements.

II. Compliance with the Quality Assurance Standards

We reviewed the Laboratory's policies and procedures related to DNA sample security, sample processing, sample retention, and contamination. In addition, we examined the Laboratory's most recent internal and external audits. For the items tested in our audit, we found the Laboratory to be in compliance with the QAS.

During our audit, we considered the Forensic Quality Assurance Standards (QAS) issued by the FBI.[7] These standards describe the quality assurance requirements that the Laboratory must follow to ensure the quality and integrity of the data it produces. The QAS we reviewed are described in more detail in Appendix II.

Results of the OIG audit

We found that the Laboratory complied with the Forensic QAS tested. Specifically, through observation and discussion with laboratory management, for those items tested we determined that the laboratory has adequate building and lab security, undergoes stringent annual audits, and has commensurable Quality Assurance Policies. These results are described in more detail below.

- The QAS requires laboratories to undergo an annual review, including an external review every 2 years.[8] QAS Standard 15.1 also states that the time limit between audits shall not exceed 18 months and be no less than 6 months. We determined that the Laboratory complied with this requirement by undergoing an annual audit and by alternating between an internal and an external audit each year.

- We obtained the most recent external and internal QAS review reports for the Laboratory. We determined that for both reviews, the FBI audit document was used, all instances of noncompliance were

[7] Forensic Quality Assurance Standards refers to the Quality Assurance Standards for Forensic DNA Testing Laboratories, effective October 1, 1998.

[8] The QAS require that laboratories undergo annual audits. Every other year, the QAS requires that the audit be performed by an external agency that performs DNA identification analysis and is independent of the laboratory being reviewed. These audits are not required by the QAS to be performed in accordance with the *Government Auditing Standards* (GAS) and are not performed by the Department of Justice Office of the Inspector General. Therefore, we will refer to the QAS audits as reviews (either an internal laboratory review or an external laboratory review, as applicable) to avoid confusion with our audits that are conducted in accordance with GAS.

reported, and all auditors had completed the FBI's reviewer training course. The laboratory's last internal and external review reports, did not contain any findings or recommendations.

- To help ensure that the external auditors who performed the Laboratory's most recent external review were independent when they performed the review, we requested and received a completed auditor independence statement from each auditor who participated in the laboratory's last external audit. Each external auditor attested that they were independent at the time of the external audit.

- We determined that access to the laboratory is controlled and secured in order to prevent access by unauthorized personnel. The Laboratory has secure entrances that require scanned ID cards and a receptionist for the public entrance to prevent access by unauthorized personnel. Areas within the Laboratory, including elevators, are also adequately controlled with scan cards. Overall security at the Laboratory appears to be effective and in compliance with the QAS.

- The integrity of physical evidence and forensic samples is maintained by the Laboratory in accordance with the QAS. Specifically, when evidence first enters the building, it is given a unique indentifying number and entered into both the department's evidence tracking system and the laboratory's information system. The chain of custody for evidence is tracked in both the evidence and laboratory systems. Evidence and forensic samples are properly stored from the point of receipt through processing.

- To ensure the accuracy of data loaded into the database, each case undergoes a laboratory technical review, an administrative review, and a secondary screening of the DNA sample prior to uploading the samples to LDIS. We did not note any deficiencies with regard to these processes.

- The QAS requires laboratories to perform evidence examination, DNA Extraction, and PCR setup at separate times or in a separate area from one another unless Robotics, also known as "Expert Systems," are used. If Robotics are used, QAS requires that they are internally validated by the laboratory prior to their use. For known and unknown samples, the Laboratory performs the PCR setup and amplification in separate rooms and times within the Laboratory. Both examination and extraction are done using Robotic systems, so the provision requiring a separate room and time is not required. We determined that the laboratory did internally validate its systems.

- The Laboratory retains forensic samples indefinitely and stores them in a secure manner. Prior to processing, the laboratory extracts the DNA from the evidence and sends the evidence to off-site storage. The DNA samples are stored in refrigerators and freezers in order to preserve their integrity.

- We determined that the Laboratory did not contract for the analysis of forensic samples during our audit scope period.

- In addition to the preceding steps, we also reviewed the following to determine if it is consistent with QAS standards: (1) the laboratory's procedures concerning contamination, (2) procedures for dealing with multiple instances of contamination, (3) policies for proficiency tests and corrective action, (4) the proficiency tests of all of the laboratory's analysts, (5) the documented reviews of quality assurance and proficiency testing programs in the laboratory, and (6) the amplification of negative controls. All were consistent with QAS standards.

