

The Implications of Fremont Pottery in Montana

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Abstract: Fremont pottery was recovered at the Valley of the Shields rock art site in Montana and dated by luminescence at circa A.D. 1500. The Fremont archaeological culture of northern Colorado and Utah is thought to have dispersed circa A.D. 1350, meaning that Montana Fremont pottery appeared late in time. Recent research suggests that the Fremont spoke a Tanoan language, and when they disbanded, major groups moved east to join the Rio Grande Pueblos, while another group, the Kiowa, who spoke a Tanoan language are believed to have moved north to the region around Yellowstone National Park. Importantly, artifacts found with Montana Fremont pottery are made of the same material type that was found in an excavation beneath a panel of Castle Gardens-style rock art figures at Valley of the Shields. These combined discoveries suggest that Montana Fremont pottery is the product of the proto-Kiowa, and they are the most likely group to have made Castle Gardens-style rock art shields.

Keywords: Fremont pottery; luminescence dating; Valley of the Shields; Montana rock art site; Kiowa origins

1. Introduction

Pottery is rare in central Montana archaeological sites, so it was significant when thirty potsherds were found on the surface at Valley of the Shields, a major rock art site in south-central Montana. This finding became considerably more significant when several ceramic specialists identified the sherds as Fremont pottery, either Uinta grayware or Salt Lake grayware. The pots were made via coiling, a diagnostic attribute that is not found with Intermontane pottery (Shoshoni) or Crow pottery, the two ceramic wares that are found in south-central Montana (Frison 1976).

The Fremont consist of a southwestern cultural unit found in Utah and western Colorado where they are associated with ancestral Pueblo groups. The Fremont were corn-growing people who lived in semi-subterranean pit houses from about A.D. 200 to A.D. 1350. They also made thin-walled gray pottery in a variety of forms. Sherds of Fremont pottery are occasionally found in southwest Wyoming and southern Idaho, but it is rare for them to be found in northern Wyoming, and their presence is essentially unknown in Montana. This paper presents information on a documented Fremont site in Montana, Valley of the Shields, and examines the significance of Fremont pottery in the region, particularly in comparison to Shoshoni and Crow wares.

2. Valley of the Shields (24CB1094)

Valley of the Shields (VoS) is a major rock art complex, 20 km south of Bridger, Montana (Figure 1). Two opposing sandstone walls make up the main part of the site with panels at



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different loci on these walls and over them to the west on scattered sandstone outcrops. Forty localities have been found, with some that have five or six panels. The rock art panels are dominated by shield-bearing warrior (SBW) motifs that present a human figure carrying a large shield that obscures the body, leaving their heads and lower legs and feet exposed. One of these VoS warriors stands two meters tall, while the others stand shoulder to shoulder in defensive stances.

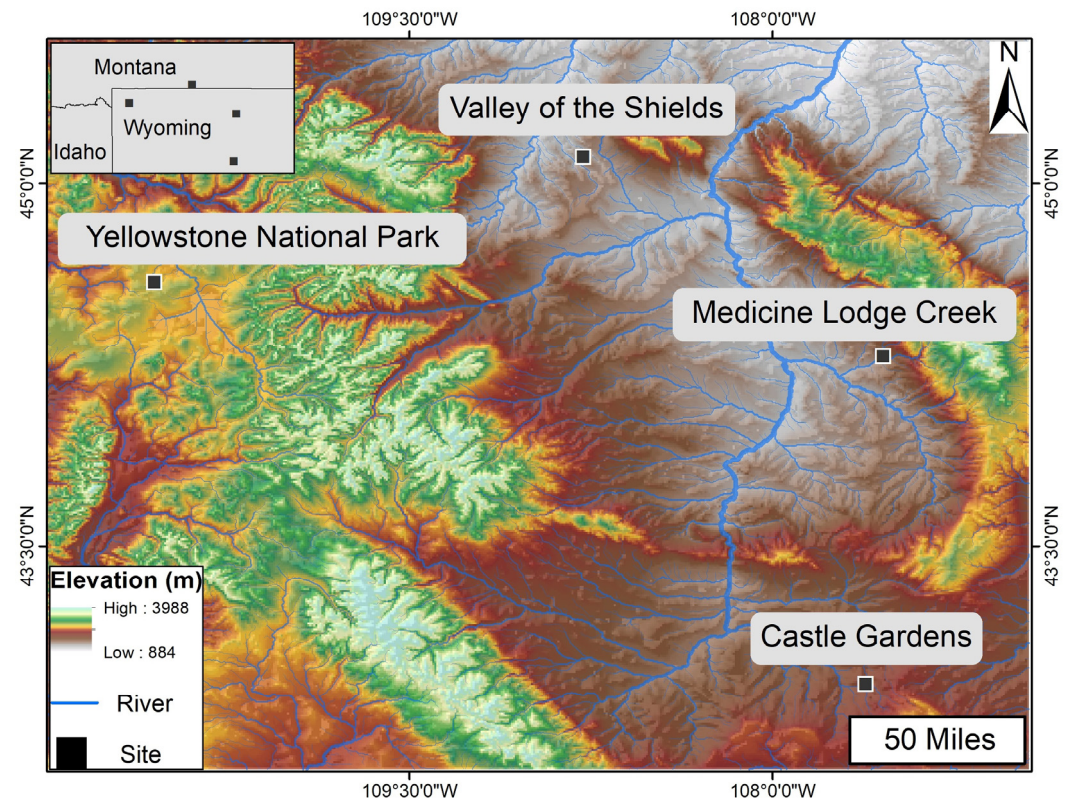


Figure 1. A map showing the locations of the sites discussed in this text.

An important trait related to the VoS figures is that they are made in a recognizable and patterned way. For most figures, their makers rubbed the rock surface with a flat rock to create a flat and smooth surface on which to put their figures. Next, the artists used a small, thin piece of chert, about the size of a guitar pick, to incise the outline of the desired design. They then applied paint in at least six different colors to complete these panels of side-by-side SBW figures. The colors include two shades of red (one that is more purple), two shades of yellow (one that is more gold), white, and green.

