

**EXPLORATORY INVESTIGATIONS AT SOAPSUDS ROW,
2023 FIELD SEASON,
OLD FORT MEADE MILITARY RESERVATION,
MEADE COUNTY, SOUTH DAKOTA**



**Linea Sundstrom
for
Bear Butte Creek Historic Preservation Council
and
Deadwood Historic Preservation
2023**

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Meade County, South Dakota**

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Report prepared for the Bear Butte Creek Historic Preservation Council and Deadwood Historic Preservation in fulfillment of an Outside of Deadwood grant awarded February 22, 2023

South Dakota State Historical Society Archaeological Research Center Permit No. SP-23-005

A handwritten signature in black ink, appearing to read 'Linea Sundstrom', with a long horizontal flourish extending to the right.

Linea Sundstrom, Ph.D., Principal Investigator

February 23, 2024

TABLE OF CONTENTS

Project Background and Rationale	1
The Site	2
Environment of the Site Area	2
History Context	3
Previous Investigations	8
2023 Research Design	10
Site Stratigraphy	14
Results: Features	16
Results: Artifacts	21
Discussion and Conclusions	51
References Cited	60
Appendix A: Surface Collections	64
Appendix B: Botanical Remains	69
Appendix C: The Courtneys, A Western Immigrant Saga	74

TABLES

Table 1. Final depths of excavations in centimeters below site datum.	12
Table 2. Macrobotanical remains from privy and log structure feature fill.	51
Table 3. Datable artifacts from 39MD 45.	53
Table 4. Proposed sequence of formation of various features at 39MD45.	54
Table 5. Proportion of wire to cut nails, sitewide.	55
Table 6. Proportion of wire to cut nails, log structure excavation block.	56
Table 7. Proportion of wire to cut nails, log structure excavation block.	56

FIGURES

Figure 1. View of site area looking southwest.	2
Figure 2. 1889 map of Fort Meade showing a row of houses labeled “Laundress Quarters” along Bear Butte Creek.	4
Figure 3. End paper from Blue Ribbons for Meg, showing location of “married non-commissioned officers’ quarters, known as Soap Suds Row (from deLeeuw 1947).	7
Figure 4. Drone photo of 39MD45 with grid points (red dots) laid over.	13
Figure 5. Map of site showing location of excavation blocks (in red) in relation to former creek bank and highway.	13
Figure 6. Privy feature excavation block (Units 1-3, 7, and 8) showing stratigraphy	14
Figure 7. Another view of the privy excavation block showing upper and lower soils separated by stream-laid gravels.	15
Figure 8. Current bed of Highway 36 overlaid on historic map of Soapsuds Row showing loss of house remains to highway construction.	15
Figure 9. Feature 3/5, base of feature and east wall.	16
Figure 10. Hardened effluent as it appeared in the east side of Unit 8.	17
Figure 11. Bricks, bottles, and wood exposed in upper levels of Feature 6 privy in 2022.	17
Figure 12. Unit 6 plan view at 75 and 80cm below site datum, showing appearance of Feature 7 logs and debris.	18
Figure 13. Chow chow jar, oilcloth, and ash pan from stove, Feature 7.	18
Figure 14. East and south walls of Unit 6 at base of feature 7, showing Feature 7 deposit exposed in the sidewalls.	19
Figure 15. East wall of Units 5 and 6 showing relationship of natural stratigraphy to Feature 9 plank wall and trench and Feature 7 debris deposit associated with log structure.	20
Figure 16. Drawing and photograph of plank wall as seen from above.	20
Figure 17. Side view of plank wall at termination of excavation	20
Figure 18. Examples of chipped stone tools from 2023 project.	22
Figure 19. Pattern of plate from T&R Boote Pottery; rim sherd from privy feature and interior sherd from log structure feature.	23
Figure 20. Three sherds from the log structure feature; example of a plate in “Variety” pattern manufactured by Ridgway Pottery, England.	23
Figure 21. Collection of blue transferware sherds from 2023 and complete teacups in the Madras pattern.	24
Figure 22. Blue transferware sherd from privy; refitted, unidentified blue transferware sherds from privy; blue transferware sherd from debris associated with the log structure.	25

Figure 23. Refitted Anthony Shaw plate in Tea Leaf design; back of plate showing maker's mark; other Tea Leaf design dish fragments.	26
Figure 24. Examples of embossed white porcelain from the privy fill.	26
Figure 25. Beer bottle fragments.	27
Figure 26. Fragments of a John Gund Brewing beer bottle base.	27
Figure 27. Complete beer bottle.	28
Figure 28. Beer bottle fragment with D-stretch ybk enhancement showing "A" and shape of lower label.	28
Figure 29, beer bottle fragment with label and muselet closure.	29
Figure 30. Flask-form bottle probably used for patent medicine.	30
Figure 31. Examples of remnant brandy finishes from flask-form bottles.	30
Figure 32. Chow chow bottle, D-stretch enhancement to show remnant label.	31
Figure 33. Bottle embossed with a mortar and pestle design and "Theo Haas & Co, Druggists, Sturgis, So. Dak."; bottle embossed with "Shiloh's Consumption Cure."	32
Figure 34. Bluing bottle.	33
Figure 35. Small bottle and fragment of bottle stopper.	33
Figure 36. Lard pail with D-stretch lbl enhancement to show label.	34
Figure 37. Examples of metal cans and lids from the debris pile associated with the log structure.	35
Figure 38. Examples of kitchen stoves showing the use of ornamental elements.	36
Figure 39. Ornamental tin bracket or handle; part of a cast iron grid.	37
Figure 40. Two items tentatively identified as firesteels and item identified as a pothook	37
Figure 41. Top, uniform button and enlisted man's jacket; parts from the 1881 model US Cavalry dress helmet and example of helmet.	38
Figure 42. Buttons from 39MD45.	39
Figure 43. Three pieces of a corset busk; shoe leather and heel fragments.	40
Figure 44. Jewelry clasp and incised brass plate.	41
Figure 45. Brooch pin with a loop for holding a scarf or cord or for looping over a collar or pocket; hoop made of rolled brass or copper.	41
Figure 46. Three fragments of metal wash basins.	42
Figure 47. Example of a tobacco tag of the same kind found at 39MD25; two tags found in 2023.	43
Figure 48. Top, front and back of advertising pin found in the trash deposit at 39MD45 (23-0017-493); bottom, original appearance of the pin.	44
Figure 49. Cartridge cases and gun cleaning rod tips.	45

Figure 50. Needle (23-0017-587).	45
Figure 51. Hardware for furniture: caster, bracket, metal tips for furniture legs.	46
Figure 52. Furniture construction staple; handle; hook.	46
Figure 53. Portion of a mortise lock plate.	47
Figure 54. Petrified wood, staples, harness buckle.	47
Figure 55. Examples of cut bone from Feature 7, 39MD45.	49
Figure 56. Examples of cut bone from Feature 7, 39MD45.	49
Figure 57. Examples of mammal bone without evidence of cutting, Feature 7, 39MD45.	50
Figure 58. Examples of mammal bone without evidence of cutting, Feature 7, 39MD45.	50
Figure 59. East wall profile of Units 6 and 5, showing change in sediment at the plank wall.	54
Figure 60. Brick found on surface west of excavation units.	64
Figure 61. Beer bottle with C.C. Conrad maker's mark.	64
Figure 62. Bricks from surface east of excavation units.	65
Figure 63. Plate with QMD transfer on front rim.	66
Figure 64. Beer bottle fragments from looter discard pile.	66
Figure 65. Ceramic fuse holder.	67
Figure 66. Horseshoes.	67
Figure 67. Flotation using bucket method in laboratory.	70
Figure 68. Left, geologic sieves; right, low-powered microscope.	71
Figure 69. Left, Brassiaceae sp. (mustard seeds); right, Rubus (raspberry or blackberry).	71
Figure 70. Prunus sp. (plum or peach pit fragments) and Cucurbita sp. (charred squash or pumpkin seed).	72
Figure 71. Total data count and pie chart of Unit 3 macrobotanicals and seeds.	72
Figure 72. Ubiquity of macrobotanicals excavated in Units 3 and 6.	73

ACKNOWLEDGMENTS

The 2023 Soapsuds Row Excavation Project was funded through an outside-of-Deadwood grant from the Deadwood Historic Preservation Commission. The project was sponsored by the Bear Butte Creek Historic Preservation Council.

Ross Lamphere provided crew housing at cost at the Lamphere Ranch Campground, space for a field laboratory, and logistical support. The project director was Linea Sundstrom. The A Team—Allan Johnson and Aaron Mayer—served as crew chiefs, making sure all relevant information was properly recorded and all excavation units were neat and square. Volunteering their time and talents in the field and lab were Blaine Anderson, Alec Anton, Cher Burgess, Michael Fosha, Glen Fredlund, Terri Holts, Paul Horsted, Brittany Kahl, Jo Knutson, Elaine Kub, Logan Lamphere, Darrell Mayer, Brad McKinney, Connie McKinney, John Mitchell, Michele Mitchell, Morgan Patterson, Teri Patterson, J.T. Reagan, Pattie Reynolds, Alan Rickell, Camille Riner, Leanna Smith, Maggie Syversen, and Vicke Vogel. Archaeologists Paul Oberheim from the Bureau of Land Management and Brenda Shierts of the National Resources Conservation Service assisted, along with BLM personnel Dave Reinecke, Emma Rogers, and Eric Selchert.

Archaeology isn't all about finding cool stuff. Some of it is about finding next to nothing. It's important to know where things are not, as well as where they are. The excavation team was thoroughly professional and cheerful even when going through many layers of sterile (lacking artifacts or features) sediment. Crew members were generous in sharing their ideas about the site and its content, which are reflected in the analysis presented here.

Charles Ford of the Beer Bottle Museum helped ID and date the Gund beer bottle fragment. Kenneth McPheeters of Antique Militaria provided expert advice on the gun cleaning rod. George Mustoe of Western Washington University analyzed the petrified wood. Julien Wiley helped with artifact processing and proposed the ice-house function for Feature 7. Cher Burgess, Lee Stroschine, and Katie Lamie provided advice on several artifacts. Lee Stroschine, Cher Burgess, Brenda Sheirts, and Glen Fredlund helped with historical research. Glen Fredlund took charge of photography and helped with cataloging and deciphering the site stratigraphy.

The cover photo is by Paul Horsted. Feature drawings are by Teri Patterson. The Augmented A Team--Allan Johnson, Aaron Mayer, and Alec Anton--checked the report for errors.

My most sincere thanks to all.

PROJECT BACKGROUND AND RATIONALE

The project reported here is the second year of a two-year inquiry designed to evaluate the archaeological potential of an area of the old Fort Meade cavalry post. The project was initiated by the Bear Butte Creek Historic Preservation Council (BBCHPC), a locally directed group devoted to creating and maintaining a historic and ecological park on land that had been part of the original Fort Meade Military Reservation. The land in question reverted to the Sturgis School District in the early 1970s; part of it was used for the campus of a new high school. The school district property west of the high school campus was leased to BBCHPC to create and maintain a public facility focused on area history. The BBCHPC manages the lease land toward three goals: to protect natural and historic resources; to provide opportunities for public education and recreation; and to protect local natural habitat.

In line with these goals, the council endeavored to better understand the archaeological potential of the lease lands. Old maps indicate use of one portion of the land as laundress quarters affiliated with the Fort Meade cavalry post, officially designated as quarters for married enlisted men. Little is recorded of the presence of laundresses at Fort Meade, apart from the maps showing “Soapsuds Row” and some census documents. The work of laundresses was essential to the military mission of the fort. They worked to keep the officers’ and enlisted men’s uniforms clean and in good repair. Secondarily, they stepped in as nurses and midwives as needed. It was anticipated that the remains of Soapsuds Row might help give voice to this largely silent and invisible contingent of cavalry life (Huyck 1988:304, 315). Unlike the wives of the officer corps, most army laundresses had neither the time nor the educational background to write their memoirs (Myers 1990). We know almost nothing about their lives.

The fieldwork portion of the proposed project was open to, and largely carried out by, volunteers and offered complimentary instruction in archaeological methods. This aligned with the BBCHPC’s goal of providing opportunities for public education.

To better understand the nature of historic resources within the school district lease lands, the BBCHPC decided to undertake an exploratory archaeological project in the late summer of 2022. BBCHPC submitted a grant proposal to the Deadwood Historic Preservation Commission under its “Outside of Deadwood” grant program. This program supports historic preservation efforts on properties located outside the Deadwood city limits but directly related to Deadwood history. Administration of the grant was done by BBCHPC, which engaged Linea Sundstrom, Ph.D., to design and direct the project. A proposal for a second year of fieldwork and analysis was developed for the late summer of 2023. That second year was also largely funded by the Deadwood Historic Preservation Commission.

Other entities supporting the project included the South Dakota State Historical Society Archaeological Research Center (equipment, consulting, and fieldwork), the Department of Anthropology, University of South Dakota (fieldwork and remote sensing), the South Dakota Archaeological Society (fieldwork and research), the Old Fort Meade Museum (facilities and research assistance), and the Archaeology Laboratory of Augustana University (leave for one of the crew chiefs).

Linea Sundstrom directed the project. Cher Burgess took charge of the artifact processing and analysis. The field assistants were Allan Johnson and Aaron Mayer.

THE SITE

The larger old Fort Meade military reservation is designated 39MD3002 in the state archaeological sites inventory. Much of the old military reservation is listed on the National Register of Historic Places. Within the larger fort area, individual loci have been given separate site numbers. The project reported herein is part of previously recorded site 39MD45. The 2022 investigations resulted in extending the boundary of 39MD45 to the east to encompass the adjacent artifact- and feature-bearing portion of the stream terrace north of South Dakota Highway 34. This expansion roughly doubled the size of the site.

Environment of the Site Area

The eastern and western portions of 39MD45 lie on a Holocene terrace south of Bear Butte Creek between the former creek bed and South Dakota Highway 34 (Figure 1). A sparse stand of oaks and other deciduous trees fringes the stream course, but the terrace itself is grassy and lacking in trees or shrubs. The site lies just outside of a water gap leading from the interior Black Hills to the rolling prairie extending to the east. Bear Butte lies a few miles northeast of the site and is plainly visible from the site. The Pleistocene gravel terrace known as the Sturgis Terrace extends east to west above Bear Butte Creek just north of the site area. The sandstone ridge marking the outer edge of the Black Hills, through which the creek flows immediately west of the site, is forested with ponderosa pine. Several springs rise on the east side of the sandstones, providing a clean supply of water. Bear Butte Creek flows northeastward, emptying into the Belle Fourche River, a tributary of the Missouri.



Figure 1. View of site area looking southwest. Trees in foreground mark the former course of Bear Butte Creek.

The site area enjoys protection from winter winds, a permanent water supply, wood for fuel and construction, grass for livestock, a wide variety of edible and medicinal plants, and access to a variety of landscapes, including Bear Butte and Bear Butte Lake, both sacred to Indian nations occupying the area. Bear Butte is a prominent landmark.

The site area has a continental climate with cold winters and hot summers and high seasonal variability. Annual precipitation averages 43 cm. Mean annual temperature is 8.3 degrees Celsius. The climate of the area is wetter and cooler than that of the plains to the east, but less snowy than that of the higher Black Hills (www.weather.gov/media/unr/toptens/ftms2.pdf). The mildness of Black Hills weather, in comparison with the northern Great Plains as a whole, would have attracted both animals and people, especially in times of low precipitation or severe winters elsewhere.

Soils at the site are primarily Winetti gravelly loam, Altvan loam, and Saint Onge loam, all formed in alluvium. Winetti gravelly loam occurs on level or gently sloping bottomland, stream terraces, and alluvial fans in and near the Black Hills (Ollila 1978). Saint Onge loam similarly occurs at low elevations along streams flowing out of the Black Hills. Altvan loam occurs within stream terraces and alluvial fans. In some places, its sand and gravel content increases with depth. The main soil underlying 39MD45, Winetti series gravelly loam, typically contains an A horizon about 7.6 cm thick underlain directly by a C horizon extending to 150 cm below surface.

Historic Context

Historic maps designate an area on the south side of Bear Butte Creek as “Laundress Quarters” or “Soapsuds Row” (Figure 2). More officially, this part of the cavalry post was used for housing for married non-commissioned officers (NCOs). In general, an NCO could construct and/or occupy a house there if his wife was working as a laundress (Lee 1991:40). Some civilian employees were also allowed to build their own cabins on the post (Lee 1991:86). The historic maps show 13 structures; however, it is not clear whether this indicates 13 houses or a smaller number of houses with outbuildings. In 1878 there were nine laundresses in an equal number of houses along the creek (Lee 1991:40). This suggests that subsequent maps also showed one structure per family.

The US Army had adopted the idea of company washerwomen in 1802, initially allowing four laundresses to a company, changing over the years to allow one laundress per 19 ½ enlisted men. Daily rations issued to each laundress usually consisted of meat, bread, and whiskey, sometimes supplemented by flour, bacon, and/or beans (Holmes 1997:178; Lawrence 2016:53; Reiter 1978:105; Stallard 1978:59; Stewart 1980:421-422). Laundresses were also provided medical care from the post surgeons (Reiter 1978:71). An “energetic” laundress could earn as much as \$40 per month when enlisted men were getting between \$13 and \$16 per month (Reiter 1978:71; Rutter 2005:39). This earning potential made laundresses attractive for marriage partners (Lawrence 2016:73). The Army discouraged enlistment of married men. The number of married men allowed in any given unit depended upon the need for laundresses (Stallard 1978:53-54). Because relatively few laundresses were allowed on post, many enlisted men waited to get married until other married couples had left the military or moved to a different post (Lawrence 2016:74-75; Reiter 1978:84). Laundresses were phased out first with a general order in 1876 that stated they would no longer be allowed to accompany their husbands to military posts. In practice, however, many laundresses were permitted to continue their trade on post (Reiter 1978:72; Rutter 2005:39). In 1883, an Army Circular was issued stating laundresses would no longer receive rations (Lawrence 2016:124-125).

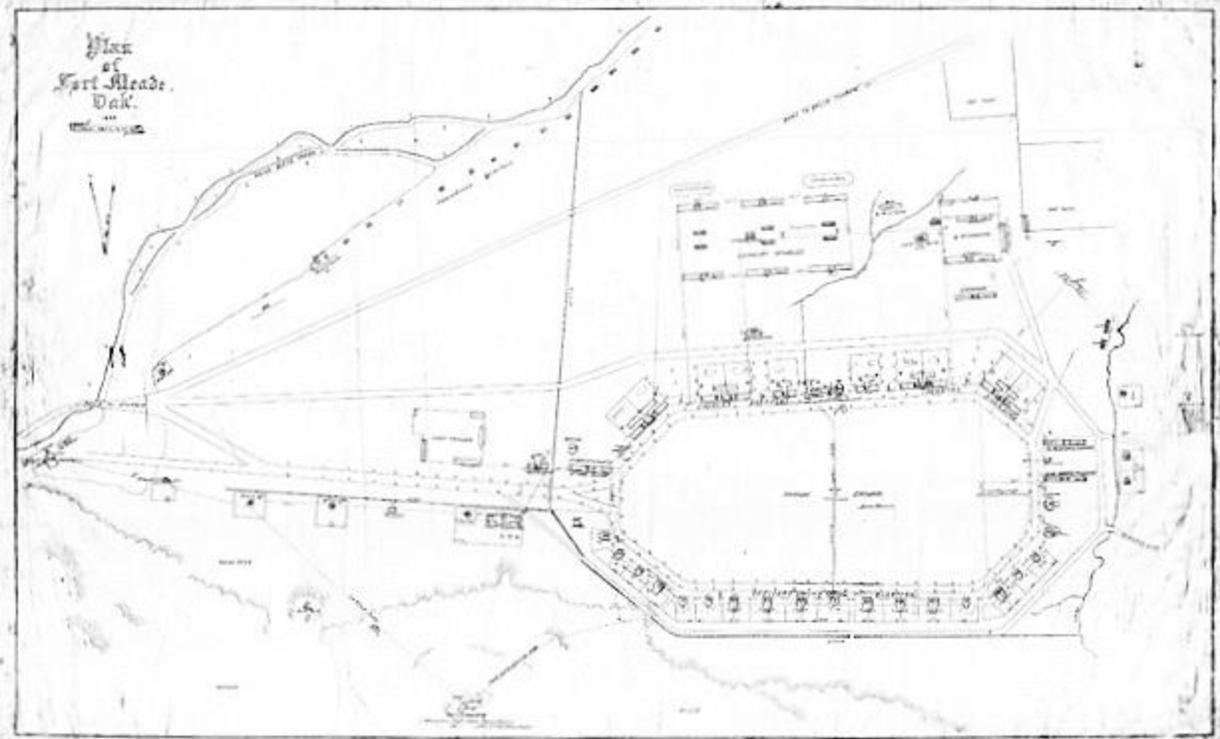


Figure 2. 1889 map of Fort Meade showing a row of houses labeled “Laundress Quarters” along Bear Butte Creek. US National Archives.

Housing for enlisted men, their laundress wives, and their children was never luxurious and often was crowded, uncomfortable, and unsanitary (Stallard 1978:54-56, 59). Conditions varied from post to post. Some families were consigned to wall tents, soddies, or dugouts, while others might be provided (or build themselves) adobe, log, or frame houses. Sometimes unused buildings were divided into small apartments for these families’ use.