Conclusion

Based on the review of internal and external audits, as well as Laboratory and sample security, our audit did not reveal deficiencies with regard to the Laboratory's compliance with the QAS we reviewed. We made no recommendations concerning our review of the Quality Assurance Standards.

III. Appropriateness of Forensic DNA Profiles in CODIS Databases

We reviewed 100 DNA profiles in the Laboratory's forensic CODIS database and determined that 97 profiles were complete, accurate, and allowable for inclusion in NDIS. We identified three forensic case samples that were not permissible for upload to NDIS because they were not forensic unknowns. Also, one additional unallowable profile, which was not part of our sample, was identified as a result of our review.

We reviewed a sample of the Laboratory's forensic DNA profiles to determine whether each profile was complete, accurate, and allowable for inclusion in NDIS.[9] To test the completeness and accuracy of each profile, we established standards that require a profile include all the loci for which the analyst obtained results and that the values at each locus match those identified during analysis.[10] Our standards are described in more detail in Appendix II of this report.

The NDIS operational procedures establish the DNA data acceptance standards by which laboratories must abide. These procedures prohibit a laboratory from uploading forensic profiles to NDIS that clearly match the DNA profile of the victim or another known person, unless the known person is a suspected perpetrator. The NDIS procedures we reviewed are described in more detail in Appendix II of this report.

Results of the OIG Audit

We selected a judgmental sample of 100 profiles out of the 667 forensic profiles the Laboratory had uploaded to NDIS as of July 1, 2010. We identified three case forensic profiles sampled that were not permissible for upload to NDIS because they were not forensic unknowns. Also, one additional unallowable profile, which was not part of our sample, was identified as a result of our review. The remaining profiles sampled were complete, accurate, and allowable for inclusion in NDIS. The specific exceptions are explained in more detail below.

[9] When a laboratory's universe of DNA profiles in NDIS exceeds 1,500, our sample is taken from SDIS rather than directly from NDIS. See Appendix I for further description of the sample selection.

[10] A "locus" is a specific location on a chromosome. The plural form of locus is loci.

OIG Sample Number CA-11

Sample number CA-11 was taken from a swab of blood taken from the suspect's hand. The evidence was taken during the investigation of a homicide. According to the FBI's flowchart, General Principle 8 states, "If the suspect's profile could reasonably have been expected to be on an item that is at the crime scene or is part of the crime scene independent of the crime, then it is probably not a Forensic Unknown." Because the sample was taken from the suspect and you would expect to find the suspect's DNA on his person, this sample was not a forensic unknown and, therefore, should not have been uploaded to NDIS. The CODIS Administrator deleted this forensic profile while she was reviewing the case files in anticipation of the OIG CODIS audit.

OIG Sample Numbers CA-14

Sample number CA-14 was taken from a cutting of a cigarette butt. The evidence was from a homicide in which the crime had taken place at the victim's apartment building. The sample was taken from outside of the foyer of the victim's apartment building. There was no indication that the evidence could be attributable to the crime scene. Additionally, another profile that was not selected in our sample was deleted from this same case file because it was a cutting from clothing found in the suspect's vehicle. This evidence was not a forensic unknown because the evidence was not taken from the scene of the crime, and it would be reasonable for the suspect's DNA to be present on items within his vehicle. The CODIS Administrator deleted these forensic profiles while she was reviewing the case files in anticipation of the OIG CODIS audit.

OIG Sample Number CA-29

The sample number CA-29 was taken from an aggravated robbery with a deadly weapon. The evidence that was uploaded to NDIS was a swab taken from a pistol handle. The pistol was located in the suspect's vehicle that was not located near the crime scene. The victim gave a description of the vehicle and the suspects in the vehicle, and the police officers detained the suspects at a different location. They removed the pistol from under the suspect's car seat. Because the evidence was taken from the suspect's possession, this is not a forensic unknown. When we brought this to the attention of the Technical Leader, she agreed and deleted this specimen from NDIS before we completed fieldwork.

Conclusion

We found four profiles that were unallowable for upload to NDIS. However, the CODIS Administrator or Technical Leader deleted the unallowable profiles from NDIS either before we initiated or completed our work at the Laboratory. Therefore, we make no recommendations concerning our review of forensic DNA profiles.

