STATE OF WISCONSIN : CIRCUIT COURT : MANITOWOC COUNTY

STATE OF WISCONSIN,

Plaintiff,

v. Case No.: 2005 CF 381

STEVEN A. AVERY,

Defendant.

MOTION FOR POST-CONVICTION SCIENTIFIC TESTING

Pursuant to Wisconsin Statutes § 971.23(5) and § 974.07 and *State v. O'Brien,* 233 Wis.2d 202, 323, 588 N.W.2d 8 (1999), Steven Avery ("Mr. Avery") through his attorneys Kathleen T. Zellner and Associates, P.C., and Tricia Bushnell, local Wisconsin counsel, moves for an order for post-conviction testing of physical evidence collected in connection with Mr. Avery's conviction of first degree murder. Mr. Avery asserts he is innocent and that additional scientific testing can, once again, prove he did not commit the crime for which he has been convicted. Mr. Avery will bear the cost of any testing performed.

INTRODUCTION

Mr. Avery is requesting, and is willing to pay for, the most comprehensive, thorough, and advanced forensic testing ever requested by a criminal defendant in the State of Wisconsin. By doing this additional and totally comprehensive testing, a guilty defendant would risk conclusively establishing his guilt. In contrast, Mr. Avery is requesting the comprehensive, thorough, and most advanced forensic

testing currently known for one simple reason: he is completely and totally innocent of the murder of Teresa Halbach ("Ms. Halbach"). Mr. Avery has already completed a series of tests that will conclusively establish his innocence in conjunction with the additional forensic tests he is seeking in this motion. All of this evidence will be presented in Mr. Avery's post-conviction petition which will be filed after the new test results are obtained from the tests requested in the instant motion.

Background

1. Mr. Avery was charged on November 15, 2005, with first-degree intentional homicide and mutilation of a corpse. The complaint was later amended to include possession of a firearm by a felon. The case proceeded to trial on February 5, 2007, before the Honorable Patrick L. Willis. A jury convicted Mr. Avery of first degree intentional homicide and felon in possession of a firearm. Trial Tr. Day 27, 3/18, 2007.[1] The jury acquitted Mr. Avery of mutilating a corpse. *Id.*

2. The convictions related to the October 31, 2005 death of Ms. Halbach, a twenty-five-year-old photographer. Ms. Halbach's clients included Auto Trader magazine; Ms. Halbach had an appointment to take photos of vehicles at the Avery salvage yard for the magazine on October 31, 2005. Ms. Halbach disappeared after she completed her assignment and left the Avery salvage yard. Her last call forwarded message at 2:41 p.m., occurred when her cellphone was still powered on and registered. That call pinged off

[1] All future references to the Trial Transcript will be abbreviated as follows: TT: Date: Page.

the Whitelaw Tower, which was approximately 13.1 miles from the Avery Salvage Yard. (TT:2/27:218; Trial Exhibit 361).

3. Ms. Halbach's voicemail box had a twenty-message capacity and a review of her records and other witness records indicates that five of Ms. Halbach's voicemails were deleted on October 31, 2005, and another eleven voicemails were deleted before 7:12 a.m. on November 2, 2005. Cingular Wireless Voicemail Plan Detail, attached and incorporated herein as **Exhibit A**. Ryan Hillegas ("Mr. Hillegas") called Ms. Halbach at 6:42 p.m. on November 1, 2005 and her voice mailbox was full. Ryan Hillegas Phone Records, attached and incorporated herein as **Exhibit B**; STATE 6893. The State's expert testified that a password was required to access Ms. Halbach's voicemails from a different phone line (TT:3/7:163). Ms. Halbach's Motorola Razr featured one-touch dialing for voicemail, which would allow anyone in possession of her cell phone to access her voicemail.

4. Five voicemail deletions occurred on October 31, 2005 and eleven additional deletions were made prior to 7:12 a.m. on November 2, 2005, Ms. Halbach's disappearance was not reported until November 3, 2005. (TT:2/12:79).

5. On November 3, 2005, Officer Colborn discovered the victim's vehicle and called dispatch, on a personal line, to confirm the victim's license plate number. (TT:2/20:180-182). On November 3, 2005, according to the Manitowoc County Sheriff's Department reports, Ms. Halbach's vehicle was

seized. Manitowoc County Sheriff's Department Summary Report, attached and incorporated herein as **Exhibit C**; STATE 78.

6. On November 5, 2005, Ms. Halbach's vehicle was discovered in the southeast corner of the Avery salvage yard. (TT:2/13:209-215). Ms. Halbach's vehicle was moved to the southeast corner of the Avery property on the evening of November 4, 2005 after Calumet County Sheriff Jerry Pagel and Investigator Wendy Baldwin conducted a flyover of the Avery Salvage Yard. (TT:2/13:107, 110-111; Motion Hearing Tr., 65-66, June 5, 2006[2]). Ms. Halbach's vehicle was moved from the Fred Radandt Sons, Inc. quarry to the Avery property using the conveyor road that led onto the Avery property from the quarry. (TT:2/15:75); Calumet County Sheriff's Department Report, November 7, 2005, attached and incorporated herein as **Exhibit D**.

7. After Ms. Halbach's vehicle was discovered on November 5, 2005, law enforcement officers secured the 40-acre property, preventing the Avery's from entering their property from November 5 to November 12, 2005. (TT:2/16:127). Significantly, the Manitowoc County Coroner, Debra Kakatsch ("Ms. Kakatsch") was not informed of the murder by law enforcement personnel; instead, she learned of it by watching television. (TT:3/8:204-205). There is no record of Ms. Kakatsch being allowed on the Avery property during the evidence collection.

[2] All future references to Motion Hearing Transcripts will be abbreviated as follows: MHT: Date: Page.

8. Mr. Avery contends that the blood evidence was planted in Ms. Halbach's car, by law enforcement, prior to the discovery of the vehicle on the Avery property on November 5, 2005. (TT:2/20:227; TT:2/20:191-192, 227). Either Officer Lenk and/or Officer Colborn were connected to the discovery of each item of planted evidence. Officer Colborn seized the victim's car on November 3, two days prior to it being planted on the Avery's property (*Id* at paragraph 5). They entered the Avery property twice on November 7, 2005, prior to the charred bones and key being discovered on November 8. Officers Lenk and Colborn testified they discovered the key in Mr. Avery's bedroom on November 8, 2005. (TT:2/21:7-13). Officer Lenk was conducting a search of the garage when the bullets fragments were discovered. (Trial Exhibits 125, 146, and 147).

9. Non-law enforcement individuals were also allowed to enter the property after the property was closed to the general public. Two of those individuals were untruthful in their police interviews. Mr. Avery will present his third party theory in his post-conviction petition that he will file once he obtains the new test results. Individual A accessed the property from the quarry four times, for some unknown reason, after it had been closed to the public. Specifically, Individual A accessed the property within minutes of Officers Colborn and Lenk on November 5, and twice on November 7. Crime Scene Logs, attached and incorporated herein as **Exhibit E**. Prior to anyone realizing that Ms. Halbach's body had been burned, Individual A gave a

statement in which he described seeing a fire in a burn barrel behind Mr. Avery's garage on October 31, 2005. Written statement of Individual A, attached and incorporated herein as **Exhibit F**. Subsequent investigation has determined that Individual A's statement is contrary to the facts; Mr. Avery's burn barrel was never behind his trailer or garage, and it was impossible for Individual A to observe Mr. Avery's backyard as he described because of the elevation of the quarry from where he was allegedly making his observations.

