

5. At the time that testing was done, nuclear DNA testing was not able to be performed on hair shafts, and there were insufficient hair roots in the samples to do nuclear DNA testing.
6. Based on the absence of hair roots, mitochondrial DNA testing was performed.
7. Mitochondrial DNA testing can exclude someone as a source of the DNA.
8. In this case, the mitochondrial DNA testing excluded George Luna as being the source of the hairs found in the decedent(s)'s hand(s).
9. Mitochondrial DNA testing can also include a class of people as being potential contributors of the DNA. This class includes people who share a maternal relationship with the source of the DNA.
10. In this case, the hairs recovered by the police could have come from Helen Thomas (mother), Lynn Luna (daughter), or Doug Thomas (son).
11. Nuclear DNA testing can provide a near certain result matching the DNA sample to a specific person. This is because nuclear DNA is inherited from both parents, instead of just through the mother. And, the nuclear DNA genome contains approximately 3.3 billion DNA base pairs in contrast to the 16,569 DNA base pairs found in the mitochondrial genome.

12. Recent advancements in DNA testing have enabled experts to conduct short tandem repeat (STR) extraction from some hair shafts and conduct nuclear DNA testing on these samples.
13. It is not certain that the hair samples obtained in this case will be sufficient for nuclear DNA testing using new methods and technology. However, there is no way of knowing until such time as experts in the field such as those at Bode Technology attempt it.
14. If nuclear DNA testing is done in this case and a profile is obtained, this information would substantially increase the information available to the Court in making its decision as to whether George Luna's conviction should be vacated and a new trial ordered.
15. Presently, the information available to the Court is limited. It specifically excludes George Luna as the source of the hairs, but does not specifically link those hairs to Doug Thomas, the alleged third party perpetrator.
16. If testing reveals that the hairs recovered were from Doug Thomas, George Luna's actual innocence claim will be substantially corroborated by scientific evidence.
17. The anticipated cost of conducting the new DNA testing, consulting with defense counsel, and testifying at trial, is \$5,000.00.

18. This amount is reasonable in light of the expertise of the firm performing the testing and the amount of work necessary to complete the process. Up until this point, Pennington County has not incurred DNA testing costs, as those were paid by an outside source. That outside source is no longer in existence, and there is no other source of funding available to George Luna. He is indigent and has been incarcerated for approximately 37 years.

Dated December 30, 2020.

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CERTIFICATE OF SERVICE

The undersigned certifies that he e-filed the foregoing document for e-service by the Clerk of Courts upon:

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Dated December 30, 2020.

/s/ John R. Murphy

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