Laundry work was strenuous and demanding (Juster 1996:55; Lawrence 2016:25-46; Tannenbaum Schirf 2022). The process of cleaning textiles required many steps, including:

- Render tallow and lye
- Make soaps of various strengths
- Make starch of various strengths
- Mark laundry with owner’s mark or initials
- Sort woolens from cotton and linen; colors from whites
- Fill wash tubs
- Gather wood for fires
- Treat any stains; mend tears, and replace missing buttons; remove unwashable trim
- Soak items in cold, then warm, water
- Scrub whites in stronger lye soap; boil; add bluing; rinse; wring; hang up to dry
- Scrub woolens in milder lye soap; wash in warm water; rinse; hang up to dry
- Wet items to be starched; starch various items with appropriate starch mixture; dry
- Dampen items, roll tightly; iron everything when nearly dry; reattach trim
- Deliver clean laundry and pick up soiled laundry

A woman who immigrated to Alberta, Canada, in 1919 described washday as follows:

Washing! What a job that always was. Usually it took me the entire day. In summer I washed outside; in winter, down in the basement. The boiling sudsy water had to be carried in pails from the stove to wherever my tubs were set. More than once I burned myself severely, spilling water on unprotected hands and legs.

I washed for the hired men as well as for my own family. We were always from eight to fifteen strong, according to the time of the years, and since most the men worked in close contact with the soil, and with animals, there was always an astonishing pile of extremely dirty clothing—mountains of overalls and socks, heavy underwear, and flannel shirts, not to speak of voluminous bed linen.

Drying the clothes was almost as much of a job as washing them, especially in winter. It often took the best part of a week, and for many months during the year, when the weather was cold, the various rooms of our house were made uncomfortable and unpleasant with smelly underwear and clumsy flannel shirts which took not hours but days to air thoroughly (Strange 1937).

In addition to soldiers' laundry, laundresses were responsible for taking care of their families' day-to-day needs, as well as sometimes serving as midwives or nurses (Lawrence 2016:82; Stallard 1978:57, 61; Stewart 1980:430). Many laundresses were widowed or abandoned by their soldier husbands. In the latter instance, the husband often took the wife's savings, leaving her destitute. Many laundresses were immigrants from Ireland, England, Scandinavia, or Eastern Europe, and lacked family in America who could support them (Lawrence 2016:22-23).

At some posts, laundresses acted as sex workers (Lawrence 2016:111-14). Some post commanders tolerated the practice as a safer alternative for enlisted men than frequenting nearby towns (Rutter 2005:39). Some enlisted men, referred to as procurers, married women to give them access to quarters on post as laundresses with the intention of setting up sex-work operations (Rutter 2005:39). There is no evidence that such practices took place at Fort Meade. The town of Sturgis and the area between Sturgis and the fort were notorious for brothels, usually combined with bars and gambling dens (Lee 1991:35). With Sturgis within easy walking distance of the post, potential competition from off-post operators may have made the risks of illegal activity on post too high to justify the potential profits. The notorious "Poker Alice" Tubbs operated a house of prostitution and gambling between Sturgis and Fort Meade after 1910 (Lee 1991:193-195; Rutter 2005:39). Whether or not sex work took place at the fort before then, it seems very unlikely that Tubbs would have tolerated competition from the Soapsuds Row community.

During the debate over the role of laundresses at the 1876 Army reorganization hearing in Congress, military witnesses voiced contradictory views. Some thought the laundresses were an asset to post morale, as well as hygiene, and "ladies in every sense of the word" (Stewart 1980:431-432). One general testified that while the laundresses might be rough in their words and manners, they were honest, industrious, and willing to help in times of trouble. Testimony against retaining the official military recognition of laundresses focused primarily on the costs of providing them transportation and rations; however, a few disparaged the laundresses as living in squalid conditions, having too many children, and engaging in immoral activities (Lawrence 2016:121-122; Stewart 1980:432-433).

Little is recorded of the role of laundresses at Fort Meade. By 1878, the year the fort was constructed, the US Army had discontinued the program under which laundresses were officially part of regiments. The need for laundresses did not disappear with the order removing them from official military payrolls. An Army report for 1878 lists nine laundresses with 21 children on Soapsuds Row at Fort Meade, occupying one- or two-room log houses constructed by their enlisted men husbands along Bear Butte Creek. These women did officers' laundry for three dollars a month and enlisted men's laundry for two dollars per month (Lee 1991:40). By 1880, 112 civilians were living at the post, not including 29 men employed by the quartermaster. Only three of these are listed as personal servants of officers; the remainder being family members of enlisted men (Lee 1991:72-73). The hospital steward's report for 1886 notes that 72 women and 115 children were living at Fort Meade (Waldman 1964:81).

Housing for civilian employees and married noncommissioned officers appears to have been chronically inadequate. When Major General Hugh Scott was ordered to Fort Meade in the winter of 1882-83, he found no available housing and was impelled to build a log cabin to house him and his family (Scott 1928:110-111). A letter describing the post in 1885 implies that the original log cabins used by noncommissioned officers' families had been supplemented by cottages: "the soldiers' houses are little cottages about as large as the officers' kitchens and are neat looking, porches overgrown with wild cucumber vines" (anon. 1885). The Army Inspector's report for 1886 notes that the post commander had improved the "appearance and hygiene" of the post by removing some outbuildings and renovating the married soldiers' housing (Waldman 1964:82).

In the spring of 1889, the post commander entertained bids for construction of a set of civilian employees' quarters at Fort Meade (*Sturgis Advertiser*, February 14, 1889). These frame houses with stone fireplaces were completed by early May of 1889 (*Sturgis Advertiser*, May 4, 1889). Apparently, they were intended to replace the deteriorating log cabins that formed the original Soapsuds Row housing. Maps from 1892 and 1893 show 13 houses labeled Laundress Quarters; a map from 1896 shows 14 houses in the same area. Maps from 1904 show 13 houses in this area of the fort. By 1926, however, only four or five houses are mapped; these are not labeled.

Around this time, medical officers expressed concerns about public sanitation at Fort Meade. In 1883, a child living on Soapsuds Row died of malaria. The post surgeon recommended that the post commander prohibit laundresses from washing clothes in Bear Butte Creek above the water intake (Lee 1991:79). At the time, the cause of malaria was unknown. The death of a cavalry band member's infant from cholera the same year underlined the need for a better water supply system and civilian housing for the post (Lee 1991:79); however, the recommended improvements would not be fully implemented for several years (*Sturgis Advertiser*, March 27, 1890).

Under a short-lived Army policy, six all-Indian regular army units were recruited from among the Lakota from Standing Rock, Pine Ridge, Rosebud, and Cheyenne River agencies in 1891. Having just experienced the horror of the Wounded Knee Massacre and starvation conditions on the reservations, the enlisted Lakota soldiers were worried about their families. The post commander agreed to allow the Lakota soldiers' families to occupy the recently abandoned laundress quarters. By 1892, the families were allowed to join their enlisted husbands and fathers (Lee 1991:149). The Army program was discontinued soon thereafter, putting an end to Lakota use of the civilian housing on the post.

A children’s novel based on the Fort Meade of 1905 to 1910 included a map showing a line of frame cottages along the south bank of Bear Butte Creek (Figure 3). These are labeled “Married Non-Commissioned Officers’ Quarters (Soap Suds Row).” These apparently represent the civilian employee quarters constructed in 1889.

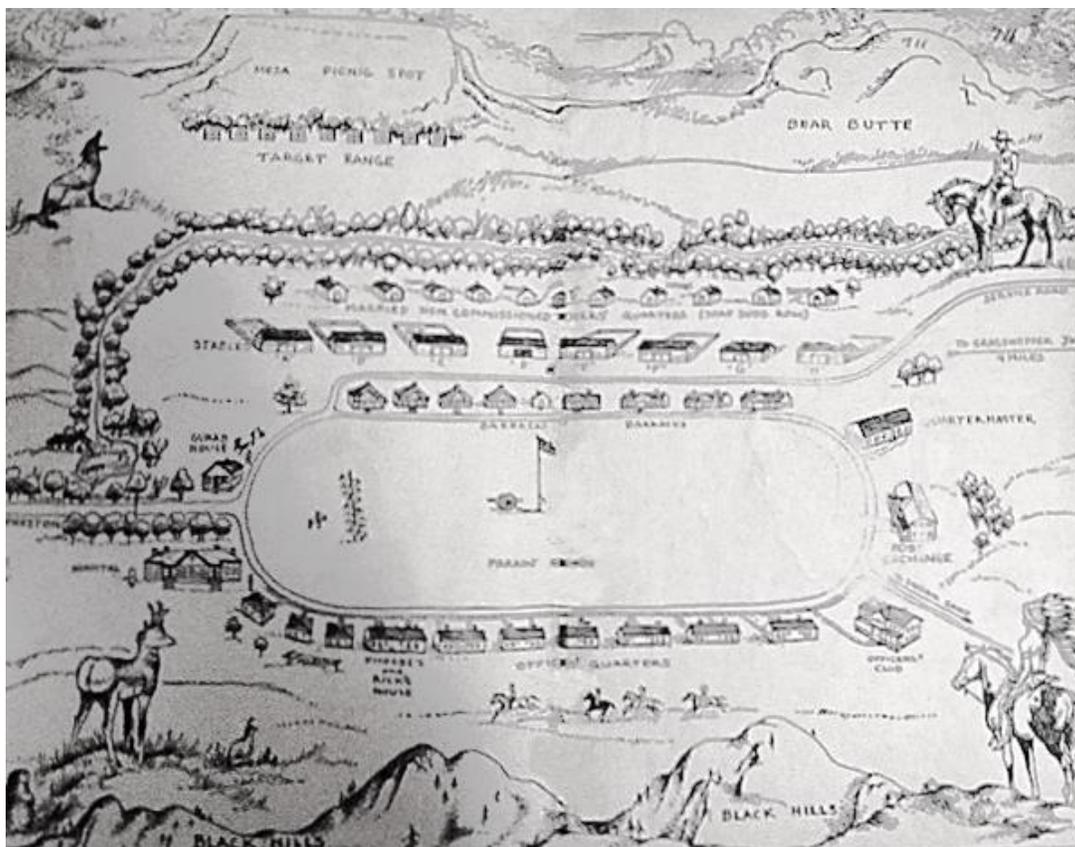


Figure 3. End paper from *Blue Ribbons for Meg*, showing location of “married non-commissioned officers’ quarters (Soap Suds Row)” (from deLeeuw 1947).

At least one log house was still standing in 1907 when former laundress Rose Courtney, then aged around 60, met her death when her cabin burned to the ground (*Sturgis Weekly Record*, November 29, 1907).

A building labeled “Laundry” shows up on maps of the post dating from 1889 to 1905. This structure is southwest of the parade ground along a pipeline leading from a spring west of the fort to a reservoir and then on to the officers’ quarters and barracks. No record was found of when or by whom this was constructed; however, in 1910 a Rasmuss Rasmussen sold the equipment from a steam laundry in Fort Meade to a nearby hotel (*Daily Deadwood Pioneer-Times*, August 5, 1910). This suggests that the laundry shown on the maps was a privately funded enterprise allowed to set up business on the post.

Census data provides a few clues to the history of Soapsuds Row at Fort Meade. By 1900, several adult members of the Wong family were living on post, employed as laundry workers. One local history notes the presence of a married couple named Wong who had eight children born in Sturgis. They operated a laundry, although its location is unclear from the available data, nor is it clear whether this is the family listed in the Fort Meade census for 1900 (Waldman 1964:15-16).

Elsewhere in the Black Hills, Chinese laundry owners put white laundresses out of business by collaborating to lower prices and then raising them again after the competitors gave up (Zhu and Estep 2004:13).

Previous Investigations

The old Fort Meade Military Reserve was placed on the National Register of Historic Places in 1973 based on the standing structures (Putz 1973; South Dakota Division of Game, Fish, and Parks, 1971). This nomination did not involve archaeological investigations, and the nomination is assumed to exclude any such sites unless they are added to the existing nomination or nominated separately (memo regarding call to Sarah Bridger, National Register, from Jerry Clark, Miles City Bureau of Land Management, 1979). The western half of site 39MD45 was recorded in 1977 as a sparse scatter of chert flakes exposed in a gravel roadbed and an ash lens, a concentration of butchered horse bones, bottle glass, cut nails, and a brass military button eroding from the bank of Bear Butte Creek within the top 11 cm below surface. An attempt was made as part of the 2022 project to verify that this bone was butchered and from horses; however, the specimens observed in 1977 were not collected for later study. In 2009, four shovel tests were dug along the western edge of the site in advance of hiking trail development. Two of these shovel tests yielded multiple fragments of unidentified bone, approximately 20 tertiary flakes made from a variety of chalcedony, chert, and quartzite raw materials, and one retouched quartzite tertiary flake. All artifacts were recovered from below surface, the majority at a depth of 30-60 cm below ground surface. The shovel tests did not extend beyond 60 cm below surface (Calhoun 2009).

After examining the surface and cut-bank exposure on the Sturgis School District side of the fence, the project director requested a site boundary extension for 39MD45 to incorporate the eastern portion of the terrace remnant. This was based on continuity of stratigraphy, artifacts, features, and historic maps of buildings, all of which indicated a single large site. Apart from land ownership, nothing distinguishes the western half of the site from the eastern half.

Other archaeological investigations have taken place near, but not within, the Soapsuds Row project area (summarized in Carpenter 2012:15-22; see also Shierts 2019, 2020; Urbaniak et al. 2022).

The 2023 excavations at Soapsuds Row were a continuation of a project started in 2022. The previous year's work focused on better understanding the portion of the site on school district land through surface survey, metal detecting, and excavation. The 2022 project succeeded in confirming the presence of intact archaeological deposits dating to the cavalry post era, but the limited extent of the 2022 excavations did not permit a full understanding of the historic features or of the pre-fort history of the site.

With the exception of a few items near the surface of the southeast corner of Unit 6, the southernmost of the excavation units, all post-contact features and artifacts recovered during the project were the right age to represent the Soapsuds Row era of old Fort Meade, 1878 to 1913. The southeast corner of Unit 6 contained a mottled fill, indicating that it had been dug into and the topsoil and subsoil mixed. Artifacts found there include a stainless-steel gasket, parts from a pitch pipe, a steel bolt and nut, and some clear bottle glass. This appears to have been a later dump or burn pile unrelated to the initial occupation of the terrace by military personnel and their employees and relatives. Stainless steel was not widely manufactured and used in the United States until the 1920s.

The discussion of site chronology presented below gives the estimated ages of various items recovered, with the exception of the more recent material in the southeast corner of Unit 6. The minimum time span that would account for these items at Fort Meade is 1878 to 1881, with a maximum time span of 1878 to 1930. In other words, the excavated area of the site was likely first occupied when the post was built in 1878 and continued in use until about World War I, with the most concentrated use between 1894 and 1907.

Not surprisingly, the material from 39MD45 differs in content from the material from nearby 39MD293, a military dump elsewhere on the old military reserve. The latter site contained thick stoneware dish fragments stamped QMC for Quarter Master Corps, which indicates a date after 1912, modeled glass bottles, a decorated sherd from a china dish, an Army-issue table knife, machine-gun shells, a glass button, and some metal items from horse gear. These items ranged in age from 1900 to 1940; however, most appear to be of World War I vintage. The contrast between the two assemblages is the result of their different ages, as well as one being a dump associated with military activities at the post while the other was primarily a dwelling and workplace.

The main feature in Units 4-6 is a remnant of a log structure. Excavations in 2022 were not sufficient to define the size, construction, or function of this structure, nor whether it represents cleanup of a razed or burned house or a house still in its original location. The use of logs for construction indicates this is the remains of one of the original laundress houses, later briefly used to house the families of Lakota enlistees and civilian employees.

The other set of units (1-3) started in 2022 contained two prominent features: a privy pit and a complex feature possibly related to soap production. Components of the latter include an ash-filled pit overlying oxidized sandy sediment, a concentration of small gravel, and a line of some kind of effluent that rehardened into a coral-like substance. Some cattle bone and a pitcher made of tin cans were associated with this feature. The composition of the effluent could not be determined; however, a working hypothesis is that the feature resulted from removing byproducts of tallow rendering. Fat from tallow or lard is one of two ingredients of soap (Wilcox 1881). The pH of the unknown substance is identical to that of bone broth (Hsu et al. 2017). In other words, the rehardened material may be calcite from bone calcium suspended in water that recrystallized as it was being drained off. It may be significant that most of the cut bone from the area of the site is cancellous bone, such as vertebrae, ribs, a pelvis, and skull portions. Tallow-bearing bone marrow is concentrated in cancellous bone. The soil matrix is moderately alkaline, making it hard to determine whether the substance consists of calcium from bone or calcium carbonates and calcium sulfates from the soil, or both. The soil matrix in this portion of the site contained many root casts formed when calcareous material dissolved and then rehardened around roots. The other set of excavation units lacked such root casts, suggesting that the high level of calcium carbonates in Units 1-3 is the result of human activity.

The privy pit contained a wide variety of materials, from dishes to building materials to personal items. Gender indicators included sewing supplies, a dress button, and a fragment of a woman's decorative hair comb. A fragment from a perfume bottle stopper also likely reflects women's presence at the site, as well as showing that some luxury goods made their way to this out-of-the-way frontier post. The presence of one man's shoe and one probable woman's shoe reflects that entire family units occupied Soapsuds Row.

Beer and liquor bottles were not particularly abundant in the excavations. Neither alcohol bottles nor tobacco tags are reliable indicators of gender in this context, as both substances were

consumed by both sexes. The story of Rose Courtney presented in Appendix C bears witness to alcohol use (to the point of abuse) by at least one laundress. By the 1870s, women, particularly those of the working classes, used tobacco in various forms, either openly or in secret (Cook 1997:29). A tobacco shop owner in 1884 remarked that many of his customers were women seeking mild blends for their own use (*Omaha Bee*, December 2, 1884). In 1878, the author Charlotte Younge bemoaned the increased use of tobacco by young women, which she blamed on the carelessness of men, including military officers, in smoking in front of women and girls (*Cheyenne Daily Leader*, July 14, 1878). Women were also increasingly consuming tobacco in Ireland, where many of the laundresses had grown up (Cook 1997:29). Further, the only evidence for tobacco use at the site, tin tags for plug or twist tobacco, were also saved as collectables or premiums by men, women, and children and thus are not a direct indicator of tobacco consumption.

As to evidence for illegal activity, the number of beer and liquor bottles found in 2022 is too small to suggest more than household consumption, and nothing else was found that might be an index of extralegal activity. In terms of class, the 2022 artifact assemblage suggests that the economic status of the Soapsuds Row households was above that of the enlisted men on post and nearly on a par with officers' households. Fine dishware and perfume from New York are goods that rise above the bare necessities of frontier life. While documentary evidence draws a strong class difference between the families of enlisted men, including the laundresses, and those of the officers, evidence from the 2022 project indicates that their household items were not sharply different in quality.

Further interpretation of the site was not warranted by the limited amount of data collected during the preliminary work conducted in 2022.

2023 RESEARCH DESIGN

The investigations reported here represent the second phase of a project designed to provide data on a set of general questions regarding the archaeological potential of the lease land and a set of research questions specific to Soapsuds Row, the area of the site used for laundress housing. The 2022 investigations were sufficient to answer some of these research questions, while others required more excavation. The 2022 investigations were able to answer questions 1, 2, 5, and 6. The remaining questions were partially, but not completely, addressed by the 2022 data (Sundstrom and Burgess 2023).

1. Are intact ca. 1878 to 1910 deposits present?
2. What is the extent of fort-related archaeological remains?
3. What is the depth of culture-bearing sediment?
4. Are intact pre-contact (pre-fort) deposits present? What is their depth and horizontal extent?
5. Has the site been looted or otherwise disturbed? To what extent?
6. What, if anything, remains of the old Soapsuds Row?
7. Where were the laundress houses and outbuildings?
8. What were the houses made of?
9. Which ages, sexes, and ethnic groups were present at Soapsuds Row?
10. What activities took place at Soapsuds Row? Were the laundresses “ladies in every sense of the word” or catering to soldiers' vices?
11. What was the economic status of those living along Soapsuds Row?

Additional research questions arose from the 2022 project, concerning the specific nature of the features and artifacts found then.

1. What is the nature of the apparent structural feature? Do the logs indicate an intact log building of some sort or are they debris from fences? Does the feature represent an intact house or other building or does it represent a trash pile?
2. Does the privy fill represent more than one episode of deposition?
3. Is the privy feature contemporaneous with the structural feature?
4. Does the hardened effluent feature pre-date the privy?
5. Can the age of the various features be narrowed down or expanded?
6. What explains the highly fractured and burned nature of the artifacts?

The 2022 archaeological investigations at 39MD45 incorporated limited excavation, surface survey and remote sensing. Old military maps were consulted to define the area of the terrace most likely to have contained laundress housing. Drone, LiDAR, and satellite images were examined for potential features on the site surface. A possible house depression and a possible privy depression were selected for test excavation to establish the age and vertical extent of cultural deposits at the site. These two features were selected because they appeared undisturbed by looting, as well as because of their relation to features on the old maps. Additional features on the terrace surface were measured and mapped using a GPS device but were not further analyzed. Finally, a metal detector was used to scan a series of mowed transects across the terrace surface.

Prior to the 2022 excavations, a University of South Dakota archaeological field school crew established a grid over the site area using a total station (Figure 4). The datum used for the excavation was at point K8 on the site grid. This datum is at UTM point 13/4919001N/621151.9E and 992.7 meters elevation. All depth measurements used in the excavation were measured from this elevation, using surveyors' string and line levels to establish the elevation line.

