

Authentication of Lakota Artifacts

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Moccasins

Introduction:

- This pair of moccasins was loaned by the Red Cloud Heritage Center reportedly retrieved from the Wounded Knee Massacre of December 29th, 1890. With a documentation trail also provided by the Red Cloud Heritage Center the moccasins seem to have been loaned by a gentleman in Denver, CO to a museum on 08/25/1937 marking the correct month and year of the massacre. The next record is from the Gerald F. Ford Conservation Center who proposed to do repair work in 2002, though nothing seemed to come of it. Afterwards, Ann and Chuck Trimble gave the moccasins to the Heritage Center in 2006, where they have been kept since. Our job was to determine the authenticity of this pair of moccasins.

Approach:

- In handling and analysis, these moccasins had to be treated with great care and respect. If they were, they would be of high significance to the Lakota people as a living mark of our history. Even if they were not retrieved from the massacre, they would still be 77 years old, according to the paperwork.

Procedure:

- Acquire Cultural Understanding of Item(s):
 - The Wounded Knee Massacre is a sensitive issue (a largely unarmed group of Oglala, Lakota of 250 were killed by Wounded Knee Creek by the Seventh Cavalry)
 - Interview of cultural advisors (JhonDuane Goes In Center, Steve Tamayo)
 - Designs are very characteristic of Lakota: heavy geometry [Figure 1], hills represented, red cloth use as a mark of high standing, colors [Figure 2], construction
- Acquire Historical Understanding of Item(s):
 - Post-Reservation establishment noted by materials used (i.e. thread instead of sinew, red cloth, irregularity of glass beads [Figure 3], arch as a note of time [Figure 4], brain-tanned deer hide)
- Appropriate Analytical Tools:
 - Predominantly X-Ray Fluorescence analysis of hide and beads in comparison to commercially tanned hides with chromium
 - VSC6000/HS used to detect fluorescence in hope of identifying a trait of the material, there was none

Results:

- Hide from moccasins showed a lot of iron [Figure 5] and arsenic, though the arsenic was not uniform. It was made with brain-tanned deer as noted by Steve Tamayo, who brain-tans himself.
- Deer hide tanned with chromium is very identifiable [Figure 7].
- White and opaque green beads showed high amounts of lead [Figure 6], and arsenic though much smaller than in hide.
- Noting the arch, materials, composition, construction, and paperwork, these moccasins are definitely from the 1890-1900 decade, though if they are from the massacre site itself is still to be determined.

Overarching Objective:

To determine a versatile database and procedure for authenticating Lakota historical objects and art of various mediums. To uphold the Indian Arts and Crafts Act of 1990.

General Procedure:

Unlike typical research procedures, this project has required a unique combination of historical and cultural facts with modern analytical tools. All testing was non-destructive to the items. To proceed, we developed the following guidelines:

- 1) Acquire Cultural Understanding of Item(s)
- 2) Acquire Historical Understanding
- 3) Use of Appropriate Analytical Tools for Material Analysis



