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February 21, 2006

Sheriff Jerry Pagel
Calumet County Sheriff's Department
206 Court Street
Chilton, Wisconsin 53014-1198

Re: Forensic dental examination of submitted evidence and comparison to the dental records of Teresa Halbach.
(Calumet County Sheriff's Department case #05-0157-955)
(Wisconsin State Crime Laboratory case #M05-2467)
(Division of Criminal Investigation case #05-1776)

On November 9, 2005, at the request of the Division of Criminal Investigation and the Calumet County Sheriff's Department, I examined charred dental remains of an individual recovered in Manitowoc County. These remains were brought to my office by Special Agent Matthew Joy. These remains were in a small white box with a Wisconsin State Crime Laboratory case #M05-2467 and an item "#A11". These remains consisted of seven severely charred root fragments.

On November 10, 2005 Special Agent James Holmes brought dental records to my office for comparison. These records consisted of a panorex x-ray dated August 30, 2001, four bite-wing x-rays dated August 4, 1998; four bite-wing x-rays dated August 20, 1999, four bite-wing x-rays dated August 30, 2001, two bite-wing x-rays dated August 5, 2003 and two bite-wing x-rays dated September 2, 2004. All of these x-rays are labeled with the name Teresa Halbach.

On November 11, 2005, Special Agent James Holmes brought additional dental remains to my office. These remains were in a clear Ziploc bag labeled with "DCI 05-1776", "JCH 11/11/05" and "11/10/05 L. Eisenberg". These remains consisted of two charred bone fragments from a mandible and three charred root fragments. The bone fragments are a portion of a coronoid process and a portion of the lingual plate of bone from the lower right quadrant. Two of these root fragments could be fracture matched back together and then I could re-associate these roots to the fragment of the mandible from the lower right quadrant. Now these three combined fragments can be identified as the root structure and the associated supporting bone of the lower right second permanent molar (tooth #31).

On November 13, 2005, I picked up one more root fragment and one more bone fragment from Dr. Leslie Eisenberg. This evidence is in a clear Ziploc bag and labeled with "05-1776 DCI", "Item 1 Tag 7924" and "Dental 11-13-05 L. Eisenberg". The root fragment appears to be a portion of a root from a mandibular incisor and the bone fragment is also from the anterior region of the mandible. The root fragment can be placed in two of the sockets that are present in the fragment of the mandible. This mandibular fragment has sockets where three roots had been and these sockets are consistent with a section of the mandible where the lower right central and lateral incisors and the lower right cuspid would have been (teeth #25, 26 and 27). The socket that is most anterior and the middle socket are where the root fragment can be placed, so that fragment would be consistent with either the lower right central or lateral incisor.

On November 18, 2005, I picked up additional evidence at the Dane County Morgue. This evidence is in a clear Ziploc bag labeled with "DCI 05-1776", the Wisconsin State Crime Laboratory case number "M05-2467", "BY" and Dr. Leslie Eisenberg also initialed it on November 16, 2005. Inside this bag is a small box with the same case numbers and the same item #BY. This box contains three charred root fragments and 11 non-dental burned items. These 11 non-dental items look like charred dental fragments, but based on x-rays that I obtained, they clearly are not and they appear to be pieces of wood. The three dental fragments are root fragments and two of them can be fracture matched back together.

On December 20, 2005, I met Dr. Eisenberg at the Dane County Morgue and picked up additional dental remains. There were two boxes. One box has evidence "tag #6200" and one box has evidence "tag #8150". In these two boxes there were a combined nine dental fragments and 13 non-dental items. Even though the 13 non-dental items again do appear as charred tooth fragments, based on x-ray examination, they clearly are not. Again, they appear to be pieces of wood. Of the nine dental fragments in these two boxes, there were eight root fragments and one portion of a cuspid crown.

On January 28, 2006, I picked up the last of the dental remains from Dr. Leslie Eisenberg at the Dane County Morgue. These remains were in a plastic vial that was in a Ziploc bag. This bag and the vial were labeled with the DCI "#05-1776" and "tag #8118". There were two fragments enclosed. One was a charred root fragment that appears to be from a lower left lateral or central incisor. The second item looked like the crown of a tooth, but when it was cleaned up and x-rayed it clearly is not from a tooth and in fact it looks like a piece of plastic.

