

**EXPLORATORY INVESTIGATIONS AT SOAPSUDDS ROW,
OLD FORT MEADE MILITARY RESERVATION,
MEADE COUNTY, SOUTH DAKOTA**



**Linea Sundstrom & Cher Burgess
for
Bear Butte Creek Historic Preservation Council
and
Deadwood Historic Preservation**

February 27, 2023

Revised April 17, 2023

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Linea Sundstrom and Cher Burgess

Report prepared for the Bear Butte Creek Historic Preservation Council and Deadwood Historic Preservation in fulfillment of an Outside of Deadwood grant awarded February 9, 2022

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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

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The field crew worked efficiently and cheerfully despite less-than-ideal field conditions. Five days of near or over 100-degree temperatures and heavy smoke from wildfires in the Pacific Northwest presented challenges that the crew met with aplomb. These volunteers went above and beyond expectations by applying their enthusiasm and skills where most needed. Blaine Anderson crunched through Unit 6 and made important observations about the stratigraphy there. Gene Anderson worked tirelessly on the sometimes-cantankerous sediments in Unit 1. He showed the youngsters how it's done. Katie Anderson helped with field records and bone ID, as well as excavating. Cher Burgess devoted not just the fieldwork days, but several months afterwards, to cleaning, cataloging, and analyzing artifacts. Evelyn and Warren Busch showed that you are never too young to help—even if it's just spraying the other volunteers down with cold water on a hot day. They also helped with artifact sorting and cleaning and found some tiny, but important, artifacts. Weston Carlson helped with digging Unit 4. Mike Chamberlain helped excavate and identify artifacts and then generously expended the extra time and mileage to deliver borrowed equipment back to Rapid City.

Tom Darnell lent his considerable expertise in metal detecting to the project and showed us all the value of using magnets before screening to recover little things like fragments of pins and needles. Michael Fosha brought his privy-digging skills to Unit 3 and made many valuable suggestions about artifact identification and the stratigraphy of the site. Glen Fredlund helped set up the excavation units, sorted out the stratigraphy of the terrace, took photos, and helped map the surface features. He also created map overlays and probed with a coring device to determine which parts of the old row of housing were still intact. He also surveyed areas of the school district land to identify other areas with high probability of containing intact archaeological deposits. Casey Henry helped with excavation on Unit 4. Brittany Kahl helped process artifacts at the end of each day. We are grateful to Dustin Lloyd of SARC for dashing to the site from Rapid City to confirm that a set of bones was not human. Valerie McLean helped with Units 4 and 5. John Mitchell helped process artifacts, assisted with the metal detector work, and searched out old maps of the fort from the National Archives website.

The Patterson family—Teri, Justin, and Morgan—were a great asset to the project. Teri managed the screen, helped in the artifact lab, and provided historical information about the Scott sisters. She also took charge of compiling data on several hundred nails from the excavations. Morgan was a delight: eager to learn and help. Justin helped with the excavation of Units 5 and 6, joining us as soon as his work schedule would allow. Mike Runge of Deadwood Historic Preservation helped with the excavations and with various aspects of planning the project. The ever-cheerful Ardie Sand did the tricky excavating in Units 2 and 3, as well as

helping in the artifact lab and researching buttons. Jarody Udager helped excavate units 4 and 5. Vicke Vogel also proved indispensable in keeping us current on the artifact processing. Bob Why did a little of everything and a lot of screening. Off site, he found all sorts of historic photos of Fort Meade. Julie York pitched in on excavation work. We could not have asked for a better crew! Field assistant Allan Johnson kept everyone on track and made sure field records were complete.

In advance of the fieldwork, field school students from the University of South Dakota and their professor, Dr. Tony Krus, shot in grid points across the site area and drew soil profiles of the exposed terrace edge. Logan Lamphere helped document the USD work with his excellent photography. Explosives expert Jim Laverick generously took time to visit the site and helped locate the boundaries of the old grenade court, as well as teaching students and volunteers what to look for to avoid any unpleasant surprises—a necessary preparation for work on a former military installation. A team from the Biology Department at USD provided high resolution drone imaging of the site. They were professor Dr. Ranjeet John and graduate students Sakshi Saraf, Vankatesh Kolluru, and Khushboo Jain.

Ross Lamphere provided discounted camping for the crew, space for the artifact lab, and backhoe work. Together with his wife, Jan, he made everyone feel welcome. Ross is the president of the Bear Butte Creek Historic Preservation Council and a wonderful collaborator.

Jessica Kusser of the Fort Meade Museum provided information about the history of the site and let us poke around the museum on one rainy day. Local historian Lee Stroschine helped with research into Fort Meade's past. Brenda Shierts, formerly of the Bureau of Land Management Belle Fourche field office, first envisioned the project and helped with every aspect of it, from digging to mapping features, to providing LiDAR images of the site. David Wade and Mike Bergstrom of Billings, Montana, looked for butchered horse bones found on the BLM portion of the site in the 1970s. Unfortunately, the horse bone had not been collected and brought to Billings with the other artifacts from that early project, but we appreciate them looking.

Dr. Patrick Hoggard reached out via email after reading about the project online and provided his meticulous genealogical and historical research on the Flynn sisters and their mother. Then he helpfully switched gears back to his chemistry professor days and patiently reviewed the senior author's notions about the chemistry of the mysterious line of hardened effluent. We are so happy he found us!

Danny Walker, retired Wyoming Assistant State Archaeologist, generously helped with identification of bones and artifacts.

Staff from the South Dakota State Archaeological Research Center helped in many ways. Katie Lamie helped set up the artifact processing lab, advised us on procedures, and sent reports from related projects in South Dakota. State Archaeologist Cassie Vogt allowed us to borrow field equipment. She was joined for a day of excavating by SARC archaeologist Fidel Martinez-Greer. Michell Pritchard scanned the completed field forms to provide backup copies.

A hearty thank you to all!

PROJECT BACKGROUND AND RATIONALE

The Bear Butte Creek Historic Preservation Council (BBCHPC) is 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 for laundress quarters affiliated with the Fort Meade cavalry post. 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. Secondly, 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. This aligned with the BBCHPC’s goal of promoting public awareness of their larger goals and provided education in archaeological methods.

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.

Other entities supporting the project included the South Dakota 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), and the Old Fort Meade Museum (facilities and research assistance).

Linea Sundstrom directed the project. Cher Burgess took charge of the artifact processing and analysis. The field assistant was Allan Johnson.

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 lies adjacent to the 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 area.

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 lacks trees or shrubs. The site lies just outside 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 supply of clean water to the fort. Bear Butte Creek flows northeastward, emptying into the Belle Fourche River, a tributary of the Missouri.



Figure 1. View of 39MD45 looking southwest. Trees in foreground mark the former course of Bear Butte Creek.

The site area thus enjoys protection from winter winds, a permanent water supply, wood for fuel and construction, grass for horses, 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

Native American nations occupying the area before and after contact with Euro-Americans. Bear Butte serves as 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 (17 inches). Mean annual temperature is 8.3 degrees Celsius (45 degrees F). 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. 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 when precipitation faltered or winters were severe 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. Saint Onge loam similarly occurs at low elevations along streams flowing out of the Black Hills. Altvan loam occurs on stream terraces and alluvial fans. In some places, its sand and gravel content increase 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 100 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.” 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. These maps show 13 structures; however, it is not clear whether that 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 household.

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 a limited number of 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 that laundresses would no longer receive rations (Lawrence 2016:124-125).

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 military buildings were divided into small apartments for the use of these families.