Figure 1 Pair of Moccasins



Figure 2 Sony Camera, Gender Identification

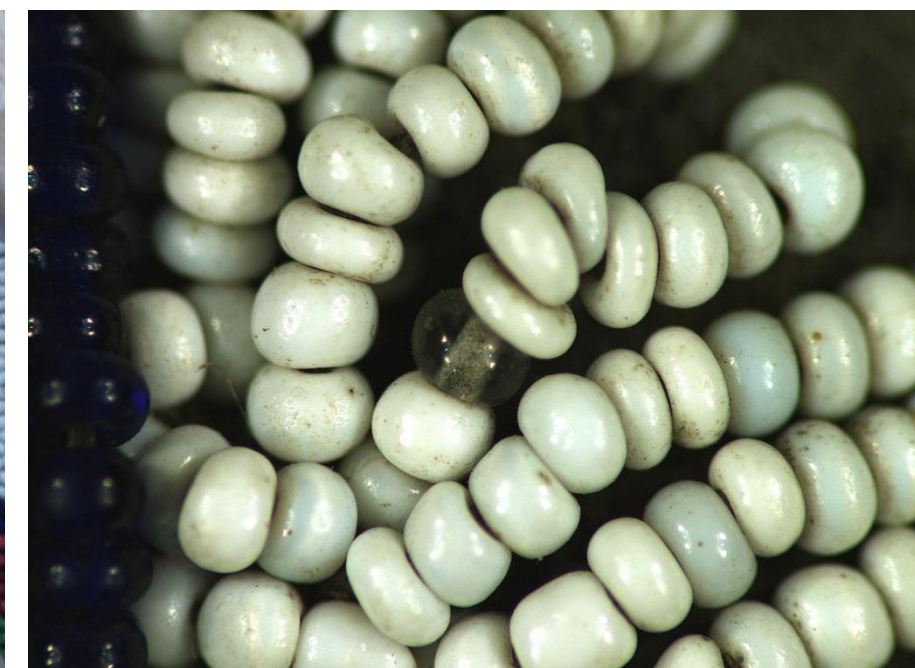


Figure 3 VSC6000/HS Image, Clear Bead Note



Figure 4 VSC Image, Sole Note