This method for making an SBW figure is recognized in several other regional sites. In fact, it was first recorded by E. B. [Renaud \(1936\)](#) at the Castle Gardens site in central Wyoming. There are now about 14 known sites across Montana (11), Wyoming (2), and Colorado (1), where SBW figures are made in the Castle Gardens style ([Francis and Loendorf 2002](#), pp. 136–41; [J. Keyser and Poetschat 2014](#), pp. 29–34). Bear images are a common decoration on Castle Gardens-style shields. The “bear coming out” motif where the front quarters of a bear are emerging from its den is found on shields at VoS and Castle Gardens ([J. D. Keyser 2004](#)). Bear pawprints that appear to be emerging from a center hole, or trailing a half bear, are also found on Kiowa and Crow shields.

Another important detail is that many designs on shields include stenciled dots. These were apparently made by pressing a circular piece of rawhide against the wall where it was painted over, like a stencil, so it left the color of the bare sandstone to show through as part of the design. In some cases, these are solid color dots that fill in portions of the shield

design. The Castle Gardens style is also known to contain many examples of stand-alone shields without the warrior's legs and head. These can be on the same panel as the full warrior or on separate panels by themselves.

The VoS site is one of the more important sites that displays Castle Gardens-style shield-bearing warriors (Loendorf 1988, 1990; Francis and Loendorf 2002; J. Keyser and Klassen 2001; J. Keyser and Poetschat 2014). Several research projects have been undertaken at VoS since its discovery in 1987. A portion of Panel 1 was partially buried, so an initial effort was made to uncover the underground part of the panel (Loendorf 1990). In this test excavation, a layer of possible horse dung, dated at 340 ± 80 B.P. and 160 ± 80 B.P., was discovered about 20 cm below the surface. Beneath this layer was sterile sand that extended to a depth of about one meter, where a small fire hearth was uncovered. Chipped stone flakes were found with the hearth including some unusual pinkish orange- to brown-colored chert, other high-quality chert, and a few obsidian flakes. The obsidian was sourced to Obsidian Cliff in Yellowstone National Park, but the source of the unusual pinkish orange, brown-colored chert is unknown.

Two sandstone abraders were the most important discovery. These had been used to smooth the canyon wall before the SBW figures were made. One of these abraders still had paint adhered to it as though the person who made the painting had picked it up with paint-covered hands (Loendorf 1990). Radiocarbon dates on charcoal from the hearth were 950 ± 80 B. P. and 870 ± 80 B. P. or circa A.D. 1110–1200. Importantly, because the tools used to make the paintings had been dated, the date of the Castle Garden-style SBWs was reported as circa A.D. 1100–1200 (Loendorf 1988, 1990; Francis and Loendorf 2002, pp. 136–44).

Panel 1 had a variety of colors including two shades of red, two shades of yellow, and a definite green color. Green is a rare color in any North American pictograph but especially so in Montana and Wyoming. Using pXRF, the green pigment was identified as fuchsite, a chromiferous muscovite known to be found in several places near Sheridan, Montana (Newman and Loendorf 2005).

As time passed, there was concern about an old wood issue with the VoS SBW dates. The dates were standard radiocarbon ages where 10 g of charcoal was submitted for each sample. This meant that large lumps of pine and juniper charcoal dominated the samples. Partly for this reason, a second more extensive excavation to expand on the test unit was undertaken in 2007.

The new excavation (6.5 m \times 1 m) was across the base of Locality 1, Panel 1, where it encompassed the original (2 m \times 1 m) test unit. The thick dung layer was found at 20 cm to 30 cm below the surface where it had been encountered in the test unit. Four additional hearths were found with associated artifacts between 80 cm and 110 cm below the ground surface (Loendorf 2010; Loendorf and Scott-Cummings 2016). These fires were simply placed in an area where sand was scooped out without any surrounding or interior rocks (Figure 2). The reddened soil found with the hearths suggested that the fires burned hot for a period of time.

Additional sandstone abraders were found with three chipped stone flakes about the same size as and somewhat thicker than a guitar pick (Figure 3). The edges of these flakes were smooth from using the tools to incise the designs. We also found dozens of pieces of pigment in various stages of transition from yellow to red. We are confident that the fires were used to heat yellow and red ocher to obtain more shades of red for their paintings. Fragments of burned bone, some so extensively burned that they were reduced to calcined pieces, were also recovered in the hearths. There is a strong possibility that this bone was crushed into ash and used as an extender for the pigment, or perhaps it was added to the paint to help it bind together. Bone ash is still an additive used in modern pigments where

it is a neutral agent without color. Importantly, about two dozen high-quality pinkish orange, brown-colored chert flakes were found. More than half of these were re-sharpening flakes, suggesting that the material was popular for making tools that were reworked for additional use.



Figure 2. Hearth feature from Locality 1, Panel 1, excavation. The fire was laid on the sand with no surface preparation. The reddened sand suggests that the fire burned hot.

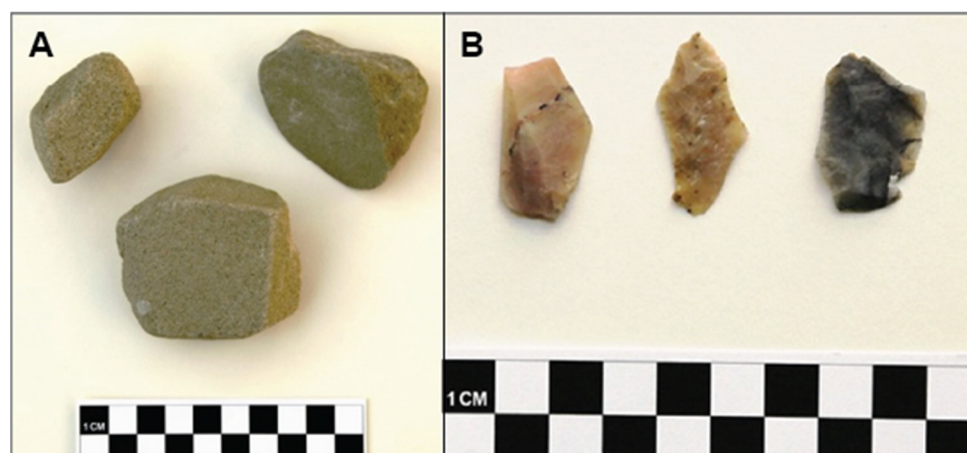


Figure 3. (A) Sandstone abraders recovered in the excavation. These were used to smooth the sandstone panel surface to prepare it for the painting. (B) Thin flakes with heavily abraded edges recovered in Locality 1, Panel 1, excavation. These tools were used to incise the design before applying paint.