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 year, and since most of 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, the women of Soapsuds Row 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 were widowed or abandoned by their soldier husbands. In the latter instance, the husband often took the wife's savings when he disappeared, 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 brothel and gambling den 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 witnesses 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 rolls. 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 (Figure 2). 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.

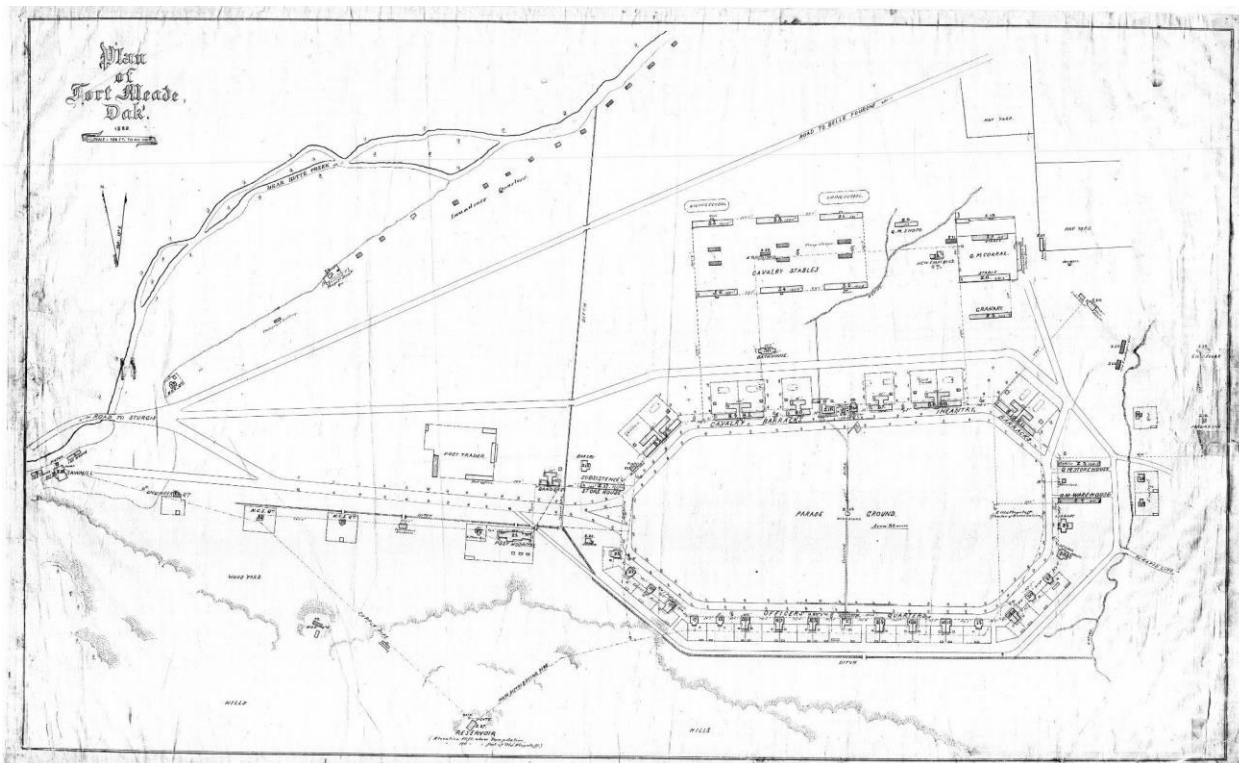


Figure 2. 1889 map of Fort Meade showing a row of houses labeled “Laundress Quarters” along Bear Butte Creek.

Around this time, Fort Meade medical officers expressed concerns about public sanitation. 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 for the post (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 to improve the 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 Lakota men 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’ wellbeing. 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 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 (deLeeuw 1947: endpapers). These are labeled "Married Non-Commissioned Officers' Quarters (Soap Suds Row)" (Figure 3). These apparently are the civilian employee quarters constructed in 1889.

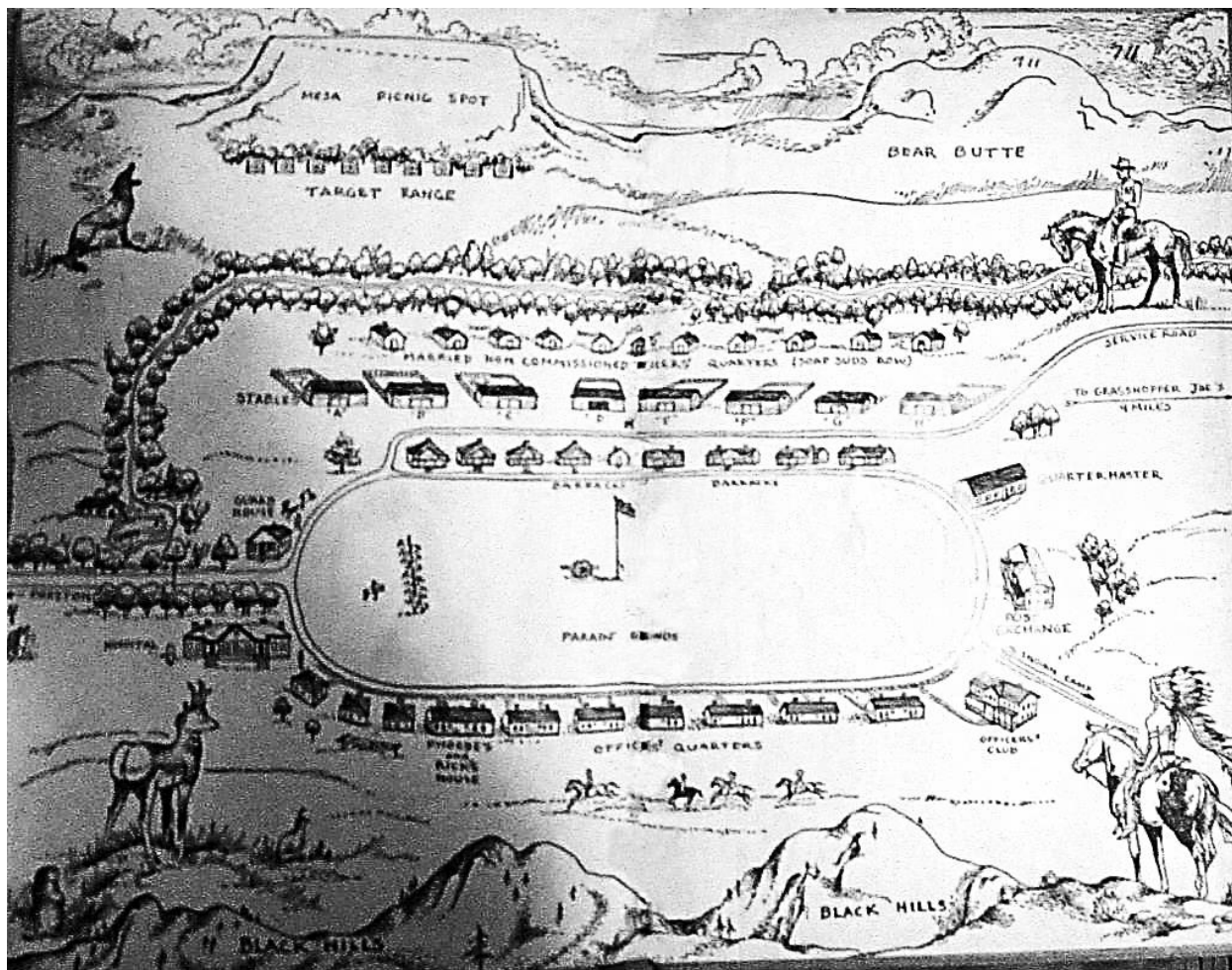


Figure 3. End paper from *Blue Ribbons for Meg*, showing location of "married non-commissioned officers' quarters, known as Soap Suds Row" (from deLeeuw 1947).

