COMPLIANCE WITH STANDARDS GOVERNING COMBINED DNA INDEX SYSTEM ACTIVITIES AT THE SOUTHWESTERN INSTITUTE OF FORENSIC SCIENCES DALLAS COUNTY, 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 Southwestern Institute of Forensic Sciences (SWIFS) Laboratory (Laboratory). The Federal Bureau of Investigation's (FBI) CODIS program blends 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 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 state offenders. The Local DNA Index System (LDIS) is used by local laboratories.

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[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.

The objectives of our 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. The results of our review are below.

- The results of our review indicated that the Laboratory did not strictly adhere to all of the NDIS participation requirements we reviewed. The NDIS participation requirement compliance issues we found resulted from the Laboratory not: (1) storing the CODIS server backup media in a locked container at an off-site location on a monthly basis, (2) properly authorizing through the FBI an analyst that used CODIS for 1 year, (3) forwarding its most recent external audit report to the FBI within the required time frame, and (4) making best efforts to disposition in a timely manner 8 of the 17 CODIS matches we selected for review. In addition, the Laboratory did not maintain adequate documentation to determine timely notification of investigators for three matches and could not locate the case file for the profile involved in one match we attempted to review.[2] As a result of our audit, the Laboratory stated that it would begin making monthly backup tapes of the CODIS server and storing them in a locked container at a secure facility off-site, and the unauthorized CODIS user is no longer employed at the Laboratory. The Laboratory was in compliance with the remaining NDIS participation requirements we reviewed.

- Our audit results indicate that the Laboratory did not adhere to all of the Quality Assurance Standards (QAS) we reviewed. Four profiles we requested to review during our audit were missing documentation of DNA analysis. Specifically, the Laboratory could not locate case files for three profiles we requested to review, and one profile we reviewed was missing evidence of DNA analysis in the case file.[3] Forensic QAS 11 requires that laboratories maintain documentation generated by examiners related to case analyses. As a result, for these profiles it was not possible to verify adherence to Quality Assurance Standards such as technical review, control samples, and quantitation. In

[2] While timely notification of investigators is not an NDIS participation requirement, the OIG uses a standard of 2 weeks. The profile with a missing case file is discussed further in the Quality Assurance Standards section of our audit report.

[3] Three of these profiles were in our sample of forensic profiles as part of our testing for the suitability of profiles at NDIS and one was involved in a match we selected for review as part of our NDIS Participation Requirement testing.

addition, for those profiles missing case files it was not possible to assess compliance with NDIS suitability requirements or NDIS Participation Requirements for timely match resolutions. We verified that the Laboratory removed three of these four incompliant profiles.

- In our sample of 103 profiles, 2 profiles were inaccurate and 18 profiles were deleted from NDIS because they were unallowable, incomplete, or missing, and because of insufficient record retention, 15 of the Laboratory's files did not have sufficient evidence to determine if the profiles were obtained from a crime scene. The Laboratory deleted these 35 profiles from NDIS. The remaining 68 profiles we reviewed were complete, accurate, and allowable for inclusion in NDIS. However, 58 of the 103 profiles in our sample are not searchable at NDIS because they contain 9 or less core loci rather than the minimum of 10 loci required to be searchable at NDIS.[4] Prior to January 2009, the Laboratory only attempted the analysis of 13 loci on forensic samples that did not have a standard for comparison, but in January 2009, the Laboratory began attempting the analysis of 13 core loci. However, 11 (30 percent) of the 37 samples analyzed between January 1, 2009, and May 13, 2009, contained less than 13 loci. The CODIS Administrator explained that it could be a matter of timing if the profile was run prior to January 1, 2009, or 13 loci were not run either because a suspect profile had already been developed for comparison or some of the sample was preserved for later use.

We made 10 recommendations to address the Laboratory's compliance with standards governing CODIS activities, which are discussed in detail in the Findings and Recommendations 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. In addition, we requested a written response to a draft of our audit report from the FBI and the Laboratory. The Laboratory responded that it agreed with all ten of our recommendations. In addition, the Laboratory took adequate corrective actions to close eight recommendations. The FBI responded that it agreed with nine of our recommendations. The Laboratory response can be found in Appendix IV, while the FBI's response can be found in Appendix V. Our analysis of those responses, as well as the actions necessary to close the recommendations can be found in Appendix VI of this report.

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