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Attn: Dr. John Green
Dr. Charles L. Matsch
Dr. Richard Ojakangas

Subject: Kensington Runestone Investigation (KRS)
Response to Peer Review of Report
APS Job # 10-01120

Dear Professors,

First of all I want to thank all of you for taking the time to review this report. Your comments and opinions are greatly appreciated.

I think it is be important to explain the approach I took to this portion of the KRS work which was the same that I take on any other forensic investigation project. We are paid to reach a conclusion that is defendable in a court of law. Are there times when we have fewer facts to base our opinion(s) on than other cases? Absolutely. I am always asking myself if I have enough evidence to support the conclusions I make. Rarely do we not come to a defendable opinion. I should also add that we write our reports in a rather curt fashion for legal reasons. I definitely plan on writing a much more comprehensive report/book on all of this work in the future. It will be after the additional work I recommended has been completed.

In this case the question is simple. Is there enough physical evidence on the artifact to render an opinion on the authenticity of the KRS? In my mind there is, even though this is a preliminary report. The two key points that led to my opinion that the KRS is authentic are as follows:

1. It is very clear that the last three rows (rows 10-12) of the inscription were carved after the split side of the KRS was made/dressed (See photo #2). The chip sample taken from the split side exhibits weathering of minerals (biotite, muscovite and chlorite) that took many years to reach their present state or complete absence. This conclusion was made assuming it was buried in the ground for a prolonged period of time as reported. If the chip implies the entire split side has experienced the same period of weathering, then the three rows of the original inscription on that side, have also.
2. The white, branching, apparent root leaching lineations on the glacial side (See photo #3) clearly were produced by chemical reactions that occurred between tree roots and minerals in the stone over a period of several years. I believe that the root leaching was produced by the same tree that Olof Ohman found the stone entangled in because the pattern matches his description and sketch. "The other root extended almost horizontally across the stone and made at it's edge a right angled turn downward." Signed affidavit given and witnessed by R.J. Rasmussen and George H. Merhes, on July 20, 1909. (See attached letter with sketch). Even though I disagree with Theodore C. Blegen's conclusion of who carved the KRS, his book has an excellent appendix of source documents regarding the stone. The above quote was taken from Blegen's book, The Kensington Rune Stone - New Light on an Old Riddle, 175 pp. published by the Minnesota Historical Society (MHS) in 1968.

These two points support the idea that the KRS was buried in the ground for many years. All of the witnesses who saw the tree estimated the diameter of the trunk to be between 8 to 10 inches (N. H. Winchell estimated it's age at not less than 40 years). Assuming these estimates to be true, the age of the tree easily pre-dates Mr. Ohman's presence in this country. He homesteaded the Kensington property in 1890 and found the stone in 1898. The conclusion is that he could not have carved the stone. So, if not him, then who? The only other evidence that puts the carving anywhere else in time, is the date on the stone. All other possible scenarios I've heard are simple speculation with no tangible evidence to support them. There is a multitude of other circumstantial evidence that also supports the stones authenticity that I will comment on in the future. The question now becomes, do I have enough factual evidence to defend my conclusion. I believe I do.

I would like to respond to your specific comments. You're first Dick...

1. Page 3, General Geology - I do not know if it is Archean or Proterozoic in age, it's simply a speculation. Perhaps you could help us out when we get to that part of the recommendations in future work. Could it be from the Thomsom Formation?

2. Page 4, Retooling - The retooling appears to have been done by Olof Ohman shortly after he found the stone, probably the same day he found it. In interviews I've read he said he cleaned soil from the carvings with a nail. My guess is that as he was cleaning clay and soil the nail crushed the minerals at the base of the characters and they turned white. He probably thought what he was doing was helpful and proceeded to clean out the entire inscription. I have reviewed the first known photographs taken of the stone in March of 1899, about four months after it was found, and it looks like the retooling was present on the stone then. This would be consistent with Mr. Ohman having inadvertently retooled the stone. It is certainly possible that someone else retooled the inscription but there is no other documentation suggesting that. (If Mr. Ohman did indeed retool the stone, it seems unlikely that he could be a forger. If he purposefully carved and then buried the stone to presumably create a weathered appearance, why
would he remove the very evidence he waited years to develop?).

3. Page 4, Freeze-Thaw Cycles - The idea that an object buried underground would experience fewer freeze-thaw (F-T) cycles is based on the fact that the ground would provide some insulation from these events. It would take longer for water in the ground to melt and then re-freeze than water present at the surface, hence a greater number of F-T cycles. Ultra-violet light exposure also impacts F-T cycling at the surface resulting in a greater number of events.

4. Page 6, Undercutting - I was referring to the greater loss of ground-mass material (primarily micas) in the white, leached area during fixed abrasive, high speed polishing. The idea was to show that the mica minerals had been degraded physically by chemical reactions initiated by prolonged contact with the root. What I should do is put a dashed line on the SEM photo marking the contact between the two zones (degraded vs. non-degraded).

5. Page 7, Weathering of Chip Sample - The point that I obviously did not make clear is that even though the glacial (top of core sample) and split side (exposed side of the chip sample) surfaces look similar at high magnification (500x), they look quite different at lower magnification (50x) under reflected light. The reflected light images (photos #32 & 34) clearly show pitting of the core/glacial surface that I believe indicates weathering that has taken much longer to develop than the chip/split side surface.

6. Page 8, Conclusion - The fact of the matter is that the KRS either is, or is not, an authentic artifact. Yes or no, period. When I write an opinion I have to be able to defend that opinion with facts and judgement based on experience. The judge and/or a jury ultimately decides if I have proven my case beyond a reasonable doubt. Does that mean the decision reached is absolute truth? No way. Truth these days unfortunately, is what people read or hear in the news!