At least one log house was still standing in 1907 when the widowed former laundress and domestic servant Rose Courtney was given permission to move into an unused log cabin.

A building labeled "Laundry" shows up on maps of Fort Meade 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. The laundry was a private concession, apparently owned by Sam Sing, a Chinese immigrant, and was in operation in 1888. Near the end of that year, On Hang purchased the laundry (*Sturgis Weekly Record*, November 23, 1888). Hang must have sold it prior to 1910, when a Rasmuss Rasmussen sold the equipment from a steam laundry in Fort Meade to a nearby hotel (*Daily Deadwood Pioneer-Times*, August 5, 1910).

Census data provides a few clues to the history of Soapsuds Row at Fort Meade. Chinese immigrants seem to have replaced enlisted men's wives as laundry workers. 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 colluding to lower prices and then raising them again after the competitors gave up (Zhu and Fosha 2004:13).

The Stories

Our knowledge of the women who occupied Soapsuds Row is limited to a few names and a few details of their lives. A grave in the old Fort Meade Cemetery is marked "Annie Franklin, Laundress." Cemetery records give her date of death as March 24, 1881. She thus was among the first women at Fort Meade, but nothing else is known of her history.

The Scott Sisters. Census records list two sisters as having been employed as laundresses at Fort Meade: Elizabeth Scott Morrison and Mary Scott. The sisters were from Ireland and had married soldiers. In 1880, at the age of 42, Elizabeth had four children, all born in Michigan (Figure 4); Mary, aged 40, was raising a teenaged nephew from Ireland. Both women are listed as head of household. Elizabeth was listed as married, suggesting her husband was away on a campaign or was living elsewhere; Mary is listed as widowed, although Scott was her maiden name.



Figure 4. Elizabeth Morrison (photo from Ancestry.com)

The Flynn Sisters. Another pair of sister laundresses spent time at Fort Meade. Margaret Flynn Veach was married to career soldier Josiah Veach. Their daughter Lillian was born in 1889, a year after the couple arrived at Fort Meade from Fort Brown (Brownsville) in Texas. Lillian joined two older siblings, Thomas and Sarah. Margaret's sister, Lillie (Lillian) Flynn Hanson, newly divorced from her civilian husband, Martin Hanson, Jr., of Brownsville, Texas, came to live with the Veaches in 1892. She was 25 years of age, seven years younger than Margaret. She had given birth to a daughter, Marion, nine days after the divorce was finalized. It is not known where the baby was born, but one possibility is Fort Meade (Hoggard 2023).

After joining her sister and brother-in-law at Fort Meade, Lillie was employed as a laundress. Although her ex-husband was a successful contractor, the divorce had left her with no financial resources. Her new baby's father was a Mexican national in whose household Lillie had been living while her husband was away, leading to the divorce on grounds of adultery. Martin Hanson was awarded custody of their three minor children, and Lillie's share of their community property, which would have amounted to about \$13,700 in today's dollars, went to Martin for support of the children (Hoggard 2023).

Lillie had another child in 1895 by Thomas A. Shepherd, a soldier she had met at Fort Meade. He was sent to Fort Wayne, Indiana that year as a military recruiter. Lillie followed him to Indiana. The couple never married, and Thomas left Lillie and married Mary Louise Carter while still in Fort Wayne. After the wedding, he returned to Fort Meade before his and Lillie's daughter was born in Indiana on May 31, 1895. Lillie gave the child's name as Josephine Hanson and invented "Jacob Hanson" for the child's father on the birth record. (In a later record, she gave the father as "Philip Hanson.") For the birth record, she also reported that Josephine was her second (not fifth) child. Lillie gave her age as 32, when she was in fact 27. In the 1895 and 1897 Fort Wayne city directories, Lillie Hanson is listed as a domestic servant or cook for the Allen County Orphans' Home. Apparently, Lillie had placed little Marion in the orphanage and secured work there for herself. Both girls were adopted by Fort Wayne families, Josephine as an infant and Marion at age three or four. In 1897 Lillie married Otis Pontious in Fort Wayne. The couple resided in Iowa and St. Louis before separating in 1905 or 1906. After that date, Lillie listed herself as widowed; however, Otis was still alive and remarried in 1921, using the name Charles instead of Otis. On his marriage license application, Otis stated that Lillie had died in 1918. In fact, she was still living in 1930, but her date and place of death are unknown (Hoggard 2023).

While Lillie's story is convoluted and rather tragic, her experiences were not unusual for the time and place. Marriages and divorces were frequently not formalized. It might be easier to invent alternative stories than to pursue the expensive and drawn-out process of divorce—assuming an official marriage had taken place to begin with. Children ended up in orphanages because their mothers could not support them or wished to remarry to men unwilling to raise other men's children.

Lillie's sister Margaret seems to have had a more stable life in that, after a brief first marriage, she wedded career soldier Josiah Veach. They arrived at Fort Meade in 1888, but apparently were reposted before the 1900 census took place. The couple stayed together throughout his career but were not always living in the same place. Josiah retired as a first sergeant in 1903 after a 29-year career in the cavalry. Josiah died in 1918 and Margaret in 1936. They are buried together at the San Antonio National Cemetery in Texas (Hoggard 2023).

The Flynn sisters were no strangers to army life and the arduous work of the army laundress. Their mother, Mary Ann O'Callaghan Flynn, was an army laundress for her husband James's company in the First Artillery for 15 or 21 years. She had already borne two children, surnamed Flynn, before marrying James Flynn in 1861. They had two more children, Margaret and Lillie, but were separated (not divorced) by 1875. Assuming all four children were James's, the couple had lived together as man and wife since 1854, making the marriage official seven years later. And even if the older two were not from James Flynn, the couple had still stayed together for 15 years---a long time for a soldier and wife (Hoggard 2023).

Mrs. Nash. The laundress and dressmaker "Mrs. Nash" is mentioned by Elizabeth Custer and Katherine Gibson in their memoirs of Army life on the Northern Plains (Custer 1961; Gibson Fougere 1942). She lived for a time at Fort Meade where she apparently married an enlisted man named Noonan; however, her death – at which she was discovered to be biologically male – and burial took place in North Dakota.

Rose Courtney. Major General Hugh Lenox Scott remembered the laundress Rose or Rosie Courtney, describing her as "an old Irish laundress of excellent character when sober." Scott claimed that she had been on the 1874 Black Hills Expedition as a cook for Lt. Col. George A. Custer.

This is the same "Irish cook" who accompanied Custer's Washita Expedition in 1868. He wrote to his wife, Elizabeth: "Tell Eliza [the Custers' cook] she 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).

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).

In 1868 Mrs. 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 her 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).

According to Scott, Courtney had worked for General Wallace at Fort Riley and had followed him to Fort Meade (presumably from Fort Lincoln) 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). This would have been in 1878 when the Wallace family came to Fort Meade (Lee 1991:35). The 1880 Fort Meade census lists her as a servant for the Wallace family and aged 40. She was married at the time, but her husband, Dennis Courtney, apparently was living off-post, as he is not listed in the Fort Meade census. He had served in the Seventh Cavalry under George A. Custer and was with the 1874 Black Hills Expedition (Carroll and Frost 1976; *Dakota Farmers’ Leader*, Nov. 24, 1899). According to a newspaper report, he later acquired considerable property and was living east of Sturgis at the time of his death. Whether that means Soapsuds Row or a home outside the military reserve is unclear (*Dakota Farmers’ Leader*, Nov. 24, 1899).

