

UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NORTH CAROLINA
WESTERN DIVISION
No. 75-CR-26-3

UNITED STATES OF AMERICA)	
)	
)	
v.)	
)	
JEFFREY R. MacDONALD)	
Movant)	
)	
)	

AFFIDAVIT OF GRANT D. GRAHAM, SR.

Grant D. Graham, Sr., being duly sworn does depose and say that:

1. I am currently employed by the Mississippi Bureau of Investigation – Crime Scene Unit as a Senior Crime Scene Analyst, Forensic Scientist 5, Region Team Leader with responsibility for providing on-call, full service crime scene examinations and reconstruction, and training expertise to federal, state, and local law enforcement agencies throughout the state of Mississippi.

2. Prior to my employment with the Mississippi Bureau of Investigation, I served in the United States Air Force for a period of 20 years and 11 months and retired on August 31, 2000 with the rank of Master Sergeant.

3. While in the Air Force I was trained as a Security Police Law Enforcement Specialist.
4. In 1997 I received a Master of Forensic Sciences Degree from National University.
5. In 1998 I attended a two week course given by the FBI Laboratory entitled Introduction to Hairs and Fibers, which involved training in the use of the microscope for the examination of hair and fiber trace evidence as well as being able to distinguish between hairs of human or animal origin. The course also included instruction on the basic structure and nomenclature of human hairs, and use of the microscope scale to measure items being viewed. I also received instruction in the use of the microscope while completing my Master of Forensic Sciences graduate studies at National University.
6. While I was on active duty in the U.S. Air Force and was assigned as the Chief, Forensic Trace Materials Analysis Laboratory, Office of The Armed Forces Medical Examiner (OAFME), Armed Forces Institute of Pathology (AFIP) in Rockville, Maryland, I received in-house training in the use of the OAFME microscope camera system to obtain photomicrographs.
7. I have never been qualified in any State or Federal Court of the United States, including courts-martial, as an expert in the forensic examination or comparison of hairs, and consequently have never testified as such.
8. In 1999, I was on active duty in the U.S. Air Force assigned to the OAFME, which was co-located with the Armed Forces DNA Identification Laboratory (AFDIL).

9. As the Chief of the Forensic Trace Materials Laboratory my normal responsibilities included examining and preparing reports for bloodstain pattern analysis, alternate light source examinations, crime scene analysis, and assisting in autopsy and anthropology examinations. Extended responsibilities included independently processing aircraft mishaps, buried human remains and other death scenes for significant forensic evidence; performing crime and mishap scene, autopsy, laboratory, microscopic, and alternate light source photography.
10. In 1999, I was informed that the order of the United States District Court for the Eastern District of North Carolina dated March 26, 1999, the independent laboratory to be designated by the Court to conduct DNA testing of biological matter in United States v. Jeffrey R. MacDonald was required to conduct a divisibility analysis of the exhibits to determine which were divisible between the parties. AFIP was subsequently designated by the Court as the independent laboratory.
11. Because the Armed Forces DNA Identification Laboratory (AFDIL), a component of AFIP, lacked the in-house capacity to conduct microscopic examinations of biological matter, including hairs, for either divisibility or suitability for DNA testing purposes, assistance from the OAFME was requested¹.

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As explained to me, the term "suitability" in relation to nuclear and mitochondrial DNA testing depends on a number of factors, including the presence or absence of a hair root, and whether or not the root has follicular tissue attached. I was advised by AFDIL, as a general matter, that mitochondrial DNA testing could be conducted on hair shafts that had no roots, however, nuclear DNA testing required the presence of a hair root with some follicular tissue. My role in determining the divisibility of hairs for DNA testing was essentially limited to the measurement of the length and width of the hair, and providing that data to AFDIL for their determination as to the divisibility of the hair.

12. Subsequently, and with the express agreement of counsel for both sides, as well as defendant Jeffrey MacDonald, I was designated by AFIP to conduct microscopic examination of slides believed to contain hairs or other biological matter including possible blood.
13. Pursuant to agreement of the parties, and the requirements of AFDIL, my role was strictly limited to gathering data relevant to the issues of the suitability and divisibility of the biological evidence for DNA testing purposes only. Determination of suitability for DNA testing was to be determined by AFDIL personnel.
14. Specifically, I was to determine the following: (a) whether human hair was present on the slide, (b) the length of the hair, (c) the shaft diameter of the hair, (d) whether the hair had a root, (e) whether there was also follicular tissue present, and (e) whether there was possible blood present either on the hair or some other item on the slide. In observing for the presence of possible blood, I looked for the presence of a red – reddish brown in color substance/debris. I was not asked to make any determination with respect to whether a hair was forcibly removed or fell out naturally, and would not have been competent to do so. I was not permitted to alter the microscopic slides in any fashion or to remove any hair, collect any item, including possible blood, or otherwise change the evidence.
15. In accordance with standard operating procedures as OAFME/AFIP I proceeded to photograph the evidence I was asked to examine, starting with the packaging of the evidence as received by me and continuing through the process of microscopic examination of the slides. The body of the camera was attached to the microscope by means of an adapter. The camera was also attached to a computerized exposure meter that also functioned as the shutter release for the camera. In this process, in connection with AFDIL case No. 99C-0438, I exposed 16 rolls of Fujichrome 64

T (Tungsten) film, which were subsequently developed as slides. As I was photographing the evidence containers, and photographing the specimens mounted on glass slides, I maintained a Photographic Log for each roll of film which identified each specimen by AFDIL number, and further described each exposure. A copy of my photographic log for Case No. 99C-0438 is attached at Tab 1.