You are correct that the final word on the authenticity of the KRS has yet to be decided. You are also correct in saying that I personally want the stone to be real and I understand if there is concern about my objectivity. After 17 years of performing this type of work I have become very proficient at separating my personal and professional opinions. I know I don’t come across that way all the time, but I take that aspect of this work very seriously.

As time has progressed, the factual evidence mounts in favor of the KRS. But we must be open-minded and carefully consider any tangible evidence that is in conflict with authenticity. I’ve read the transcripts and listened intently to the 1967 and 1970 Walter Gran interviews about his fathers “death-bed” confession (The Sr. Gran was only sick, he died six years later). The Sr. Gran alludes to helping Mr. Ohman carve the Runestone. His sons recollection of this conversation that occurred 40 years before offers no time
line or details about any aspect of the “prank.” All his father says is “Go ask Olof Ohman.” On April 27, 2002, I personally interviewed a Mr. Gil Moe (84 years old) from Kensington, Minnesota, who knew both Olof Ohman (Gil was 17 when Mr. Ohman died) and Walter Gran. Gil confirmed what everyone has said about Mr. Ohman, that he was credible and honest. Gil also said “Walter Gran was a liar and a drunk.” A few days later while listening to the tapes I heard Mr. Gran talk about “tying one on” with three different people. I suggest you listen to the tapes and decide Mr. Gran’s credibility for yourself.

(An interesting rumor that has circulated since the first “Gran Tapes” interview conducted by Dr. K. Paul Carson Jr. in 1967, is that the MHS conducted and publicized the interviews to promote Ted Blegen’s book which was published by MHS the following year. Coincidently, the book concludes a conspiracy including the same people Mr. Gran implicates in his interview. Mmmn!)}

The other important aspect of the stone is the inscription itself. That has been the focal point of arguments against the stone. I am certainly not qualified to comment on this aspect but I have had extensive correspondence with Dick Nielsen who has. He has made great strides in demonstrating the inscriptions 14th century origin.

7. Petrographic Thin Section Sheet, Foliation vs. Bedding - I agree that it is more likely a foliation. I left open the possibility of relict bedding out of respect to your observation in our lab on September 11, (No joke, I looked it up!) 2000.

8. Photo # 10, Striations - I do not believe these are striations. I think those sub-parallel lineations on that fracture surface are related to the foliation. Something similar to the sub-parallel lineations observed on a conchoideal fracture face that are influenced by elongate chalcedony needles. I’ve seen these features many times in agates.

9. Photo # 31 & 32, Same Photo - I intentionally used the same “fresh” fracture photo twice to try and illustrate how both fracture surfaces started off the same, but now appear different because of the length of time of weathering.

John, you’re next. I won’t address points I mention previously.

1. Page 2 & 3, Weight of the Stone - We did not weigh the stone due time, convenience and concern for scratches, but it reportedly weighs 202 lbs.

2. Page 3, Stone Color - I always tend to lighten my visual estimate of color shades. Maybe my eyes are messed up!

3. Page 4, Four Man-made Surfaces - All four of these surfaces had the same color, texture, weathered appearance and logical contemporaneous origin.

4. Page 4, Pseudo-Conchoideal Fractures - I was not able to get a good photograph at the
time, but I have since taken one that shows it pretty well. I should add that at the time, I was 99% sure in my mind that I was looking areas of purposeful impact. We then had Janey Westin (Bob Johnson’s daughter who is a stone carver by trade) come in and look at the stone. She emphatically agreed that they were impact marks and that the split side was clearly dressed before the inscription was carved.

5. **Page 7, Conclusion 2a.** - The split side showed no evidence of striations at all. I think you mean the “face” side (photo #10) which is where the inscription starts. As I said before, I don’t think those are striations. Either way, I don’t think that point is significant to the investigation.

6. **Page 7, Conclusion 2c.** - As far as we know the message is all there. I think the carver became nervous about more spalling along that cleavage plane and moved over to the right. On the next line (Row 3) he/she indented to the right again, trying to avoid the cleavage plane. It appears the carver got brave on the fourth line and started on the far left edge again.

7. **Page 8, Permission to Sample Tombstones** - We’ve already contacted the City of St. Paul seeking permission to take samples in the oldest cemeteries. Anywhere else we might go we will definitely obtain permission. I would think most families and their deceased loved ones would be willing to participate in such a project. We only need a very small chip sample from the tombstones to perform the analysis.

8. **Page 9, Powder Mounts** - Powder mounts are simple scrapings that we put on a thin section glass slide with refractive index oils to identify secondary deposits and coatings.

Ok Charlie, your turn...

1. **Page 2, Purpose as a Runestone** - Your point is well taken, however, I believe this part of the background information is relevant to work we performed. It’s use as a man-made artifact (a Runestone in this case) is directly related to better understanding the origin of the physical features we observed.

2. **Page 5, “H” Control** - Barry Hanson believes that since we know the “H” was carved in 1908 that we may be able to use those surfaces for comparison purposes. I’m not so sure about that, we definitely can’t get the whole stone in an SEM with present-day technology. Maybe someday.

3. **Page 5, N. H. Winchell Credentials** - That’s a very good idea and I will definitely will talk a lot about him in future publications.
Hopefully, I touched on all of the points you guys felt were important. I can’t tell you much I appreciate your time and concern. Feel free to contact me if you need further clarification. You can be sure there will be more to come and I’ll definitely keep you posted!

Respectfully,

Scott F. Wolter