10. Individual B accessed the property using a false name. Civilian Search Map, attached and incorporated herein as **Exhibit G**. Individual B misrepresented that the victim's blinker light was broken months before and that she had made an insurance claim for it. Wisconsin DOJ DCI Report, December 14, 2005, attached and incorporated herein as **Exhibit H**, STATE 1144. On November 3, 2005, Individual B placed three calls to the Cingular Customer Service account and password assistance line. Individual B received approximately 22 calls from law enforcement on November 4, 2005, prior to the victim's vehicle being moved onto the property. Individual B accessed the Avery property twice on November 7, 2005 and once on November 8, 2005 after the property was closed to the public. Crime Scene Logs, attached and incorporated herein as **Exhibit I**. Mr. Avery contends that the victim's key and bones were planted on November 7, 2005 and were discovered on November 8, 2005.

11. Most of Ms. Halbach's bones and 29 of her teeth were not found in Mr. Avery's burn pit. State expert Leslie Eisenberg testified that the volume of bones discovered in the burn pit was "two- to three-fifths of what might be expected." (TT:2/28:225). Dr. Eisenberg also admitted that the bones had been moved prior to their location in Mr. Avery's burn pit. Dr. Eisenberg testified that she suspected that the bones found in the Radandt quarry, which included a pelvis, were human. (TT:3/1:10-11, 28).

12. Between Saturday, November 5, when the original search warrant was issued, and Wednesday, November 9, when the police obtained a new warrant, law enforcement and crime lab personnel entered Mr. Avery's trailer on seven occasions. First, after the warrant was issued on November 5 at 3:30 p.m., law enforcement conducted a ten-minute sweep of Mr. Avery's trailer and an eight-minute search of his garage, looking for any evidence related to Ms. Halbach's whereabouts. Then, at 7:30 p.m. that same day, law enforcement entered Mr. Avery's trailer for a second time. This time the officers stayed just over two and one-half hours and seized approximately fifty pieces of evidence. The third and fourth entries occurred on Sunday, November 6, and a fifth entry occurred on November 7, 2005.

13. Despite the exhaustively comprehensive search of Mr. Avery's trailer and extensive testing, not one drop of the victim's blood or bodily fluids was ever discovered in Mr. Avery's trailer or garage or on the evidence seized from the trailer or garage. TT:2/26:108-109.

14. On November 7, 2005, small drops of blood were discovered in the front of Ms. Halbach's vehicle on the driver and passenger seats, driver's floor, and the rear passenger door jam. These blood drops produced a complete DNA profile of Mr. Avery. Suspiciously, there were no bloody fingerprints of Mr. Avery in or on the vehicle despite the fact that he could not have been wearing gloves when he allegedly deposited blood in the vehicle. (TT:2/26:90-91). None of the 8 latent fingerprints found in and on the victim's vehicle belonged to Mr. Avery. Ms. Halbach's blood was found in the cargo area. (TT:2/26:74-75, 91-92). One of the most compelling scientific facts pointing to planted blood evidence is that there was no mixture of Ms. Halbach and Mr. Avery's blood despite the State's claim that the bleeding Mr. Avery threw Ms. Halbach in the rear cargo area of her vehicle. (TT:3/14:61).

15. On November 8, 2005, the sixth entry and search of Avery's trailer occurred. Officers Lenk, Colborn and Kucharski searched the trailer for three and one-half hours. (MHT:8/9/06:208-209; MHT:8/10/06:48-49). Among other things the officers swabbed Mr. Avery's blood stains found in the bathroom. (MHT:8/9/:210; TT:2/20:95-96, 122-26).

16. Officer Colborn conducted an hour-long search of Avery's small bookcase, approximately 32 x 16 x 31 inches. (TT:2/20:123, 125). Officer Colborn testified that he tipped and twisted the bookcase, pulling it away from the wall. Officer Colborn repeatedly pushed the photo binder into the back of

the bookshelf until he knocked the back loose. (TT:2/20:127). Supposedly, Officer Colborn's actions forced the key to fall from the back of the shelf and migrate to a place on the carpet on the side of the bookcase by Mr. Avery's slippers. The key was not present in the initial photographs of the bookcase and Mr. Avery's slippers. (MHT:8/9:210; TT:2/20:130). During Officer Colborn's frenetic interaction with the bookcase, Officer Lenk left the bedroom. (TT:2/20:129-130). When Officer Lenk returned, he noticed a Toyota key had suddenly appeared. Rather than being where one would expect the key to have fallen, based on Officer Colborn's actions, the key was actually lying next to the bookcase on the carpet. Allegedly, this key had Mr. Avery's complete DNA profile but not Ms. Halbach's. Although no presumptive blood testing was done by the State which would suggest whether the DNA came from blood, their expert nonetheless testified that Mr. Avery's blood from his cut finger had masked Ms. Halbach's DNA profile. (TT:2/19:133).

17. There are conflicting dates (November 5 and 7) about law enforcement's discovery of the remnants of Ms. Halbach's Motorola Razr cell phone, Palm Pilot, and camera in a burn barrel in Mr. Avery's yard. No mention was made at trial about the second Motorola cell phone taken from Ms. Halbach's home on November 3, 2005. The contradictory evidence about the cell phone is as follows:

A. Officer Mark Wiegert's affidavit states that on November 5, "officers located a burn barrel containing burnt clothing and a partially burnt shovel" and does not mention a cell phone. (STATE0388).

B. State Crime Lab Field Response Scene Notes state that at 6:15 p.m. "a fifth barrel, reportedly containing remnants of a Motorola cellular phone, had also been transported to the SO on Chilton." (STATE_1_1842).

C. Sheriff Pagel's affidavit says that on November 5, "officers located a burn barrel near the residence of Steven Avery" in which "officers located burned clothing, a partially burned shovel, and fragments of a Motorola cellular telephone." (STATE1525).

D. The criminal complaint says that on November 5, "officers located a burn barrel near the residence of Steven Avery" and in it "located burned clothing and a partially burned shovel" (STATE1484). A cell phone is never mentioned anywhere in the criminal complaint.

E. Officer Dedering's affidavit contains the exact same statement as Sheriff Pagel's, placing the cell phone in a barrel found on November 5, with clothing and a shovel (STATE2824-2825) and does not mention a camera, despite the camera having been confirmed as Canon Powershot A310 on 12/01. (STATE2759).

18. Mr. Avery's garage was searched six times before the final searches were conducted on March 2nd and 3rd, 2006, during which police recovered a

nearly intact .22 LR bullet and bullet fragments that the State subsequently claimed contained Ms. Halbach's DNA. (TT:3/1:116). No presumptive blood testing was performed on the bullet or fragment nor was any scientific testing done to determine the organ (i.e., heart, liver, brain) from which Ms. Halbach's cells, from the bullet fragment, originated. No ballistic expert testified to the fact that it is highly improbable that any .22 LR, much less two, could have exited Ms. Halbach's skull.

19. On March 1, 2006, Mr. Avery's nephew Brendan Dassey ("Dassey") allegedly confessed to assisting Mr. Avery in the commission of the Halbach crimes.