APPENDIX I

OBJECTIVES, SCOPE, AND METHODOLOGY

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Our audit generally covered the period from July 2008 through July 2010. The objectives of the audit were to determine if the: (1) Laboratory was in compliance with the NDIS participation requirements; (2) Laboratory was in compliance with the Quality Assurance Standards (QAS) issued by the FBI; and (3) Laboratory's forensic DNA profiles in CODIS databases were complete, accurate, and allowable for inclusion in NDIS. To accomplish the objectives of the audit, we:

- Examined internal and external Laboratory review reports and supporting documentation for corrective action taken, if any, to determine: (a) if the Laboratory complied with the QAS, (b) whether repeat findings were identified, and (c) whether recommendations were adequately resolved.[11]

  In accordance with the QAS, the internal and external laboratory review procedures are to address, at a minimum, a laboratory's quality assurance program, organization and management, personnel qualifications, facilities, evidence control, validation of methods and procedures, analytical procedures, calibration and maintenance of instruments and equipment, proficiency testing of analysts, corrective action for discrepancies and errors, review of case files, reports, safety, and previous audits. The QAS require that internal and external reviews be performed by personnel who have successfully completed the FBI's training course for conducting such reviews.

[11] The QAS require that laboratories undergo annual audits. Every other year, the QAS requires that the audit be performed by an external agency that performs DNA identification analysis and is independent of the laboratory being reviewed. These audits are not required by the QAS to be performed in accordance with the *Government Auditing Standards* (GAS) and are not performed by the Department of Justice Office of the Inspector General. Therefore, we will refer to the QAS audits as reviews (either an internal laboratory review or an external laboratory review, as applicable) to avoid confusion with our audits that are conducted in accordance with GAS.

As permitted by GAS 7.42 (2007 revision), we generally relied on the results of the Laboratory's external laboratory reviews to determine if the Laboratory complied with the QAS.[12] In order to rely on the work of non-auditors, GAS requires that we perform procedures to obtain sufficient evidence that the work can be relied upon. Therefore, we: (1) obtained evidence concerning the qualifications and independence of the individuals who conducted the review and (2) determined that the scope, quality, and timing of the audit work performed was adequate for reliance in the context of the current audit objectives by reviewing the evaluation procedure guide and resultant findings to understand the methods and significant assumptions used by the individuals conducting the reviews. Based on this work, we determined that we could rely on the results of the Laboratory's external laboratory review.

- Interviewed Laboratory officials to identify management controls, Laboratory operational policies and procedures, Laboratory certifications or accreditations, and analytical information related to DNA profiles.

- Toured the Laboratory to observe facility security measures as well as the procedures and controls related to the receipt, processing, analysis, and storage of forensic evidence.

- Reviewed the Laboratory's written policies and procedures related to conducting internal reviews, resolving review findings, expunging DNA profiles from NDIS, and resolving matches among DNA profiles in NDIS.

- Reviewed supporting documentation for 5 of 23 NDIS matches to determine whether they were resolved in a timely manner. The Laboratory provided the universe of NDIS matches as of July 6, 2010. The sample was judgmentally selected to include both case-to-case and case-to-offender matches. This non-statistical sample does not allow projection of the test results to all matches.

- Reviewed the case files for selected forensic DNA profiles to determine if the profiles were developed in accordance with the Forensic QAS and were complete, accurate, and allowable for inclusion in NDIS.

[12] We also considered the results of the Laboratory's internal laboratory review, but could not rely on it because it was not performed by personnel independent of the Laboratory. Further, as noted in Appendix II, we performed audit testing to verify Laboratory compliance with specific Quality Assurance Standards that have a substantial effect on the integrity of the DNA profiles uploaded to NDIS.

The NDIS Custodian, via the contractor used by the FBI to maintain NDIS and the CODIS software, provided a printout identifying the 667 Short Tandem Repeat forensic profiles the Laboratory had uploaded to NDIS as of July 1, 2010. We limited our review to a sample of 100 profiles. This sample size was determined judgmentally because preliminary audit work determined that risk was not unacceptably high.

- Using the judgmentally-determined sample size, we randomly selected a representative sample of labels associated with specific profiles in our universe to reduce the effect of any patterns in the list of profiles provided to us. However, since the sample size was judgmentally determined, the results obtained from testing this limited sample of profiles may not be projected to the universe of profiles from which the sample was selected.