Both Courtneys met gruesome deaths. Dennis was killed in a runaway accident between Fort Meade and Sturgis in 1899. According to news reports, he had gone drinking in Sturgis. Rose came to town late in the day looking for him. The two got into a physical altercation regarding money from the sale of a few cows. Rose got out of their buggy, and Dennis continued driving toward Fort Meade when he lost control of the horses and was nearly decapitated by a wire fence. In 1907, the widowed Rose was allowed to move into an abandoned log house, probably on Soapsuds Row. She was there less than a day when she died in a fire that consumed the house (*Sturgis Weekly Record*, November 29, 1907).

Class, Race, and Rank at Early Fort Meade

A recent dissertation by Geoffrey West examines the complex interactions of race, class, and rank at frontier military posts in the West. He argues that commissioned officers’ wives were under great pressure to keep up the appearance of a middle- or upper-class lifestyle despite the difficulties presented by remote postings. It was difficult to acquire and retain the servants expected for their husbands’ ranks, as well as challenging to acquire and transport the trappings of a well-heeled household. A shortage of female labor meant that laundresses and cooks could demand high wages, while officers’ families were contending with the severe pay cuts that followed the Civil War (West 2019). A captain at Fort Meade offered “best wages” for a competent laundress/cook (*Daily Deadwood Pioneer-Times*, January 28, 1908). A competent, hardworking laundress could earn almost as much as an officer—not counting her husband’s pay, which of course also added to the family income. Commissioned officers’ wives were expected to retain domestic servants and certainly not to bring in income on their own. Some laundresses built up considerable savings. For example, a Black laundress from the northern Black Hills was reported to have lost \$400 when a local bank went out of business in 1880—equal to the yearly salary of an Army general (*Black Hills Weekly Pioneer*, January 24, 1880).

A rigid military caste system included women and governed social interactions at even the most remote posts (Myers 1990; Stallard 1978:53; Stewart 1980:430-431; West 2019:137-138). One historian listed three classes of women on frontier posts: the wives and daughters of officers; the wives and daughters of enlisted men; and the laundresses (Whitman 1962). Another historian added four more categories to that list: officers' domestic servants; wives and daughters of civilian employees; Indian women visiting posts; and camp followers, meaning women providing goods or services to enlisted men without official sanction (Stallard 1978:53). Occasionally a laundress crossed class lines and married an officer. Such women were in a kind of social limbo. They were referred to as "halfway ladies," implying that their former lower status would prohibit them from ever become true ladies (Myers 1990; Nacy 2000). While the officer corps might accept a member who had risen through the ranks, the officers' wives were less accommodating to upwardly mobile laundresses. Officers' wives seem to have had little sympathy for the laundresses and domestic servants who had two households to care for. For example, Elizabeth Custer offhandedly noted that life on a frontier post depended upon servants. "Army people like the Negroes and find a quality of devotion in them that is most grateful when one is so dependent on servants, as everyone is in military life" (Custer 1890). Her *everyone* clearly excluded the wives of the non-commissioned officers who occupied a lower social stratum and had no servants to help them.

Little has been written about the social dynamics of early Fort Meade. It would appear from *Blue Ribbons for Meg*, a children's novel based on experiences at Fort Meade, that the children of commissioned officers did not associate with those on Soapsuds Row, whose fathers would have been enlisted men or noncommissioned officers. The book, set in the early 1900s, mentions Soapsuds Row but does not refer to any interaction between its inhabitants and those of Officers' Row (deLeewu 1947). A letter from the post commander, Elmer Otis, in 1890 supports the notion that the families of officers and enlisted men did not mix. Otis criticized the post's superintendent of schools for allowing officers' and enlisted men's children to attend school together; however, he allowed children of enlisted men to attend school with those from civilian families (Lee 1991:98-99).

Some officers preferred to hire Black servants because they were unlikely to marry enlisted men and leave their employers; however, Fort Meade housed many Black troops, complicating the racial/class dynamic. The 1880 census lists three Blacks among the civilian population at Fort Meade, all of whom were employed by officers as domestic servants. In 1900, five Blacks, all servants, were living on the post, as well as two Chinese men employed as officers' cooks.

West's study of social dynamics at frontier military posts notes a movement to curtail the relative prosperity (and upward mobility) of laundresses by replacing them with Chinese or Black men. The Chinese laundry workers, in turn, would become the target of white labor unions as labor became more available on the former frontier (West 2019). The pattern of Chinese labor replacing that of white and Black laundresses reflected a complex interplay of racial, class, and gender dynamics (Wang 2004). It appears that this dynamic played out at Fort Meade much as it did elsewhere in the West. Census data show a shift from female laundresses to Chinese laundrymen at Fort Meade by 1900.

Although individual families benefitted from the wage-earning of laundresses, the notion of financially independent women was antithetical to the Victorian mores still held at the societal level. Women were expected to devote themselves uncomplainingly to family and to expect only

the reward of knowing theirs was a job well done. An 1887 cookbook reminded young housekeepers:

When you especially realize your tired feet, and aching back, and coarse, red hands, try also to appreciate the greatness in littleness, the nobleness underlying the pettiness of your office. If you belong to the noble army of martyrs who are daily sacrificing themselves upon the domestic altar, --conscious that they are capable of higher service--, let these words of Ruskin's encourage you: "Every action, however mean or inconsiderable, is capable of a peculiar dignity in the manner of it, and a still higher dignity in the motive of it. For there is no action so light but it may be done to a great purpose and ennobled therefore" (Juster 1996:102).

In other words, the intangible rewards of unpaid labor should be enough for women. The male-dominated social structure was threatened by women who were not financially dependent upon, and hence controlled by, men. Although this patronizing attitude would soon begin to shift, it was still the majority view from 1878 to 1900 and was a factor in the Army's decision to phase out paid laundresses and in the substitution for male Chinese labor for laundresses.

PREVIOUS INVESTIGATIONS

The old Fort Meade Military Reserve was placed on the National Register of Historic Places in 1973 based on the standing structures present there (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 archaeological 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, concentration of butchered horse bones, bottle glass, cut nails, and a brass military button eroding from the bank of Bear Butte Creek to a depth of 11 cm. An attempt was made as part of the current project to verify that this bone was butchered and from horses; however, the specimens observed in 1977 had not been 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).

RESEARCH METHODS

The archaeological investigations at 39MD45 reported here 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 surface 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 excavation, the University of South Dakota 2022 archaeological field school crew established a grid over the site area using a total station. The datum used for the excavation was at point K8 on the site grid (Figure 5). 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.



Figure 5. University of South Dakota student Kylie Roth assisting with grid set-up; view to north. Photo by Logan Lamphere.

Three contiguous one-by-one-meter units 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 exposing artifacts and features associated with, but outside of, the privy pit. These three units were placed at 0 to 3 meters south and 13 to 14 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 10 to 13 meters south and 7 to 8 meters west of the K8 datum.

Excavation of both sets of units proceeded in five-centimeter levels measured below a shared datum. The first level of each 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. All fill was passed through ¼-inch wire screen, and about 9.5 liters from each unit/level was passed through 1/8-inch wire screen (Figure 6). Unmodified rocks were not collected. Larger and more diagnostic artifacts were pedestalled and piece-plotted 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, identified, and cataloged as fieldwork proceeded.