20. On April 3, 2006, based upon Dassey's coerced confession, a swab was taken from the hood latch of the victim's car. The hood latch swab allegedly had "sweat DNA" from Mr. Avery's hand. (TT:2/12:87). It is undisputed that there is no such thing as "sweat DNA." Again, no presumptive blood test was performed on the swab. Again, no bloody fingerprint of Mr. Avery was discovered on the latch. No DNA or fingerprint testing was done on the interior hood release, the prop bar for the hood, or the disconnected battery cable under the hood. Although it would have been impossible for Mr. Avery not to have touched the interior hood release and the prop bar of the hood if he had opened the vehicle's hood, these two items were never tested for the presence of DNA. Additionally, according to the State, Mr. Avery disconnected the battery cable. Yet, the cable was never tested for DNA.

21. On March 17, 2007, Dassey was convicted of crimes in relation to the death of Ms. Halbach. On August 12, 2016, Dassey's conviction was vacated. *Dassey v. Dittmann,* WL 4257386, Case No. 14-CV-1310 (E.D. Wis. Aug. 12, 2016). The Court found that the investigators had used "deceptive interrogation techniques" to obtain the confession from Dassey. Specifically, the Court found:

> Finally, only after Fassbender's highly leading questions did Dassey acknowledge that Avery went under the hood of Halbach's RAV4. When Fassbender asked Dassey what else he and Avery did to the RAV4, he could not muster the answer Fassbender was looking for until Fassbender asked, "[D]id he go and look at the engine, did he raise the hood at all or anything like that?" (ECF No. 19-25 at 79.) Dassey responded affirmatively, but when pressed for additional details he could offer none. (ECF No. 19-25 at 79.) Instead, all he could say was, "I don't know what he did, but I know he went under." (ECF No. 19-25 at 79.)

22. Mr. Avery's case proceeded to trial in February of 2007. The defense's theory was that the Manitowoc County Sheriff's Department framed Mr. Avery for a crime he did not commit by planting Mr. Avery's DNA on the following evidence: the victim's vehicle and the victim's key. The defense contended that the victim's bones were planted in Mr. Avery's burn pit and

her DNA was planted on a bullet fragment found in Mr. Avery's garage that was linked to his rifle.

23. The defense claimed the motive for the frame-up was retaliation because Mr. Avery had sued the Manitowoc Police Department for a previous wrongful conviction and wrongful imprisonment. Officers Lenk and Colborn, a month prior to Ms. Halbach's disappearance, had been deposed as witnesses in Mr. Avery's civil rights lawsuit. (TT:2/20:138-140, 231-232).

24. The State, in order to refute the defense's allegations about planted blood evidence in the victim's vehicle, presented an FBI expert on the issue of whether EDTA, which was present in the 1996 blood vial, was also present in Mr. Avery's blood discovered in the victim's vehicle. The State's expert's opinion was based on unsubstantiated and unreliable data, but no other forensic testing was widely available or known by either side to determine the age of Mr. Avery's blood found in the victim's vehicle. (TT:3/9:20-30).

ARGUMENT

It is undisputed that Mr. Avery was convicted solely based on forensic evidence found at the crime scene that allegedly connected him to the crime. Additional scientific testing could once again definitively prove Mr. Avery's innocence and exonerate him for a crime he did not commit. Mr. Avery requests the following additional testing: body fluid source testing that could identify the source of the bodily fluids found on the victim's vehicle key and hood latch; Radiocarbon (14c) testing which could definitively establish the age of Mr. Avery's blood found in

the victim's vehicle and determine, based on the age, if the blood was planted; new DNA testing on evidence not previously tested (the prop, the battery cable, the interior hood release of the victim's vehicle, the blinker light, the lug wrench, and the purple thong underwear); new and improved DNA testing of previously-tested items (the license plates and swabs taken from the victim's car) trace testing for the presence of chemicals, solvents, or fibers to determine whether the chemicals or fibers (rubbing) had been used to remove DNA from the victim's key or hood latch.

All of this evidence was collected in connection with the crime, and all of it was material to Mr. Avery's conviction. New testing could conclusively prove Mr. Avery's innocence, and thus he is entitled to it under *State v. O'Brien,* 233 Wis.2d 202, 323, 588 N.W.2d 8 (1999) ("a defendant has a right to post-conviction discovery when the sought-after evidence is relevant to an issue of consequence.")

<u>New Testing for Sources of DNA</u>

25. Since Mr. Avery's 2007 trial, considerable progress has been made in forensic DNA methods, procedures and tests, including the development of tests for the specific detection of blood, saliva, semen and urine.

26. There are four forensic body fluids: blood, semen, saliva, and urine. It is of course understood that humans make a variety of other body fluids. However, there are no tests for these other biological fluids and biological products. There is no way to identify other body fluids other than the four listed.

27. As for all body fluid identification, detection is based on a biological marker that is associated with the body fluid. Common examples (but not an exhaustive list) might include using hemoglobin for the identification of blood, α-amylase for the identification of saliva, acid phosphatase or PSA/p30 or semenogelin for the identification of seminal fluid, and urea or Tamm-Horsfall for the identification of urine.

28. The further distinction between presumptive/screening tests versus confirmatory tests is also important. Presumptive tests do not have the specificity to allow definitive identification of the body fluid. Confirmatory tests, on the other hand, provide the scientific foundation for making a much more definitive statement as to the presence of the tested body fluid.

29. In Mr. Avery's case, the Wisconsin Department of Justice State Crime Laboratory used presumptive tests, not confirmatory tests, for the identification of blood on some, but not all, items of evidence.

30. There are many reasons to critically examine and re-test certain items of evidence in this case in light of new, more specific and more sensitive body fluid testing regimens.

31. The laboratory which will complete the testing, Independent Forensics, has developed the most specific forensic tests available for blood, saliva, semen, and urine. These tests have been commercialized as the RSID series (Rapid Stain Identification) of lateral flow tests. These tests have been developed exclusively for forensic body fluid identification, are fully validated, and

have been used by hundreds of accredited forensic DNA laboratories world-wide.

32. In order to perform body fluid identification/source attribution testing, the original items of evidence or the original swabs used to sample the evidence are required. Mr. Avery is requesting the following items of evidence for new testing for sources of DNA utilizing RSID-Saliva testing and the RSID-Blood testing:

- **Item ID**: Mr. Avery is requesting to perform RSID-Saliva testing and the RSID-Blood testing on Item ID, the hood latch on the victim's RAV-4. Significantly, the Wisconsin Department of Justice State Crime Laboratory did not do chemical analysis of the hood latch for the presence of blood despite the fact that the State's theory at trial was that Mr. Avery had deposited significant amounts of blood in the victim's car from a cut on the middle finger of his right hand. (TT:2/12:85). Clearly, if Mr. Avery were bleeding in the victim's car, he would have also deposited blood, from his bleeding finger, on the victim's hood latch; however, no presumptive blood test was done on the hood latch by the Wisconsin Department of Justice State Crime Laboratory. Wisconsin State Crime Lab Report, May 8, 2006, attached and incorporated herein as **Exhibit J**; (TT:2/23:173). Culhane testified that she discovered a full DNA profile of Mr. Avery on the hood latch. (TT:2/23:174). Culhane testified that the hood latch swab appeared

discolored but it was not reddish-brown or consistent with blood; Culhane admitted that she could not rule out blood as being the source of the DNA profile on the hood latch. (TT:2/26:92-94). No mixture of the victim's DNA with anyone else's DNA was present on the hood latch. Culhane testified that she did not receive the hood latch swab for testing until April 2006. (TT:2/26:92-93). Culhane compared the hood latch profile with Mr. Avery's buccal swab taken on November 9, 2005. (Trial Exhibit 324). At Mr. Avery's trial, the State contended that the source of the hood latch DNA profile was "sweat" from Mr. Avery's hands. (TT:2/12:87). Source testing will definitively identify the body fluid on the hood latch. Mr. Avery is therefore requesting to test the remaining 17 nanograms from the hood latch swabs to definitively determine whether the DNA profile is from blood, epithelial cells, or saliva. If the DNA profile is from saliva or blood, this would refute the State's theory that when Mr. Avery opened the hood latch he transferred DNA from sweat to the hood latch. Skin cells are anucleated and keratinized and buccal cells are nucleated and lack keratin.