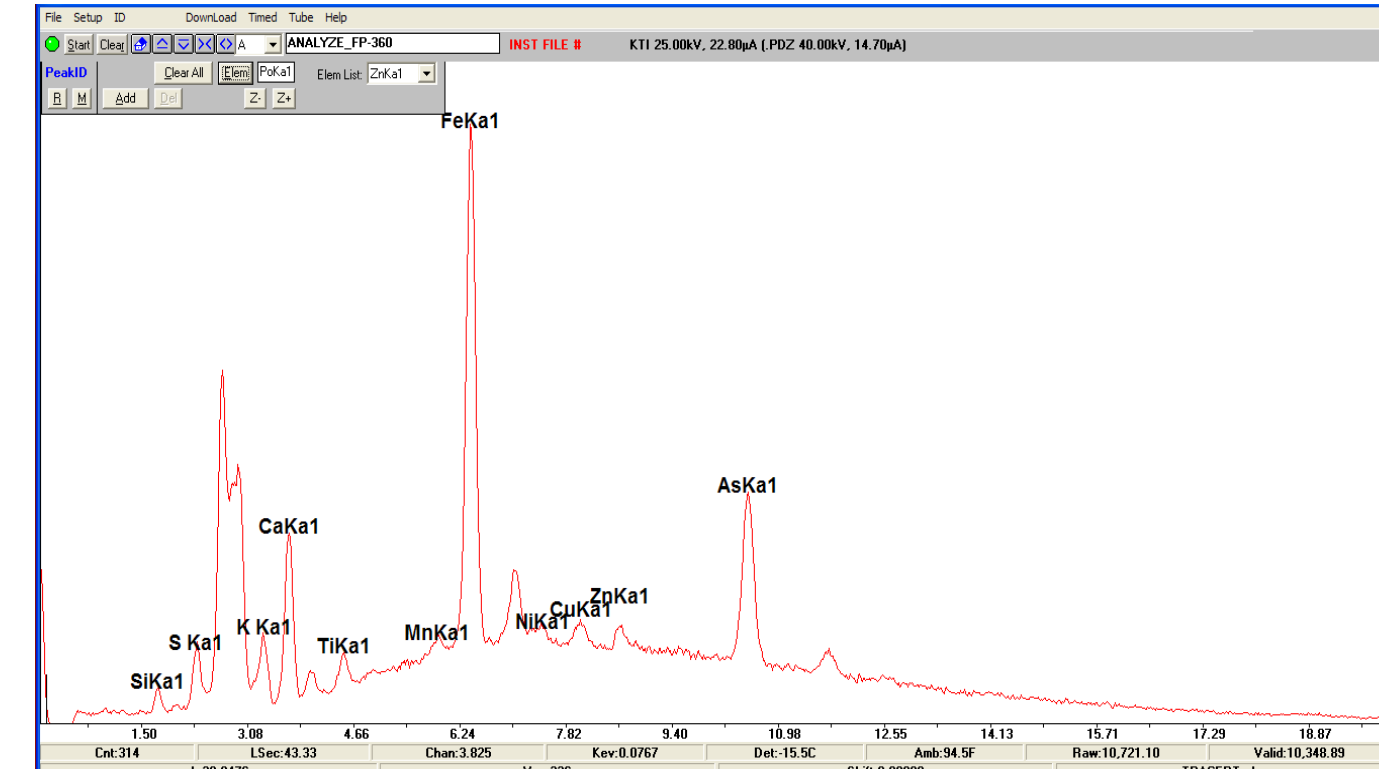


Figure 5 XRF, Hide Around Ankle

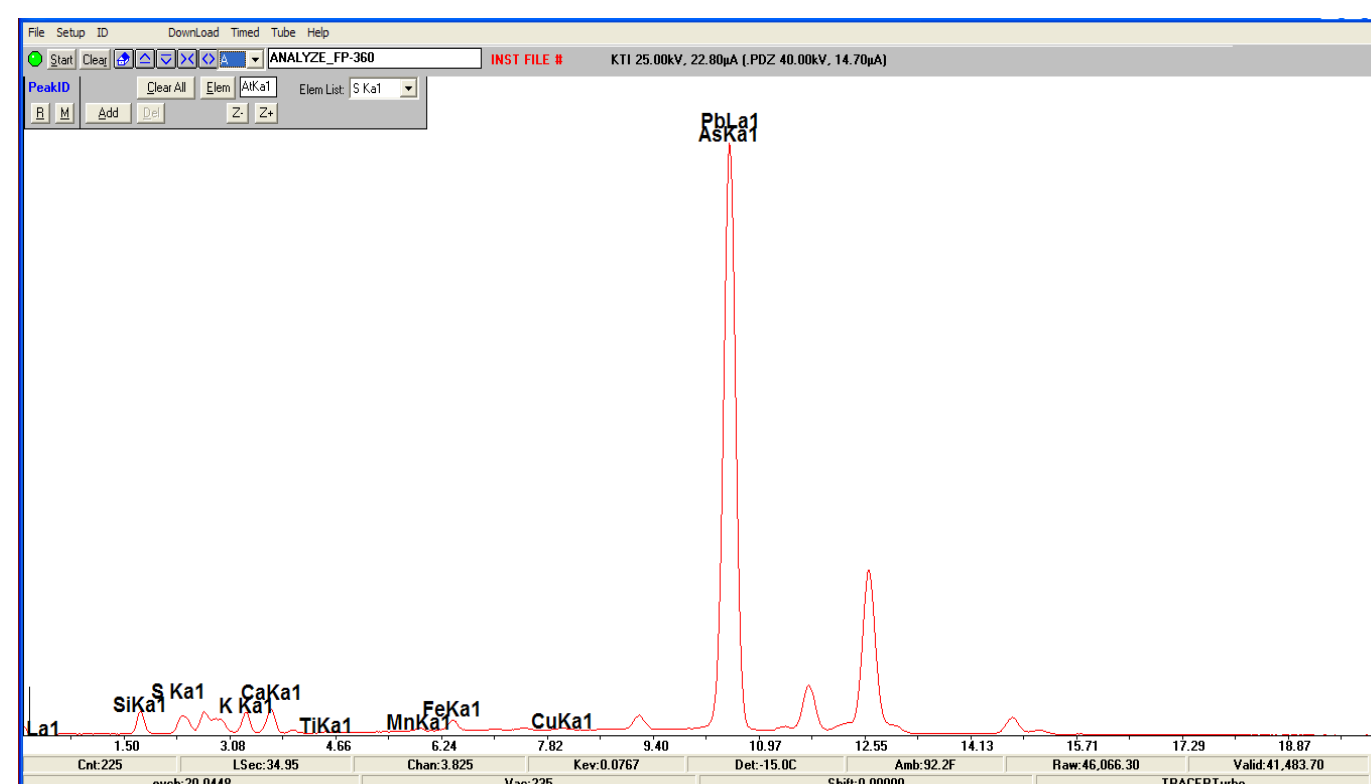


Figure 6 XRF Spectrum, White Beads (near identical to opaque green beads)