The radiocarbon dates were the most significant discovery in the 2007 excavation. PaleoResearch Institute identified pine (*Pinus* sp.), Juniper (*Juniperus* sp.), and sagebrush (*Artemisia* sp.) charcoal for AMS radiocarbon dating. A total of six dates were obtained from the 2007 excavation. Four of these, on sagebrush charcoal, had ages that were very tightly grouped between 315 and 360 cal. B.P. Despite coming from four distinct hearth features, these samples yielded statistically similar results. At one sigma, the calibrated ages ranged from A.D. 1460 to 1640. The age differed so greatly from the 1987 A.D. 1100–1200 dates for the same cultural level that we decided to date a lump of pine charcoal. The pine charcoal dated at 840 cal B.P. or an age that was consistent with the 1987 dates. It is important to note that both the sagebrush and pine charcoal were collected directly from the hearths

in the field, ensuring that they were not contaminated during the water screening or flotation process. Additionally, the samples were subjected to the same preparation by PaleoResearch, so there is no reason to suspect any error. These results suggest that the pine charcoal yielded a false old wood date, while the age of the sagebrush is accurate.

3. DStretch Study

Because the rock art panels of SBWs at VoS are faded and difficult to see, in 2016, a DStretch study was conducted at this site (Loendorf et al. 2017). In the past decade, rock art researchers have learned that DStretch is especially useful in Cretaceous age sandstones like those at VoS. Completely hidden panels appear, but more significant is the opportunity to find hidden parts of known panels, which makes DStretch helpful for artists who are creating drawings of the panels (Figure 4).

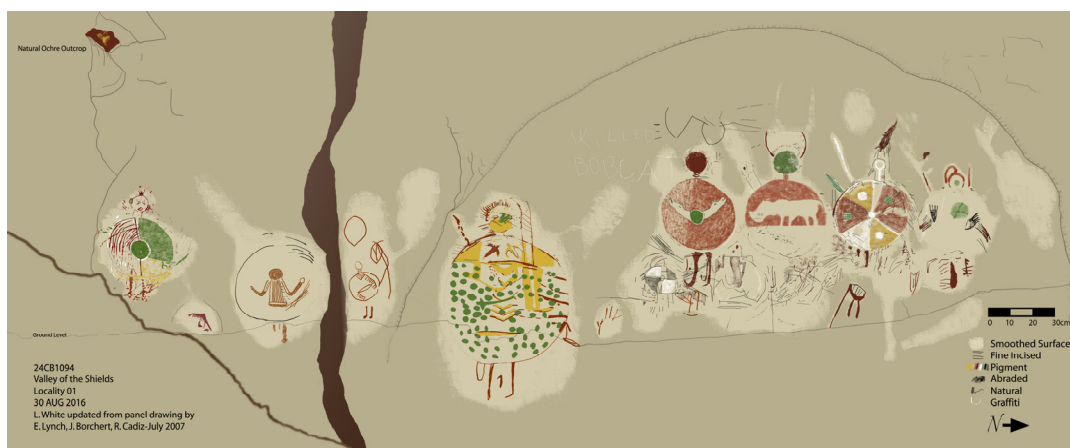


Figure 4. A drawing of Locality 1, Panel 1, at the Valley of the Shields site. The smoothing of the panel surface and green paint are attributes common to Castle Gardens-style paintings. Illustration by L. White which was updated from a panel drawing by E. Lynch, J. Borchert, and R. Cadiz.

In Locality 1, Panel 1, for example, we discovered an SBW that is very faded, but with DStretch, it was possible to see that the shield is decorated with a figure wearing rod and slat armor and a wooden helmet (Figure 5). Shields decorated with human figures are found but are rare (J. Keyser and Poetschat 2014, p. 21), and an example like this has not been found elsewhere.



Figure 5. A human figure on a shield that may be wearing protective headgear.

The body armor shown in vertical slats is worn from the head to the waist as a cuirass of breast and back plate armor. Examples among the Salish in British Columbia were made of cedar boards laced together with buckskin. They are described as follows:

... as made of narrow strips of wood from half an inch to an inch in thickness or of rods that went entirely around the body. The strips of wood were placed vertically and laced together with bark strings. The vest reached from the collar-bone to the hip-bone and was held over the shoulders by means of thongs. (Teit 1900, p. 265)

The figure on the shield appears to wear armor that fits this description.

The round head of this figure is unusual in the way it is set tight against the shoulders. It might represent some sort of head protection.

Finding a figure wearing slat armor suggests a connection to a place where warriors used this kind of protection. Examples of rod and slat shields are found at other regional sites. J. Keyser and Poetschat (2014, pp. 47–50) describe these shields as part of the Seedskadee shield style. Seedskadee figures are different than the VoS example because they are represented by rectangular shields, while the VoS figure appears to be wearing rod and slat armor on its body.

In the DStretch research, we also found multiple figures that are assigned to the Crow Indians of Montana. These include incised and painted “medicine bags” that are found in Crow Indian rock art sites (Figure 6, McCleary 2016, p. 95). Anthropomorphs with V-necks and dot pattern constellations are thought to be part of the Crow component at VoS (Figure 7).