The objectives of our audit concerned the Laboratory's compliance with required standards and the related internal controls. Accordingly, we did not attach a separate statement on compliance with laws and regulations or a statement on internal controls to this report. See Appendix II for detailed information on our audit criteria.

APPENDIX II

AUDIT CRITERIA

In conducting our audit, we considered the NDIS participation requirements and the Quality Assurance Standards (QAS). However, we did not test for compliance with elements that were not applicable to the Laboratory. In addition, we established standards to test the completeness and accuracy of DNA profiles as well as the timely notification of DNA profile matches to law enforcement.

NDIS Participation Requirements

The NDIS participation requirements, which consist of the Memorandum of Understanding (MOU) and the NDIS operational procedures, establish the responsibilities and obligations of laboratories that participate in NDIS. The MOU requires that NDIS participants comply with federal legislation and the QAS, as well as NDIS-specific requirements accompanying the MOU in the form of appendices. We focused our audit on specific sections of the following NDIS operational procedures.

- DNA Data Acceptance Standards
- DNA Data Accepted at NDIS
- Quality Assurance Standards (QAS) Audits
- NDIS DNA Autosearches
- Confirm an Interstate Candidate Match
- General Responsibilities
- Initiate and Maintain a Laboratory's Participation in NDIS
- Security Requirements
- CODIS Users
- CODIS Administrator Responsibilities
- Access to, and Disclosure of, DNA Records and Samples
- Upload of DNA Records
- Expunge a DNA Record

Quality Assurance Standards

The FBI issued two sets of Quality Assurance Standards (QAS): (1) QAS for Forensic DNA Testing Laboratories, effective July 1, 2009 (Forensic QAS) and (2) QAS for DNA Databasing Laboratories, effective July 1, 2009 (Offender QAS). The Forensic QAS and the Offender QAS describe the quality assurance requirements that the Laboratory should follow to ensure the quality and integrity of the data it produces.

For our audit, we generally relied on the reported results of the Laboratory's most recent annual external review to determine if the Laboratory was in compliance with the QAS. Additionally, we performed audit work to verify that the Laboratory was in compliance with the QAS listed below because they have a substantial effect on the integrity of the DNA profiles uploaded to NDIS.

- Facilities (Forensic QAS and Offender QAS 6.1): The laboratory shall have a facility that is designed to ensure the integrity of the analyses and the evidence.

- Evidence Control (Forensic QAS 7.1): The laboratory shall have and follow a documented evidence control system to ensure the integrity of physical evidence. Where possible, the laboratory shall retain or return a portion of the evidence sample or extract.

- Sample Control (Offender QAS 7.1): The laboratory shall have and follow a documented evidence control system to ensure the integrity of physical evidence.

- Analytical Procedures (Forensic QAS and Offender QAS 9.5): The laboratory shall monitor the analytical procedures using [appropriate] controls and standards.

- Review (Forensic QAS 12.1): The laboratory shall conduct administrative and technical reviews of all case files and reports to ensure conclusions and supporting data are reasonable and within the constraints of scientific knowledge.

  (Offender QAS Standard 12.1): The laboratory shall have and follow written procedures for reviewing DNA records and DNA database information, including the resolution of database matches.

- [Reviews] (Forensic QAS and Offender QAS 15.1 and 15.2): The laboratory shall be audited annually in accordance with [the QAS]. The

annual audits shall occur every calendar year and shall be at least 6 months and no more than 18 months apart.

At least once every 2 years, an external audit shall be conducted by an audit team comprised of qualified auditors from a second agency(ies) and having at least one team member who is or has been previously qualified in the laboratory's current DNA technologies and platform.

- Outsourcing (Forensic QAS and Offender QAS Standard 17.1): A vendor laboratory performing forensic and database DNA analysis shall comply with these Standards and the accreditation requirements of federal law.

  Forensic QAS 17.4: An NDIS participating laboratory shall have and follow a procedure to verify the integrity of the DNA data received through the performance of the technical review of DNA data from a vendor laboratory.

  Offender QAS Standard 17.4: An NDIS participating laboratory shall have, follow and document appropriate quality assurance procedures to verify the integrity of the data received from the vendor laboratory including, but not limited to, the following: (1) Random reanalysis of database, known or casework reference samples; (2) Inclusion of QC samples; (3) Performance of an on-site visit by an NDIS participating laboratory or multi-laboratory system outsourcing DNA sample(s) to a vendor laboratory or accepting ownership of DNA data from a vendor laboratory.