In 2022, three contiguous one-by-one-meter units, designated 1-3, were established at each of the two features. Units 1-3 exposed an area from the edge of the terrace into the possible privy feature. This allowed easier access to the privy feature, as well as showing artifacts and features associated with, but outside of, the privy pit. These three units were placed at 0 to 3 meters south and 12 to 13 meters west of the K8 datum. Three additional contiguous one-by-one-meter units, designated 4-6, were placed to intersect the edge of the possible house feature, with the center unit placed across a slightly elevated area that appeared to be the remains of a wall. This set of units was placed 11 to 14 meters south and 7.5 to 8.5 meters west of the K8 datum (Figure 5).

The 2023 Soapsuds Row project continued evaluations of the archaeological potential of site 39MD45 begun the previous year. The 2023 excavations were focused on the same two 3-meter blocks excavated the previous year, one intersecting what appeared to be a privy and the other intersecting what appeared to be a log house or other structure. The 2022 excavations established that intact cavalry-era deposits were present at the site; however, those excavations did not extend into stratigraphic levels from the pre-contact era. The 2023 excavations continued the same two excavation blocks (privy and log structure). The block containing the privy feature was extended into pre-contact deposits. Two additional one-by-one-meter units were dug adjacent to the original privy excavation block; these also extended into the paleosol predating the fort era. In the second excavation block, the northern half also extended into the paleosol. The southern half,

however, contained only cavalry-era materials deposited in and near a structural feature representing a cold cellar or icehouse that had been dug into both the upper and lower soils.

All units were excavated by hand in 5-centimeter levels. The first level of each new unit was excavated to create a level surface; thus, the thickness and volume of sediment removed from the uppermost levels varied from unit to unit. The floor of each level was mapped and photographed before the next level was started. All fill was passed through ¼-inch wire screen. Larger and more diagnostic artifacts were pedestaled and mapped as the excavation proceeded. Features were recorded on feature and level forms; in some instances, a sample of feature fill was collected for flotation. Artifacts were sorted, cleaned, and identified as fieldwork proceeded. Artifacts from each level were bagged separately with artifacts from feature fill bagged and cataloged separately from the rest of the level. All materials from the excavations are curated at the South Dakota State Historical Society Archaeological Research Center in Rapid City.

The ending depth of each unit is presented in Table 1. In the block containing the privy feature, the initial units 1-3 were reopened with three objectives. First, Units 1 and 2 were excavated through and beyond the remaining gravel lens and into the underlying buried soil to ascertain whether cultural materials were present in the lower soil. Adjacent Unit 3, containing the privy feature, was also excavated through and beyond the gravel lens to determine the depth of the privy pit, to further understand the privy pit’s relationship to the effluent spill recorded as Feature 5, and to assess the potential of the lower soil to contain cultural material. Unit 7 was excavated adjacent to and southwest of Unit 3 in order to follow out the effluent spill feature, which had been truncated by the west wall of Unit 3 at its northwest corner. It was hoped that following the line of hardened effluent upslope might uncover evidence of a hearth for heating bone broth or for mixing soap. Unit 8 was excavated immediately north of Unit 7 and west of Unit 3 to check for additional features in the upper soil and for cultural materials in the lower soil.

The block with the apparent house depression was made up of three one-by-one-meter units aligned north to south. Unit 4 was placed north of what appeared to be a structure wall; Unit 5 was placed to straddle the “wall,” and Unit 6 was placed in the depression in what appeared to be the likely interior of the structure. The 2023 excavations continued these units. In the case of Units 4 and 5, the units were extended through the gravel lens and into the underlying buried soil. Unit 6 was in sediment disturbed by construction of a cellar. These excavations were aimed at better defining the apparent log structure and determining the vertical extent of historic artifacts in this portion of the site, as well as providing some data on whether earlier, precontact cultural material was present in the lower soil below the cavalry-era component and the stream gravel stratum.

The 2023 project also included surface survey near the excavation blocks and on the abandoned creek bank northeast of them. These results are presented in Appendix A.

Excavation Unit	Depth below Datum	Excavation Unit	Depth below Datum
1	90	5	115
2	115	6	120
3	120	7	95
4	95	8	100

Table 1. Final depths of excavations in centimeters below site datum.

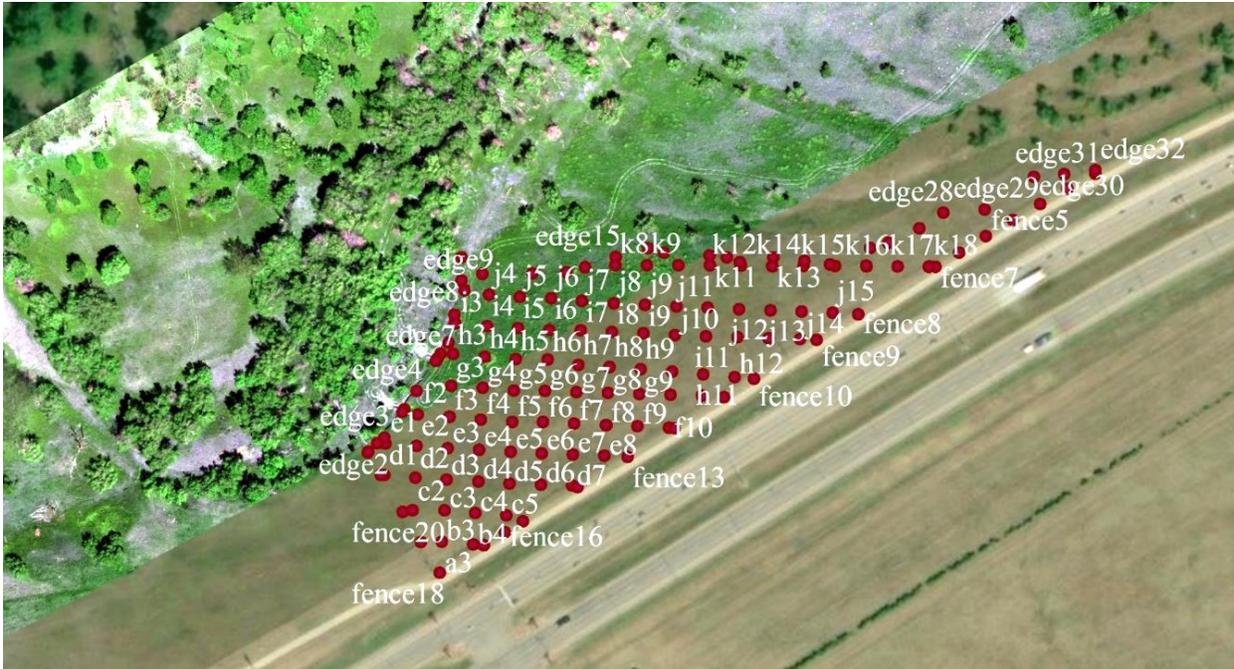


Figure 4. Drone photo of 39MD45 with grid points (red dots) laid over.

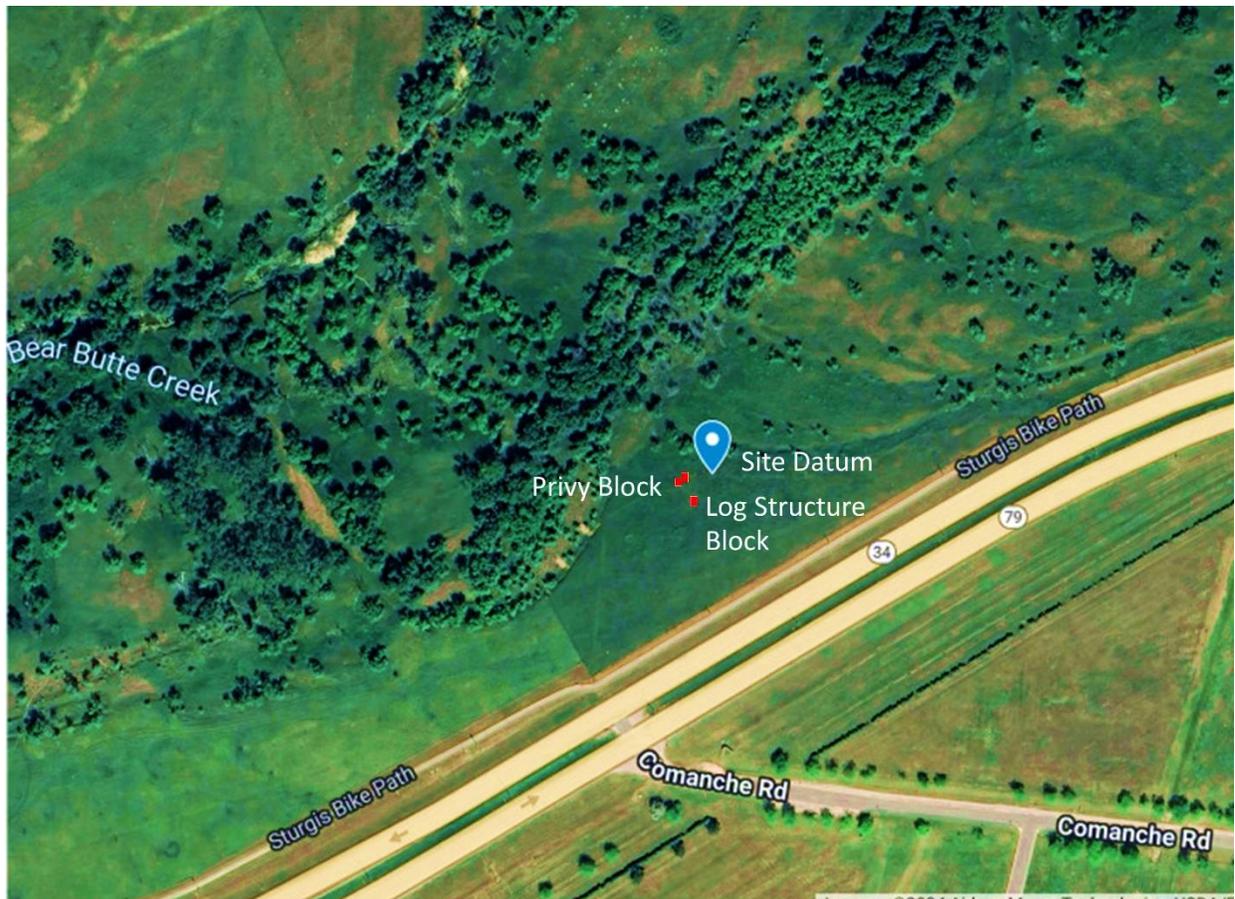


Figure 5. Map of site showing location of excavation blocks (in red) in relation to former creek bank and highway.

SITE STRATIGRAPHY

Site 39MD45 lies atop and within a terrace of Bear Butte Creek at an elevation of 3320 feet or 1012 meters above sea level. It lies three meters above the nearest former bed of the creek. Deposits within the terrace consist primarily of loam, interspersed with streambed gravels. The terrace contains a well-developed surface soil and a lower paleosol. The northern edge of the terrace was cut into by Bear Butte Creek, which apparently was downcutting before it was rerouted via an artificial berm constructed after a flood in 1972. Cleaned cutbank exposures on the north side of the site show a well-developed buried soil horizon at about 100 cm below surface, immediately below a layer of stream-laid gravels. The upper soil is an A-C horizon, while the lower soil is an A-B horizon. The cutbank exposures exhibit no evidence of disturbance other than the stream-laid gravel layer that separates them. In general, this indicates that the surface represented by the lower soil was stable for thousands of years, and the current terrace surface was stable for hundreds of years. No attempt was made to collect bulk carbon to date either soil.

What appears to be a paired terrace surface is present on the other side of the creek. This was not examined in detail but suggests potential for intact deposits extending back thousands of years. The gravel represents a former stream bed, as the creek migrated across its valley. The same stratigraphy characterizes the terrace between the old stream bed and the highway. Farther back from the old creek bed, the gravel layer is thinner, but still forms a clear boundary between the upper (current) and lower (paleosol) soils (Figures 6 and 7).

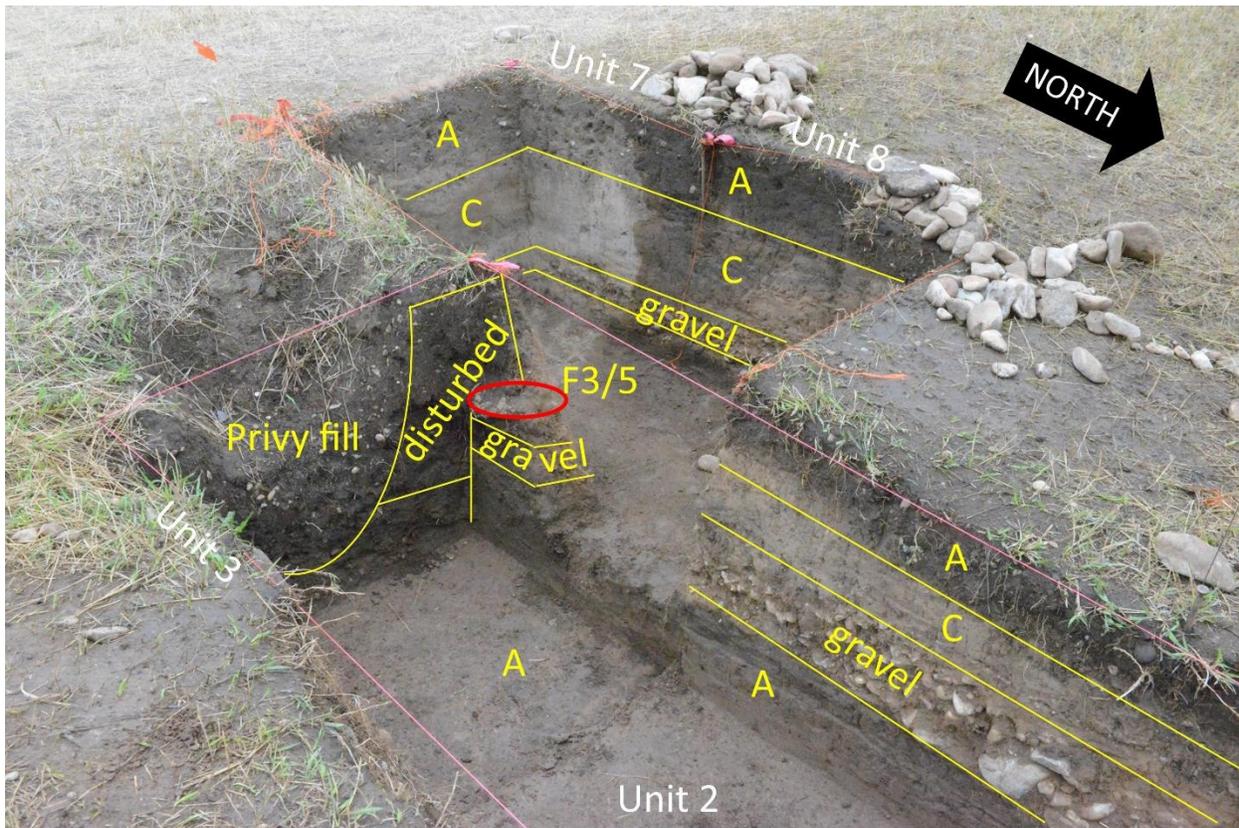


Figure 6. Privy feature excavation block (Units 2, 3, 7, and 8) showing stratigraphy and location of hardened effluent associated with Feature 3/5 (red oval at center). Unit 1 is out of the picture adjacent to Unit 2.



Figure 7. Another view of the privy excavation block showing upper and lower soils separated by stream-laid gravels, view to west.

The terrace surface on BBCHPC lease land between the cutbank and the highway right-of-way encompasses about 1150 square meters. Although a wagon road cut across the terrace, it appears that most of this area is intact and undisturbed by construction and military activities. At the same time, the eastern portion of the terrace is now occupied by a US highway, construction of which removed significant portions of the former Soapsuds Row (Figure 8).



Figure 8. Current bed of Highway 36 (white bands at lower right) overlaid on historic map of Soapsuds Row showing loss of house remains to highway construction.

RESULTS: FEATURES

The 2023 project continued the investigation of three features identified in 2022 and revealed one additional feature. Feature 5 is a line of hardened effluent associated with ash, a gravel lens, cut mammal bone, and oxidized (burned) sandy soil. Feature 6 is a privy hole. Feature 7 is a concentration of household debris associated with several logs. Feature 9 is a vertical plank wall and an associated trench marking the back wall of a subsurface cellar or icehouse.

Feature 5 is a line of the unidentified rehardened effluent extending from the southeast corner of Unit 1 diagonally across Unit 2 and into the northwest corner of Unit 3 where it is truncated by the west wall of the unit (Figure 9). Feature 5 rests directly on stream gravels that lie between the surface soil and the buried soil. Feature 5 lies directly under what had been designated Feature 3, a scatter of cans, animal bone, and ash, and the two may represent the remnants of a single set of activities. Feature 3 appeared at 50-70 below datum in Unit 2, truncated by the east wall of the unit and measuring 108 cm north to south and 30 cm east to west.

Feature 3 was a shallow, bowl-shaped pit with a concentration of medium to small gravel adjacent to an ash concentration, both overlying sandy, oxidized sediment. Adjacent to and slightly lower than the ash and gravel was the line of an apparent effluent forming a coral-like calcified structure designated Feature 5. This occurs in the C horizon, with the effluent resting directly on the gravel layer. Artifacts associated with Feature 3 were cut animal bone, two nested tin cans, small pieces of sheet metal, cut nails, and a bottle bottom. The feature fill, ash lens, and effluent all yielded pH readings of 8.3 to 8.4, suggesting the presence of an alkaline substance. The matrix soil (Winetti gravelly loam) pH ranges from 7.4 to 7.8. In 2023, Units 7 and 8 were opened southwest and west of Unit 3 to explore the source and configuration of the line of hardened effluent. These units contained very few artifacts and revealed that the effluent line terminated in an amorphous blob not far from its original extent in Units 2 and 3 (Figure 10). Unfortunately, this did not allow a better understanding of the source of the effluent.

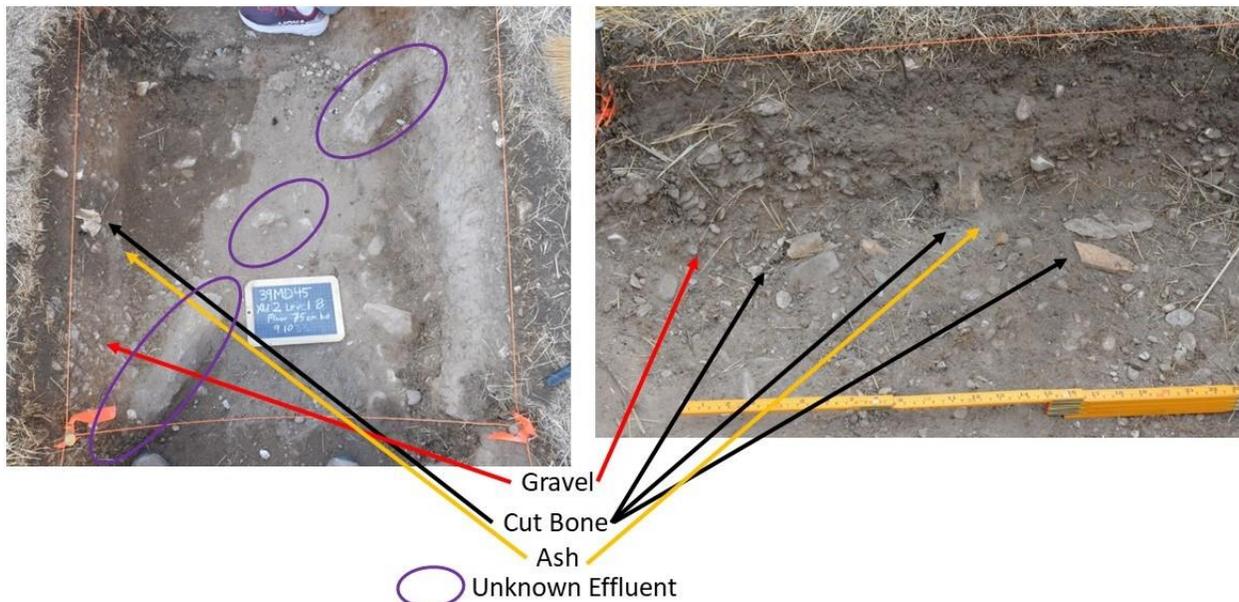


Figure 9. Feature 3/5, base of feature (left) and east wall of Unit 2 (right).

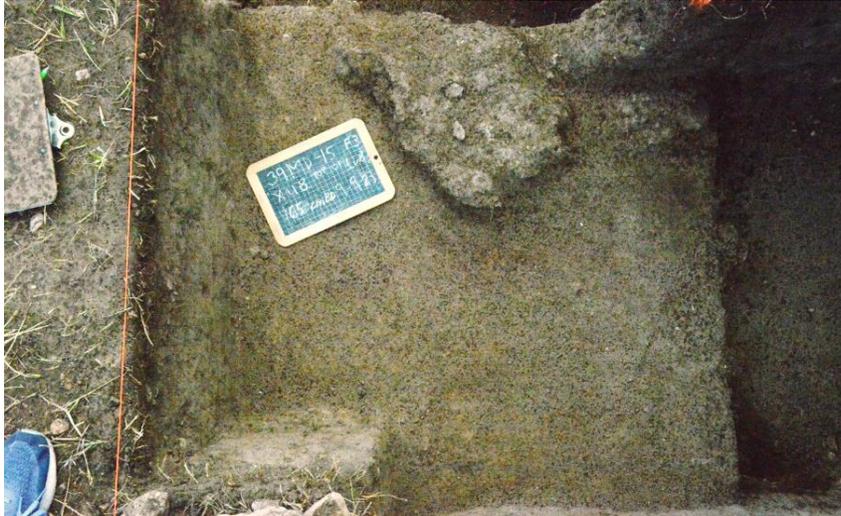


Figure 10. Hardened effluent as it appeared in the east side of Unit 8 (top of photo). The speckled appearance of sediment is due to rain.