16. In addition to my Photographic Log, I made bench notes contemporaneously with my detailed examination of the contents of the slides, which were recorded on AFIP/OAFME Trace Materials Analysis Notes forms. Attached at Tab 2 are eight consecutively numbered pages of my bench notes.
17. The results of my divisibility measurements and examination of the hairs described above was detailed in the OAFME Forensic Trace Materials Analysis Laboratory Examination Report of November 30, 1999. An Addendum to this report was Dated December 20, 1999. Both documents are attached at Tab 3.
18. I have been furnished copies of Jeffrey MacDonald's Motion To Add An Additional Predicate To His Previously Filed Motion Under 28 U.S.C. Section 2255 and the accompanying Memorandum Of Evidence And Points And Authorities In Support of Petitioner's Motion To Add An Additional Predicate, both relating to the results of the DNA testing. I have no personal knowledge of the circumstances or actual location in which the hairs in specimens 91A, 75A, nor 58A1 were found or collected. Nor do I have any knowledge of the results of the DNA testing by AFDIL, or of any previous examinations by the FBI or CID laboratories. I can only attest to what I personally observed, or did not observe, when examining these three hairs under the microscope for the limited purposes of suitability and divisibility for DNA testing. I can further attest to the actual terminology that I used for those limited purposes in my contemporaneous bench notes and subsequent reports. I can not offer an expert opinion which is beyond

my level of knowledge, training, and experience. In the paragraphs which follow I set forth what I previously wrote with respect to each of these exhibits.

19. As reflected in my bench notes for 30 November 99, in regard to Specimen 91A, I wrote:

“Slide 99C-0438-91A: Slide is in poor condition due to mounting medium being on top of cover slip. Contains unknown debris & yellow fibrous material that has red in color substance adhering to it that could be blood. Fiber marked with black dot and “1” for better identification. Contains one human hair with root but no tissue. Hair is approximately 29.4 [symbol for microns] wide, approx. 5mm long.” See Tab 2.

Descriptive language virtually identical to that of the bench notes appears in my typewritten report of November 30, 1999:

“Slide 99c-0438-91A : The slide is in poor condition with dried mounting medium on top of the cover slip. Contains one fiber with red adhering material that appears to be blood. Fiber marked with black dot and “1” for better identification. Also contains one (1) human hair with root but no tissue. Hair is white in color, approximately 5mm long, approximate maximum shaft diameter 29.4 [symbol for microns].” See Tab 3.

I did not describe the single hair in Specimen 91A in my bench notes (Tab 2) as being a hair with “the hair root in tact”(sic) or as having an “intact root”. By use of the term “with root but no tissue” in reference to the 91A hair, I did not expressly, or by implication, offer any opinion as to whether the hair was naturally shed or forcibly removed, nor could I offer such an expert opinion. Nor did I describe the hair in Specimen 91A as having blood or suspected blood on the hair.

20. As reflected in my bench notes of 30 November 99, with respect to AFDIL Specimen 75A I stated the following:

“Slide 99C-0438-75A: Contains 1 human hair with root and follicular tissue. Hair is approximately 132.3 [symbol for microns] wide, approximately 63 mm long and medium blond to dark golden brown in color. Has splits along shaft & buckling. See Tab 2.

My typewritten OAFME Report of November 30, 1999 states as follows:

“ Slide 99C-0438-75A: Contains one human hair, approximately 63 mm long, approximate maximum shaft diameter is 132.3 [symbol for microns]. The hair has a root and adhering follicular tissue.” See Tab 3.

I did not describe Specimen75A as being a “hair with root and follicle intact”. In describing the 75A hair as having “a root with adhering follicular tissue” I did not expressly, or by implication, offer any opinion as to whether this hair was naturally shed or forcibly removed, nor could I offer such an expert opinion.

21. As reflected in my bench notes of 30 November 99 with respect to AFDIL Specimen 58A I stated the following:

“Slide 99C-0438-58A: Contains two human hairs. Both have roots but no tissue. Hair not marked with red dot is dark golden brown in color; end is cut. The hair marked with a red dot has a slightly rounded tip. The hair marked with a red dot is approximately 102.9 [symbol for microns] wide and approximately 43 mm long. The other hair is approximately 73.5 [symbol for microns] wide & approximately 5mm long. For identification purposes, the hair not marked with a red dot is numbered “1” and the other hair is numbered “2”.” See Tab 2.

My bench notes do not state, that hair No.1, the dark golden brown hair not marked with a red dot (AFDIL Specimen 58A(1) "is a hair with root intact". Rather, the description in my notes pertaining to hair No. 1 and hair No.2 states that "both have roots but no tissue". I did not expressly, or by implication, offer any opinion as to whether either hair No. 1, or hair No.2, in specimen 58A was naturally shed or forcibly removed, nor could I offer any such expert opinion.

My typed OAFME Report of November 30, 1999, states as follows:

"Slide 99C-0438-58A: Contains two (2) human hairs with roots but no tissue.

Hairs marked "1, 2" for better identification.

- a. Hair #1: Dark golden brown in color, approximately 5mm long, approximate maximum shaft diameter 73.5 [symbol for microns].
- b. Hair # 2: Blond in color, approximately 43mm long, approximate maximum shaft diameter 201.9 [symbol for microns]. See Tab 3.

My statement above with respect to my notes on Specimen 58A applies equally to my report concerning Specimen 58A.

22. As of this date, I have had no communication with any member of the MacDonald defense team regarding my examination of Specimens 91A, 75A or 58A, or my bench notes and typewritten report relating to those examinations, or any photographic images of those Specimens or my Photographic Log.

Further your Affiant sayeth not.

Grant D. Graham, Sr.

Grant D. Graham, Sr.

Subscribed to and sworn before me this 8th day of September 2007.

Notary: *Almetrius J. Brown*

My Commission expires My Commission Expires Feb 20 2009