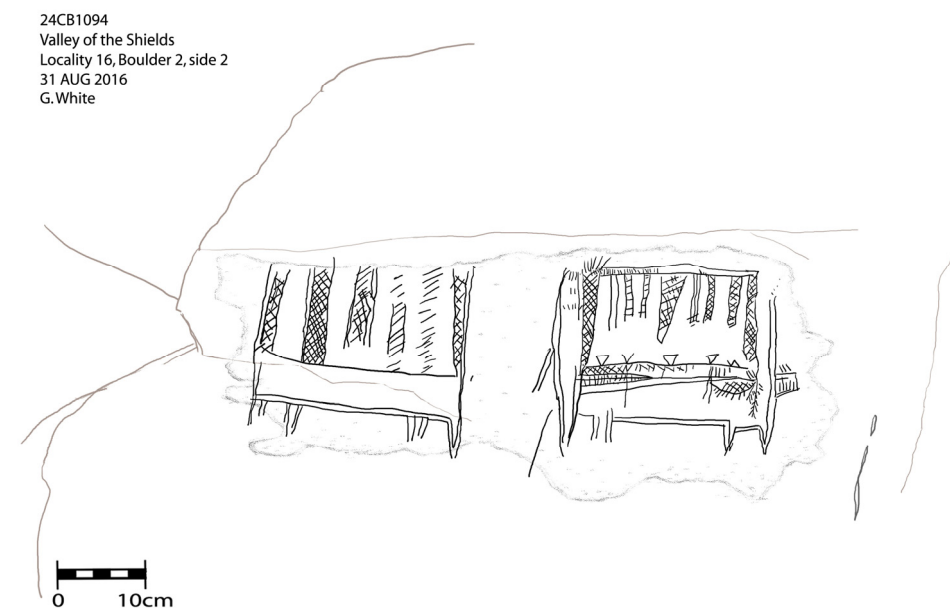


Figure 6. Incised medicine bags that are thought to have been made by the Crow Indians. Drawing by Greg White.



Figure 7. Examples of paintings assigned to the Crow Indians. The V-neck figure on the lower left and the dot patterns which may represent stars are examples of Crow Indian rock art. Drawing by Laurie White.

4. Methods and Results

4.1. Surface Findings and Ceramic Characterization at VoS

About 30 pottery sherds were found on the surface along the top of a small knoll at Valley of the Shields (Figure 8). They were located about 250 m southeast of Locality 1 where the excavation was completed in 2007. The largest sherds measured about 4 cm across, with the smallest being 1 cm or less. Thickness ranged from 6 mm to 7 mm for wall pieces with basal sherds measuring as large as 11 mm. A single tiny rim sherd had a flat undecorated lip. The interior of the vessel appeared to have been wiped or lightly scraped to smooth it, and the exterior was also wiped to the point that it looks polished. It had a more refined look than the interior. Significantly, the pot was made with coils. Although they were flattened somewhat, the coils remained obvious in the vessel walls. The temper material was sand or grit.

Two pottery specialists examined the VoS sherds. Richard Krause, a ceramic production specialist, pointed out the coils in the vessel walls and the smoothing, and he noted that the fragments appeared to come from a single vessel. C. Dean Wilson, a recognized authority on native ceramics in the American southwest, identified the sherds as Fremont, either Uintah grayware or Salt Lake grayware. A third confirming identification was conducted by Spencer Pelton, a Wyoming State archaeologist who thought this pottery was like the Fremont pottery found in southwestern Wyoming.

In addition to the pottery, several pieces of chipped stone and a partial projectile point were found on the surface in and around the sherds. The projectile point only consisted of the blade minus the base with no evidence of its notching pattern. It measured 28 mm long by 15 mm wide by 2 mm thick. It was made from an orangish pink chert. Several small flakes of the same material were also found on the surface. This was the same distinctive chert found in the excavation below VoS Locality 1.



Figure 8. The potsherds of the Fremont ceramics found at the Valley of the Shields site.

4.2. Luminescence Dating of VoS Ceramics

The luminescence dating of pottery offers distinct advantages over radiocarbon dating, particularly at archaeological sites where organic material is scarce or poorly preserved. Unlike radiocarbon dating, which determines the age of organic remains like charcoal or bone that may not be directly linked to pottery or human activity, luminescence dating directly measures the time elapsed since the pottery was last fired. Even when organic material is abundant, luminescence dating serves as a valuable tool for cross-checking radiocarbon results, identifying potential discrepancies, and constructing a more nuanced chronology for a site.

Three of the VoS sherds were processed for luminescence dating at the Desert Research Institute Luminescence Laboratory. A Dremel tool was used to remove the outer 2 mm of the ceramic sherd to exclude light-exposed material. The interior portion of the sample was crushed carefully in a mortar and pestle and prepared for analysis using standard methods to isolate the 4–11 μm polymineral fraction (Aitken 1985). The 4–11 μm polymineral fraction was deposited onto stainless steel disks using a methanol suspension and subjected to luminescence measurements on an automated Risø TL-DA-20 reader.

A single-aliquot regenerative dose (SAR) thermoluminescence (TL) protocol was initially tested, but signals were dim and suffered from significant and irreversible sensitivity changes between the natural and first regenerative dose. There was insufficient sample material to proceed with a multiple-aliquot additive dose TL protocol, so a SAR-based post-infrared infrared stimulated luminescence (post-IR₅₀IR₂₂₅) approach was employed instead (Buylaert et al. 2009). Equivalent dose (D_e) measurements were made on a minimum of five aliquots per sample. The Central Age Model of Galbraith et al. (1999) was used to determine the D_e value used for age calculation. For additional details concerning instrument configuration and measurement protocols, the reader is referred to the Supplementary Materials.