Feature 6 is the privy pit appearing in the southeast corner of Unit 3. This feature was visible below surface as a truncated circular area of dark soil. The feature fill contained whiteware, blue and brown ceramics, bottles and bottle glass, cut and wire nails, bricks, window glass, tin can fragments, and fragments of a blue-and-white stoneware cup, as well as parts of two or more shoes (Figure 11). The 2023 excavation followed the pit down to its bottom at about 120 cm below datum. A large chunk of hardened effluent lay at the bottom (23-0017-237). This must have fallen in when the privy pit was created, confirming that the privy is later than the Feature 3/5 line of effluent and associated artifacts, ash, and oxidized sand. Artifacts were found throughout the privy in 2023, but in smaller amounts than in the upper levels explored in 2022.



Figure 11. Bricks, bottles, and wood exposed in upper levels of Feature 6 privy in 2022.

Feature 7 appeared in 2022 as a line of cobble-sized stones with highly deteriorated logs parallel and adjacent to it in the northwest corner of Unit 6 and the south wall of Unit 5 (Figures 12-14). This appeared to be the remains of the wall of a log structure, although it is not clear what function the stones served. Adjacent to the feature in the northwest corner of Unit 6 were a beer bottle neck and a horseshoe. As this feature emerged in the 2023 excavations it could be clearly identified as a concentration of roughly parallel, highly deteriorated logs amidst a dense concentration of household debris. The debris consisted of bottles and bottle fragments, cans, strap metal, barrel hoops, fragments of a cast-iron kitchen cook stove, and clothing items. Many of these appeared to have been heavily damaged by fire, and the deposit included numerous bits of charcoal, burned wood, and melted metal. The logs and debris lay in a bowl-shaped depression traceable in the side walls of Units 5 and 6. The debris deposit extended entirely across Unit 6 and into the southeast corner of Unit 5 on the south side of Feature 9.

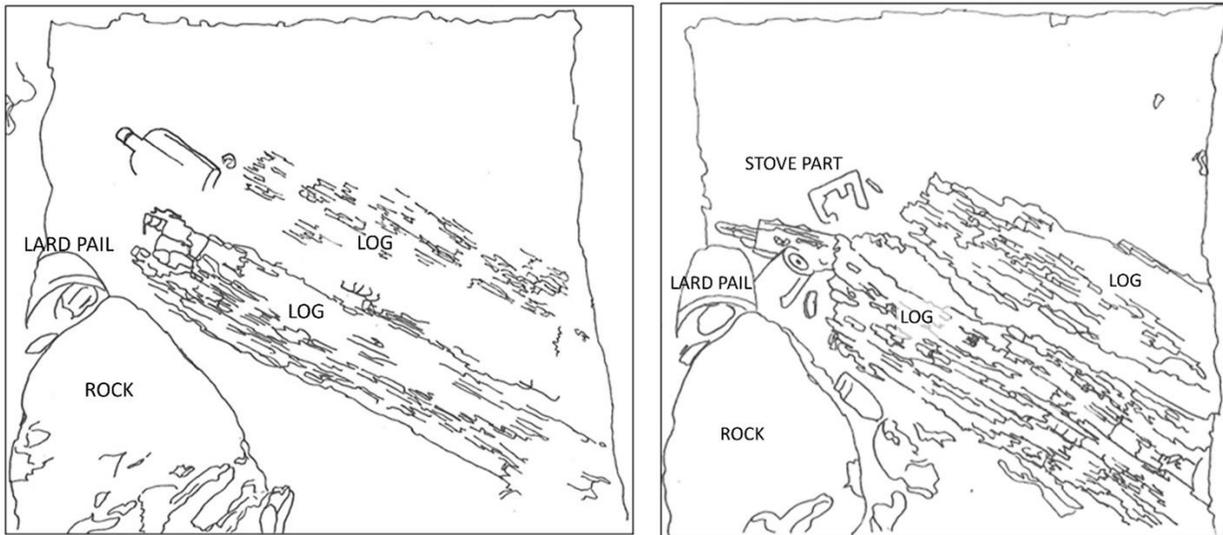


Figure 12. Unit 6 plan view at 75 (left) and 80 (right) cm below site datum, showing appearance of Feature 7 logs and debris (north at top).



Figure 13. Chow chow jar, oilcloth, and ash pan from stove, Feature 7.

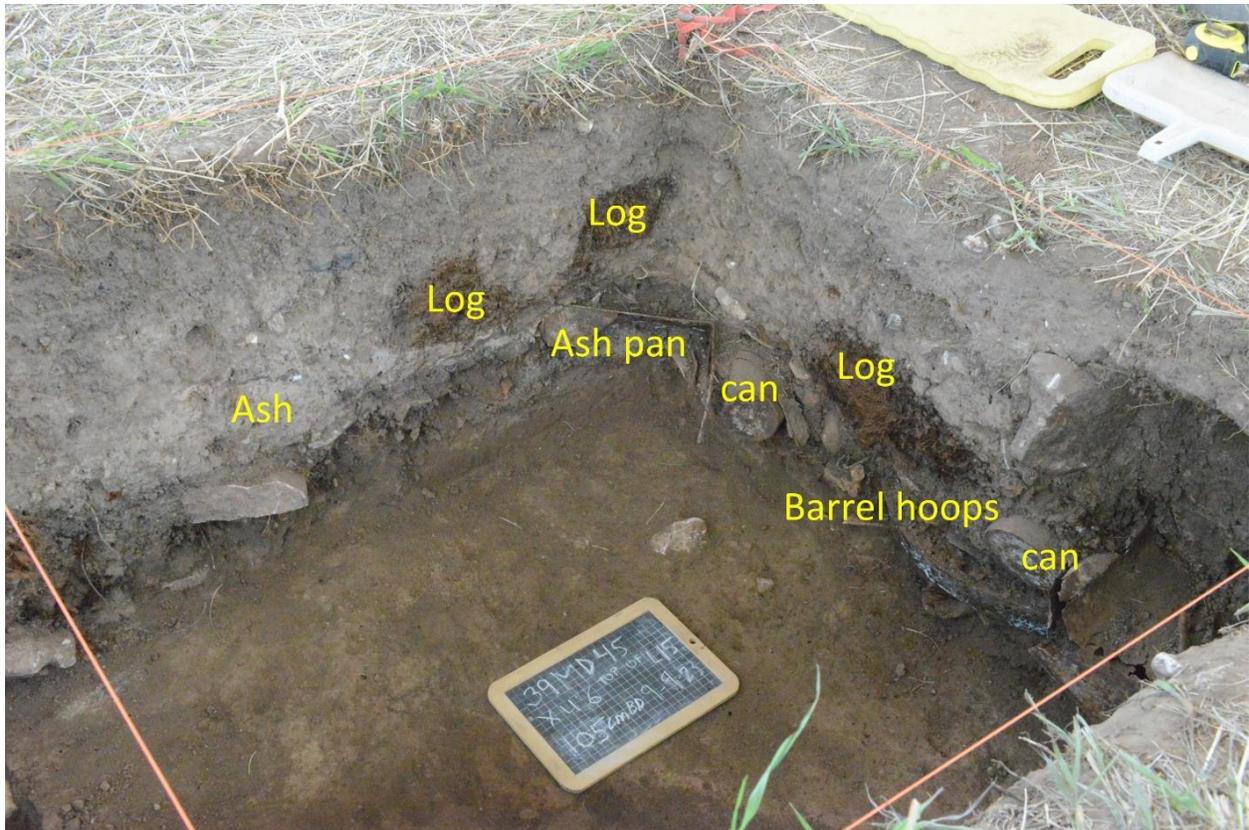


Figure 14. East and south walls of Unit 6 at base of feature 7, showing Feature 7 deposit exposed in the sidewalls. View to southeast.

Feature 9 is a dugout cellar or icehouse facing to the south with its back wall faced with a line of vertical planks from log trimming. Time constraints prevented full excavation of this feature, which appeared under the log and trash deposit designated Feature 7. The top portion of the feature had a sparse artifact assemblage consisting only of seven cut nails near the top of the excavated portion. It was not clear whether those nails belong with Feature 9 or had migrated a short distance down from Feature 7. Excavation terminated about 120 cm below site datum. A bucket auger was employed to test the depth of Feature 9 before backfilling the unit. This test encountered a piece of wood (lumber) at 150 and 172 cm below datum, suggesting considerable depth for this feature. The placement of the line of vertical planks in relation to the logs and the roof slump evident in the unit profile suggest that the structural depression first noted on the surface formed when the cellar roof collapsed (Figures 15-17). Although the logs lay atop the cellar, there was no clear indication that those two features were originally related to each other. Instead, a preliminary impression is that the cellar represents an earlier structure whose collapse subsequently provided a place to deposit trash from a log house dating around 1890 to 1905 that probably stood nearby. Both this hypothesis and the function of the dugout feature with the plank wall await further clarification through continued excavation.

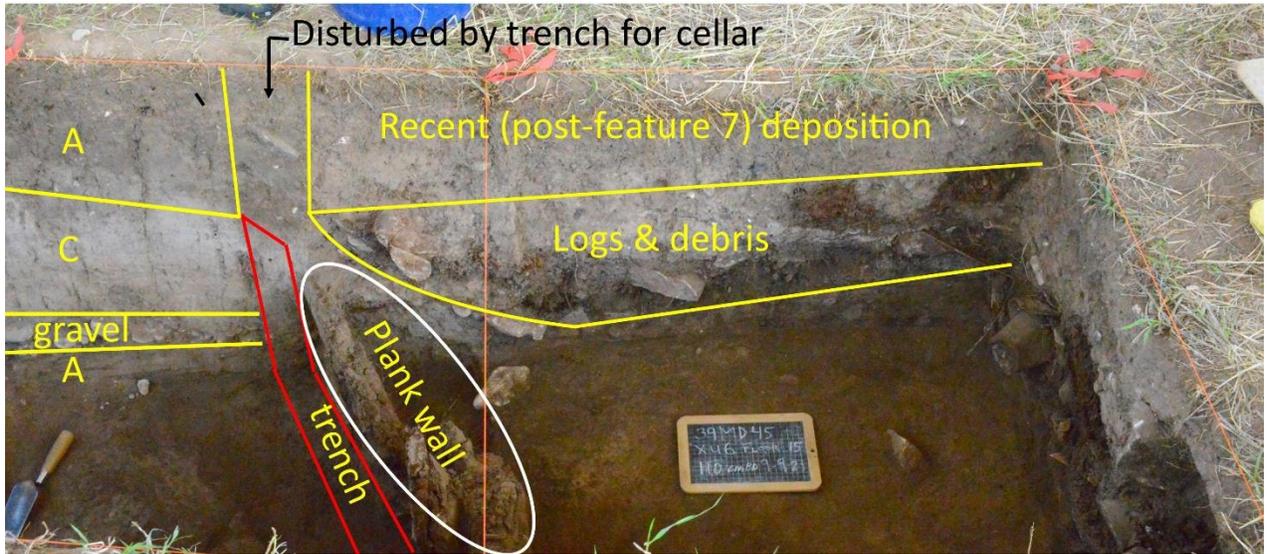


Figure 15. east wall of Units 5 and 6 showing relationship of natural stratigraphy (left) to Feature 9 plank wall and trench and Feature 7 debris deposit associated with log structure. View to east.



Figure 16. Drawing and photograph of plank wall as seen from above, facing east.



Figure 17. Side view of plank wall at termination of excavation, facing south

RESULTS: ARTIFACTS

Chipped Stone

During the 2022 project, 14 pre-contact chipped stone artifacts were found in total. Of these, seven were found in the top 15 cm below datum in Unit 1, the portion of the privy block closest to the creek bank. Another six came from the top 20 cm below datum in adjacent Unit 2. These are all from the upper soil. The remaining chipped stone artifact was found in Level 3 of Unit 6, the unit containing the log structure feature. These artifacts included a broken quartzite flake tool, a small scraper, and a retouched flake. No pre-contact features were found in the 2022 excavations, which were largely limited to the upper soil.

The 2023 excavations yielded 38 chipped stone artifacts (Figure 18). Of these, four chipped stone artifacts were from Unit 1, Levels 5 and 6, within the upper soil. The 2023 excavations continued into the paleosol. Unit 3 had seven chipped stone artifacts in Levels 9 through 14, in or near the lower soil. A similar bimodal distribution was seen in adjacent units 7 and 8, which had ten chipped-stone artifacts in the upper soil and 17 in the paleosol. Despite the larger number of artifacts in the paleosol, no features were detected there.

In 2023 Unit 6 yielded seven chipped stone artifacts in deposits disturbed by the log structure and cellar features. The cellar feature cuts through the upper soil and the top portion of the paleosol; thus, these artifacts cannot be confidently assigned to either deposit.

Chipped stone tools from the upper soil included two scrapers, a possible scraper, and a retouched flake. The remaining chipped stone artifacts were unmodified flakes, shatter, and tested cobbles. The lower soil had one scraper and one biface fragment. The remaining artifacts from the lower soil are unmodified flakes, shatter, and tested cobbles. Two retouched flakes were from disturbed contexts and cannot be confidently assigned to either the upper or lower deposit. These assemblages are too small for meaningful comparisons or functional interpretations. In the absence of features or artifact concentrations, this limited chipped stone assemblage indicates only that pre-contact materials are present both in the upper soil where they are intermixed with contact-era artifacts and features and in the lower soil.

Knapped glass artifacts from the 2022 excavations suggested that some of the chipped stone artifacts could be contemporaneous with the early cavalry post; however, nothing was found in 2023 to elucidate this possibility. It is not clear whether the chipped stone in the upper soil represents Native American use of the site at the same time, or nearly so, when the cavalry post was established or whether they represent items dropped before the fort was built. The latter scenario is more likely. In other words, after the paleosol was buried by stream deposits and silts began to accrue atop the gravelly stream deposit, Native American people left behind a few tools and waste materials from stone tool production. These items either stayed on the surface or were buried by slowly accumulating silt deposits. Undisturbed pre-contact deposits can be expected in the paleosol, based on the few artifacts recovered during the 2023 excavations, but so far any such deposits are undatable and reveal little of how earlier people used the site.

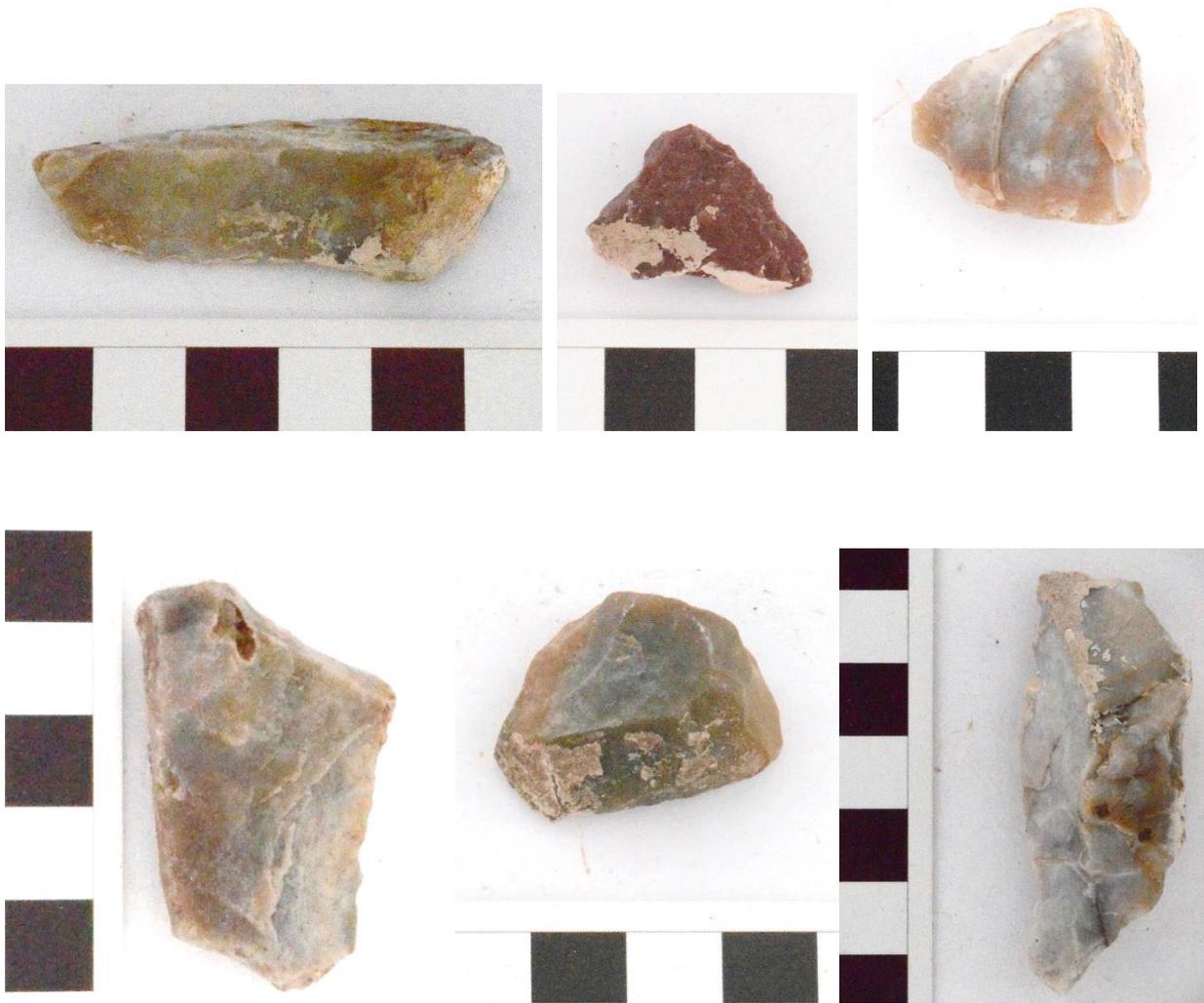


Figure 18. Examples of chipped stone tools from 2023 project. Upper row: expedient tool of chert (23-0017-053), chert biface fragment (23-0017-216), scraper (23-0017-056), all from the north excavation block; lower row: unifaceally retouched flake, (23-0017-285) and scraper fragment (23-0017-341) from south excavation unit; flake tool (23-0017-641) from north excavation unit).

Ceramics

Brown Transferware. The ceramic assemblages from the privy feature and the trash deposit associated with the log structure show little overlap in the types and patterns of vessels represented by the excavated sherds. The single exception to this is a brown transferware sherd from the privy that matches a sherd of the same china pattern from the log structure (Figure 19).



Figure 19. Left, patterned plate from T&R Boote Pottery; upper right, rim sherd from privy feature (22-0042-457); lower right, interior sherd from log structure feature (23-0017-576).

Another set of brown transferware sherds from the log structure feature are from a plate or bowl (Figure 20). Its pattern was called “Variety” and was produced by the Ridgway Pottery in Devonshire, England, between 1879 and 1885. The pattern reflects a Japanese-inspired aesthetic in vogue at the end of the Victorian period (Godden 1985).



Figure 20. Left, three sherds from the log structure feature (23-0017-539, 23-0017-328, 22-0042-430); right, example of a plate in “Variety” pattern manufactured by Ridgway Pottery, England.

Blue Transferware. About 50 sherds of flow blue transferware were found in the privy fill in 2022 and 2023. These represent at least two vessels. All but three of the sherds are from one or more teacups and/or saucers made by the Doulton (or Royal Doulton if after 1901) Company in England in the “Madras” pattern. This teacup is decorated on both the inside and outside near the rim. The decoration includes a heavy band of a flower-leaf-and-berry designs, a thinner band at the rim in a diamond design, and an interior landscape scene. The cup bears a complex design of trees, water, and exotic buildings (Figure 21). This variation of the Madras pattern dates from 1885 to 1905 (Gaston 2005:156-157).



Figure 21. Top, collection of blue transferware sherds from 2023 (top, 23-0017-211 and 23-0017-184) and complete teacups in the Madras pattern (bottom).

The second vessel is probably another cup or bowl. It has a wide diamond-in-diamond patterned band with a different geometrically ornamented band above it. Below the diamond-patterned band is a white band and below that another band of alternating curlicues and solid blue medallions with a cross design inside (Figure 22, center). A sherd with a image of a hatted man riding a donkey may go with this vessel, but it is too fragmentary to reconstruct with any degree of certainty (Figure 22, left).



Figure 22. Left, blue transferware sherd from privy; center, refitted, unidentified blue transferware sherds from privy (23-0017-256); right, blue transferware sherd from debris associated with the log structure (23-0017-369).

Only a single blue-on-white sherd was found in the log structure feature (23-0017-369). This is a light blue transferware that does not match any of the vessels or sherds from the privy fill (Figure 22, right).