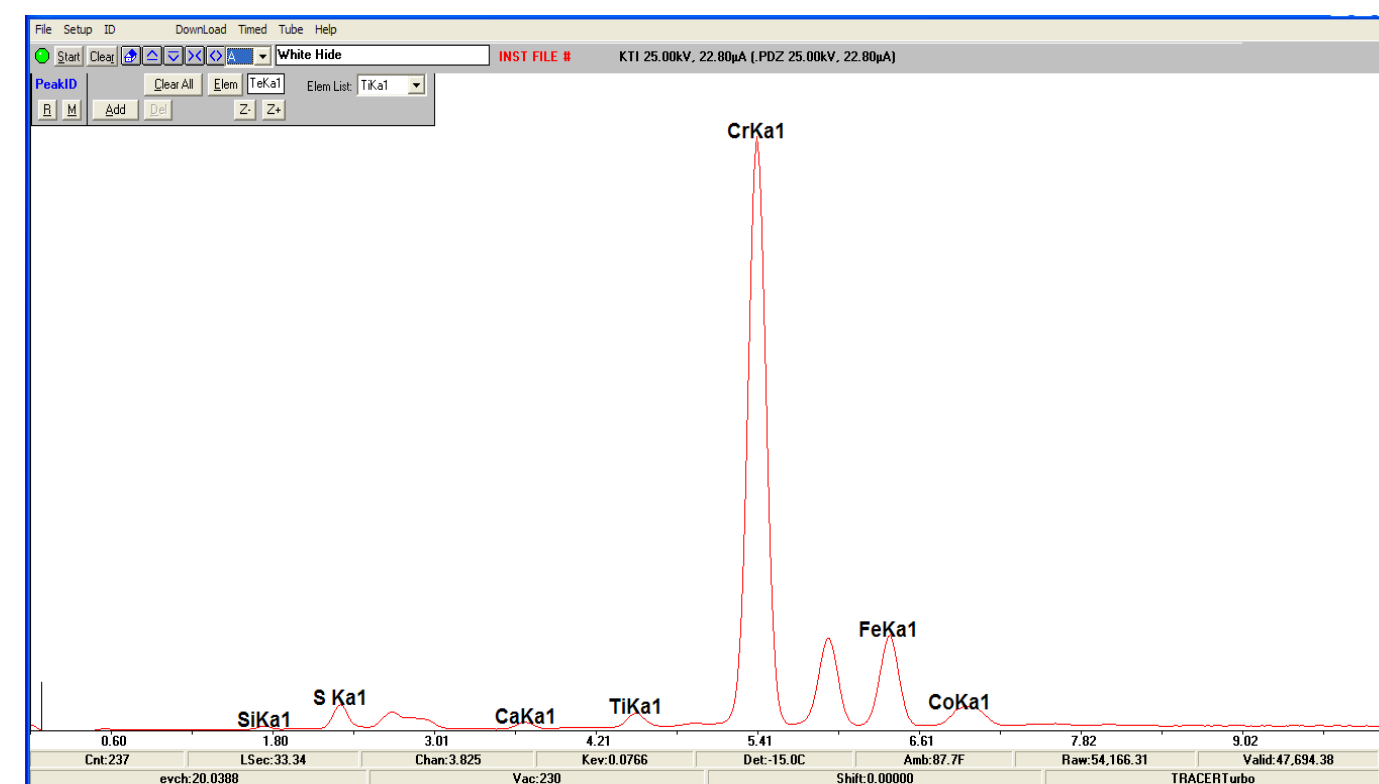


Figure 7 XRF Spectrum, Inside of Cr Tanned Deer



Figure 8 VSC6000/HS Image, Pouch Attachment

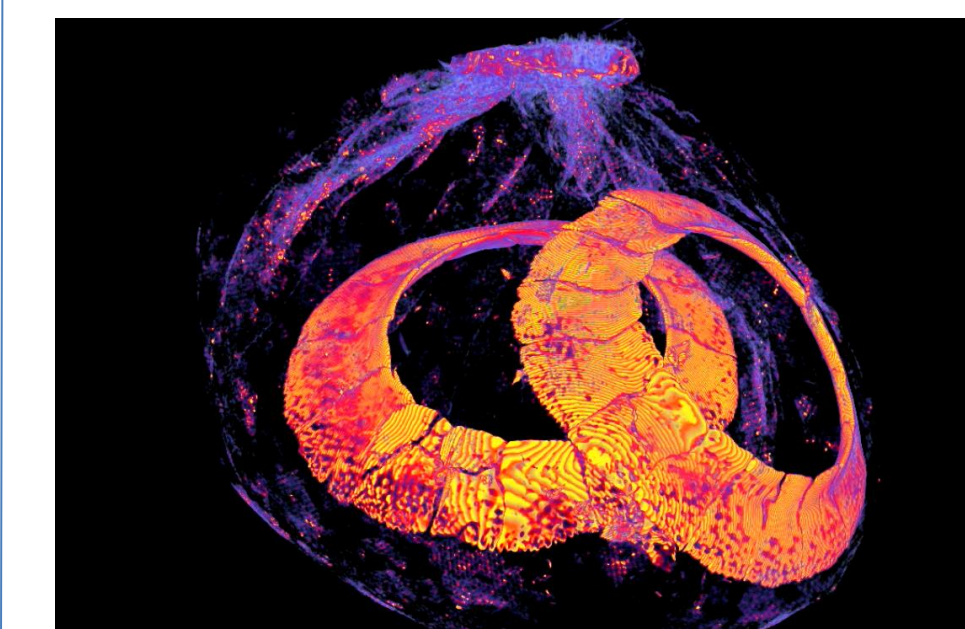


Figure 9 Micro CT, Pouch with Copper Rings

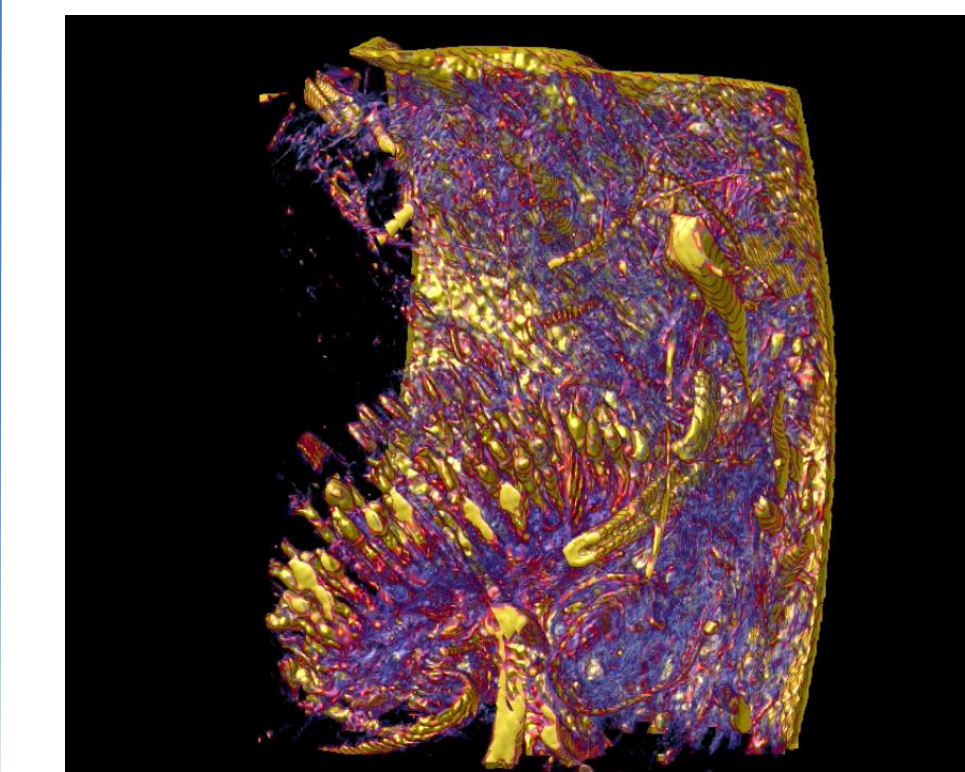


Figure 10 Micro CT, Plant



Figure 11 Lakota Bustle, Courtesy of Mary Bordeaux

Pouch Attachment

Introduction:

- Loaned by the Red Cloud Heritage Center, with the intent for the contents and purpose to be determined considering the gender roles of the Lakota culture. Dependent on what we would find would determine future handling procedures. Unfortunately there is no documentation tracing how old this item might be.

Approach:

- A man usually adorned a pouch for spiritual reasons as instructed during a vision quest, a four day trial of spiritual awakening of a young man fully transitioning into adulthood during which a dream will come providing instruction on how they should live the rest of their life. Another possible reason for adornment of a pouch could be a give of spiritual protection in hunting and/or warfare. In either case pouch attachments are a very personal item to the individual.
- Precaution should also be taken considering that the lace holding it together is extremely weak, non-destructive testing (i.e. not opening it) was essential.

Procedure:

- Acquire Cultural Knowledge:
 - Interview of cultural advisors (JhonDuane, Steve Goes In Center)
 - Significance of bustles to Lakota people, counting coup system [Figure 12]
- Acquire Historical Understanding:
 - Big Missouri Winter Count (hosted at the Journey Museum) dating interactions with Omaha people
 - Bustle was brought to Lakota people in 1864-1865 (maximum age)
 - Bottom of trailers note the dying process, European (British) and time (circa 1900's) [Figure 11]
- Appropriate Analytical Tools:
 - Initial X-Ray Fluorescence scan revealed a large amount of copper with some calcium and iron [Figure 13]
 - Micro-Computed Tomography revealed inner contents, copper rings [Figure 9], multiple fibers and an unknown plant [Figure 10]

Results:

- The wear on the hide enclosing the pouch attachment is almost identical to the wear on the hide used to hold the bustle together., suggesting that they are of the same age. We were able to view and begin determining inner contents of the pouch, however higher resolution is encouraged. The non-destructive analysis was successful.