All artifacts were retained for curation at the South Dakota Archaeological Research Center in Rapid City. Samples of charcoal and an unidentified effluent were collected for curation, as were small sample of feature fill from Features 3 and 4.



Figure 6. Volunteers Bob Whay, Tom Darnell, and Ardie Sand screening soil from Units 1 and 2 (in background), looking east.

RESEARCH QUESTIONS

The project was 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.

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?

RESULTS

Extent of Cultural Deposits

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. Terrace deposits consist primarily of loam, interspersed with deposits of sand and gravel resulting from overbank flooding. 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 after a flood in 1972. This cutting action has resulted in a 180-meter-long bank exposure. On its eastern portion, the exposure slumps to a gentle slope and thus reveals nothing of the underlying sediments; however, the western portion has a vertical cutbank at the top, exposing the surface soil. Two 1-meter-wide exposures were cleaned in this portion of the cutbank by using a small backhoe to remove slumped deposits and expose a vertical face extending 180 cm below the current surface.

The two cleaned cutbank exposures are consistent in showing a well-developed buried soil horizon at about 100 cm below surface, immediately below a gravel lens. The upper soil is an A-C horizon, while the lower soil is an A-B horizon. The two exposures exhibit no evidence of disturbance other than the gravel lens 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 in order to date either soil.



Figure 7. Dr. Tony Krus and students, Camilla Crosby, Elise Shield, and Zach Wettier analyzing soils exposed in cleaned cutbank; view to southeast. Photo by Logan Lamphere.

What appears to be a paired terrace surface is present on the other side of the creek. This was not examined in detail, but again suggests the presence of intact deposits extending back thousands of years.

Figure 8 shows the profiles of the cutbank exposure closest to the 2022 excavation area. Photographs of the east and west profiles are in Figure 9.

The former creek bed adjacent to the terrace's northern edge exhibits a pattern of braiding and shifting course over the time it was active. Because this portion of the creek lies just outside a constricted water gap, it would be expected to drop sediment as it widened out and lost velocity after passing through the gap and as it encountered a lower grade than the upstream portion of the creek. Intact lower terraces may be present here and there in this lower portion of the landscape; however, this could not be assessed in detail during the work reported here. Bucket auger tests placed in this lower portion of the site revealed unmodified stream deposits over most of the area but did reveal an area of possible surface stability on a slightly higher, lenticular rise lying between stream courses. No soil was present on or in this remnant surface; however, the metal detector had many hits in this area, suggesting the discard of fort-era items there.

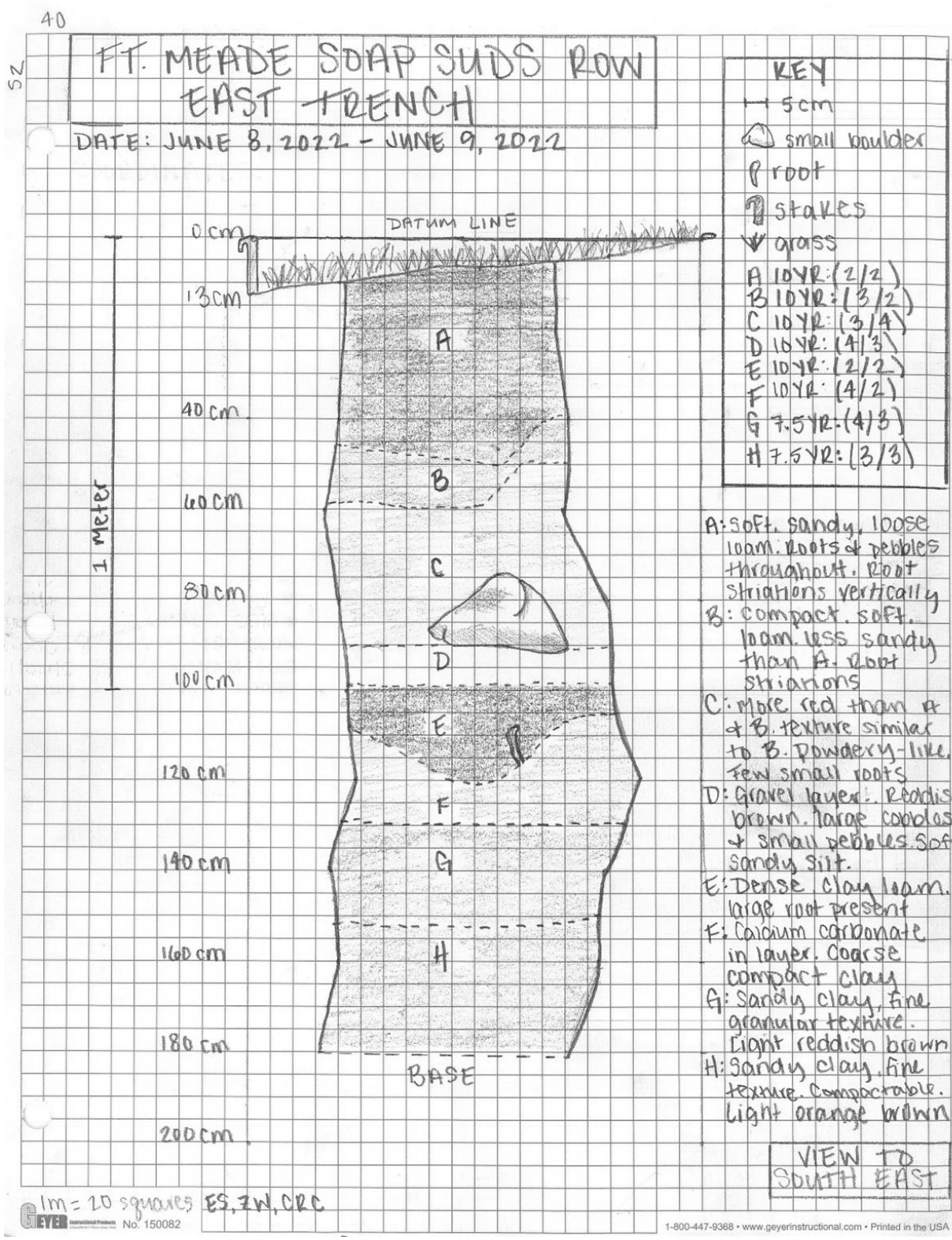


Figure 8. Profile of eastern cutbank exposure at 39MD45.



Figure 9. East (left) and west (right) cutbank exposures along the former course of Bear Butte Creek at 39MD45.



Figure 10. Drone photo of 39MD45 with grid points (red dots) laid over.

The terrace surface on BBCHPC lease land between the cutbank and the highway right-of-way encompasses about 1150 square meters (Figure 10). 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 11).



Figure 11. 1904 military map of Fort Meade showing laundress/NCO housing at center-right removed by later highway construction (double white lines).

Excavations done as part of the current project were too shallow to assess the potential of the lower soil to contain cultural materials. All the cultural materials encountered were on the surface or in the upper soil.