- **Item C:** Mr. Avery is requesting to perform source testing on the victim's RAV-4 key. The key is sealed in box bearing Calumet County inventory no. 8114 and item no. AO. The new source testing developed after 2007 will determine if there is blood or saliva on the key. If there

is only saliva and no blood, this will refute one of the State's theories that blood from Mr. Avery's cut finger "mask[ed]" the victim's DNA. (TT:2/19:133). Culhane testified that she did not perform any presumptive blood testing. (TT:2/26:96). Culhane testified there was no indication of staining and the DNA was from "touching." (TT:2/23:180-181). If the DNA is from saliva, it will contradict the State's theory that it was blood that masked the victim's DNA on the key. It will also contradict Culhane's testimony that the DNA was from touching because there was " no visible indication of a biological fluid." (TT:2/26:97).

All of the requested testing is consequential to Mr. Avery's conviction and he is entitled to the testing at his own expense pursuant to *State v. O'Brien,* 233 Wis.2d 202, 323, 588 N.W.2d 8 (1999).

New DNA Testing

33. Since 2007, more sensitive forensic DNA techniques have been developed that can recover sufficient DNA for profiling from enhanced latent ridge impressions (*i.e.,* fingerprints). The new technique is more efficient for these kinds of samples. While not every fingerprint has sufficient biological material for DNA profiling, these kinds of samples can provide DNA profiles.

34. In order to perform new and improved DNA testing, the original items of evidence or the original swabs used to sample the evidence are required.

Mr. Avery is requesting the following items of evidence for new and improved DNA testing:

- **Items IE and IF:** The apparent identification of Mr. Avery's DNA on the hood latch of the victim's car (Calumet County inventory no. 9188) and its link to the removal of the car's battery cable, requires further testing to identify the potential DNA on the battery cable clamps and cables pulled off the battery posts prior to their removal. Because of the effort required to remove the clamps and cables, it is extremely likely that the individual who performed these tasks would leave his DNA on them. Therefore, Mr. Avery is requesting new and improved DNA testing on items IE and IF (Calumet County inventory nos. 9189 and 9190).
- **Item AJ and AK:** Mr. Avery is requesting swabs that were previously done of Items AJ and AK, (Calumet County inventory nos. 8313 and 8305) and the license plates themselves, so that new and improved DNA testing can be done. The license plates were removed from the victim's RAV-4 and put in another vehicle at the time the victim's vehicle was deposited on the Avery property. TT:2/16: 227-228. At the time of the initial testing of the front license plate (Item AK), an insufficient quantity of DNA was obtained. Wisconsin State Crime Lab Report, March 31, 2006 (attached and incorporated herein as **Exhibit K**), STATE 5248. The rear license plate (Item AJ) has no discernible

DNA. However, with new and improved DNA testing methods, Mr. Avery may be able to obtain a full DNA profile from the license plates.

- **Item A15:** Mr. Avery is requesting DNA and trace evidence testing on the blinker light found in the victim's car. The victim's blinker light was displaced sometime during the sequence of events of either the crime or the transport of the victim's car onto Mr. Avery's property. The blinker light was picked up and placed in the rear cargo area of the victim's car by the perpetrator or the individual who moved the car onto the Avery property. It is a reasonable assumption that this individual handled the blinker light and quite probably left his DNA on the light. Mr. Avery is requesting that Item A15 be subjected to new and improved DNA testing. (TT:3/7:100).
- **Item A16**: Mr. Avery is requesting to perform new and improved DNA testing on the lug wrench recovered from the victim's car. Mr. Avery is requesting new and improved DNA testing of the lug wrench because it appears to have been moved from its original place in the rear cargo area, and therefore may have been touched by the perpetrator. (Calumet County Sheriff's Department Report, November 11, 2005, attached and incorporated herein as **Exhibit L**, STATE 1352; TT:3/7:100).
- **Swabs IB, IC, IE, IF, IG, and IH:** Mr. Avery is requesting testing of the following swabs: IB - swab of the exterior door handle (Calumet

County inventory no. 9186); IC - swab containing possible DNA evidence from interior passenger door handle (Calumet County inventory no. 9187); IE - swab containing possible DNA evidence on left battery cable (Calumet County inventory no. 9189); IF - swab containing possible DNA evidence on right battery cable (Calumet County inventory no. 9190); IG - swab containing possible DNA evidence from interior door handle (Calumet County inventory no. 7860); IH - swab containing possible DNA evidence from exterior door handle (Calumet County inventory no. 7861).

- **Item CV** (Calumet County inventory no. 8324), a pair of women's purple thong panties recovered from the white trailer near the Mercury station wagon where the victim's license plates were found. Similar thong panties were recovered from the victim's residence (Items CM, CN, and CO). Mr. Avery is requesting to perform new and improved DNA testing on these panties to determine if they belonged to the victim and if they contain a male DNA profile.
- **Item A:** Mr. Avery is requesting DNA testing, for the first time, of the victim's RAV-4 on specific items that were not previously DNA-tested. According to the State's theory, Mr. Avery was not wearing gloves and bled from his cut finger inside the RAV-4. TT:2/12:85. If this is true, the following untested items would likely yield the perpetrator's DNA: A) the bar that moves the seat in the RAV-4 forward; B) the prop bar

which holds up the hood; and C) the interior hood release. These previously-untested items should disclose the perpetrator's DNA because the ungloved perpetrator, of necessity, would have touched all of these items in order to operate the car, open the hood, and remove the battery cable. The defense forensic team will swab the RAV-4 at the Calumet County Sheriff's Department.

- **Calumet County property no. 8675:** Mr. Avery is requesting DNA testing on the alleged human pelvic bones recovered from the quarry property southwest of the Avery Salvage Yard in order to conduct more advanced DNA testing to determine the origin of these bones.
- **Calumet County property nos. 7958 and 7963:** Mr. Avery is requesting DNA testing on the burnt material found at the Radandt deer hunting camp west of the Avery Salvage Yard to determine whether there are any items of evidentiary value at the deer camp.

35. The source testing and the new DNA testing will be performed by Dr. Karl Reich ("Dr. Reich") at Independent Forensics. CV of Dr. Reich (attached and incorporated herein as **Exhibit M**). Mr. Avery is requesting that all of the evidence described above be shipped to Independent Forensics, 500 Waters Edge, Suite 210, Lombard, IL 60148.