Copper Lustre Stoneware. Fragments of several dishes of whiteware decorated with copper leaf were present in the log structure trash deposit (23-0017-539, 23-0017-577, and 23-0017-610). These ceramics were made by Anthony Shaw Pottery in England. The fragments found at 39MD45 are all from a pattern known as Copper Lustre Tea Leaf (Figure 23). Many potters produced whiteware with a small tea leaf design in copper leaf in the center and a narrow band of copper leaf inside the rim. Such wares were produced from the 1850s to 1910. According to a description from the McLeod County, Minnesota, Historical Society:

Nineteenth century pioneers favored heavy practical dishware that would stand long moves by river boats, heavy wagons, or trains. Dishes had to withstand countless washings using homemade lye soap. Tea Leaf caught the ladies' fancy because it was simple white, yet had elegant shapes, copper lustre added color, it was durable, and it was cheap. It was used in the modest homes of farmers, miners, millers, and country people across America. Undecorated white ironstone was first patented by Charles James Mason in England in 1813 and English potter Anthony Shaw created the original Tea Leaf motif in the 1850s. Due to its sturdiness and

affordability Tea Leaf decorated ironstone was made into everything from teacups to chamber pots. From 1875 to 1900 Tea Leaf was the most popular pattern made. By 1900 at least 25 English potters had produced their own variations of Tea Leaf and perhaps twelve American contemporaries tried to get a share of the market. English Tea Leaf was sent to the U.S. by the shipload. It was packed in barrels and distributed throughout the country by the cheapest method possible. Tea Leaf was used as ballast in ships landing along the Atlantic Coast. After discharging the dishware they loaded with cotton, wood, tobacco. Thus the Tea Leaf ballast made the trip more profitable than using & dumping rocks as ballast. After 25-30 years Tea Leaf went out of style and was not shown in catalogs after 1910 (<https://mcleodhistory.pastperfectonline.com>).

Two other sherds of white stoneware may belong with the Tea Leaf ceramics; however, they could not be refitted to the sherds decorated with copper leaf.



Figure 23. Left, refitted Anthony Shaw plate in Tea Leaf design (23-0017-539); center, back of plate showing maker's mark; right, other Tea Leaf design dish fragments (23-0017-539; 23-0017-539).

Porcelain. Five pieces of embossed white porcelain, probably from the same vessel, were recovered from the privy fill (Figure 24; 23-0017-068, 23-0017-159, 23-0017-185). No porcelain was found in the log structure feature.



Figure 24. Examples of embossed white porcelain from the privy fill (23-0017-068, 23-0017-159, 23-0017-18).

Other Ceramics. A few pieces of plain white stoneware were recovered from the site. Some of this may belong to the Copper Lustre set. A single sherd of pink transferware was found in the privy fill in 2022. The ceramic assemblage from the debris pile associated with the log structure does not match that of the privy with the exception of the single brown transferware sherd described above. This would tend to confirm that the debris pile represents a single deposition event perhaps postdating use of the privy.

Bottles

Beer Bottles. Fragments of glass bottles and a few complete examples were among the most common artifacts found in the privy and trash pile. Beer bottles and beer bottle fragments were found in both the privy and the debris associated with the log structure. These are of types dating between 1880 and 1920. Except for the oldest one, they all fall within the 1885 to 1905 age estimate for the features. Aqua, brown, and clear glass examples were found (Figure 25).



Figure 25. Beer bottle fragments (23-0017-414, 23-0017-417, 23-0017-531).

The base of a clear or pale aqua glass bottle was found in the debris pile associated with the log structure. A fragment is embossed J GUND BR'G (Figure 26, left; 23-0017-347). Of the two Gund Breweries, this would be the one in LaCrosse, Wisconsin, established by John Gund in 1854 and operated under the J Gund Brewing name from 1880 to 1910. Bottles with this base mark: J GUND BR'G CO EST 1854 were first used in 1900. Another fragment embossed with "1854" probably is part of the same bottle (Figure 26, right; 23-0017-348).



Figure 26. Fragments of a John Gund Brewing beer bottle base (23-0017-347 and 23-0017-348).

Another aqua glass beer bottle also from the trash pile associated with the log structure is similar to bottles from the John Gund brewery in LaCross, Wisconsin, but lacks any marks (Figure 27; 23-0017-448). The Gund bottles are significant as goods brought in from Wisconsin. Most of the other household and food items can be traced to St. Louis or Ohio.



Figure 27. Complete beer bottle, ca. 1900 (23-0017-448).

The bottom portion of a cylindrical aqua glass bottle was refitted from fragments (Figure 28). This is the size of a soda water or beer bottle. This bottle bears a fugitive label. The label is not readable but contains an angular cartouche and a large “A” at the top. The “A” logo suggests an Anheuser-Busch product, but no exact match for this label was found among existing examples.

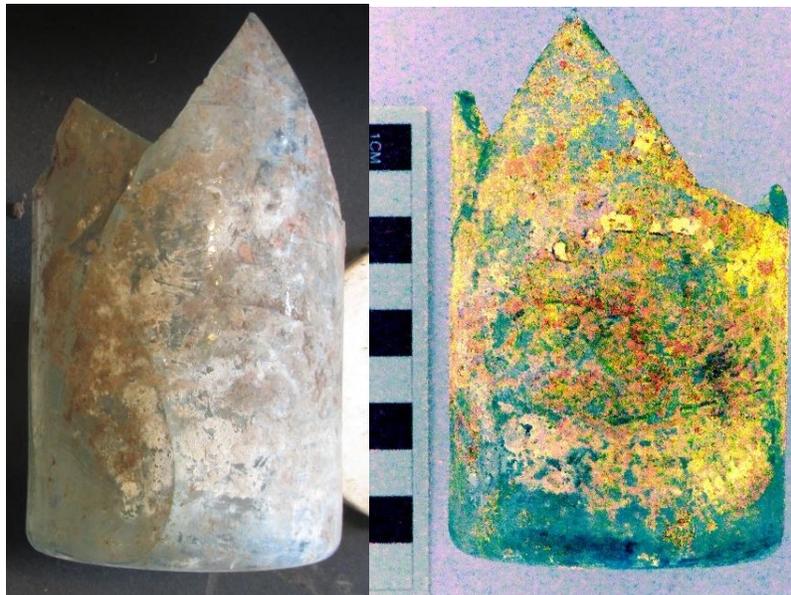


Figure 28. Beer bottle fragment (left) with D-stretch ybk enhancement showing “A” and shape of lower label (right).

A clear or light green glass beer bottle neck and top was found in 2022 in Unit 6 near the log structure. The bottle top retained its wire closure and foil label (22-0042-317). The label reads

“Exquisite American Pilsner” (Figure 29). This beer was brewed by the Anheuser-Busch Company of St. Louis, Missouri. The company had started pasteurizing beer in 1876, giving it a long enough shelf-life for export in bottles to frontier locations. The first published reference to the Exquisite American brand was in 1891 (e.g., *Sunday Herald and Weekly Intelligencer*, November 22, 1891) with no reference to pilsner. The brewery had started making pilsner by 1886, referring to it as Pilsner Bohemian. This was advertised as a tap beer rather than a bottled beer (*Oakland Tribune*, May 31, 1886). By 1892, the bottled version of this beer was branded as “White Label Exquisite American Pilsner” (e.g., *Minneapolis Journal*, July 30, 1892).

The muselet (wire cage) closure of the type on this bottle fragment began to be replaced by the lightning stopper (bail-type) closure in 1880 and had gone out of use by 1906 (Illinois Glass Company Catalog, 1906:252-257, 262-263). The foil label itself bears a stamp from a German manufacturer, A. Flach, located in Wiesbaden. Flach’s company, Wiesbadener Stannoil- und Metallkapelfabrik, was in operation at least until 1990, based on registers available online. The starting date of this company is not known; however, it was in operation by 1880 when Flach won a first-place medal for metal cartridges at the Melbourne International Exhibition. In 1913, the company was granted a US patent for a bullet cartridge.



Figure 29. Beer bottle fragment with label and muselet closure.

Flasks. Bottles with a slender oval cross-section, usually referred to as flasks, were common in the debris pile associated with the log structure. These bottles had several uses. The bottom half of a clear flask was refitted from fragments. The elongated oval base has a maker’s mark of an S inside a shield (23-0017-318). Such flasks were used for both whisky and medicines. The maker is not known, but a similar mark appears on beer bottles manufactured in Indiana around 1897 to 1903. A similar flask of a slightly different shape was found at Fort Laramie. Like the one from 39MD45, the Fort Laramie example was mouth-blown and bore the S-in-Shield maker’s mark. It appears that the various S-in-Shield marks all date between 1890 and 1919 (Lockhart et al. 2019:348-349).

Another flask of a type used to hold patent medicines was found in the debris associated with the log structure (23-0017-399). This complete bottle is made of brown glass. Pieces of cork remained inside the neck, but no label or maker's mark is present on the bottle (Figure 30).



Figure 30. Flask-form bottle probably used for patent medicine (23-0017-399).

Several bottle fragments at the site had flask-shaped bodies and a top referred to as a brandy finish (Figure 31). This is a top that tapers inward and that has a bead (ring) below it. These bottles had cork closures and were used for whiskey and other spirits and for patent medicines. The examples shown here are too incomplete to indicate their exact use.



Figure 31. Examples of remnant brandy finishes from flask-form bottles (23-0017-416, 23-0017-418, 23-0017-415).

A complete cylindrical pickle bottle of aqua glass was found in the trash deposit (23-0017-532). It bears a fugitive label, partially legible using D-stretch digital image manipulation (Figure 32). This large-necked bottle held chow chow, a popular mixed vegetable pickle. Labels were not printed directly onto glass bottles until the 1930s, so the label here seems to have bled from a paper label after the bottle was discarded. No match for this label could be found; the bottle is a type commonly used for chow chow. The large opening allowed large pieces of vegetable to be placed inside for pickling. The word “CHOW CHOW” is visible in an arc at the top of the label, with a brand name underneath beginning with the letters SO. Below that is a circular design, on which the letters US or WS are visible, with additional printing below.

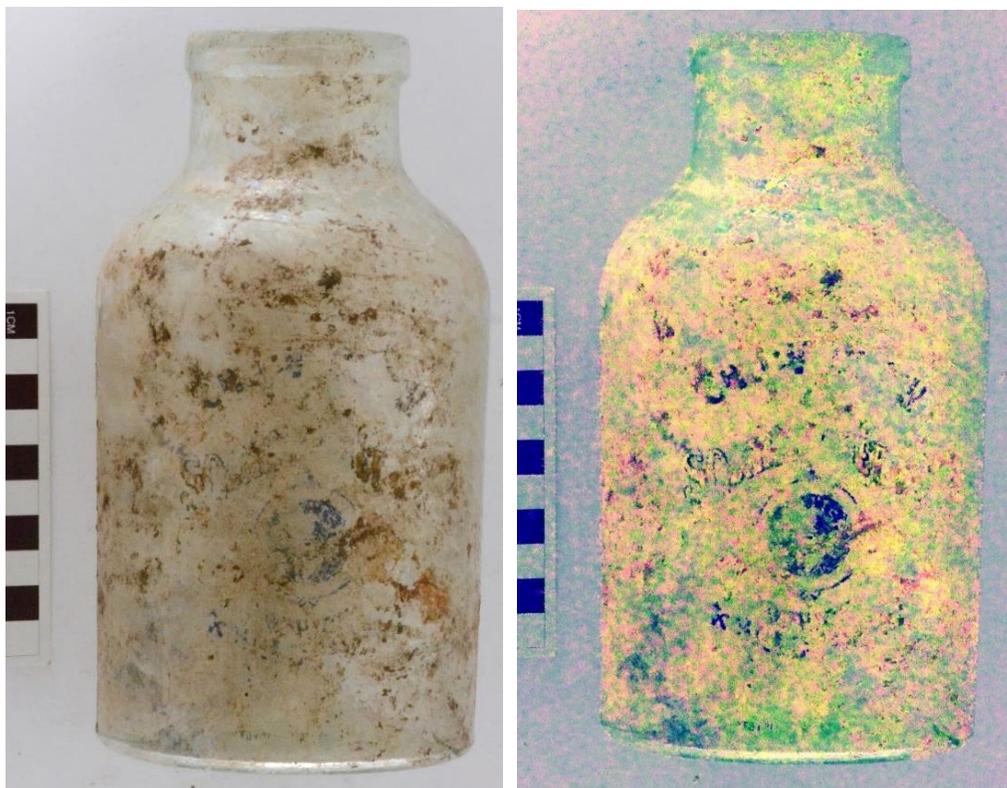


Figure 32. Chow chow bottle (left, 23-0017-532), D-stretch enhancement to show remnant label (right).

A clear glass bottle was found in the debris pile associated with the log structure (23-0017-570). It bears an embossed image of a mortar and pestle and the words Theo Haas & Co. Druggists, Sturgis, So. Dak. (Figure 33, left). The bottle contained a clear liquid, the neck having been plugged with what appeared to be dirt. The liquid was tested for pH, color, and odor, and proved to be water that had seeped in after the bottle was discarded. Theo Haas had a drug store in Sturgis from 1890 to 1904. Similar bottles were used for both medicinal remedies and soda water.

Another medicine bottle held a popular patent potion called Shiloh’s Consumption Cure (Figure 33, right; 23-0017-401). This potion appeared on the market in 1873. After 1906, the name was changed to Shiloh’s Consumption Remedy, in accordance with the new Federal Food and Drugs Act. Government chemists soon further warned consumers of the habit-forming properties of Shiloh’s, which counted heroin among its active ingredients.



Figure 33. Left, bottle embossed with a mortar and pestle design and “Theo Haas & Co, Druggists, Sturgis, So. Dak.” (23-0017-570); right, bottle embossed with “Shiloh’s Consumption Cure” (23-0017-401).

Two other complete bottles were found in the debris associated with the log structure feature. One is similar to a beer bottle, but shorter and smaller (23-0017-529). This clear glass bottle is stained blue on the inside, suggesting that it was used to hold bluing for laundry, either originally or as repurposed (Figure 34). Bluing is a dye added in small amounts to white laundry to make it appear whiter.

A small tapered rectangular bottle of clear glass yielded no clues as to its use (Figure 35, left; 23-0017-551). A tiny clear glass circular bottle fragment is embossed with a cross pattée surrounded by dots (Figure 35, right; 23-0017-552). The size of this object suggests it may have been the top of a stopper for the small bottle; however, they cannot be refitted.



Figure 34. Bluing bottle (23-0017-529).



Figure 35. Small bottle(left) and fragment of bottle stopper (23-0017-551 and 23-0017-552).

Metal Containers

As in the previous year's investigations, cans and other metal containers were abundant in both excavation blocks in 2023. Fragments of tin cans, mostly for food, were found in the privy fill in Unit 3, Levels 9-14 and in the top level of adjacent Unit 8. In the debris pile associated with the log structure, Unit 5 contained can fragments in Levels 8 and 10, and Unit 6 contained cans and can fragments in Levels 9-14 and Level 16. Because the can remains were mostly fragmentary, it is not possible to estimate the number of cans represented in these assemblages. Ten complete or nearly complete cans were recovered, all from the log structure. These included several hole-in-top cans and one rectangular can like those used for sardines or oysters.

A metal lard pail was found in association with the log feature fill, as was a lard pail lid (23-0017-365 and 23-0017-299). The lard pail tapers slightly toward the bottom and has a place

to attach a bail (Figure 36). The pail had been repurposed to hold paint or some other substance and contained the remnants of a rag. A fugitive label on the lard pail reads “Leaf Lard”; the remainder of the label cannot be deciphered, but it contains a word beginning SPE. Remnants of a circular band are visible below the written label.



Figure 36. Lard pail (23-0017-365) with D-stretch lbl enhancement to show label.

Several other friction-fit metal can lids were found in the debris associated with the log structure (Figure 37, top left; 23-0017-299, 23-0017-412, and 23-0017-526). These may be from baking powder cans. One screw-on metal lid was also found (23-0017-525). All are typical of containers in the late nineteenth and early twentieth centuries.

Numerous fragments of hole-in-cap tin cans were found in the debris pile associated with the log structure and in the privy fill (Figure 37, bottom row). These probably contained fruits or vegetables. Nearly all vegetables were sold in hole-in-cap cans between the 1860s and early 1900s although the technology was in use until around 1930. The seams are lapped and soldered and the ends are stamped, meaning the tops and bottoms of the cans had vertically flanged lips that overlapped the bodies. The stamped ends represent a technological improvement to canning that took place in the 1840s. This type of can has a filler hole in the middle of one end. After the contents are put into the can, a tin-plate cap is placed over it and soldered. A vent hole in the center of the tin-plate provides a vent for excess moisture. Later a drop of solder is placed over the vent hole to complete sealing the can (Rock 1987).

Oilcloth

A large piece of oilcloth was found in the trash pile associated with the log structure feature (23-0017-497). This item is light tan and apparently was not printed with a design. Made of linen

or duck cloth painted with many layers of linseed oil, oilcloth was water resistant and easy to wipe clean. It was used for rainwear and table and floor coverings. It was not possible to determine the use to which the oilcloth from 39MD45 was put.

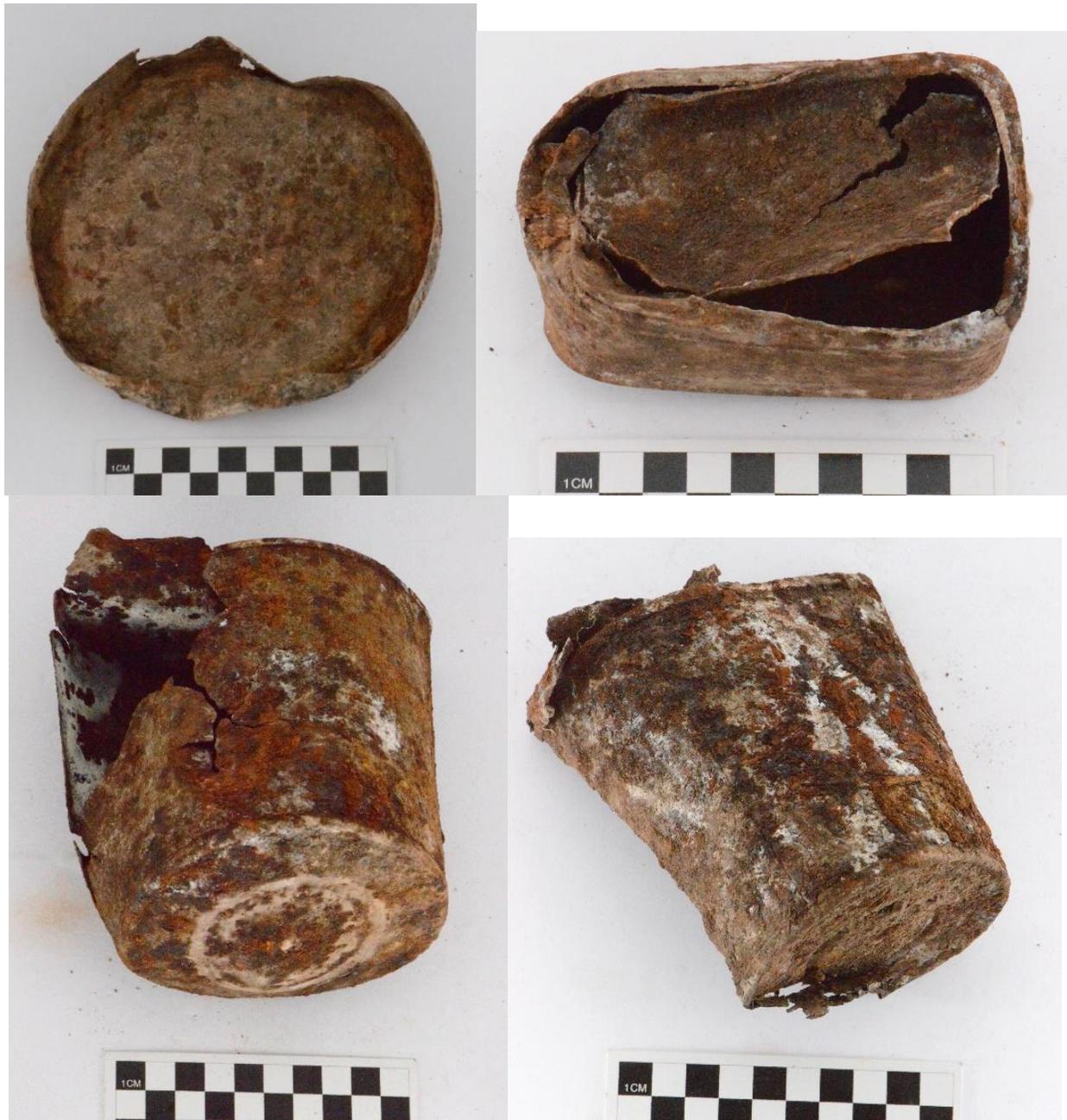


Figure 37. Examples of metal cans and lids from the debris pile associated with the log structure. Top, 23-0017-299, 23-0017-472; bottom, 23-0017-445, 23-0017-498.

Honing Stone

Three fragments of a flat piece of hard very dark gray micaceous schist were found in the debris associated with the log structure in Unit 6, Levels 10 and 12 (23-0017-488, 23-0017-548). These appear to be from a stone slab used for sharpening knives. This honing stone was about 1.2 cm thick and of unknown width and length. One side bears numerous fine scratches.

Kitchen Stove

Wood- or coal-burning kitchen stoves of the late 1800s and early 1900s were frequently elaborate pieces of technology, combining burners, ovens, storage compartments and shelves, and reservoirs for hot water (Figure 38). Parts from a wood- or coal-burning kitchen range were found throughout the debris pile in Unit 6 associated with the log structure (Figure 39). Cast-iron pieces probably represent the main body of the stove. A boxlike metal ashpan was also found with ash inside it. An ornate steel handle may have been an ornament on shelves at the top of the stove; however, it is possible that this artifact goes with some other implement.