Dose rate and age calculations were made using DRAC (Durcan et al. 2015) with inputs that are described in the Supplementary Materials. Dose rates incorporate an “internal” component from the ceramic itself and an “external” component from the surrounding sediments. The former was used to estimate the alpha, beta, and a portion of the gamma dose rate contributions, whereas the latter was used to exclusively estimate the gamma dose rate contribution. Alpha efficiency values were determined on each sample with a

calibrated ^{241}Am alpha source using conventional SAR-based methods for IRSL (Kreutzer et al. 2014). Anomalous fading rates were measured over the course of ~ 24 h on five aliquots of VOS001 using the approach of Auclair et al. (2003) after laboratory bleaching. The final ages were corrected using this fading rate and the correction model of Huntley and Lamothe (2001). Sample ages ranged from A.D. 1425 ± 50 to A.D. 1544 ± 40 . All ages are reported in years before 2024 (Table 1).

Table 1. Summary of equivalent dose, dose rate, and luminescence age data.

Sample	Depth (cm)	N ¹	D _e (Gy) ²	U (ppm) ³	Th (ppm) ³	K (%) ³	Alpha Efficiency Value	External Alpha Dose Rate (Gy/ka) ⁴	External Beta Dose Rate (Gy/ka) ⁵	External Gamma Dose Rate (Gy/ka) ⁶	Cosmic Dose Rate (Gy/ka) ⁷	Total Dose Rate (Gy/ka)	Uncorrected Age (ka) ⁸	Fading Corrected Age (ka) ⁹
VOS001	5	5	3.88 ± 0.10	2.92	15.00	4.81	0.082 ± 0.004	1.31 ± 0.16	4.61 ± 0.47	0.67 ± 0.08	0.38 ± 0.04	6.96 ± 0.51	0.56 ± 0.04	0.60 ± 0.05
VOS002	5	5	3.07 ± 0.07	2.61	14.00	4.92	0.087 ± 0.004	1.28 ± 0.15	4.63 ± 0.48	0.69 ± 0.08	0.38 ± 0.04	6.97 ± 0.51	0.44 ± 0.03	0.48 ± 0.04
VOS003	5	7	2.88 ± 0.04	2.56	16.00	3.60	0.089 ± 0.004	1.41 ± 0.17	3.63 ± 0.36	0.64 ± 0.07	0.38 ± 0.04	6.05 ± 0.41	0.48 ± 0.03	0.51 ± 0.05

¹. N is the number of D_e determinations accepted after screening. ². D_e values were determined using the Central Age Model (CAM) (Galbraith et al. 1999). The reported error is the standard error. ³. Radionuclide concentration measurement uncertainties are 10% for U, Th, and K. Beta and gamma dose rates were calculated using the conversion factors of Liritzis et al. (2013) and are shown rounded to two decimal places; ages were calculated using values prior to rounding. The U, Th, and K radionuclide measurements were measured from the pottery itself. For U, Th, and K measurements from the surrounding sediment, refer to the Supplementary Materials. ⁴. Alpha dose rates were calculated using measured alpha efficiency values and the grain size attenuation factors of Brennan et al. (1991). ⁵. Beta dose rates were calculated using the grain size attenuation factors of Guérin et al. (2012). ⁶. The fractional gamma dose rate contribution to each sample from both the pottery sherd itself and the bounding sediments were calculated following Aitken (1985). ⁷. Cosmic dose rates were calculated according to Prescott and Hutton (1994). ⁸. Luminescence ages, rounded to the nearest 10 years, are expressed as thousands of years before A.D. 2024. Error is 1 sigma. ⁹. Ages were corrected for a measured average anomalous fading rate of $1.1 \pm 0.6\%$ /decade ($t_c = 2$ days, $N = 5$).

5. Discussion

The discovery of Fremont pottery at the VoS site in Montana is incongruous with local archaeology. First, it is rare to find ceramics in Montana archaeological sites. When sherds are found, they are either Intermountain ware—associated with the Shoshoni and characterized by flat-bottomed pots—or part of globular jars made by the Crow.

Intermountain pots are characterized by their distinctive “flowerpot” shape with a circular flat bottom and out-flaring straight sides. They do not have handles, but they sometimes have patching holes. The rims are usually slightly thickened and flat on the top, suggesting that the pots were placed upside down on a flat surface while wet (Mulloy 1958, pp. 197–98). Their temper, made from locally sourced sand or coarse quartz fragments, suggests that these pots were produced and discarded near their place of origin (Finley et al. 2018). These pots were made by molding or using a paddle working against a hand inside the pot. Intermountain pottery is found in Montana, across much of Wyoming, into northern Colorado, and southern Idaho (Finley and Boyle 2014), with a date range spanning from A.D. 800 to A.D. 1900 (Finley et al. 2018).

Crow Indian vessels are globular with rounded to pointed bottoms. The rims vary, with some exhibiting an S-shaped profile, others being straight, and some combining elements of both styles. The pots are made using paddles and anvils. Decoration is variable but includes lips that are incised, punctate, marked with a cord-wrapped rod, and plain. Bodies are often plain, but check-stamping does occur and can be used as a diagnostic marker of these ceramics (Frison 1976).

There is a second site where Fremont pottery was found at Jack Creek Underlook (24CB1861), a site about 10 km east of the VoS pottery site (Hadden 2017). The proximity of the two sites suggests they are likely related. Based on the projectile points recovered at the Jack Creek site, there were at least two occupations associated with seven hearth features. Late Archaic, Pelican Lake corner-notched points were found with Late Prehistoric projectile points that might be variants of the Rose Springs type. A slab-lined hearth with close-fitting sandstone walls was excavated and radiocarbon-dated 1270 ± 70 B.P. or cal

A.D. 660–810 (Hadden 2017). The date was assumed to be associated with the three Fremont potsherds found on the surface of the site.