36. **Mr. Avery is entitled to mandatory DNA testing of all blood stains found in or the victim's vehicle pursuant to the prior trial court order entered on**

April 4, 2007. The April 4, 2007 trial court order (attached and incorporated as **Exhibit N**) states as follows:

> 1. That the State shall preserve indefinitely, until further order of this Court, all bloodstains that the State believes contain Steven Avery"s DNA and that were found in or on Teresa Halbach's vehicle, in a condition suitable for further scientific testing;
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> 2. That the State shall preserve indefinitely, until further order of this Court, all swabs or other collected samples of bloodstains that the State contends contain Steven Avery's DNA and that were collected from areas in or on Teresa Halbach's vehicle, in a condition suitable for further scientific testing;
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> 3. That the State shall preserve indefinitely, until further order of this Court, portions of all the items submitted by the State to the FBI Laboratory in Quantico, Virginia, for the purpose of testing related to the presence or absence of EDTA. Such portions of these items shall be adequate in size and quality, if possible, to permit independent scientific testing by the defense and shall be maintained by the State in a condition suitable for further scientific testing;
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> 4. That the defendant, Steven A. Avery, or any lawyer representing him, may at any time submit the bloodstains, swabs, and items described in paragraphs 1 through 3 above to any laboratory or person the defense may choose for independent scientific testing pursuant to WIS. STAT. § 971.23(5), without further order of this Court. For purposes of illustration, not limitation, this paragraph expressly contemplates independent defense testing before verdict, after verdict, before sentencing, after sentencing, during state or federal post-conviction proceedings (if any), or after any such post-conviction proceedings; and
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> 5. For purposes of facilitating the relief allowed in paragraph 4 above and without further order of a judge or court, the State shall transfer without delay to a laboratory or scientist designated by the defense any or all of the materials described in paragraphs 1 through 3 above as necessary to permit the defense to undertake independent scientific testing. Upon completion of such testing, the defendant or his counsel shall return promptly to the State any remaining materials not consumed in testing, for further safekeeping pursuant to this order. The defendant and his counsel also shall cooperate with the State's

reasonable requests in documenting chain of custody of any items released and transferred for independent scientific testing.

37. To the extent that Mr. Avery requests DNA testing of previously-collected swabs and blood stains alleged to contain Mr. Avery's DNA, testing is warranted under the prior order.

38. Additionally, Mr. Avery is requesting that he be allowed to test previously-untested evidence for DNA and to collect additional blood samples from the RAV-4 for radiocarbon testing and for new DNA testing pursuant to Wis. Stat. § 974.07. § 974.07 provides for testing where a movant can show that the evidence is relevant to the investigation or prosecution, the evidence is in the possession of the government agency, and that the evidence has not previously been subjected to DNA testing, or if previously tested, may now be tested using a newer technique. *Id.* Here, Mr. Avery satisfies all of these requirements and is entitled to testing at his own expense:

1. **The evidence is relevant to the prosecution or investigation.** All of the requested evidence was collected in connection with the investigation of the death of Ms. Halbach and is thus relevant to the investigation.
2. **The evidence is in the State's possession.** Mr. Avery's counsel has confirmed on August 24, 2016, that all of the forensic evidence in Mr. Avery's case was transferred to the Calumet County Sheriff's Department and is being held there.
3. **The evidence requested for DNA testing has not been previously DNA tested.** Mr. Avery's trial transcripts reveal that certain relevant evidence

collected in his case was never subjected to prior DNA testing. If these items (such as the blinker light, hood prop, and battery cable) are tested, they could conclusively demonstrate Mr. Avery's innocence by identifying the real perpetrator's DNA.

Radiocarbon (14C) Testing to Determine Age of Blood in RAV-4

39. Since the 2007 conviction of Mr. Avery, there have been substantial developments in the application of established scientific testing to forensic cases. Forensic testing using radiocarbon (14C) could conclusively prove whether or not the blood evidence in the RAV-4 was from the 1996 blood vial taken from Mr. Avery and was therefore planted in the the RAV-4.

40. Blood is comprised of many fast renewing molecules and cell types and, as such, carbon dating the whole cell (or even DNA extracted from the cells) will yield a date when the blood sample was taken (the date at which it exited the body and stopped exchanging 14C). For example, if blood was freshly left in the car in 2005, then the blood sample will have a 14C/C profile that matches 2005. If the blood was planted from an older sample, the 14C/C profile of the blood sample will show an age older than 2005. Additionally, the test could detect petroleum-derive products such as EDTA.

41. The carbon dating method was developed by Dr. Kirsty L. Spalding ("Dr. Spalding"), an Assistant Professor at the Karolinska Institute, Stockholm, Sweden. She currently heads a research group in the Departments of Cell and Molecular Biology (CMB) and the Integrated Cardio Metabolic

Centre(ICMC). The CV of Dr.Spalding (attached and incorporated herein as **Exhibit O**).

42. Dr. Spalding started and has continued to develop and refine a novel method to use radioactive levels of 14C in the atmosphere to determine the age of biological structures. This technology has been extensively tested and validated. The technology has been used to answer many important biological questions, such as: a) do human beings make new nerve cells in the brain? b) do human beings make new heart muscle cells? and c) do human beings make new fat cells as adults? As well as biological applications, the method has also been developed to radiocarbon-date tooth enamel in order to establish a person's date of birth. Dr. Spalding has been working on the latter with police and forensic authorities to help determine the date of birth of homicide and missing person victims.

43. The rationale of ^{14}C carbon dating is as follows: ^{14}C levels in the atmosphere have remained relatively stable (with respect to all carbon) for the last several thousand years. However, atmospheric detonations of nuclear weapons during the period of the cold war (1955-1963) doubled the concentration of $^{14}C/C$ in the atmosphere. After the nuclear test ban treaty in 1963, ^{14}C levels have dropped exponentially. Atmospheric ^{14}C reacts with oxygen to form CO_2, which is incorporated into plants by photosynthesis. By eating plants, and animals that live off plants, the ^{14}C concentration in the human body closely parallels that in the atmosphere at any given point

in time. As such, ^{14}C levels in a rapidly-evolving tissue sample, such as blood, can be used to retrospectively determine the age of the sample. Establishing the concentration of ^{14}C is done using high precision accelerator mass spectrometry (AMS).

44. Fibers from the seat or carpet where the blood was taken are also needed to identify the age of any potential contaminants. If possible, it would be preferable to scrape new samples directly from the RAV-4, and thus avoid any issues of carbon contamination as a result of the way the sample has been stored since its 2005 collection date. The sample will be microscopically analyzed to determine whether there are any contaminating fibers in the sample and, if so, the fibers will be removed.

45. Radiocarbon dating of blood samples taken from the RAV-4 will be able to determine whether the blood found in the car and identified as Mr. Avery's was actually left from a fresh wound in 2005, or whether the blood is old, indicating that it was planted from a previously taken blood sample. The precision of AMS varies depending where on the bomb-spike a sample falls. However, resolving the difference between samples 9 years apart gives a solid margin for AMS. As such, radiocarbon (14C) testing will be able to determine whether the blood sample found in the RAV-4 was planted using the 1996 blood of Mr. Avery.