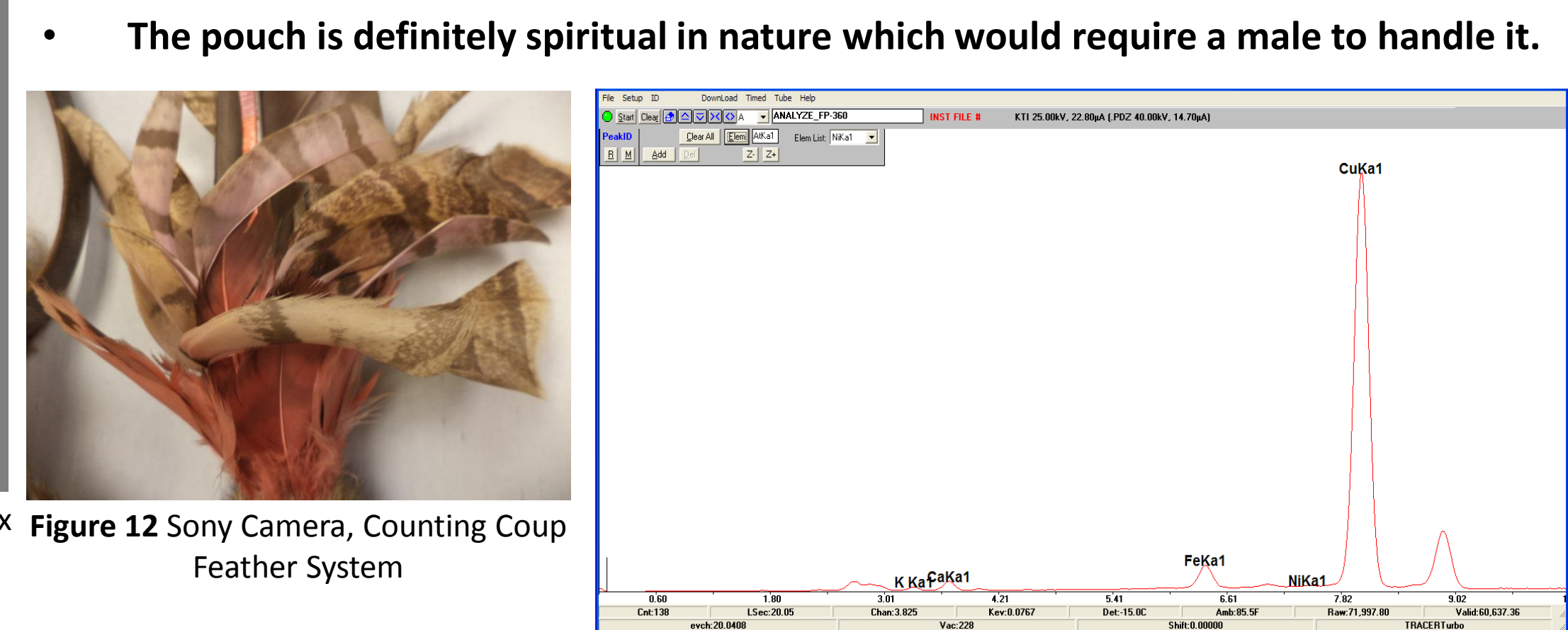


Figure 12 Sony Camera, Counting Coup Feather System

Figure 13 XRF Image, Large spike detecting copper

Future Work:

Deterioration of brain-tanned hides versus commercially tanned hides (vegetable and chromium); Continue building database for branching cultural and historical knowledge to other tribes; Build on database for identifying hides and feathers; Identify plant inside pouch, possibly with higher resolution; More thorough analysis of bustle itself.

Acknowledgements:

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Counterfeit Native American Art: Dreamcatchers have become an iconic example for commercialization of Native American philosophies and crafts. Other examples include war bonnets, tipi lodges, dolls, staffs, and the list goes on. This serves to help identify what is being presented to the public played as “authentic.”



Figure 14 Local dreamcatcher, Price Sticker over “...in China”



Figure 15 Local dreamcatcher, Dark feather under the word “...NOT”