There are several outstanding questions about the Jack Creek site. First, there is the question as to whether the ceramics are Fremont or whether they represent another Montana ceramic type. The Fremont identification was questioned by other regional archaeologists who thought the grayware was more likely Intermountain ware (S. Scott et al. 2014, p. 79). Three sherds are curated at the Bureau of Land Management Curation Facility in Billings, Montana. Examining these sherds, they do appear to be Fremont grayware. The largest piece shows coils in the sidewall. The second question concerns the radiocarbon age for the slab-lined hearth of cal A.D. 660–810 which Hadden associates with the pottery. Slab-lined hearths that resemble the Jack Creek feature, almost exactly, are found in the Wyoming Bighorn Basin. These features from three different sites have dates that range from A.D. 450 to A.D. 870. (Zeimens and Frison n.d.) where they represent Late Archaic features that are associated with Pelican Lake projectile points. It is more reasonable to recognize the Jack Creek hearth as having the same kind of feature. The Fremont ceramics found on the surface are not associated with the slab-lined hearth. It should also be recognized that the age of A.D. 660–810 is older than any other dated ceramics in Montana. It seems more likely that the Jack Creek sherds date to an age close to that of the VoS sherds.

The luminescence age results from sherds collected from the VoS site are close to the radiocarbon dates on sagebrush charcoal in the excavation below Locality 1, Panel 1. The four radiocarbon ages are very tightly grouped between 315 and 360 cal. B.P., and although they came from four separate hearth features, their ages are statistically indistinguishable. At one sigma, the calibrated ages range from A.D. 1460 to A.D. 1640. The consistency between the luminescence and radiocarbon ages, along with the presence of the same orangish, pinkish chert found both with the ceramics and in the excavation, suggests that the group that made the VoS pottery is the same as the group that made the paintings (Figure 9). This allows for a comparison of the paintings with other rock paintings and suggests that they were made by the same cultural group.



Figure 9. An unusual tool stone recovered in the Valley of the Shields excavation at Locality 1, Panel 1.

We propose that the makers of the Fremont ceramics were proto-Kiowa–Kiowa Apache, a hypothesis that will be explored in the following sections.

5.1. Kiowa

The Kiowa are recognized as a powerful group of equestrian warriors who ranged through parts of modern Oklahoma and Texas in the late A.D. 1700s and 1800s. A curious fact is that the Kiowa have always maintained a close connection and relationship with a group of Apache who are said to have moved with them as they migrated from the northern to southern Plains shortly after the introduction of the horse or circa A.D. 1750.

While this migration is accepted, based on historical records, there is debate about the movements of the Kiowa–Kiowa Apache in protohistoric and prehistoric times. For example, James [Mooney](#) (1898, p. 153) learned that the Kiowa had traditions of their homeland being in the vicinity of the Gâ'i K'op Mountains, somewhere near the Three Forks of the Missouri River.

The problem with the Kiowa having a northern homeland is that anthropologists could not find much corroborating evidence to support their claims. The major issue was that the Tanoan language spoken by the Kiowa is related to the Pueblo languages in New Mexico, so the question was how could a tribe that spoke a Puebloan language have a northern origin, especially for a long period of time? Robert [Lowie](#) (1953), for example, writing about the Kiowa stated the following:

The Kiowa may have well lived considerably farther north for a comparatively short period within the last five hundred years and incidentally had contacts with the Crow. However, that these contacts were peculiarly intimate is demonstrated neither by Crow tradition, which supports Kiowa assertions, nor by a comparison of Kiowa. (Lowie 1953, p. 365)

In other words, Lowie believed that a group of Rio Grande Puebloans, later known as the Kiowa, made sojourns into the north where they met the Crow. Clark [Wissler](#) (1914, p. 14) echoed these sentiments, writing that any evidence for the Kiowa in the north was due to their “periodic wanderings”. Significantly, these assertions influenced researchers like John Ewers, the Smithsonian scholar who wrote about the horse among the Blackfoot and other Plains Indian tribes. [Ewers](#) (1955) made it clear that he considered the Kiowa a southern tribe when horses were introduced to the greater Plains region.

Solid support for a Kiowa origin and a centuries-long tenure in the north did not come forth until relatively recently when Yellowstone National Park commissioned an ethnographic overview to identify traditional properties in the National Park ([Nabokov and Loendorf 2004](#)). Kiowa elders who visited Yellowstone retained knowledge about specific places including the Mud Volcano and Dragon’s Mouth area where the Kiowa explained that Doh Ki, Earth-maker, placed all the people on Earth in different areas according to how well they could fit in in those places. Unfortunately, people were left out, including the Kiowa, so Doh Ki called them to this forsaken place with boiling cauldrons, no vegetation, no animals, and all rocks and dirt or the place called Mud Volcano and Dragon’s Mouth today. He asked whether there was a person brave enough to dive into a cauldron and come up in a beautiful land for his people. Kahn Hayn, a Kiowa culture hero, took the challenge, dove into the boiling water and came out in a land of grass, trees, and plentiful animals. This became the land of the Kiowa.

The land in and around Yellowstone National Park was the birthplace of the Kiowa people. As with many American Indian oral traditions, this tale was backed by information collected by Hugh Scott, a 7th Cavalryman who was stationed at Fort Sill, Oklahoma, in 1889. In handwritten notes, Scott explains where the Kiowa came from:

...the headwaters of the Missouri and Yellowstone Rivers near where the Kiowa Mountains are and the geysers of the Yellowstone Park which they describe as shooting hot

water high in the air—and which no Kiowa has seen for some generations—and probably has heard little of from white people but he describes that country in a way it can be recognized. [(H. L. Scott n.d.) no pagination]

The foregoing testimony makes it clear that the Kiowa origin is in Yellowstone Park, and they roamed in and around that region after they became the Kiowa. The greater questions are what group or culture represents the proto-Kiowa and how and when these Tanoan-speakers arrived in the Yellowstone region.