46. Using radiocarbon to date the blood in the RAV-4 would not have been readily available or even known to Mr. Avery's attorneys at the time of his

trial in 2007. Advances in the technology and methodology make it a viable test to do in 2016 to determine the age of the blood in the RAV-4.

47. Dr. Spalding will be assisted by Dr. Peter Steier ("Dr. Steier"), a physicist at the Isotope Research and Nuclear Physics VERA Laboratory, in performing the radiocarbon dating in the instant case. Dr. Steier will split the samples into three parts and perform three determinations to rule out contaminations by fibers and particles. He will then be able to perform a measurement with sufficient precision with at least 20 μgC per aliquot. Together with quality controls from dried blood, and two blood samples from the vial, there will be nine measurements in total. Dr. Streier will perform 14C radiocarbon dating of the forensic blood samples using Accelerator Mass Spectrometry (AMS).

48. Mr. Avery is requesting to examine the victim's RAV-4 (Item A) to obtain additional scrapings of dried blood. In addition to attempting to obtain more blood scrapings from the RAV-4, Mr. Avery is also requesting to test the blood scrapings already collected by the Wisconsin Department of Justice State Crime Lab. These blood scraping samples will be sent to Dr. Reich at Independent Forensics, to determine the quantity remaining for radiocarbon testing. Dr. Reich will ship them to Dr. Spalding at the Karolinska Institute for testing.

49. Upon receipt and before any examinations are performed by Dr. Reich and Dr. Spalding, the items will be thoroughly imaged to document their

condition and that of their packaging upon receipt. Seals, initials, labels, etc. will be carefully documented at appropriate magnifications so that they accurately represent their appearance and condition as received. All chain of custody protocols, agreed upon by the parties, will be strictly adhered to by Dr. Reich and Dr. Spalding.

Forensic Samples Required for Radiocarbon Analysis

50. **Item SA from LabCorp file no. 95-624:** Mr. Avery is requesting the blood tube containing Mr. Avery's 1996 blood sample.

51. **Item A6:** The stain determined to be Mr. Avery's blood cut from the fabric of the driver's seat of the victim's car. Whole blood is about 14% carbon so a very small drop (1 uL) would be a sufficient sample for one 14C/C AMS measurement (140ug carbon). Multiple 14C/C measurements are preferable and help attest as to the reproducibility of the measurements.

52. **Item A7:** Mr. Avery is requesting the blood scrapings of his blood from the victim's car that were identified as Mr. Avery's DNA. Whole blood is about 14% carbon so a very small drop (1 uL) would be a sufficient sample for one 14C/C AMS measurement (140ug carbon). Multiple 14C/C measurements are preferable and help attest as to the reproducibility of the measurements.

53. **Item A8**: The stain determined to be Mr. Avery's blood recovered, *i.e.*, swabbed, from an area to the right of the ignition of the victim's car. Whole blood is about 14% carbon so a very small drop (1 uL) would be a sufficient

sample for one 14C/C AMS measurement (140ug carbon). Multiple 14C/C measurements are preferable and help attest as to the reproducibility of the measurements.

54. **Item A9:** The stain on fabric determined to be Mr. Avery's blood cut from the fabric of the passenger's seat of the victim's car. Whole blood is about 14% carbon so a very small drop (1 uL) would be a sufficient sample for one 14C/C AMS measurement (140ug carbon). Multiple 14C/C measurements are preferable and help attest as to the reproducibility of the measurements.

55. **Item A10:** The stain determined to be Mr. Avery's blood recovered from the black compact disc case in the victim's car. Whole blood is about 14% carbon so a very small drop (1 uL) would be a sufficient sample for one 14C/C AMS measurement (140ug carbon). Multiple 14C/C measurements are preferable and help attest as to the reproducibility of the measurements.

56. **Item A12:** The stain determined to be Mr. Avery's blood recovered from the metal panel around the rear passenger door entrance. Whole blood is about 14% carbon so a very small drop (1 uL) would be a sufficient sample for one 14C/C AMS measurement (140ug carbon). Multiple 14C/C measurements are preferable and help attest as to the reproducibility of the measurements.

57. **Item G:** A stain recovered from the garage floor at 12332 Avery Road that was determined to be Mr. Avery's blood (Calumet County inventory no. 651).

58. **Item I1:** A stain recovered from the garage floor at 12332 Avery Road that was determined to be Mr. Avery's blood (Calumet County inventory no. 653).

59. **Item J:** A stain recovered from the garage floor at 12332 Avery Road that was determined to be Mr. Avery's blood (Calumet County inventory no. 654).

60. **Item K:** A stain recovered from the garage floor at 12332 Avery Road that was determined to be Mr. Avery's blood (Calumet County inventory no. 655).

61. **Item O:** A stain recovered from the garage floor at 12332 Avery Road that was determined to be Mr. Avery's blood (Calumet County inventory no. 639).

62. **Item P:** A stain recovered from the garage floor at 12332 Avery Road that was determined to be Mr. Avery's blood (Calumet County inventory no. 659).

63. **Item Y:** A stain recovered from the bathroom floor at 12932 Avery Road that was determined to be Mr. Avery's blood (Calumet County inventory no. 7116).

64. **Item AA:** A stain recovered from the molding around a door at 12932 Avery Road that was determined to be Mr. Avery's blood (Calumet County inventory no. 7104).

65. **Item CF:** Two pieces of fabric cut from the front of a couch at 12932 Avery Road that was determined to be Mr. Avery's blood.

66. **Item CG:** One piece of fabric cut from a zippered couch cushion at 12932 Avery Road that was determined to be Mr. Avery's blood.

67. **Item CQ:** A stain recovered from the inside of the living room door at 12932 Avery Road that was determined to be Mr. Avery's blood.

68. **Item CR4:** A stain recovered from the sink at 12932 Avery Road that was determined to be Mr. Avery's blood.

All of the requested testing is consequential to Mr. Avery's conviction and he is entitled to the testing at his own expense pursuant to *State v. O'Brien,* 233 Wis.2d 202, 323, 588 N.W.2d 8 (1999).

Alternative DNA Methylation Testing to Age Mr. Avery's Blood in Victim's Car

69. In the event that the samples for the radiocarbon testing are too contaminated for the test to produce accurate data, Mr. Avery is requesting that an epigenetic evaluation be performed on certain items. This testing will not be necessary if the radiocarbon testing produces reliable test results as to the age of Mr. Avery's blood. However, for reasons of judicial economy, Mr. Avery requests that the court order include DNA methylation testing

only if the radiocarbon testing fails because of contamination of the evidence samples.

70. The DNA methylation will be performed by Dr. Steven Horvath ("Dr. Horvath"), a Professor in Human Genetics and Biostatistics at UCLA. His methodological research area lies at the intersection of biostatistics, bioinformatics, computational biology, cancer research, genetics, epidemiology, machine learning, and systems biology. UCLA Bio of Dr. Steven Horvath, attached and incorporated herein as **Exhibit P**.

71. Applying these methods, Dr. Horvath studies a broad spectrum of disease, e.g., aging research, cancer, cardiovascular disease, HIV, Huntington's disease, and neurodegenerative diseases, in addition to other research applications. His group develops and applies methods for analyzing and integrating gene expression, DNA methylation, microRNA, genetic marker, and complex phenotype data. In particular, he developed weighted correlation network analysis (also known as weighted gene co-expression network analysis WGCNA), which is a systems biologic data analysis method for analyzing high dimensional "-omics" data.