Metal Detector Survey

Because of the site's location on a military base that was active until World War II and that continues to be used for South Dakota National Guard training exercises, it was assumed that metal would be ubiquitous across the site, possibly forming a continuous "pavement" in the near-surface deposits. To explore the distribution of metal items, a White M-6 detector was passed over seven transects measured off the grid established by USD, as follows:

1. Creek bank from Edge Point 3 to Edge Point 7
(UTM 13/4918945.802/ 621078.178 to 13/4918985.085/621100.536)
2. Fence point 20 to Edge Point 3
(UTM 13/ 4918922.078/621084.073 to 13/4918945.802/ 621078.178)
3. Grid line from Grid Point A3 to Grid Point I3
(UTM 13/4918902.578/621095.877 to 13/4918982.259/621100.832)
4. Terrace edge from Edge Point 9 to Grid Point K8
(UTM 13/4918995.924/621102.82 to 13/4919000.894/621151.924)
5. Grid line from Grid Point K8 to Grid Point F8
(UTM 13/4919000.894/621151.924 to 13/4918949.812/621148.902)
6. Grid line from Grid Point F8 to Grid Point F2
(UTM 13/4918949.812/621148.902 to 13/4918953.124/621088.899)
7. Grid line from Grid Point K8 to Grid Point K18
(UTM 13/4919000.894/621151.924 to 13/4919000.426/621251.829)

As expected, metal items occurred across the terrace containing Soapsuds Row; however, two patterns emerged from the metal detector data. First, metal hits tended to be more concentrated along the western side of the project area (Figures 12-14). Second, more metal items occurred along the creek bank than in the middle of the terrace remnant. No explanation for these patterns is offered here because we did not follow up with subsurface investigations of the metal hits. This patterning may reflect either historic use of the terrace or natural and/or human-caused site disturbance that disproportionately affected the portion of the terrace closer to the highway.



Figure 12. Bureau of Land Management archaeologist Brenda Shierts recording features on the terrace surface at 39MD45; view to west-southwest.

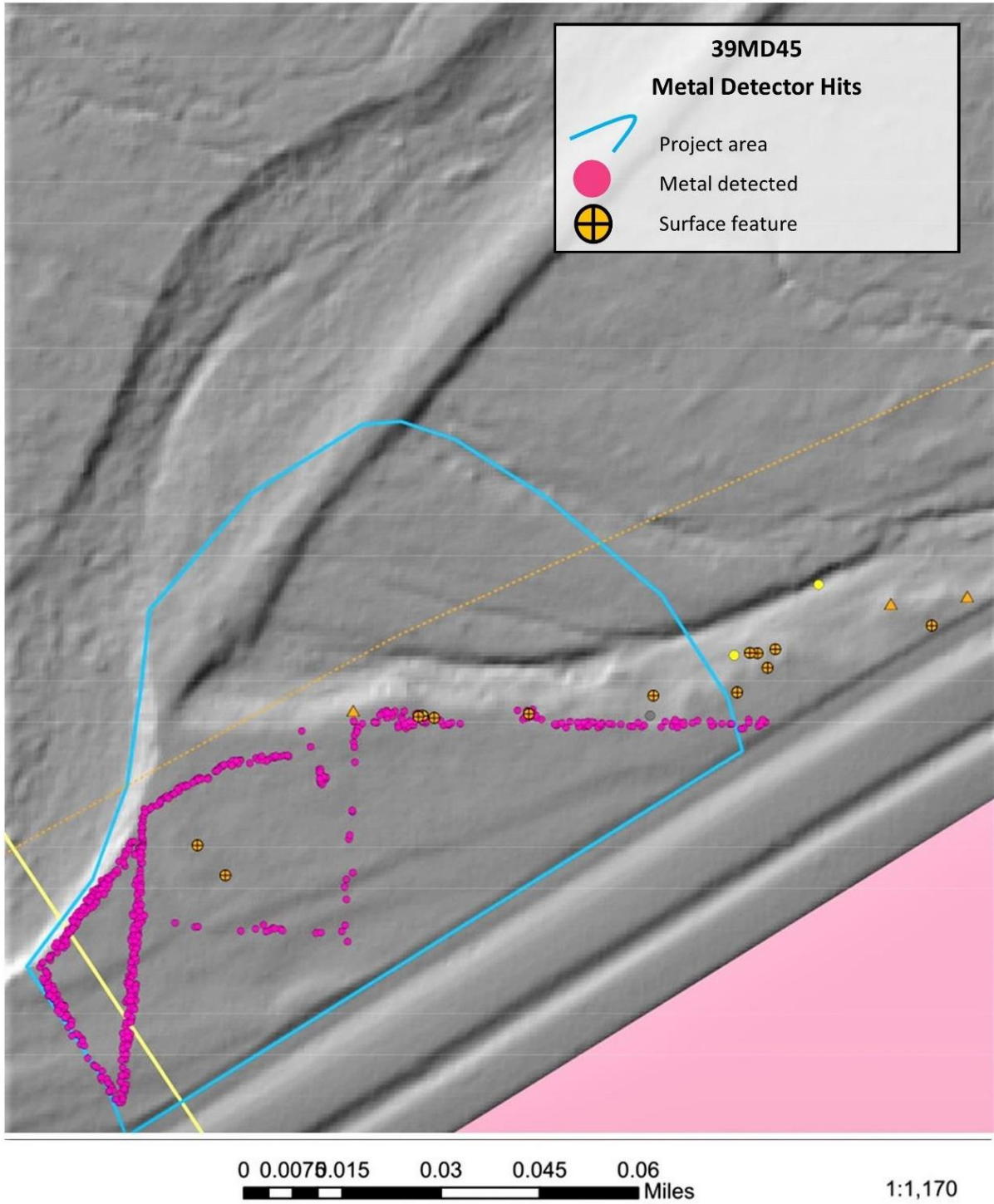


Figure 13. Distribution of positive metal detector hits (pink dots), showing heaviest concentration of subsurface metal items on the west and north sides of the site.