Figure 38. Examples of kitchen stoves showing the use of ornamental elements.



Figure 39. Left, ornamental tin bracket or handle (23-0017-458); right, part of a cast iron grid (23-0017-435).

Pothook and Fire Steels

Three cast-iron implements are identified here as a pothook and two fire steels (Figure 40). Such items are incongruent with the age of other materials from the debris pile associated with the log structure. It is possible that the fire steels were still being used in lieu of matches or they may have been retained as souvenirs of earlier times. The iron hook has a loop on one end that would allow it to be hung on a bar or spit in an open fireplace or perhaps hung from a shelf above the cooking surface of the stove.



Figure 40. Upper, two items tentatively identified as fire steels (23-0017-514, 23-0017-400); bottom, item identified as a pothook (23-0017-489).

Military Uniform Elements

A brass cavalry uniform button and several pieces of a dress helmet were found in the large trash deposit (Figure 41). The embossed brass button has a spread-eagle design on the front and the mark “W.H. Horstmann & Sons Phila” on the backplate. It measures 0.8 inches in diameter and was attached by a shank. Horstmann Company of Philadelphia operated from 1815 to 1935, producing a range of military gear, including insignia, swords, and flags (Hagley Museum n.d.). Based on the embossed eagle and the maker’s mark, this button dates between 1881 and 1902.

Two small brass insignia medallions, a buckle, and two pieces of a plume holder indicate the presence of an enlisted man’s dress spike helmet in the large trash deposit. The brass medallions have a crossed-sabers design to designate use in a cavalry unit. The buckle was for the chin strap or a decorative strap extending across the front of the helmet above the brim. These items are from an 1881-model dress helmet for enlisted men, which remained in use until 1902 (Howell 1975). The helmets were made of cork covered by fabric and had a large brass eagle insignia plate on the front. Cavalry units added plumes to fall over the spike at the top of the helmet. These were made of buffalo hair and dyed various colors to indicate the unit. A brass washer and tube represent the mechanism used to attach the plume.



Figure 41. Top, uniform button (23-0017-392) and enlisted man’s jacket; bottom, Parts from the 1881 model US Cavalry dress helmet (23-0017-581) and example of helmet.

Buttons

In addition to the military uniform button found in the trash deposit associated with the log structure, the 2023 work in Unit 6 recovered eight buttons in Levels 8-9 and 12-13. One is a small shell button with two holes, and one is a two-hole bone button of the type used on underwear. The remaining six buttons are all made of metal. These have four holes. Another metal button and another shell button were found in Level 12 of Unit 3, and a rubber button for an overall clasp was found in Level 9, all in the privy fill. These buttons are all common types used for clothing (Figure 42).

Metal buttons are the most common type in the assemblage. Iron buttons were most popular between 1800 and 1870. They are most often inexpensive stamped buttons with two to five sew-through holes (Marcel 1994). Although this date span is early for the site, buttons are commonly curated for later use.

This compares with a total of ten buttons found in 2022. That assemblage was also dominated by metal (steel and brass) buttons, with two shell, one bone, and one glass button.



Figure 42. Buttons from 39MD45. Top, three metal, one shell, and one bone button (23-0017-188, 23-0017-457, 23-0017-311, 23-0017-561; bottom, one shell and four metal buttons (23-0017-433, 23-0017-562).

Other Clothing Elements

Three fragments of a woman's corset busk were found in Levels 9 and 12 of the privy fill in Unit 3 (23-0017-092 and 23-0017-190). This item was inserted into a narrow pocket running along the front of the corset to give the garment rigidity (Figure 43, left). A grommet from a shoe was found in the privy fill, as was a clothing rivet (23-0017-238 and 23-0017-245). A piece of shoe leather with a grommet was found near the debris pile associated with the log feature (23-0017-269). A shoe heel and a piece of leather were among the objects inside the lard pail found there (Figure 43, right; 23-0017-392, 23-0017-393). Part of a safety pin was found in the privy fill in Unit 3, as was a tiny watch stem (23-0017-239 and 23-0017-703).



Figure 43. Left, three pieces of a corset busk (23-0017-190, 23-0017-092); right, shoe leather and heel fragments (23-0017-392).

Two shoe soles—a man's and a woman's—were found in the privy fill in 2022, as were a boot or shoe heel and many grommets and pieces of shoe leather. A 3 x 2 cm scrap of woven fabric was found in Unit 6 in 2022.

Jewelry

A few fragments of jewelry were encountered in both the privy fill and the debris associated with the log structure. The privy fill contained what appears to be part of a necklace clasp (Figure 44, left; 23-0017-227). Another small clasp fragment was found in the debris pile in Unit 6, as was a rectangular piece of brass bearing an incised geometric design (Figure 44, right, 23-0017-544). Two triangular holes in the item would have allowed it to be attached to clothing. A brooch fragment also from Unit 6 has a safety pin closure and a long, looped attachment that might have slipped over a pocket or collar or that might have held a decorative element. Such brooch closures were commonly used in late Victorian period jewelry. No match could be found for this item, and its original appearance and use are unknown (Figure 45, left).



Figure 44. Jewelry clasp (23-0017-494) and incised brass plate (23-0017-544).

A homemade item from the debris deposit associated with the log structure feature may be an earring (23-0017-545). This is a hoop made by tightly rolling a small sheet of brass or copper and then bending it into a circle. The hoop is crimped on two opposite sides and one of these has a tiny nail inserted through it (Figure 45, right). This could have been worn as a pierced earring. It is not a zipper pull because the zipper was not invented until 1913.



Figure 45. Left, brooch pin with a loop for holding a scarf or cord or for looping over a collar or pocket (23-0017-547); right, hoop made of rolled brass or copper (23-0017-545).

Personal Care Items

A tooth from a hard rubber hair comb was found in the debris associated with the log structure feature in Unit 6 (23-0017-434). Three similar comb fragments were found in 2022 in the privy fill. Two small fragments from a mirror were found in the privy in Unit 3, where other mirror fragments had been found the year before (23-0017-130).

Three metal wash basin fragments were found in the privy fill in Unit 3 (Figure 46), from which a nearly complete wash basin was recovered in 2022.



Figure 46. Three fragments of metal wash basins (23-0017-129, 23-0017-226).

Tobacco-Related Items

Two tags from plug tobacco were found during the 2023 project: one from the privy feature (23-0017-187, Unit 3, Level 12) and one from the trash deposit associated with the log structure (22-0017-295, Unit 5, Level 7). Both are from Lorillard's Climax plug tobacco (Figure 47). The 2022 excavations yielded six tobacco tags, mostly from the Climax brand. One was found near the log structure in Level 2 of Unit 6, and the remainder were in or near the privy feature in Units 2 and 3, levels 2-4. No smoking paraphernalia were found either year, suggesting that this tobacco was consumed via chewing.



Figure 47. Example of a tobacco tag of the same kind found at 39MD25; left, the two tags found in 2023 (23-0017-187, 22-0017-295).

An additional marker of tobacco use was found in Level 10 of Unit 6, within the trash deposit associated with the log structure. This is a campaign-style pin used to promote products of the High Admiral Cigarette Company (Figure 48, top; 23-0017-493). They issued a series of pins featuring a character called the Yellow Kid from the cartoon strip *Hogan's Alley* by Richard F. Outcault and carried in the *New York World* in 1895 (Figure 48, bottom). The following year, Outcault was hired by William Randolph Hearst for the *New York Journal American*. The Yellow Kid was a bald, barefoot, grinning guttersnipe of a child wearing a long yellow nightshirt. Messages were written in an odd lingo across his gown in imitation of advertising billboards. The comic strip was discontinued in 1896, but the Yellow Kid lived on in advertising. The cigarette company's promotional pins of the Yellow Kid came in 160 varieties, including a series that featured various nationalities and foreign flags. Naturally, customers would try to collect the whole series. The pin found at 39MD45 is too deteriorated to allow identification of the specific version of the Yellow Kid cartoon, but it bears a copyright along the edge that matches those of other Yellow Kid pins: copyrighted 1896. B. Neuberger, N.Y.

This early attempt at commercial advertising using a popular cartoon figure proved highly successful and is looked to as an important event in American journalism and advertising history (Meyer 2019). Some scholars attribute the term "yellow journalism" to the appearance of the Yellow Kid cartoons in Hearst's newspapers (Olson 1993).



Figure 48. Top, front and back of advertising pin found in the trash deposit at 39MD45 (23-0017-493); bottom, original appearance of the pin.

Just as the Yellow Kid pins were collectable, so were the tobacco tags. These could indicate tobacco consumption by the site's occupant(s), or they could simply represent curating of items for amusement or, in the case of the tags, to redeem for premiums.

Gun-Related Items

The 2023 excavations uncovered the remains of a gun cleaning rod and two cartridges. The cleaning rod is represented by two brass tips that still retain some wood inside (23-0017-596, 23-0017-509). One has a loop to accommodate a cleaning patch. These tips were found in Unit 6. Such cleaning rods were ubiquitous during the period represented by the other artifacts and features; thus, the rod tips are not useful in dating the site or in determining the type of long gun the rod was used for. The first cartridge was found near one of the gun cleaning rod tips in Level 12 of Unit 6 (Figure 49, left; 23-0017-508). This is a .38 caliber extra long rimfire cartridge used in either a Ballard rifle (1862-1891) or a Remington rolling block rifle (1867-1918). Another .38

cartridge case was found in the top level of Unit 3 (22-0042-112) in 2022. Colt and other American manufacturers made this cartridge in various forms beginning in 1874 (Logan 1959:126). The other cartridge is a brass .50-70 US military casing: .50 caliber with a 70-grain black powder charge (Figure 49, right; 23-0017-165). This was used in various military-issue rolling block rifles and carbines between 1866 and 1873, when the Army retired the last of them in favor of the .45-70 version. The Army's larger caliber rifles were sold as surplus after 1873 but they remained in use in the Navy into the 1880s (Layman 2010). It is not clear whether these items indicate a commercial or a military-issue rifle.



Figure 49. Cartridge cases (23-0017-508, 23-0017-165) and gun cleaning rod tips (23-0017-596, 23-0017-509).

Sewing Items

Several fragments of straight pins and needles were found in the privy fill both years. The 2023 excavation recovered two needle fragments and four pieces of straight pins. Unit 6 also contained sewing items in the trash deposit associated with the log structure feature: one needle and three straight pins (Figure 50).



Figure 50. Needle (23-0017-587).

Hardware

One indication of manufactured furniture was a metal caster (Figure 51, left; 23-0017-541). A small bracket made of metal and wood may be from a cabinet (Figure 51, center left; 23-0017-135). Two metal caps for furniture legs also suggest the presence of manufactured furniture items (Figure 51, right; 23-0027-390, 23-0017-543). All these were found in the debris associated with the log structure. They probably were used on wooden items that did not survive.

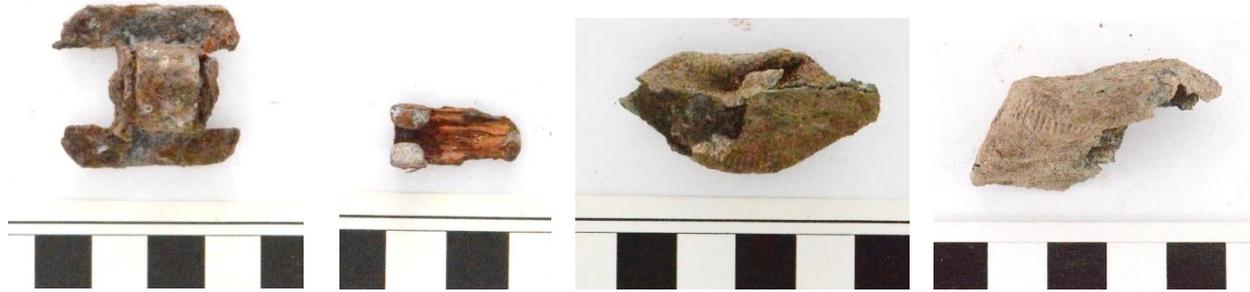


Figure 51. Hardware for furniture, left to right, caster (23-0017-541), bracket (23-0017-135), metal tips for furniture legs (23-0017-390, 23-0017-543).

One metal staple was found in the privy fill (Figure 52, left; 23-0017-186). This is too small for a fence staple and too large for a paper staple, so presumably was used in furniture construction. A cuplike handle of metal with an arm on one side probably was used for some hand-cranked kitchen device, but no exact identity for this item is ventured here (Figure 52, center; 23-0017-612). A sharp hook was found in the trash deposit associated with the log structure (Figure 52, right; 23-0017-542). Its use is unknown, but it may have been mounted onto a wooden handle.



Figure 52. Left, furniture construction staple (23-0017-186); center, handle (23-0017-612); right, hook (23-0017-542).

A final example of hardware from the site is a large fragment of a mortise door lock plate (Figure 53; 23-0017-389). This would have been appropriate for a house door and that is its presumed use.



Figure 53. Portion of a mortise lock plate (23-0017-389).

Miscellaneous

Additional items from the debris pile associated with the log structure are a large chunk of petrified wood and several light-duty staples. Many fragments of the petrified wood specimen were scattered throughout the debris pile. This rock may have been picked up as a novelty, although it is not well silicified and tended to break easily (Figure 54, left; 23-0017-096). The three staples are too light for holding anything except paper (Figure 54, center; 23-0017-096, 23-0017-660). Staplers that could drive a wire staple through paper and clinch it had been on the market since 1877; staplers like those in use today were introduced in 1895. The staple on the right may represent a pre-1895 technology that required separate steps to insert and bend the staple (<https://bostitchoffice.com/articles/history-of-staplers>). Finally, a harness or bridle buckle still has some attached leather (Figure 54, right; 23-0017-398).



Figure 54. Left, petrified wood (23-0017-096); center, staples (23-0017-096, 23-0017-660); right, harness buckle (23-0017-398).

Mammal and Bird Bone

Bird and mammal bone was abundant at the site, especially in the log structure feature. In all 556 pieces were recovered during the 2023 excavation project. No attempt was made to identify all the bone; however, the assemblage was dominated by domesticated cattle, with pig and turkey also well represented. A cattle pelvis found in 2023 matches one found in 2022, and it appears they are from the same individual (23-0017-061 and 22-0042:479). The turkey bone is from a single, mostly complete individual found in the debris associated with the log structure. The pig and turkey bone comes from domesticated animals. Wild turkeys were not introduced to the Black Hills until 1948-1951 (Rumble and Hodroff 1993). Some of the as-yet unidentified bone may come from wild species such as deer and grouse, as was the case with the 2022 bone assemblage. Given the presence of eggshell throughout the assemblage, it is likely that some bone is from domesticated chickens or ducks. About one-third of the bone recovered in 2023 had definite cut marks from a saw or butcher knife, and about 83 percent of both the cut and uncut bone came from the log structure feature in Unit 6. A small proportion of the bone assemblage shows evidence of burning. The bone found in 2023 is thought to represent food scraps (Figures 55-58). It contrasts with that from Feature 3/5, the possible soap-making feature, in containing more sawn cuts, high quality cuts of meat, and a smaller proportion of cancellous bone. It remains possible that some bone was collected to render fat for soap-making; however, the presence of a lard pail in the log structure feature casts doubt on the idea that the site's residents were still rendering fat from bone.

Plant Foods

Apart from the chow chow bottle and the beer bottles, the containers likely used for plant foods were too fragmentary and devoid of labels to know what they held. Owing to the abundance of animal bone, it may be safe to assume that the canned and bottled goods were common preserved foods of the time, such as canned peaches and tomatoes. The amount these contributed to the overall diet of the site occupants cannot be quantified based on the evidence at hand, nor is it possible to determine whether garden produce made up a significant part of the food supply.

The discovery of human coprolites in the privy fill afforded the opportunity to explore what plant foods were being consumed during the time the privy was in use. Aaron Mayer of the Augustana University Archaeology Laboratory conducted the study of plant remains from the site, summarized in Table 2. Methods used in this analysis and additional analysis are presented in Appendix B.

Since the site occupants presumably were not eating wood, it can be attributed to some intermixing with the coprolite[*feces*]-bearing sediment. The lone barley seed may have been accidentally incorporated into food or deliberately consumed. Plum and raspberry represent intentional additions to the diet, either from wild varieties gathered from near the site, where both are present today, or from canned, jarred, or dried (prunes) fruits. Another charred plum pit (22-0042-271) was found in the privy fill in 2022. Fruit was important at frontier posts where scurvy remained a real threat during the nineteenth century. The debris deposit associated with the log structure contained a single squash seed, which likely represents garden produce. The *Parenchyma* starchy tissue is from an unidentified tuber, possibly potato or wild Jerusalem artichoke or Indian



Figure 55. Examples of cut bone from Feature 7, 39MD45.



Figure 56. Examples of cut bone from Feature 7, 39MD45.



Figure 57. Examples of mammal bone without evidence of cutting, Feature 7, 39MD45.



Figure 58. Examples of mammal bone without evidence of cutting, Feature 7, 39MD45.

turnip. The *Brassicaceae* seeds are from domesticated or wild mustard or from domesticated turnip. These may represent use of mustard seed in pickles, such as the chow chow represented by a bottle found in association with the log structure. The *Chenopodium* seeds are not dietary but are modern intrusions into the sediment.

Plant ID	Unit/Feature	Charred		Uncharred		Total	
		Count	Weight	Count	Weight	Count	Weight
<i>Brassicaceae</i> (cabbage family)	U3 privy	0	0	62	0.074 g	62	0.074 g
<i>Chenopodeaceae</i> sp.	U3 privy	0	0	13	0.014 g	13	0.014 g
<i>Cucurbita</i> sp. (squash)	U3 privy	4	0.020 g	8	0.16 g	12	0.036 g
<i>Parenchyma</i> (starchy tissue)	U3 privy	11	0.038 g	0	0	11	0.038 g
<i>Poaceae</i> (grass family, barley)	U3 privy	1	0.009 g	0	0	1	0.009 g
<i>Prunus</i> sp. (plum)	U3 privy	0	0	9	1.146 g	9	1.146 g
<i>Rubus</i> (raspberry family)	U3 privy	0	0	254	0.226 g	254	0.226 g
Wood	U3 privy	17	0.165 g	1	0.01 g	18	0.175 g
Unknown	U3 privy	1	0.005 g	1	0.01 g	2	0.015 g
Unidentifiable	U3 privy	0	0	1	0.006	1	0.006 g
<i>Cucurbita</i> (squash)	U6 log structure	1	0.840 g	0	0	1	0.840 g

Table 2. Macrobotanical remains from privy and log structure feature fill.

Other Food Items

A single fragment of oyster or clam shell was found in the privy fill. Canned shellfish was a popular treat on the western frontier, and this specimen is assumed to have been accidentally incorporated into a can of clams or oysters.

As mentioned, fragments of shells from hen or duck eggs occur throughout the site deposits dating to the cavalry post era. Eggs were a reliable supplement to the diet and a source of income for women who kept chickens or ducks.

The lard pail from the log structure feature suggests that the site's inhabitants were purchasing, rather than rendering, lard by the turn of the century.

DISCUSSION AND CONCLUSIONS

No diagnostic artifacts or datable materials were found in the lower soil representing the precontact era. The sample of that paleosol was limited to its upper portions. The presence of a few chipped stone artifacts indicates some use of the site area before the cavalry post was established; however, the timing of that use cannot be determined from the current data.

The low number of artifacts found in the paleosol does not preclude a significant pre-contact presence at the site. Instead, these items indicate that the age of the paleosol coincides with a period of human use of the site. This can be further investigated by dating the soil organics, by doing more excavation below the stream-laid gravel stratum to look for additional artifacts and/or features, and by cleaning of exposed portions of the old creek bank and looking for hearths and other features. The clear separation of the two soils simplifies such investigations.

A maximum age for the cavalry post-related artifacts and features at 39MD45 is 1878 when the post was built and went into operation. It appears that this area of the site witnessed at least two episodes of use between 1878 and 1910, as indicated by the age of artifacts related to the various features. In attempting to estimate more exact dates, it is necessary to consider factors such as likely use-life and curation of artifacts. For example, some of the beer bottles skew older than the rest of the artifact assemblage. Beer bottles were in high demand on the western frontier, where breweries, but not glassworks, were quickly established. A beer bottle might have been curated for as long as a decade from when it first arrived at the fort. This puts those bottles more in line with the age indicated by other items. Dishes might have a use-life of many decades beyond their initial acquisition and use, although they are useful in setting maximum ages if the pattern or pottery can be assigned an initial date.

Taking into account the year the fort was established, the earliest maximum age of an artifact from 39MD45 is 1878. The item in question, a fluted paper cup has continued in use to the present day. Two fragments of table dishes, one from the privy and one from the trash deposit at the log structure, employ a china pattern first used in 1880. As noted, such items presumably were used for several years, if not decades before being discarded. If the evidence of burning on the artifacts reflects a house fire, then we can assume the dish or dishes were in use at the time they were broken. A more secure maximum date is provided by two innovations in beverage bottling. A cork and wire top, known as a muselet, on one of the beer bottles dates to 1891 or later. A metal crown cap, similar to those still used on bottled carbonated beverages, dates after 1895 when crown caps were patented. A bottle bottom with a circled N mark also probably dates to 1895 or later. A maximum age of 1896 comes from a copyright printed on a metal advertising button featuring a cartoon character called Yellow Kid. Two bottle parts push the maximum date forward to 1900: the perfume bottle stopper and the Gund beer bottle. In summary, the artifacts from the privy and trash deposit taken as a whole indicate an age of 1900 or later for those deposits.