72. These methods also lend themselves to comparing different species at the genomic level. Dr. Horvath's group works on all aspects of biomarker development: data collection, novel data analysis methods, and biomarker validation studies. For example, he worked on genomic biomarkers of aging and age-related diseases including cancer. He compared standard meta--

analysis methods with network based meta-analysis methods. He worked both on supervised and unsupervised machine-learning methods. Dr. Horvath developed the random generalized linear model (randomGLM) predictor, random forest clustering, and the cluster and propensity-based approximation of a network. He has a long-standing interest in developing and applying allelic association tests, e.g., Dr. Horvath has worked on the family-based association test (FBAT). More recently, he has focused on enhancing GWAS studies and exome-sequencing methods.

73. Epigenomics is the methods and applications surrounding epigenetic data (in particular DNA methylation data) to study human diseases, e.g., age-related diseases. Epigenetics is defined as the study of changes in gene expression or cellular phenotype, caused by mechanisms other than changes in the underlying DNA sequence. Dr. Horvath's epigenetic clock emerged from the study of chemical and structural modifications made to the genome that do not alter the DNA sequence but that are passed along as cells divide and can influence how genes are expressed. As cells age, the pattern of epigenetic alterations shifts, and some of the changes seem to mark time. To determine a person's age, Dr. Horvath explores data for hundreds of far- flung positions on DNA from a sample of cells and notes how often those positions are methylated, i.e., have a methyl group attached.

74. Dr. Horvath has discovered an algorithm, based on the methylation status of a set of these genomic positions, that provides a remarkably accurate age estimate - not of the cells, but of the person the cells inhabit. White blood cells, for example, which may be just a few days or weeks old, will carry the signature of the 50-year-old donor they came from, plus or minus a few years. The same is true for DNA extracted from a buccal swab, the brain, the colon, and numerous other organs. This sets the method apart from tests that rely on biomarkers of age that work in only one or two tissues, including the gold-standard dating procedure, aspartic acid racemization, which analyzes proteins that are locked away for a lifetime in tooth or bone. In human DNA, methyl groups most often attach at 'CpG sites', which are places where a cytosine precedes a guanine in the DNA.

75. A typical human genome contains more than 28 million such sites. But the microarray technology used to detect methylation samples finds only a fraction of them: older machines pin down just 27,000 sites and newer ones around 485,000. Dr. Horvath has identified methylation patterns that hewed even more closely to age in very different cell types, such as brain and blood. This identification constituted an important step toward finding a biomarker for the age of almost every part of the body. He pulled together myriad data sets that included both peoples' ages and their DNA methylation information. Methylation profiles are used for many kinds of medical research, usually in areas other than aging. Dr. Horvath devised a

way to normalize methylation profile. His algorithm, by early 2012, was using 16 CpG sites in the genome, and was returning correlations with chronological age of 96% in nine tissue types. The accuracy of median correlations were within three years for blood samples and just 18 months for buccal swabs. By December 2012, Dr. Horvath's methylation database spanned 51 types of non-cancerous tissues and cells, plus 20 kinds of cancer. The age estimator had grown to include 353 CpG sites. Dr. Horvath's paper featuring his results was featured in the October 2013 publication of *Genome Biology.*

76. Others began downloading Dr. Horvath's epigenetic-clock program to test it on their own data. Marco Boks at the University Medical Centre Utrecht in the Netherlands applied it to blood samples collected from 96 Dutch veterans of the war in Afghanistan aged between 18 and 53. The correlation between predicted and actual ages was 99.7%, with a median error measured in months. At Zymo Research, a biotechnology company in Irvine, California, Wei Guo and Kevin Bryant utilized the program on a set of urine samples Zymo had collected from 11 men and women aged between 28 and 72. The correlation was 98%, with a standard error of just 2.7 years.

77. In Dr. Horvath's opinion, an epigenetic evaluation can be used forensically in Mr. Avery's case to determine, to a reasonable degree of scientific certainty, if the blood in the RAV-4 was in fact deposited from Mr. Avery's

1996 EDTA-preserved blood vial. Natural aging alone, over a 9-year period, would have produced variable methylation patterns. The likelihood that Mr. Avery's DNA methylation profile would have remained exactly the same over a 9-year period is extremely unlikely, as it is physically and physiologically impossible to inhibit the natural process of cellular aging, which is dominated by epigenetic DNA methylation. Therefore, if the blood from EDTA-preserved vial and the blood from the RAV-4 yielded the same DNA methylation profiles, given the fact that Mr. Avery had aged 9 years, then Dr. Horvath would be able to determine with over 95% certainty that the EDTA-preserved blood collected in 1996 was indeed planted in the RAV-4 in 2005.

78. In Dr. Horvath's opinion, the following items would need to be submitted for DNA methylation testing to Dr. Devin Absher ("Dr. Absher") of HudsonAlpha Institute (601 Genome Way, Huntsville, AL 35896). Bio of Dr. Devin Absher, attached and incorporated herein as **Exhibit Q**.

A - 1999 "Toyota RAV-4" V.I.N #JT3HP10VSX7113044:

A6 - cutting of stain from RAV-4 driver seat (Exhibit #333)
A7 - swab from reddish/brown crusts recovered from the floor between center console and driver's seat (Exhibit #335)
A8 - swab of bloodstain from RAV-4 ignition (Exhibit #336)
A9 - cutting of stain from RAV-4 passenger seat (Exhibit #331)
A10 - swab of bloodstain on black CD case (Exhibit #332)
A12 - swab of bloodstain from metal panel around rear passenger door entrance (Exhibit #334)

B - 1993 blue Pontiac Grand Am V.I.N IG2NW14N9PC726145:

B1 - swab of bloodstain from passenger side of front console

B2 - swab of bloodstain from top of center console
B3 - swab of bloodstain from center console near the rear window button
B4 - swab of bloodstain from gear shaft
B5 - cutting of stain from back seat driver's side

Trace Testing

79. Mr. Avery is requesting that trace testing be performed at Microtrace Laboratories (790 Fletcher Drive Suite 106, Elgin, IL 60123) by microchemist Skip Palenik. CV of Skip Palenik (attached and incorporated herein as **Exhibit R**). Mr. Palenik has been teaching analytical microscopy to forensic scientists for more than thirty years and has published numerous scientific articles and book chapters on the applications of chemical and forensic microscopy. He established Microtrace LLC in 1992 to provide a resource for organizations and individuals in need of scientific services involving the analysis of microscopic trace evidence. His special research interests are the identification of single small particles, small amounts of complete unknowns, and tracing dust and soil back to their origins. Mr. Palenik has worked on many high-profile cases including: the Atlanta child murders, the Air India Bombing, the JonBenet Ramsey case, the 1985 Narita International Airport bombing (Tokyo), the Hillside Strangler (LA), the Oklahoma City bombing, Ivan the Terrible (Jerusalem), the assassination of Dr. Martin Luther King (reinvestigation by U.S. House Select Committee on Assassinations), the Unabomber case, the

disappearance of Helen Brach, the "Kiki" Camarena Murder Case, and the Green River serial murders.

80. Upon receipt and before any examinations are performed by Mr. Palenik, the items will be thoroughly imaged to document their condition and that of their packaging upon receipt. Seals, initials, labels, etc. will be carefully documented at appropriate magnifications so that they accurately represent their appearance and condition as received. All chain of custody protocols will be strictly adhered to by Mr. Palenik.