There were a total of 52 individual items that I initially examined. There were 24 tooth fragments, 3 bone fragments, 24 pieces of wood and 1 piece of a material that appears to be plastic. If I was 100% comfortable with the fracture matching, I did glue some of these fragments back together. I did this because, when these small critical pieces of dental fragmentary evidence are exposed to fire and the extreme temperatures, they become very brittle. If these fragments are broken or crushed, which can easily happen,

this evidence is gone forever. By fracture matching some of these fragments and then reinforcing them with cyanoacrylate glue, these fragments will be stronger and better preserved. Subsequently, after the fragments I did glue together there were now a total of 21 tooth fragments, 2 bone fragments and 1 bone fragment with root structure associated with it.

I have thoroughly examined, x-rayed and photographically documented all of the initial 52 items. I analyzed all of the dental evidence and tried to identify each of the dental fragments, if it was from a molar, a bicuspid, a cuspid, a lateral incisor or a central incisor. I also tried to determine if it was from the maxilla or the mandible and if it was from the left side or the right side. Since I didn't have any intact teeth to examine, there were only parts or fragments of teeth, it was very difficult to do. I was actually only successful with identifying a few of these fragments. I obtained a total of 46 x-rays of the items that were given to me to examine. One of the problems that I encountered was that I was looking almost exclusively at root structures, there were no crowns recovered, except for one portion of a cuspid crown. Teresa Halbach had some restorations or fillings evident on her bite-wing x-rays. These restorations are in her molars and there were no molar crowns recovered. The only crown that was recovered was a portion of a cuspid crown. The cuspid crowns do not show on the bite-wing x-rays and they are not clearly depicted on the panorex x-ray. Most of the root fragments, because they are just fragments, are impossible to identify and subsequently they really can't adequately be compared to the dental records of Teresa Halbach. Due to the fact that the examination and analysis of the root structure is so critical, I called Dr. Krupka (Teresa Halbach's dentist) to see if there were any other x-rays. I was specifically looking for periapical x-rays that would show the entire root structure. Dr. Krupka did not have any periapical x-rays, but he said that he had four bite-wing x-rays from August 25, 1997 that are positioned a little further down in the mouth and may show a little more of the root structure. He forwarded those to me and I received them on November 15, 2005. These x-rays from 1997 are again labeled with the name Teresa Halbach.

In conclusion, the best evidence available for comparison to Teresa Halbach's dental x-rays are those that I received on November 11, 2005. The fragment of the mandible from the lower right quadrant with the root from the lower right second molar (tooth #31) can be compared with the August 30, 2001 panorex x-ray and the August 25, 1997 bite-wing x-ray of Teresa Halbach. While this fragmentary evidence is not sufficient to support a positive identification, it is very consistent when I compare these antemortem x-rays of Teresa Halbach to the postmortem x-rays that I obtained. There are some mesial curvatures of both the mesial and the distal roots of tooth #31 (in the apical third) that can be seen on the postmortem x-rays and the panorex x-ray of Teresa Halbach. The 1997 bite-wing x-ray of Teresa Halbach does show more of the root structure of tooth #31 than the other bite-wing x-rays, but not all of the root structure. However, the root structure of tooth #31 that can be visualized on these 1997 bite-wing x-rays does look very similar to the root structure of tooth #31 on the postmortem x-rays. In fact, I can place the 1997 bite-wing x-ray of Teresa Halbach over the postmortem x-ray and the

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roots of tooth #31 can be superimposed one on top of the other and appear identical. I am enclosing duplicates of the postmortem x-rays that I obtained for your records. If you would have any further questions, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Donald O. Simley II". The signature is fluid and cursive, with a large loop at the end.

Donald O. Simley II, D.D.S.

copy: Special Agent James Holmes (Division of Criminal Investigation)
Special Agent Thomas Fassbender (Division of Criminal Investigation)
Special Agent Rodney Pevytoe (Division of Criminal Investigation)
Director Jerome Geurts (Wisconsin State Crime Laboratory)
Dr. Leslie Eisenberg