Office of the Inspector General Standards

We established standards to test the completeness and accuracy of DNA profiles as well as the timely notification of law enforcement when DNA profile matches occur in NDIS. Our standards are listed below.

- Completeness of DNA Profiles: A profile must include each value returned at each locus for which the analyst obtained results. Our rationale for this standard is that the probability of a false match among DNA profiles is reduced as the number of loci included in a profile increases. A false match would require the unnecessary use of laboratory resources to refute the match.

- Accuracy of DNA Profiles: The values at each locus of a profile must match those identified during analysis. Our rationale for this standard is that inaccurate profiles may: (1) preclude DNA profiles from being

matched and, therefore, the potential to link convicted offenders to a crime or to link previously unrelated crimes to each other may be lost or (2) result in a false match that would require the unnecessary use of laboratory resources to refute the match.

- Timely Notification of Law Enforcement When DNA Profile Matches Occur in NDIS: Laboratories should notify law enforcement personnel of NDIS matches within 2 weeks of the match confirmation date, unless there are extenuating circumstances. Our rationale for this standard is that untimely notification of law enforcement personnel may result in the suspected perpetrator committing additional, and possibly more egregious, crimes if the individual is not deceased or already incarcerated for the commission of other crimes.

U.S. Department of Justice

Federal Bureau of Investigation

Washington, D. C. 20535-0001

November 2, 2010

Mr. David M. Sheeren
Regional Audit Manager
Denver Regional Audit Office
Office of the Inspector General
1120 Lincoln, Suite 1500
Denver, CO 80203

Dear Mr. Sheeren:

Your memorandum to Director Mueller forwarding the draft report of the audit conducted at the Austin Police Department DNA Laboratory, Austin, Texas (Laboratory) has been referred to me for response.

Your draft report contained no recommendations relating to the Laboratory's compliance with the FBI's Memorandum of Understanding and *Quality Assurance Standards for DNA Testing Laboratories.* The CODIS Unit reviewed the draft report and since it appears that the Laboratory is in compliance with NDIS participation requirements, the CODIS Unit has no significant comments to provide about the draft report.

Thank you for sharing the draft audit report with us. If you have any questions, please feel free to contact Jennifer C. Luttman, Chief of the CODIS Unit, at (703) 632-8315.

Sincerely,

Alice R. Isenberg

Alice R. Isenberg, Ph.D
Section Chief
Biometrics Analysis Section
FBI Laboratory

The Austin Police Department DNA Laboratory has the following comments:

"Our audit generally covered the period from July 2008 through July 2010". (page ii and page 1

Comment: CODIS profiles uploaded from September 2004 to July 2010 were reviewed. Guidelines for uploadable profiles have been changed and clarified in the past several years. The 2 profiles mentioned as being removed in preparation for the audit were uploaded prior to the issuance of the flowchart. The additional profile that was removed that was not part of the audit sampling was also uploaded prior to the issuance of the flowchart.

"OIG Sample Number CA-11" (page 14)

According to the FBI's flowchart, General Principle 8 states…"

Comment: This profile was uploaded on 07/01/05 and the flowchart was not issued until 09/20/06.

"OIG Sample Number CA-14" (page 14)

Comment: The profiles mentioned were uploaded on 08/18/06. Once again this was before the flowchart issue date with clarification of what constitutes an uploaded profile.

"OIG Sample Number CA-29" (page 14)

Comment: Although we did remove this profile from CODIS (profile was from a suspect's car), it had been uploaded due to facts within the case. There were multiple suspects in the car and the weapon was located beneath the seat. The owner (one of the suspect's) of the car denied it was his and stated he had never seen it before.

Page 17-second bullet

Comment: We do not process any convicted offender samples in our laboratory.

Thank you,

Cassie C. Carradine, M.S.
DNA Supervisor/DNA Technical Leader
Austin Police Department DNA Laboratory

APPENDIX V

OFFICE OF THE INSPECTOR GENERAL COMMENTS ON THE AUSTIN POLICE DEPARTMENT'S RESPONSE TO THE DRAFT AUDIT REPORT

Based on the information provided by the Austin Police Department, we made appropriate adjustments to our draft report. Additionally, we noted that in its response to our draft report, the Austin Police Department DNA Laboratory commented that although three unallowable profiles were deleted, the actual flowchart cited in our report was not available at the time the profiles were uploaded. We agree with this assessment and regard these uploads as isolated events without need for any audit recommendation.