81. After each item is removed from its packaging and photographed, it will be subjected to examination by various light sources such as near infrared, infrared, and ultraviolet light in order to detect any unusual or unexpected regions, particles or stains that may not be visible under ordinary illumination.

82. Microscopical and micro-analytical examinations will be performed on both the victim's key found in Mr. Avery's bedroom and swabs used to obtain his buccal cells. The initial examinations will all be non-destructive and may include any or all of the following techniques: stereo-microscopy, bright-field and phase contrast microscopy, polarized light microscopy, fluorescence microscopy, scanning electron microscopy (SEM), energy dispersive x-ray (EDS) spectroscopy, Raman spectroscopy, and micro x-ray fluorescence (XRF) spectroscopy.

83. Mr. Palenik is requesting the following items for testing:

A. **Item C** - the victim's key to the RAV-4. Culhane testified that she developed a complete genetic profile by swabbing the key. Culhane testified that the genetic profile matched Mr. Avery and there was no trace of the victim's DNA on her own car key. Mr. Avery wants to re-test the key for any evidence of solvents or fibers that may have been used to remove the victim's DNA from the key. Mr. Avery also wants the key examined at Independent Forensic Laboratories in Lombard, IL in order to identify the source of the DNA because the State's expert testified that Mr. Avery's blood masked the DNA of the victim. Mr. Avery wants to use the Independent Forensic Laboratory DNA source testing described in paragraph 31 to determine if any of Mr. Avery's blood is on the key.

B. Mr. Avery requests possession of the buccal swabs taken from him in 2005 (Item BU; Calumet County inventory no. 8490; Trial Ex. 324) and 2003 (Item W from the 1985 case, Lab Report No. M85-1051; Trial Ex. 348). Mr. Avery is requesting to perform microtrace testing of the buccal swabs to determine if there are any other materials or chemicals (such as dirt) on the swabs. If any material is present on the buccal swab, other than the DNA from Mr. Avery's cheek, Mr. Avery can prove that the buccal swab was used by police officers to deposit Mr. Avery's DNA on the hood latch. (Item BU; Calumet County

inventory no. 8490; Trial Ex. 324) (Item W from the 1985 case, Lab Report No. M85-1051; Trial Ex. 348).

Ballistics Testing

Mr. Avery is requesting Neutron Activation Analysis ("NAA") to compare the elements contained within Item FL, the bullet fragment recovered from his garage, and the unspent .22 LR shells taken from his bedroom. Mr. Avery would conduct testing at the University of Massachusetts, Lowell, by Dr. G. Nelson Eby ("Dr. Eby"). CV of Dr. Eby, attached and incorporated herein as **Exhibit S**. If different elements are detected, then it would refute the State's theory that Item FL was shot by Mr. Avery, with the Marlin Glenfield Model 60 .22 rifle through the skull of Ms. Halbach. TT:2/22:38-39; TT:2/36:76-77. Mr. Avery requests the following items for ballistic testing:

A. Item FL: the bullet fragment recovered from Mr. Avery's garage.

B. Unspent .22 LR shells from Steven Avery's bedroom (contained within Calumet County inventory no. 8436).

Upon receipt and before any examinations are performed by Dr. Eby the items will be thoroughly imaged to document their condition and that of their packaging upon receipt. Seals, initials, labels, etc. will be carefully documented at appropriate magnifications so that they accurately represent their appearance and condition as received. All chain of custody protocols, agreed upon by the parties, will be strictly adhered to by Dr. Eby.

All of the requested testing is consequential to Mr. Avery's conviction and he is entitled to the testing at his own expense pursuant to *State v. O'Brien,* 233 Wis.2d 202, 323, 588 N.W.2d 8 (1999).

Compelling Fingerprint Comparison

84. Mr. Avery is requesting the previously-obtained fingerprints of Officers Colborn and Lenk for comparison to the unidentified prints discovered on the victim's vehicle (Item A25). Mr. Avery is requesting that a comparison be performed of the fingerprint standards of Officers Colborn and Lenk to any unidentified fingerprints standards from the victim's vehicle. If the unidentified fingerprints on the victim's vehicle match either Officer Colbor or Officer Lenk, it would be significant evidence of their involvement in moving the victim's vehicle onto the Avery property.

85. **Items BM**: Mr. Avery is requesting to examine items BM, described as a Motorola Razr phone and box from the victim's dining room (Calumet County inventory no. D7802). Wisconsin State Crime Lab Receipt of Physical Evidence, November 11, 2005 (attached and incorporated herein as **Exhibit T**), STATE 834. The victim's Motorola Razr phone was allegedly discovered in Mr. Avery's burn barrel. The inability of the State to produce the Motorola phone located in the victim's residence (Item BM) would demonstrate that it was the phone placed in the burn barrel by law enforcement (contents of the burn barrel are Item AL).

86. For the first time, all of the above-referenced testing has the potential to provide a comprehensive analysis of the forensic evidence used to convict Mr. Avery, and to determine the viability, validity, and veracity of the forensic evidence presented 9 years ago at Mr. Avery's trial. All of the requested testing is consequential to Mr. Avery's conviction and he is entitled to the testing at his own expense pursuant to *State v. O'Brien,* 233 Wis.2d 202, 323, 588 N.W.2d 8 (1999).

CONCLUSION

Mr. Avery's request satisfies *State v. O'Brien,* 233 Wis.2d 202, 323, 588 N.W.2d 8 (1999) and all the elements of § 974.07. Because the requested testing is consequential to Mr. Avery's conviction and because he has met all the requirements of § 974.07, this Court should order all of the testing encompassed in the 2007 trial court order and all of the new testing described above.

Because a DNA Order has already been entered, Mr. Avery requests an evidentiary hearing, if necessary, on the radiocarbon (14C) testing, DNA methylation testing (if radiocarbon testing cannot be done because of contamination), the body fluid source testing, and any microtrace testing.

WHEREFORE, Mr. Avery respectfully requests that this Court issue an order directing the following:

(1) The State shall release to the above-described laboratories the previously-identified items of evidence.

(2) Should the laboratory need to consume all of a sample, the parties shall be contacted to obtain their agreement.

(3) All of the results will be communicated to both Mr. Avery and the State by the respective laboratories.

(4) The parties will confer and determine an acceptable date and time for Mr. Avery's forensic scientists to perform additional collection of forensic samples from the victim's vehicle, currently in the possession of the Calumet County Sheriff's Department.

Dated this _____ day of August, 2016

Respectfully submitted,

_____

Kathleen Zellner*
Douglas Johnson*
Zellner Law Office
1901 Butterfield Rd #650,
Downers Grove, IL 60515
(630) 955-1212
attorneys@zellnerlaw.com
Admitted pro hac vice
Lead Counsel

_____

Tricia J. Bushnell #1080889
Midwest Innocence Project
605 W. 47th Street, #222
Kansas City, MO 64112
(816) 221-2166
FAX (888) 446-3287
tbushnell@themip.org
Local Counsel

ATTORNEYS FOR PETITIONER-APPELLANT

cc: Gregory M. Weber, Thomas J. Fallon, Assistant Attorney Generals
Lynn Zigmunt, Clerk of Manitowoc County.