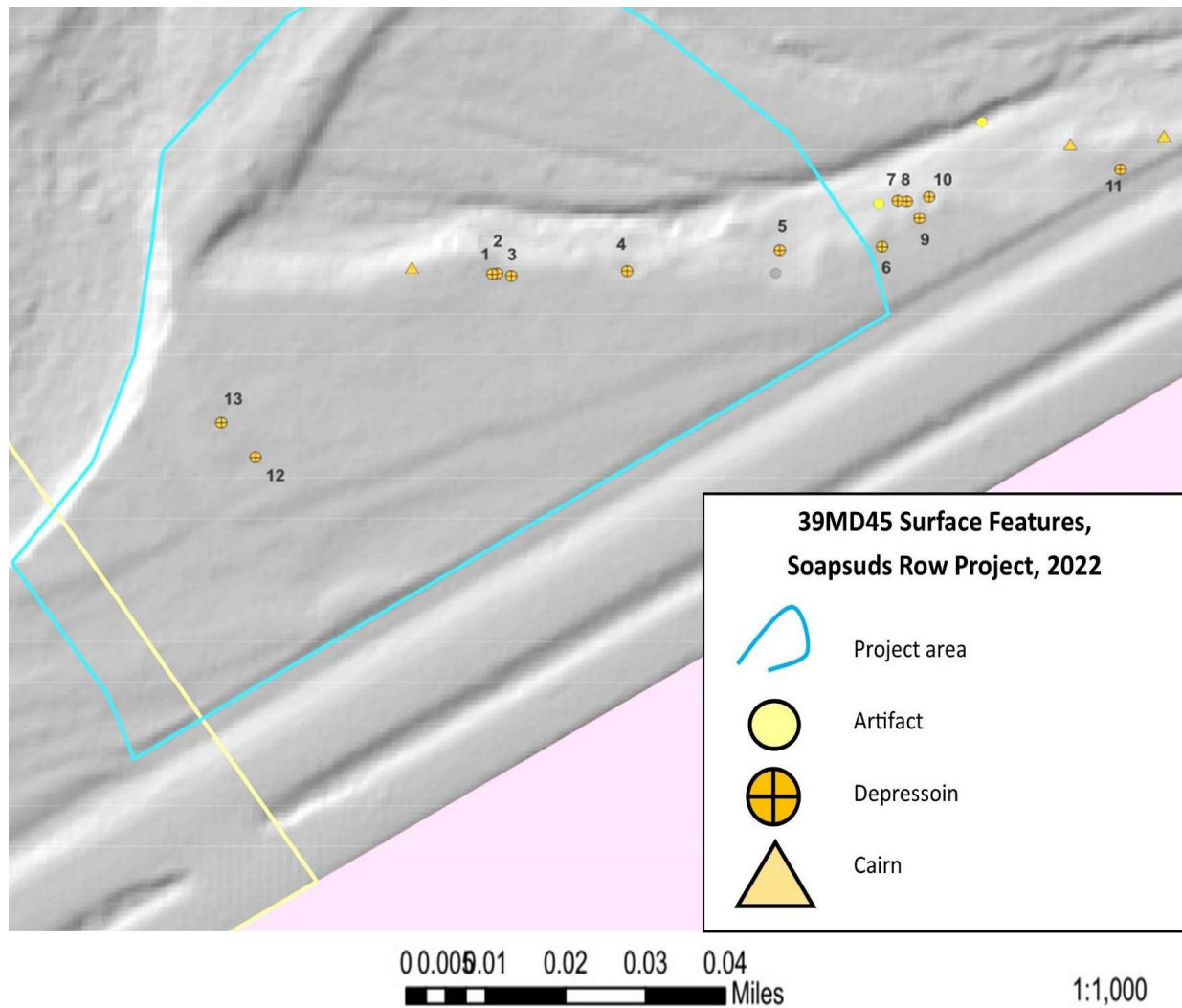


Figure 14. Distribution of surface features, 39FA45.

Surface Survey

Project personnel located and mapped a series of features exposed on the site surface. These included 13 depressions, scattered across the terrace surface, and three cairns near the cut bank (Figure 14). They also found two artifacts from the early cavalry post: a beer bottle and a brick. None of these features was investigated further; the artifacts were collected and included in the analysis presented here.

Excavation Results

Features

The **Feature 1** number was given to cut bone that appeared to be multiple pieces, but upon excavation was a single cattle bone. This number was therefore removed from the feature list.

Feature 2 is a large stone cairn partially exposed on the terrace surface along its northern edge (Figure 15). The feature is likely precontact and unrelated to the cavalry post era of the site. The visible portion of the feature measures 2.1 meters east to west and 1.6 meters north to south at a depth equal to the site datum. The feature is estimated to extend 30 cm below datum, based on a partial exposure in the terrace bank. It consists of about 23 visible stones with an undermined number of additional stones mostly or completely under the surface. Visible stones range from 13 to 20 cm in maximum dimension. No attempt was made to identify stone types.



Figure 15. Feature 2 cairn at lower center.

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 (Figure 16). The feature 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 a line of an apparent effluent forming a coral-like calcified structure. These occur in the C horizon, with the effluent resting directly on a natural gravel lens. Artifacts associated with this feature are 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.



Figure 16. Feature 3 gravel pile, ash lens, and animal bone exposed in the east wall of Unit 2.

The Feature 3 fill was collected for flotation. The light fraction from the north half of the feature contained seven uncharred seeds, including one grass seed, two tiny pressure flakes of chert and chalcedony, and a small amount (3 ml) of charcoal. The heavy fraction of the north half of the feature consisted of 430 ml of sand and silt, 400 ml of limestone gravel, and about 100 ml of the unidentified effluent. By weight, the heavy fraction was 47% silt and sand, 40% gravel, and 13% effluent. This sample also contained one cut nail and a tiny fragment of an unknown substance, possibly leather. The south half of the feature yielded one piece of eggshell, five very small bone fragments, and very little charcoal (1 ml) in the light fraction. The heavy fraction contained a small amount of sheet metal fragments, two bone fragments, a small amount of charcoal or coal, and a piece of metallic thread. The heavy fraction from the south half of the feature consisted of 120 ml of silt and sand and 200 ml of gravel. By weight, this subsample was 38% sand and silt and 62% gravel; it did not contain the unidentified effluent. Gravels ranged in maximum dimension from 7.44 to 1.48 cm, with most falling between 2 and 3 cm.

At other archaeological sites, soap production or laundering was identified on the basis of elevated levels of phosphorus, potassium, and magnesium, in one instance in association with straight pins, sewing needles, buttons, and a thimble (Phillippi and Matthews 2017:6). Wood fires tend to produce soils with high levels of potassium and phosphorus. Soils inside covered spaces tend to have higher levels of calcium and strontium (Middleton and Price 1886:679).

A photograph and oral accounts of a so-called soap house or washhouse in Kentucky dating from the 1880s to the 1920s indicate that it took the form of a square or rectangular frame building with clapboard siding and a shake-shingled shed roof. This building, used for soap-making and laundry tasks, was near a brick outdoor hearth where large copper kettles were used for soap production (Stottman and Prybylski 2004:13). An outbuilding at another site in

Kentucky contained an open hearth with a large built-in kettle, probably also used for laundry (Stottman and Prybylski 2004:19).

Feature 4 is an extension of Feature 5 into the west half of Unit 3. It appears that the privy (Feature 6) was excavated through Feature 4 and 5, meaning that the latter represents activities taking place before the privy pit was dug. A flotation sample had four small splinters of wood and 70 ml of charcoal in the light fraction. The heavy fraction sample from Feature 4 contained 360 ml of silt and sand, 100 ml of gravel, and 50 ml of the unknown effluent. By weight, the heavy fraction sample was 87% sand and silt, 9% gravel, and 4% effluent. The only artifact in this sample apart from the wood fragments was a thin piece of transparent flat glass.



Figure 17. Feature 5, showing the line of rehardened material extending diagonally across Unit 2 and extending into the southeast portion of Unit 1 and the west portion of Unit 3. The middle portion of the material was removed in excavation.

Feature 5 is a line of the unidentified rehardened effluent extending from the northwest corner of Unit 1 diagonally across Unit 2 and into the southeast corner of Unit 3 where it is truncated by the east wall of the unit (Figure 17). This feature is directly east of Feature 3 and overlaps it vertically but extends slightly lower. Feature 5 rests directly on a lens of alluvial gravels that forms the boundary between the surface soil and the buried soil.

Feature 6 is the privy pit appearing in the southeast corner of Unit 3 (Figure 18). This feature was visible below surface as a truncated circular area of dark soil. Excavation was terminated before the bottom of the feature was reached, so its depth is unknown. The feature fill contained whiteware dish fragments, blue and brown transferware dish sherds, 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 18. Feature 6 with wood, bottle, and glass inside privy pit and more bottles and a brick just outside the privy hole.



Figure 19. Feature 7 exposed in north wall of Unit 6: line of cobble-sized rocks at top with deteriorated logs immediately lower. Curved object at upper left next to the log is a horseshoe.