Regarding this issue, Scott Ortman (2012, p. 476) completed a comprehensive analysis of the Kiowa–Tanoan language and its relationship to southwestern archaeology. The question of how Fremont ceramics got to a Montana site is related to the language spoken by the Fremont which is thought to be Kiowa–Tanoan (Ortman 2012, p. 476). In Ortman’s analysis, the Fremont are progenitors to Tewa Pueblo groups in the Rio Grande region of New Mexico. Almost as a by-product of the research, Ortman concluded that the Kiowa language was spoken by the eastern Fremont, and when the Fremont broke up circa A.D. 1300–1400, some Fremont took up fulltime buffalo hunting and moved north to become the Kiowa (Ortman and McNeil 2018).

It is significant that the Kiowa traditions present a very similar scenario. A letter written on 12 September 1996, to Dewey Tsontokoy by Parker P. McKenzie, offers several important points. Parker McKenzie (1897–1999) was a well-respected Kiowa elder, linguist, and tribal historian who states that the origin of the Kiowa is from the “Southwest via . . . the region of the cliff dwellers and into the mountain range of southwest Colorado”. It was there that they met the Utes for the first time, giving the name “Ijaquip” or Ute Mountains to the region.

In about A.D. 1400, the proto-Kiowa lived in the northern Utah–Wyoming area where they encountered a river that flowed north. Following this river, they met the Shoshone who they called “Sonjodau” because they had grass huts that were somewhat like the Wichita houses. Continuing to follow the north-flowing river, they entered the following:

Yellowstone Park, for they remembered hot water shooting up out of the ground. . . they reached several high peaks in southern Montana and appeared to sojourn there a bit longer than elsewhere since they emerged out of the southwest. They named the mountain peaks Kiowa Mountains (Cauiquip) and they are yet remembered in tribal history. (McKenzie to Tsontokoy 9/12/96; page 2)

Mackenzie’s narrative parallels that of Hugh Scott except that it adds an origin in the southwest. The memories and traditions of the Kiowa elders add strength to Ortman’s suggestion that the Fremont were related to the Kiowa.

A version of this story written in Kiowa by Parker McKenzie has recently been published (Mckenzie et al. 2022). This version adds details about how the Kiowa learned to hunt buffalo, construct tipis, and learn the Sun Dance from the Crow. This all happened before the horse, which according to the McKenzie manuscript was given to the Kiowa by the Crow (Mckenzie et al. 2022, p. S36)¹. The Shoshoni could have obtained the horse as early as A.D. 1640 and the Crow within a decade or two after that time (Thornhill 2021).

A problem with establishing a Kiowa or Kiowa Apache presence on the northwestern Plains is the inability of archaeologists to identify a site or site complex that can be attributed to them. Obsidian studies, basketry, ceramics, and rock art images are possibilities, but there is no site complex that archaeologists can point to as a place where the Kiowa once lived.

The artifacts and features found in the VoS excavations are primarily related to the production of the rock paintings, so they do not offer typological information regarding who made them. Nonetheless, there are clues to their sources which are helpful in identifying regions where the makers of the paintings had interactions. The obsidian flakes were

sourced to Obsidian Cliff, in Yellowstone National Park, a source that is west of the site. Fuchsite or green-tinted muscovite (mica) is the mineral used for the green paint at the site (Newman and Loendorf 2005). It is found in naturally occurring deposits in the southern Bighorn Mountains and the Medicine Bow Mountains in Wyoming. A more likely source, however, for the individuals who made the VoS paintings is in the Ruby Mountains and other mountains in the Madison County, Montana, area (Heinrich 1965). The second mineral identified from the excavations at VoS is aluminum silicate that is thought to be kyanite or sillimanite (Loendorf 2010). These minerals co-occur with fuchsite deposits in Madison County south of Ennis, Montana, which presents a strong case for the green pigment at VoS as having a source in southwestern Montana west and north of Yellowstone National Park.

The chipped stone artifacts recovered in the excavation are made from a highly siliceous chert that is mainly pinkish orange or tan in color with gray to black dendrite inclusions. This chert is not from a local source, but very similar cherts are found in the same area as the fuchsite and kyanite or in and around Madison County, Montana (Figure 10). It is also important to note that the stone materials like the cherts in the Pryor Mountains, or the porcellanite in the coal bed area around Miles City, Montana, were not found in the VoS excavations. This indicates that the individuals who made the paintings are probably not from the area east of the site.



Figure 10. An unusual tool stone and partial projectile point found on the surface with the Fremont pottery sherds. This same tool stone found in the excavations at Valley of the Shields is secondary evidence that the ceramics and the paintings are from the same time.

The most logical explanation is that the makers of the paintings had connections to Yellowstone National Park where they obtained obsidian and the region to its west and north of Yellowstone where they found high-quality chert and pigments for their green paint. Further, the Kiowa traditions include a long association with the Crow tribe in Montana (Old Horn and McCleary 1995).

5.2. The Apache Connection

The moccasins made in a distinctive Athapascan style found in Promontory Caves, Utah, offer solid support for an Apachean presence in northern Utah in the A.D. 1200s (Ives and Janetski 2022, pp. 243–61). These Apacheans would have contacted the Fremont

groups, and the interaction was apparently peaceful. The Apacheans brought skills to hunt bison at a time in droughty conditions when corn growing was less productive.

Promontory culture is suggested to have developed from interactions between the Fremont and Apacheans. The pottery made by Promontory groups is variable, but some types, especially from the Promontory Caves, are very similar to Fremont graywares (Yanicki 2022, p. 99). This raises the question as to whether the pottery at VoS is Fremont grayware or potentially Fremont–Promontory grayware.

The pottery's age at A.D. 1500 certainly suggests that it is too late to be a classic Fremont pottery type, and it represents the work of a later group such as painters who made the VoS shield warriors. If this were the case, the scenario could be as follows—Athapaskan Apacheans moved and lived in Montana circa A.D. 1100 and continued to migrate south until they settled with the Fremont in and around Promontory Caves. As time passed, some groups of these Fremont–Promontory–Apache took up bison hunting on a full-scale basis (Yanicki 2022, pp. 116–17) and then moved back to the north to settle in and around Yellowstone National Park. These groups are the basic stock for the Kiowa.