On the other end of the date range, nothing in the assemblage definitely dates later than 1905. For example, a patent medicine bottle embossed Shiloh's Consumption Cure pre-dates 1907 when the new Pure Food and Drug Act prohibited use of the word "cure" on such substances. The perfume bottle stopper dates between 1900 and 1910. The muselet bottle stopper mentioned above dates between 1891 and 1905. Apart from the likely curated beer bottles, everything in the trash deposit assemblages (privy and log structure) falls within this date range.

The four principal features represent either two or three separate periods or events of deposition. The effluent spill feature clearly pre-dates the privy pit. The privy pit cuts through the effluent in one area. In addition, a large piece of effluent was found at the bottom of the privy pit (22-0017-237). It had clearly fallen into the privy hole while it was being dug or soon after. The privy, as it was originally used for human waste, forms a second depositional episode. The trash deposited in the top levels of the privy is the same age as that in the trash deposit associated with the structural feature in the other excavation block. In both the top layers of the privy and the trash deposit near the structure depression, artifacts show evidence of having burned in a very hot fire. The ceramics exhibit fire spalls and much of the bottle glass is partially melted. The items in the debris deposit associated with the log structure also show signs of burning, including many lumps of melted metal. The dug-out structure with the plank wall seems to pre-date the trash at the structure depression. The trash deposit lies on top of it. At this point, neither the relative nor absolute age of the dug-out structure under the trash deposit is known. Excavation was terminated

well before the bottom of the cellar feature was reached; nor did any data indicate the ages of the effluent spill and the cellar relative to one another. These relationships are summarized in Table 4.

Item	Location	Estimated age of comparable specimens	Intercept with use of Ft. Meade
Button hook <i>22-0042-388</i>	U3L8 privy	1850-1918	1878-1913
Fluted paper cup <i>22-0042-077</i>	U2L4	1879-present	1879-1913
Beer bottle bottom from DSG Co. <i>22-0042-315</i>	U3L7 privy	1879-1896	1879-1896
Beer bottle with A&DHC mark <i>22-0042-005</i>	U3L7 privy	1873-1884	1878-1884
Partial bottle base, circled N mark <i>22-0042-157</i>	U3L3 privy	1895-1915	1895-1913
Brown transferware sherd T&R Boote	U3 privy	Ca. 1880	1880-?
Brown transferware sherd T&R Boote <i>23-0017-369 and -576</i>	U6L8 & U6L13 log structure	Ca. 1880	1880-?
Doulton flow blue transferware	U3 L9-10 privy	1895-1905	1895-1905
Burgess stoneware sherd	U3L2 privy	1864-1892	1878-1892
Crown bottle cap	U3L2 privy	1895-present	1895-1913
Evens & Howard fire brick <i>22-0042-006</i>	Surface west of privy block	1867-1950	1878-1913
Clothespin spring <i>22-0042-114</i>	U3L1 privy	1887-present	1887-1913
Beer bottle neck with foil label and muselet # <i>22-0042-317</i>	U6L6 log structure	1891-1905	1891-1905
Bottle fragments	throughout	Pre-1920	1878-1913
Barbed wire <i>22-0042-163</i>	U3L3 privy	Post-1881	1881-?
Perfume bottle stopper <i>22-0042-456</i>	U6L4 log structure	1900-1910	1900-1910
Beer bottle base John Gund <i>23-0017-347</i>	U6L6 log structure	1900-1920	1900-1913
Conrad beer bottle <i>23-0017-493</i>	Surface west of privy block	1876-1883	1878-1883
Shiloh's Consumption Cure bottle <i>23-0017-401</i>	U6L9 log structure	1873-1905	1878-1905
Yellow Kid advertising button <i>23-0017-493</i>	U6L10 log structure	1896	1896
Army uniform button <i>23-0017-391</i>	U6L8 log structure	1880-1893	1880-1893
Beer bottle <i>23-0017-448</i>	U6L9 log structure	1886-1892 or 1892 – 1916	1886-1913
.38 cartridge <i>23-0017-508</i>	U6L12 log structure	1862-1891 or 1867-1918	1878-1913
Cavalry uniform helmet parts <i>23-0017-581 thru -585</i>	U6L13 log structure	1881-1902	1881-1902
Haas Druggist bottle <i>23-0017-570</i>	U6L13 log structure	1890-1904	1890-1904
Bottle base with S-in-Shield mark <i>23-0017-318</i>	U5L9 log structure	1890-1919	1890-1913
Shaw copper luster stoneware <i>22-0017-539, -577, and -610</i>	U6L13-14 log structure	1850-1910	1878-1910

Table 3. Datable artifacts from 39MD45.

Unknown pre-1900	Effluent spill	? Cellar ?
Unknown pre-1900	Original privy use	
1900-1910	Trash deposit in privy	Trash deposit at structure

Table 4. Proposed sequence of formation of various features at 39MD45.

A remaining question is whether the trash deposit at the structure feature represents a house constructed over the cellar. If so, the cellar would be considered the same age as the house. If not, the trash deposit that lies atop the cellar would be younger than the cellar. It is clear from the Unit 5 and 6 profiles that the fill below the deposit of household items and logs is not part of the natural stratigraphy, but is composed of sediment that blew or gravitated in after the cellar hole was abandoned. The gravel lens and C horizon terminate abruptly at the plank wall (Figure 59). The 2023 excavations were not adequate to clarify the relationships among the log structure, the plank-lined dugout cellar, and the dense deposit of burned trash mixed in with the logs. As mentioned, an additional deposit of unburned trash overlay the earlier, burned trash deposit in the southeast corner of Unit 6; this clearly represents a later event, probably in the mid-twentieth century.

Returning to the cellar, seven nails were found in the portions excavated in 2023 that clearly underlay the logs and trash deposit, Levels 15-17. All were large cut nails. The percentage of wire nails in the various levels of Units 4-6 varied from 0 to 100 percent, decreasing with depth as would be expected (Adams 2002; Nelson 1968). In the higher levels wire nails made up 30% of the total, on average. The bottom half of the trash deposit contained a lower proportion of wire nails, as compared to the upper half, but otherwise, no clear pattern emerged from what apparently was a single or closely spaced series of trash deposition events (Tables 5-7). A sample of seven nails from the cellar feature is too small for much confidence; however, it suggests an earlier date for cellar use than for the trash that overlies the cellar.



Figure 59. East wall profile of Units 6 and 5, showing change in sediment at the plank wall.

Unit	Cut nails	Wire nails	Total	Percent wire
0	1	0	1	0
01-05	9	0	9	0
03-01	18	7	25	28
03-02	48	24	72	33
03-03	56	27	83	33
03-04	25	12	37	34
03-09	39	4	43	9
03-10	27	5	32	16
03-11	36	19	55	34
03-12	20	3	23	13
03-13	16	3	19	16
03-14	14	0	14	0
03-15	4	0	4	0
03-extension	8	1	9	11
04-01	0	1	1	100
04-04	2	0	2	0
04-05	1	0	1	0
04-08	0	1	1	100
04-wall	2	1	3	33
05-04	1	1	2	50
05-05	0	2	2	100
05-06	7	2	9	22
05-07	4	2	6	33
05-08	8	1	9	11
05-10	4	0	4	0
05-14	4	0	4	0
05-wall	5	0	5	0
06-01	9	5	14	36
06-02	11	21	32	66
06-03	6	3	9	34
06-04	6	4	10	40
06-05	1	1	2	50
06-06	15	0	15	0
06-08	9	5	14	36
06-09	44	20	64	31
06-10	28	12	40	30
06-12	102	24	126	19
06-13	24	11	35	31
06-14	16	8	24	33
06-15	1	0	1	0
06-16	3	0	3	0
06-17	3	0	3	0
07-01	7	1	8	12
08-01	4	1	5	20
08-09	1	0	1	0
	649	232	881	26

Table 5. Proportion of wire to cut nails, sitewide.

Unit	Cut nails	Wire nails	Total	Percent wire
0	1	0	1	0
01-05	9	0	9	0
03-01	18	7	25	28
03-02	48	24	72	33
03-03	56	27	83	33
03-04	25	12	37	34
03-09	39	4	43	9
03-10	27	5	32	16
03-11	36	19	55	34
03-12	20	3	23	13
03-13	16	3	19	16
03-14	14	0	14	0
03-15	4	0	4	0
03-extension	8	1	9	11
07-01	7	1	8	12
08-01	4	1	5	20
08-09	1	0	1	0
	333	107	440	24

Table 6. Proportion of wire to cut nails, log structure excavation block.

04-01	0	1	1	100
04-04	2	0	2	0
04-05	1	0	1	0
04-08	0	1	1	100
04-wall	2	1	3	33
05-04	1	1	2	50
05-05	0	2	2	0
05-06	7	2	9	22
05-07	4	2	6	33
05-08	8	1	9	11
05-10	4	0	4	0
05-14	4	0	4	0
05-wall	5	0	5	0
06-01	9	5	14	36
06-02	11	21	32	66
06-03	6	3	9	34
06-04	6	4	10	40
06-05	1	1	2	50
06-06	15	0	15	0
06-08	9	5	14	36
06-09	44	20	64	31
06-10	28	12	40	30
06-12	102	24	126	19
06-13	24	11	35	31
06-14	16	8	24	33
06-15	1	0	1	0
06-16	3	0	3	0
06-17	3	0	3	0
	316	125	441	28

Table 7. Proportion of wire to cut nails, log structure excavation block.

The results of the 2022 and 2023 investigations confirm that this area of old Fort Meade was used for family housing, particularly by laundresses, as the early maps show. The possible soap-making feature, if correctly identified, reflects the early days of the fort when it was slow and costly to import necessities. It appears that early laundry work at the fort relied on skilled workers who knew how to make soap from ashes and scrap bone. While animal bone and wood ash were abundant at the fort, it took a great deal of expertise to create detergents of the correct strength for the various fabrics laundresses washed. Without pH test kits, it was easy to get the mix wrong, resulting either in a violent chemical reaction (soap volcano), failed soap, or soap too acidic or too caustic for its intended use. Unfortunately, the 2023 excavations were not helpful in determining the source of the effluent spill, but continued work in the privy feature confirmed that the privy postdates the effluent spill.

The cellar or icehouse feature also appears to date to the early period of the fort. Information about this feature is limited because excavation was terminated well above the floor of the feature. That said, the feature seems to have been constructed by digging a large hole below surface. The back wall of the cellar was lined with vertically placed boards. The boards are the trimmed part of logs used for lumber, and perhaps were castoffs from the post's sawmill. A narrow trench dug behind the vertical board wall probably allowed placing the bottom ends of the boards below the floor level of the cellar to give them added stability. A thin layer of wood scrap visible in the side walls of Unit 6 indicates that the cellar or icehouse was covered by a board roof. The line of wood scrap angles down toward the south, indicating that the cellar roof collapsed at some time forming a bowl-shaped depression.

Although the cellar feature is overlain by the log and trash deposit (Feature 7), it was not possible to determine conclusively whether the log house was intentionally built over the cellar—in other words, was the cellar part of the log house? While this remains a possibility, the current data suggest the two features are separate structures probably made at different times. First, the line of vertical planks marking the back wall of the cellar feature and the majority of the logs are not in alignment with one another. While both are roughly east-west, the cellar wall trends southwest to northeast, while the logs tend to lie in a northwest to southeast orientation. Second, no foundation elements were found that would indicate that the log structure is in its original placement. No foundation stones or beams were found in the meter-wide exposure of the side wall of the structural depression. A more likely scenario is that the cellar had gone out of use and collapsed at some point and debris from the log structure was later thrown into the resulting depression.

The log and trash feature lies atop what would have been a plank roof on the cellar or icehouse. The several logs exposed in Unit 6 vary in orientation from east-west to northwest-southeast. The debris itself is clearly from a domestic setting, as opposed to a military or industrial one. It strongly indicates a fairly prosperous household—one able to afford attractive dishes, a kitchen stove, and a few luxuries. This contrasts with the low quality of the house, which undoubtedly was erected hurriedly in the early days of the fort when housing was in short supply. The individual or family living there consumed beer, liquor, patent medicines, chewing tobacco, canned goods, desirable cuts of meat, domesticated turkey and chicken, eggs, and factory pickles. This household was able to purchase an oil cloth table- or floor-covering. The residents did not have electricity or running water, using the privy and kerosene lanterns for sanitation and light.

The debris pile was not completely devoid of military items, but they were limited to an enlisted man's dress helmet dating after 1881 and a single uniform button. The privy similarly lacked military items but contained domestic debris. The gun cleaning rod is likely not of military issue.

Fort Meade history suggests a likely scenario for the deposit of logs and debris (Feature 7). On November 26, 1907, the post commander issued an order allowing Rose Courtney to live in one of the old log houses for the rest of her life. Mrs. Courtney had been with the 7th Cavalry as laundress and domestic servant for at least 37 years by then, mostly at Fort Meade. She was around 60 years of age and widowed. That night, her cabin burned with her in it. Her remains were interred at the post cemetery. A few months earlier, Secretary of War William Howard Taft had announced a major building and improvement project for Fort Meade. Most of the old log houses had been taken down in 1885 and 1886; however, some remained in 1890. By 1907, any log house that remained on Soapsuds Row would have been considered an eyesore and detriment to the post. This probably explains why Mrs. Courtney sought permission to live out her life in her old cabin and not find herself homeless as a result of the planned post improvements. One can speculate that when the cabin burned, its remains were quickly cleaned up, and that the debris pile found in the archaeological excavation resulted from that single, large cleanup event.

We cannot say with complete certainty that the logs and debris in our Unit 6 came from Rose Courtney's last home at Fort Meade, but several factors argue in favor of this interpretation. The items in the debris pile show evidence of having burned in a hot fire. In particular, many lumps of melted metal were found among more recognizable items. The debris pile contained items of value that would likely have been taken along by anyone deliberately leaving the cabin behind. A complete household inventory is present, again suggesting a sudden disuse of the cabin. The items found in the debris belie the modest nature of the house, but this might be expected of a financially successful woman living in a house her soldier husband had built years before when they had few resources. Surprisingly for a site located in an area used to house families, no toys were found during our investigations. Rose and her husband had no children. Finally, nothing was found to disprove the idea. All the datable items found within the trash deposit date to the period between Courtneys' sale of their homestead in 1894 and Rose's death in 1907.

The story of the Courtneys is presented in more detail in Appendix C. Many questions remain, and unless and until additional written or archaeological evidence comes to light, the link between the Courtneys and the log house and privy investigated during the Soapsuds Row project must remain a working hypothesis.

Returning to the research questions presented above, two asked about the depth of culture-bearing sediment. The 2023 excavations in the privy block found Native American artifacts in the paleosol to a depth of about 85 cm below surface. It is likely that cultural material extends below this, as the excavations did not reach either bedrock or the bottom of the paleosol. All materials in the paleosol are of pre-contact age, but a more specific time span has not yet been determined. One question asked where the laundress houses were. If the interpretations presented here are correct, one was at or near the structural depression exposed by Units 5 and 6. Again, no definite evidence for undesirable activities was found; however, liquor bottles are present in considerable numbers and one bottle for a heroin-laced patent medicine was found. No evidence for gambling or sexual activity was found. The economic status of the person(s) occupying the log house appears to have been in the middle range—certainly not poverty level.

The other set of research questions was answered in the discussion presented above. Site 39MD45 has proved to be rich in information concerning the lives of the Soapsuds Row residents, as well as hinting at intact pre-contact deposits lower down.

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APPENDIX A

SURFACE COLLECTIONS

Additional artifacts were collected from the surface of 39MD45, both to collect more data on the sites and to discourage unauthorized digging. These items came from two different areas of the site: on the terrace surface near the excavation block with the privy feature and at the base of the former creek bank northeast of the excavation blocks. The two sets of artifacts will be discussed separately, as they reflect different uses of the site.

Items found west of the privy excavation block in 2023 include a brick, a metal strap, and a brown glass beer bottle. The brick appears to be either imported or somewhat later than other bricks found at the site that bear grass impressions on one side indicating local manufacture. The surface brick is mostly complete but missing one corner. It is made of a tan clay (Figure 60).



Figure 60. Brick found on surface west of excavation units.

The beer bottle has a C.C. Conrad Company maker's mark, dating it to between 1876 and 1883 (Figure 61; 23-0017-009). The surface collection from 2022 from near the privy block includes a fragment of white stoneware, two shoe fragments, a brick, and two beer bottles. The beer bottles appear to have been dug out of the creek bank northwest of the privy excavation block.



Figure 61. Beer bottle with C.C. Conrad maker's mark (23-0017-009).

In 2022, a beer bottle base embossed with a maker's mark reading +MG Co. was found on the surface near the fence west of the excavation area (22-0042-004). Excavations at Fort Bowie yielded eleven of these bottles. According to the excavation report, the bottles were produced by the Missouri Glass Company in St. Louis; however, researchers were unable to date the production (Herskovitz 1978:9). Another source says these bottles were made by the Mississippi Glass Company but does not provide a production date (Wilson 1981:122).

There is some doubt whether Missouri Glass ever actually made the bottles with "MG Co." embossed bottoms. Some sources state that those bottles were made for them rather than by them. If so, they were likely made by Mississippi Glass, which did not produce bottles after 1884 (glassbottlemarks.com).

Another beer bottle found on the surface in 2022 has the maker's mark "A & DHC" with mold mark "8" (22-0042-005). The finish and most of the neck is missing on this surface, from a recent break. (There are no carbonates on the surface of the break.) It may have broken someone pulled it from the cutbank and discarded it. The bottle was produced in Pittsburgh at a factory owned by Alexander Chambers and his brother David H. Chambers. At first, they made green and black bottles and vials, as well as window glass. In the 1870s and 1880s the factory produced beer bottles (Toulouse 1971:37-38). Bottles with the same maker's marks were found at Ft. Bowie with dates ranging from 1865 to about 1880 (Herskovitz 1978:8). These bottles date from 1860 through 1884 (Sha.org/bottle/machinemadedating).

The second set of surface artifacts appears to have been removed from the creek bank northeast of the excavation blocks via unauthorized digging, probably by people looking for old bottles. Presumably, any intact bottles were collected by whoever created the pile of rejected items.

Four fragmentary bricks from this assemblage appear to be of local manufacture (Figure 62). These may represent cleanup of structures torn down and replaced during the course of the fort's use. They are made of reddish clay and bear grass impressions from having been placed directly on the ground to dry.



Figure 62. Bricks from surface east of excavation units.

A fragment of a white ironstone plate bears a QMD transfer print on the front rim (Figure 63; 23-0017-043). This stands for Quartermaster Department. It indicates military dishware made prior to 1912 when the branch was renamed the Quartermaster Corps. Other white ironstone fragments are from the same or similar tableware.



Figure 63. Plate with QMD transfer on front rim (23-0017-043).

Other items recovered from the bottle-hunters reject pile include fragments of cans, stoneware, glass, and a small rubber gasket (23-0017-005). Beer bottles are types manufactured prior to 1905 (Figure 64). One has a “4” mold mark on the base (23-0017-009).



Figure 64. Beer bottle fragments from looter discard pile.

A ceramic fuse holder (circuit breaker) was manufactured by the R. Thomas and Sons Company (Figure 65; 23-0017-041). This ceramic factory was in operation in Ohio from 1884 to 1957 (https://www.r-infinity.com/Old_Photos/Thomas/R_Thomas_&_Sons_Co_p1.htm). The fuse holder dates to sometime after 1897 when Fort Meade got electricity (*Deadwood Daily Pioneer-Times*, May 14, 1897). A cast iron stove part and a fragment of zinc sheet metal probably represent kitchen equipment. Sheet zinc was commonly used for countertops at the turn of the century. Two horseshoes were found, as well (Figure 66).



Figure 65. Ceramic fuse holder (23-0017-041).



Figure 66. Horseshoes (23-0017-037, 23-0017-038).

This assemblage clearly represents a trash deposit from the cavalry post proper. This could be slightly earlier than the privy and log structure features at the site; however, it does not differ much in age from the domestic debris found in the excavation units.

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APPENDIX B
BOTANICAL REMAINS
PLANT FOODS AT SOAPSUDS ROW (39MD45)

Aaron Mayer

Botanical research contributes to understanding of social and political roles of plants. Plant use can show what plants were available to people in the past, yet some studies can go even further and indicate transitions of crop production and the importance of changing economies (Hastorf 1999).

Many modes of entry can bring a macroremain into the archaeological record. Pearsall (2010) cites possible means of macroremain preservation such as the burning of dung, cooking spillage, trash disposal into hearths and fires, and other means of accidental and intentional fires. Ritual and ceremonial offerings, idiosyncrasy, boredom, frustration, conflict, accidents, children and youth tossing in fuel and other items, are all other possible modes of entry that macrobotanicals and artifacts can enter into a hearth in the archaeological record. All of these and other methods lead to preservation and are sometimes left in primary deposits *in situ* and can indicate past human and plant relationships and landscape use (Pearsall 2010). The botanical remains from 39MD45 are primarily from coprolitic privy deposits.

Flotation is a vital part of the recovery process of macrobotanical remains. Using this process macrobotanicals are released from their soil matrix and floated up out of the water where they can be extracted and identified (Figure 67). Since the charred and uncharred remains are usually more buoyant than the soil they are trapped in they can easily be collected from the surface of the water using a fine mesh screen to sieve them out.

This recovery method can be done in the field by using a nearby and adequate water source. If water cannot be utilized near a site, the heavy soil samples must be transported to another site or processed at a suitable laboratory or shop.

The benefit of flotation is that many botanicals are small or less than 2 mm and cannot usually be seen in the soil of excavation units by archaeologists using their naked eye. Pearsall (2010) cites inexperienced and careless workers as reasons for the recovery of less small material due to insufficient shovel, pick, or trowel technique. As to which techniques are most efficient at recovery, Many archaeologists determine which methods to apply based on their individual expertise and the larger research design. Dry and delicate botanical remains may be damaged or destroyed by the introduction of water. Waterlogged botanicals recovered from lake or stream beds may be destroyed if left to dry. Yet flotation can yield all sizes of macrobotanical remains depending upon the selected screen size (Pearsall 2010).

Once the drying process of the macrobotanicals has been completed the arduous and time-consuming lab work of sorting and identification can take place. The flotation samples contain other materials from the flotation procedure such as modern botanicals (i.e., roots, stems, twigs,

and modern seeds), light fraction, and other materials that are buoyant. These are strained out of the soil samples and float up into the sample bag. The macrobotanicals must be sorted from the other buoyant materials.



Step 1. Bucket method flotation.



Step 2. Pouring off light fraction.



Step 3. Washing heavy fraction.



Step 4. Examining artifacts in heavy fraction.

Figure 67. Flotation using bucket method in laboratory.

Pearsall (2010:100) stresses that the transfer of vital provenience data onto lab forms and sample bags should be checked and double-checked. Samples are screened with geologic sieves for 2mm, 1mm, and 0.5mm (Figure 68). The sorted contents are then placed in labeled plastic bags. The University of Missouri lab sorts out all charred material from the >2mm division such as wood charcoal, nut shells and nutshell fragments, large seeds, corn cob and kernel fragments, tuber fragments, and palm pits, according to the site analyzed (Pearsall 2010). Wood charcoal is

generally collected in >2mm sieve size because it breaks into parts, and it can be very time consuming to sort 1mm to 2mm completely.

During the floatation and botanical analysis process associated with the current project at Soapsuds Row, many of the previously discussed methods were employed. Furthermore, all charred material was separated from the floatation sample and seeds were separated and sorted into genus and species if possible.



Figure 68. Left, geologic sieves; right, low-powered microscope.

The floatation light fraction samples were sorted under a low-power dissecting microscope with separate microscope lights (Figure 68, right). The >2mm, >1mm, and >0.5mm divisions were all individually sorted in small flat trays. Usually the sample was spread out in the tray and sorted with a finely haired paint brush in 1cm strokes horizontally across the tray, separating scanned material from the yet to be scanned. Macrobotanicals were picked out with the paintbrush and set aside for future specific sorting later. Less than 0.5mm divisions are usually scanned but not thoroughly sorted due to the small size, small particle dust, and the needed intense focus.

Total data counts and weights and measures from the 39MD45 samples are presented in Table 2, page 49 above. The density of the Unit 3 macrobotanicals is easy to calculate. Density is how many seeds of species occur in one liter of soil. Total data counts from the Unit 3 privy point sample are shown in Figure 71.

Species used for food appearing in the privy are *Brassicaceae* sp. (probably mustard), *Cucurbita* sp. (probably squash), *Parenchyma* (starchy tissue from tuberous plants such as potato), barley, plum, and raspberry or blackberry (Figures 69 and 70). Another *Cucurbita* seed (probably squash or pumpkin) was found in the debris pile associated with the log structure. Possible sources of these are discussed in the Artifacts section in the main report above under Plant Food.



Figure 69. Left, *Brassiaceae* sp. (mustard seeds); right, *Rubus* (raspberry or blackberry).

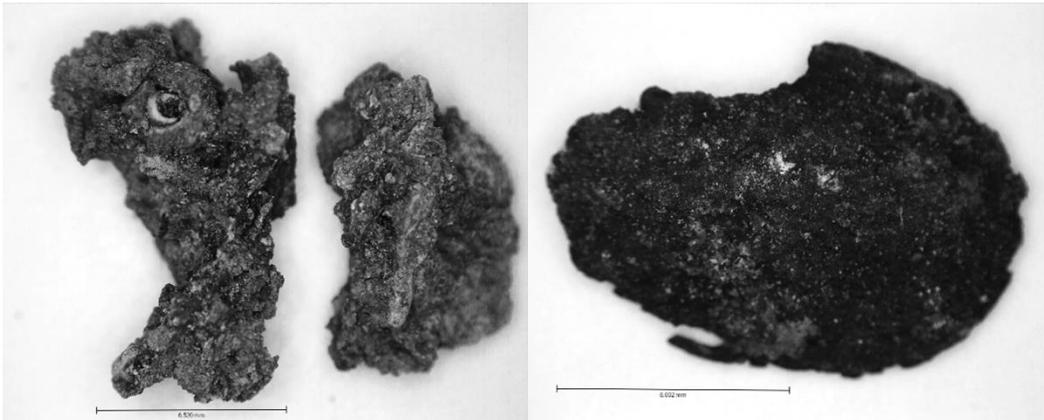
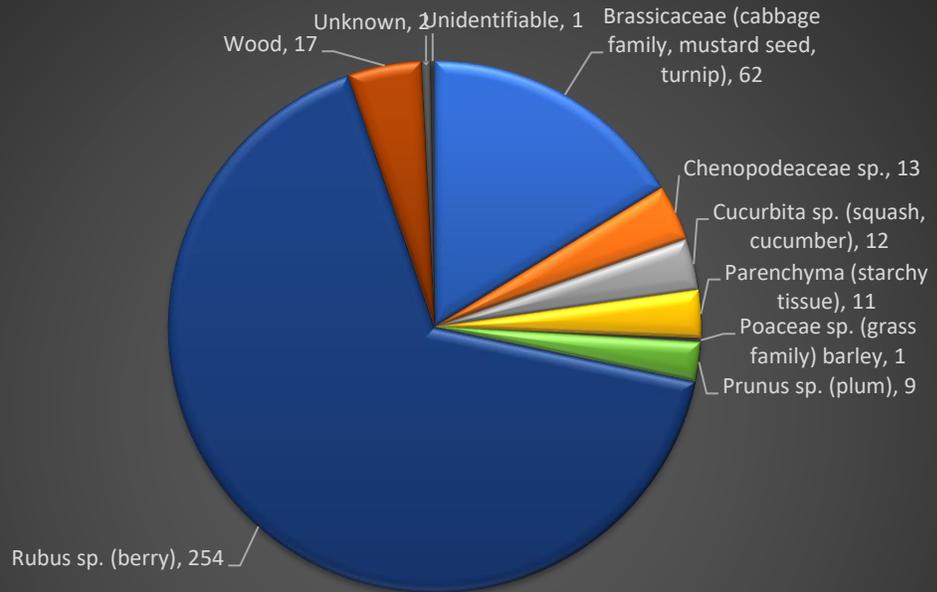


Figure 70. Left, *prunus* sp. (plum or peach pit fragments); right, *Cucurbita* sp. (charred squash or pumpkin seed).

n=382 Unit 3 (privy) Macrobotanical Data Counts



- Brassicaceae (cabbage family, mustard seed, turnip)
- Chenopodeaceae sp.
- Cucurbita sp. (squash, cucumber)
- Parenchyma (starchy tissue)
- Poaceae sp. (grass family) barley
- Prunus sp. (plum)
- Rubus sp. (berry)
- Wood
- Unknown
- Unidentifiable

Figure 71. Total data count and pie chart of Unit 3 macrobotanicals and seeds.

Ubiquities were calculated for the macrobotanicals excavated at 39MD45. Ubiquity is how many times a species occurs across a site. Since *Cucurbita* sp. and wood occurred in both excavation units 3 and 6 its ubiquity is 1 or at 100% of the site sampled for macrobotanicals. Figure 72 displays the ubiquity of the macrobotanicals at Soapsuds Row 39MD45.

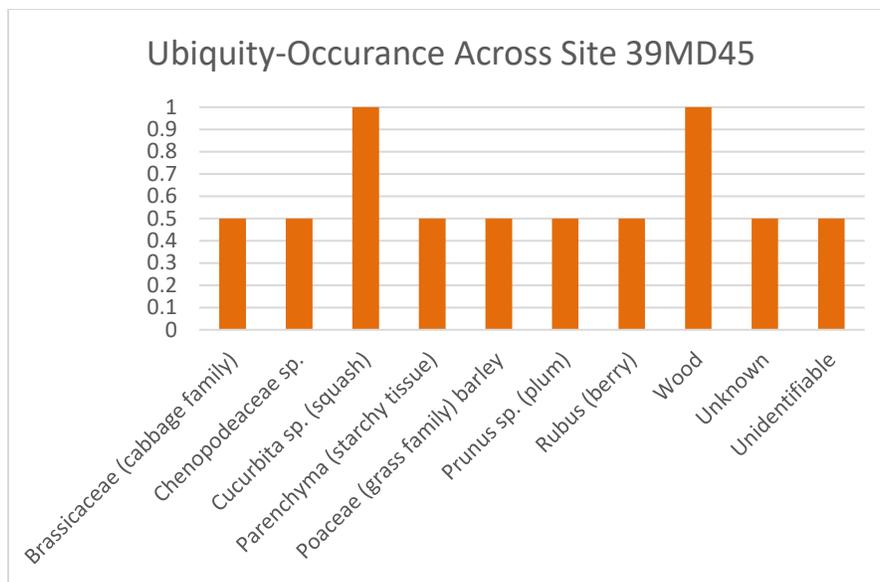


Figure 72. Ubiquity of macrobotanicals excavated in Units 3 and 6.

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APPENDIX C

THE COURTNEYS: A WESTERN IMMIGRANT SAGA

One would be hard-pressed to find a couple that exemplifies the story of the western frontier more completely than the Courtneys of Fort Meade.

A million and a half Irish people emigrated to America during the Great Famine, 1846 to 1852. It appears that young Dennis Courtney of County Kerry was among them. A search of known passenger lists that fit Dennis's timeline yields only one likely match: a passage on the *Sam Lawrence* from Liverpool, England, to New York, Sept 21, 1852. Dennis, or Denis as he was known then, was eight years old. With him were brothers Patt, 10, and Michal, 6. The ship's manifest lists all three boys as "laborers." The three boys traveled alone. No record exists of what became of Patt or Michal.

Dennis's story resumes 14 years later when he enlisted for a five-year stint in Company F of the US 7th Cavalry on December 10, 1867, at the age of 22. He gave his occupation as farming. Military records describe him as 5 feet 5 inches tall with brown hair, hazel eyes, and fair complexion. He could speak and read English but could not write it. Dennis was following many other post-famine Irish immigrants in joining the military. It was one path out of the crowded slums of New York City.

The 1870 census from Hays, Kansas, lists Dennis as married and employed as a soldier at Camp Stinges. His wife Rose was another Irish immigrant, perhaps one year older than Dennis and employed as a laundress, presumably for his unit at Camp Stinges. She could speak English, but neither read nor write. Rose's maiden name is not recorded, and her journey to America thus cannot be traced. Neither of them had attained US citizenship by 1870. Their stated ages at various points in time are not consistent, and it is possible that they were unsure of them.

Rose was the "Irish cook" who accompanied Custer's Washita Expedition from Fort Riley, Kansas, to Indian Territory in 1868. Custer wrote to his wife, Elizabeth: "Tell Eliza [the Custers' cook] she [Rose] is the 'awfulest' scold and the most 'quarrelsomest' woman I ever met. She and the man who waits on the table have constant rows" (Custer 1890:12-13). Elizabeth Custer annotated this comment as follows:

This cook was the only woman on the expedition. She had been a camp woman for many years and was tanned and toughened by 'roughing it.' She was perfectly fearless, but the life had sadly affected her temper. Even her brave husband (that is, brave in battle) approached her guardedly if anything went wrong. When the expedition was attacked at one time, she was cooking by a campfire, and was heard to mutter when a bullet passed her by, 'Git out, ye red divils ye,' and went on with her work as if nothing were happening" (Custer 1890:13).

Dennis was likely among Custer's forces at the Washita. The expedition culminated in the dawn attack on a peaceful Cheyenne village, which has ever after been a smudge on US Cavalry history. Rose Courtney showed a compassionate side during the Washita expedition. She gave clothing to two white women whose release from their Cheyenne captors the expedition officers negotiated. Courtney provided dresses so that the former captives could return home in something other than the attire provided them by the Cheyenne women (Custer 1890:60).

Courtney seems to have been given charge of a teenaged Cheyenne girl named Monasetah, who was captured in the Washita Massacre. It appears that during her time as a prisoner of war, George A. Custer sexually exploited Monasetah. Some historians have accepted the rumor that she bore a child from him or his brother Tom (Harrison 2014; Miller 1971; Sandoz 1953:16, 25, 41, 261; Utley 2001:107); however, Cheyenne historian John Stands in Timber was unable to verify the existence of such a child among the Cheyenne (Stands in Timber and Liberty 2013:245-246). In contrast to the 52 other women and children prisoners of war, Custer kept Monasetah in his entourage as his personal cook's assistant, in other words under the supervision of Courtney. Courtney may have taught Monasetah some English (Agonito 2016:90). Sergeant John Ryan recalled:

There was a sergeant in F Troop by the name of Courtney who was a married man. Mrs. Courtney, the laundress in F Troop, went along on this expedition and rode in the ambulance. She also did the cooking for General Custer and after the Battle of the Washita had an assistant, an Indian [woman] who [was] captured in that battle (Barnard 2001).

The 1870 federal census lists both Rose and Dennis at Camp Stinges near Fort Hays, Kansas. Dennis was in the 7th Cavalry and Rose was employed as a laundress there.

Dennis reenlisted in the 7th Cavalry in 1872 when his initial term was up. This time, he would be assigned alternatively to Companies F and G. The following year his company was reassigned to the newly constructed Fort Lincoln near present-day Bismarck, North Dakota. The commander of the combined infantry and cavalry post was Lieutenant Colonel George Armstrong Custer. Rose came along, apparently retaining her position as laundress for Dennis's company. In 1874, Dennis would be one of a thousand members of the Black Hills Expedition under Custer's command. The expedition would cross far into the Great Sioux Reservation, reserved for the Lakota and their allies in 1868. Custer and his superiors rationalized the trespass by claiming they needed to find potential locations for military forts. In fact, more energy went into looking for gold in order to confirm or lay to rest rumors of great gold deposits in the Indians' sacred mountains (Lee 1991:4-5). Gold was found, although not in large quantities, and thus began a gold rush and a desperate attempt by the US government to divest the Lakota, Cheyenne, and Arapaho of lands so recently promised them in perpetuity.

It appears that Rose had followed the 7th to Fort Lincoln in 1873. According to Major General Hugh Lenox Scott, Courtney had worked for Colonel Samuel D. Sturgis at Fort Riley and had followed him from there to Fort Lincoln in 1873. She moved from Fort Lincoln to Fort Meade with Sturgis in 1878 as a cook and laundress: "She led a cow much of the way and had some ducks led by a leg. When the command rested near a water hole, she would throw them into the water and reel them in when the trumpet sounded the forward" (Scott letters to Odell 1933). Scott remembered Rose or Rosie Courtney as "an old Irish laundress of excellent character when sober."

The 1880 Fort Meade census lists Rose as 40 years old and a servant for the family of General George D. Wallace. She was married at the time, but her husband, Dennis Courtney, apparently was living off-post, as he is listed in the Alkali Valley census. This was a small community living just east of the Fort Meade Military Reservation south of the main fort. Apparently, Dennis and Rose had filed for a homestead there in 1880 or earlier. Once the location of Fort Meade was announced in 1876, settlers and speculators waged a lively grab for any nearby

land (Lee 1991:30). It would appear that Dennis's luck again served him well. The Courtneys were granted a patent deed for the land on Alkali Creek in 1887.

The 1890 census of Fort Meade does not list either Rose or Dennis, suggesting that they were both living on the homestead at the time the census was taken at the military base. (The non-military federal census records for that year were destroyed by fire.) At the end of the same year, Rose's former employer, Captain George D. Wallace, was killed during the Wounded Knee Massacre, in which US Cavalry troops opened fire on a camp of Lakota seeking refuge from violence precipitated by the Ghost Dance at Standing Rock agency, killing between 250 and 300 women, children, and men. Wallace was commanding Company K of the 7th Cavalry. Many, if not most, of the casualties on the US Cavalry side were the result of friendly fire. Wallace died of gunshot wounds to the head and abdomen, but from whose gun is not known. The Wounded Knee Massacre is often cited as the end of the Indian Wars and as a disgrace to the nation's treatment of Native Americans. A week later as news of the massacre came out, the *Army and Navy Journal* praised Wallace for carrying a wounded officer away from the line of fire and opined that it was "a costly sacrifice to pay with such lives for our blundering management of Indians affairs" (*Army and Navy Journal*, January 3, 1891, p. 318).

In 1894, the Courtneys sold the homestead to a buyer from New York. It is not clear whether Dennis continued living and working on the homestead after that sale, but the place sold again in 1897 to a family that would ranch there for many years. It is not clear where they lived during the time between the sale of the homestead and Dennis's death in 1899.

Both Courtneys met gruesome deaths. Dennis was killed in a runaway accident between the town of Sturgis and his homestead in 1899. According to news reports, he had taken \$83 from Rose by force. She had been safeguarding several hundred dollars from sale of a horse. Dennis took the money and went drinking in Sturgis, spending (or losing) all but \$4.99. Rose came to town late in the day looking for him. The two got into a physical altercation regarding the money on their way home. Rose got out of their buggy, and Dennis continued driving toward Fort Meade when he lost control of the horses and was partially decapitated by a wire fence.

The 1900 federal census lists Rose as living alone as head of household at Fort Meade. It is not clear where; however, one of the remaining log cabins on Soapsuds Row is the probable location. The census record has a space for indicating home ownership and whether mortgaged or free of mortgage. This space is not filled in for Rose, suggesting that she was in a house on the military base where ownership of houses was informal and private ownership of land was not permitted. In the 1905 state census, Rose's address is given as Fort Meade. At that time, she gave her age as 58.

In 1907, the Fort Meade post commander granted widowed Rose permission to occupy a log house on the base for the duration of her life. Although newspaper reports say she had moved into the cabin November 28, 1907, it seems more likely that she had already been occupying one of the log cabins—perhaps one that she and Dennis had constructed when they first arrived at the fort in 1878. That night, Rose died in a fire that consumed the house (*Sturgis Weekly Record*, November 29, 1907). The previous June, Secretary of War William Howard Taft, soon to be US president, visited Fort Meade and announced a major building program to take place that year. By then most of the old log houses on Soapsuds Row had been replaced by frame cottages (*Sturgis Advertiser*, February 14, 1889 and May 4, 1889). Those that remained were in bad condition and were likely scheduled for demolition. Mrs. Courtney may have petitioned the post commander for

permission to remain where she was. Unfortunately, no military records of this are available. She had been with the 7th Cavalry for 37 years by then, was in her sixties, and had no relatives who might take her in. She was already well beyond the average life expectancy for a woman, 50 years, so perhaps the commander felt safe in making a decision that would not seriously impeded improvements to the fort.

The larger context of the story is tangled. A son and daughter of Ireland are forced out of their homeland by a disaster that can be laid squarely at the feet of British colonialism. Ireland's original sacred sites had long ago been retooled into Catholic or Protestant churches and shrines, which would then witness 500 years of inter-Christian warfare, rebellion, and dispossession of the native population. English colonizers took away the lands and livelihoods of the Irish under the banner of "civilizing" the small local communities. Practice of the original religion of Ireland was outlawed early on and replaced with a Catholic bureaucracy that skimmed the wealth of the Emerald Isle for the benefit of the Holy See in far away Rome. Not long after, English political control would fuel the religious conflicts and provide the future architects of the British Empire with object lessons in subduing native peoples.

Fast forward to the Americans' bloodbath Civil War and the Indian wars in the western territories. The sons of Ireland were both pushed and pulled into the US military: pushed into Union or Confederate forces by conscription and pulled after the war by the promise of land and liberty in the West. After the Confederate defeat, the nation's focus was on westward expansion. But the imagined "wilderness" was not empty. It was fully occupied by small communities that understood and revered the land. The "wilderness" notion greased the wheels of a half million covered wagons. And when it turned out the wilderness was already occupied, those settlers and railroad builders demanded military protection from the US government. When Native American communities sought to stem the invasion, they were declared "hostile" and found the full force of the US Army bearing down on them. A nation that had just witnessed 620,000 deaths (one in 20 of its fighting-age men) over political and economic disagreements, characterized the Indians, without irony, as savage, blood-thirsty, ignorant, and in desperate need of Christian charity. Parallel to the Irish experience, Native American religions were suppressed, supplanted by Christianity, and formally outlawed. The Native American communities that tried to hold onto or regain their lands and livelihoods were in the way of the ambitious new American empire that was ready to spread from sea to shining sea.

Dennis and Rose thus left their own colonized-to-starvation land only to become part of an American colonization of its native population. But how much blame, if any, should dog an eight-year-old unaccompanied minor immigrant or an unschooled, tough as nails young woman? The Courtneys' story shows both the promise and the sins of nineteenth-century America. They would never see Ireland's magical springs and stone circles or its Medieval monastery ruins again but would live and die within sight of the holy mountain of the Cheyenne, Lakota, Kiowa, and Arapaho people. We still live in the wake of what happened then. Their story is our story, too.

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