What is less clear is whether this group of proto-Kiowa included the Kiowa Apache when they moved north or whether there was a remnant group of Apache still living in the north that linked up with them after they became the Kiowa. While arguments can be made for both cases, the latter possibility seems more likely.

The close relationship between the Kiowa and Apache means there is no certainty as to which group made the Castle Gardens-style shield warriors as the paintings have attributes which are related to Apacheans and Kiowa. It seems reasonable to suggest that the paintings at Locality 1, Panel 1, were made in A.D. 1500–1550 by the Kiowa. The Kiowa recognized a band known as the Kiñep or Big Shields and the Semat or Apache, and the two groups camped together in the overall tribal camp circle (Mooney 1898). The Kiñep were known for their large shields that covered their bodies in almost the same fashion as the figures in the painted images at VoS.

5.3. *Medicine Lodge Creek*

The connection between Castle Gardens-style shield warriors and Fremont–Promontory pottery is also found at Medicine Lodge Creek, a major archaeological site in the northern Bighorn Basin, Wyoming. Three Castle Gardens shield warrior figures are found in a complicated panel of superimposed images near the middle of a large sandstone wall covered with petroglyphs and pictographs. The figures do not display the common practice of surface smoothing, but they do have typical Castle Gardens shield designs, and they include green paint (Figure 11).

To learn more about the panel, French archaeologists Carole Fritz and Gilles Tosello, who specialize in superimposition studies, completed an intensive study of the rock art. They learned that there are four layers of rock images on the wall, with the shield warriors being the third layer. The large black bear and less obvious trailing smaller bears are the most recently painted layer on top of the shield warriors. Older layers beneath the shield warriors include incised abstract designs with infilled red paint and a bison with two giant arrows.

Unfortunately, there are no direct dates for any of the rock images at the Medicine Lodge Creek site. The layering of the paintings indicates that they have some antiquity as they are not the most recent. The age of circa A.D. 1500 for the VoS shield warriors is not unreasonable for the Medicine Lodge figures.



Figure 11. A Medicine Lodge Creek drawing of a large panel of shield-bearing warriors and other figures. The shield warriors exhibit the green paint common to Castle Gardens-style rock art. The bears, also common to Castle Gardens rock art, are superimposed on the shield figures. Drawing by Carole Fritz and Gilles Tosello.

In 2021, an excavation at Medicine Lodge Creek was undertaken by Michael Page (2023) at the Wyoming Office of the State Archaeologist. The goal was to reopen areas where Crow pottery and associated artifacts had been discovered in the original site excavation (Frison 2007, p. 99). The new excavation did produce more Crow ceramics, but in the process, Page also found several Fremont–Promontory sherds. The radiocarbon dates for these sherds were cal. A.D. 1300–1450 which is older than the age for Fremont–Promontory pottery at VoS. Page did not identify the charcoal he dated, so it seems possible that the older age reflects an old wood issue.

Regardless of whether the ages are different, it is significant that the Medicine Lodge Creek site with its Fremont–Promontory pottery also has Castle Gardens-style shield warrior rock art figures. These are the only two sites with Castle Gardens-style shield warriors and Fremont–Promontory ceramics. However, other sites with Castle Gardens figures have not had any excavations except the main Castle Gardens site where some test excavations were carried out in the path of a road (Walker and Todd 1984). Three radiocarbon dates for the excavation average about A.D. 1200. These dates are on juniper charcoal, so they are almost certainly too old.

Although a major portion of a Ute pot with fingernail impressions for decoration was recovered from the surface of the Castle Gardens site (Loendorf 2002), Fremont–Promontory pottery has not been found at this site. Unfortunately, this site has experienced considerable looting, so surface artifacts are rare.

6. Conclusions

The association between the Kiowa and Castle Gardens-style shield warriors has been made in prior research (Francis and Loendorf 2002, pp. 142–43; Loendorf 2004, p. 115). This affiliation was based partly on the significance the Kiowa placed on shields and shield heraldry. At the same time, there was a claim for another Kiowa association in which the possibility of an Apachean connection was also presented (Francis and Loendorf 2002, pp. 143–44; Loendorf 2004, p. 115).

The difference between these early ideas and the current hypothesis is that the Fremont have been included in the scenario with their connection to the Kiowa. The key is the Tanoan language which is now thought to have been spoken by the Fremont (Ortman 2012). Finding Fremont pottery at VoS supports the hypothesis that the ancestral Fremont are the stock from which the Kiowa developed.

The suggestion that the Apache were linked to the Fremont before they came north to places like VoS (Yanicki 2022) is one possible explanation for a proto-Kiowa presence in the region. However, this hypothesis is not supported by the ethnographic accounts that

Parker McKenzie learned from his elders (Mckenzie et al. 2022). These accounts describe meeting Utes and Shoshoni on the northward trek but fail to mention any Apache.

Notwithstanding the various hypotheses for the origin of the Kiowa, there are several relevant facts that stand out. First, Fremont pottery was recovered at the VoS site in southern Montana, and finding Fremont pottery this far north is highly unusual. Second, three sherds of the pottery were dated using luminescence methods to ages circa A.D. 1500. Third, some of the artifacts found with the pottery included a distinctive pinkish, orange, brown-colored chert. Fourth, that same chert was found in an excavation at the base of a panel of Castle Gardens-style shield bearing warrior pictographs. Fifth, several tools used to make the Castle Gardens shield warriors were recovered in the excavation. Sixth, sagebrush charcoal from hearth features associated with the tools were radiocarbon-dated to circa A.D. 1500.

The conclusion from these facts is that a late group of Fremont pottery makers is associated with Castle Gardens-style shield-bearing warrior rock art. Further, these groups were likely Tanoan-speaking proto-Kiowa. Additional support for this hypothesis comes from the Medicine Lodge Creek site where Fremont pottery was also found in association with Castle Gardens shield warrior figures.

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Notes

- ¹ It should be noted that the existing models for the distribution of the horse indicate that the Kiowa had the horse before the Crow (Ewers 1955).

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