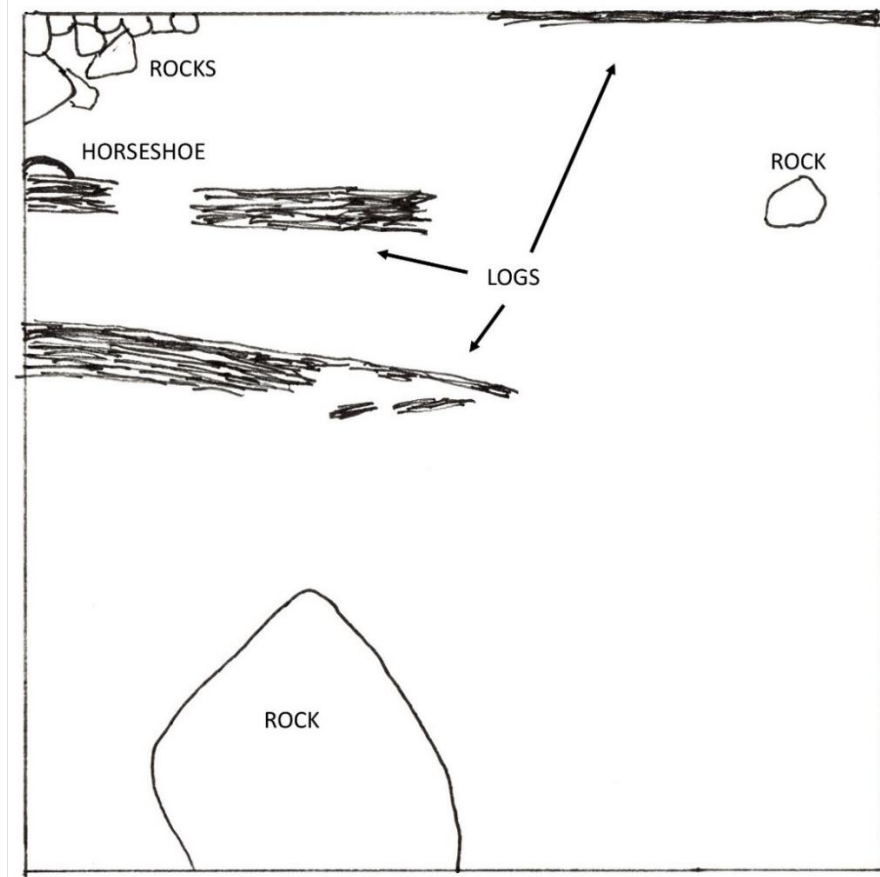


Figure 20. Sketch of Feature 7 exposed in north wall of Unit 6: line of cobble-sized rocks at top with deteriorated logs immediately lower. Curved object at left next to the log is a horseshoe.

Feature 7 is 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 19 and 20). This appears 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.

Feature 8 is a cluster of artifacts within a mottled area of soil in the southeast quadrant of Unit 6. This appears to represent a post-1930 trash discard pile.

Artifact Analysis

Initial processing of artifacts took place at a temporary field laboratory. Artifacts were sorted by type, keeping those from each level and unit together. Stone, brick, ceramic, and glass artifacts were washed and dried. Metal and leather artifacts were brushed clean or left uncleaned, depending on their fragility. Following field work, artifacts were further analyzed as to age and purpose, and cataloged for curation. In this analysis, artifacts from the two excavation blocks (Units 1-3 and Units 4-6) are considered together, as they are of the same age and appear to be related to the same occupation and use of the site. All artifacts are curated at the South Dakota State Historical Society Archaeological Research Center in Rapid City, South Dakota.

Comparative Sites Used for Artifact Analysis

Because few laundress quarters from frontier military posts have been formally investigated, comparative material is limited. Analysis of materials from 39MD45 was assisted by reports on the following set of sites, which overlap with 39MD45 in time, function, or association with military installations.

Fort Sisseton. Excavations at Fort Sisseton in 1993 focused on two areas at the old cavalry post, both used to house laundresses and scouts. This fort, located in eastern South Dakota, was in operation from 1864 to 1889, thus overlapping with Fort Meade for 11 years. No structures remained above surface, but excavations uncovered the remains of a log building in the laundress area (Kapler 1994:1). The other feature excavated was a 72-inch-deep latrine or dump, containing layers of cultural materials separated by layers of lime. Among the 850 artifacts found in the latrine/dump feature were brick fragments, wood, plaster, nails and hardware, cartridge casings, bullets, pipe fragments, tin cans, flat glass, bottles and bottle glass, doll parts and toy figurines, as well as many fragments of dishes and cookware. Bottles had been used for government medicine, patent medicine, liquor, condiments, and perfume. Five flasks decorated with various designs were found, along with bottles for wine and champagne. An insignia pin fragment and a finger ring were also recovered. Remains of pencils, jewelry, safety pins, shoes, a thimble, a toothbrush, a few comb fragments, some marbles and dominoes, and a whetstone provided additional clues to activities at early Fort Sisseton. Clothing-related items were buckles, a variety of buttons, including military uniform buttons, and a few pieces of highly deteriorated cloth. Three coins were found, dating 1856, 1876, and 1877 (Kapler 1994).

Fort Phil Kearney. This military post was in use from 1866 when construction began to abandonment in August of 1868. Cheyenne forces burned the fort to the ground shortly after its abandonment. Excavations of the commanding officer's quarters and the sutler's store in 1991-1992, completed to enhance interpretation focused on data retrieval (Fox 1994:1-3). Although the social context of an officer's house and the local store vary from laundress quarters, the proximity in time and geography support the possibility of artifact comparison.

Fort Union, New Mexico. The National Park Service conducted excavations at the ruins of Fort Union, an adobe military post in New Mexico used from 1851 to 1891. These excavations included the laundress quarters in use during the latter part of that period. Unfortunately, no reports were prepared, and no detailed information is available. The only finds reported were an area of packed surface between the laundress housing and the bakery; an 1859 Canadian penny, a piece of inexpensive jewelry, and 105 military buttons (Levine and Westbury 1992; Wilson 1965). Without a more detailed list of artifacts and potential features, this site is of limited use for comparison with 39MD45.

Fort Bowie. This military post was founded at Apache Pass in what is now Arizona on July 28, 1862. It served as one of the command posts in the area through the 1880s. The last troops left on October 17, 1894. Excavations to support site stabilization and emergency salvage took place in 1967 and 1968 recovering about 17,000 artifacts. Artifact analysis took place about four years later and is documented in a volume entitled *Fort Bowie Material Culture* (Herskovitz 1978).

Steamboat Bertrand. The steamboat *Bertrand* was hauling cargo up the Missouri from St. Louis to Fort Benton, Montana, when it sank in what is now Nebraska. The boat was quickly

covered over by river-borne silt, sealing the cargo under what would become a farm field. *Bertrand* sank in 1865, just 13 years before the establishment of Fort Meade. The results of the *Bertrand* excavations thus provide an unusually complete picture of items being exported to frontier military posts and towns (Petsche 1974). Like Fort Benton, goods and supplies for Fort Meade were transported up the Missouri; however, Fort Meade was far from the river. Cargo for Fort Meade was unloaded at Fort Lincoln or Fort Pierre and loaded onto ox- or mule-wagons for the overland stretch of the journey, about 200 miles from Fort Pierre and 270 from Fort Lincoln. The need for overland transport may have affected buyers' choices of goods; however, it is reasonable to use the *Bertrand* cargo as a guide to items likely imported to Fort Meade.

The *Bertrand* carried a wide variety of items, including foodstuffs, liquor, patent medicines, textiles, clothing, shoes, household goods, mining supplies, farming supplies, nails and other building materials, tobacco, pipes, cartridges, gunpowder, howitzer ammunition, percussion caps, ledgers, school primers, and shoe repair supplies. Laundry-related supplies on the *Bertrand* included lye and castile soaps, starch, washboards, washtubs, tallow, sewing supplies, and thread. Most of the beer and many of the manufactured items came from St. Louis; however, some items, including laundry starch, were made in the Northeast or Ohio.

The first railroad to reach Sturgis and Fort Meade was completed in 1889, giving the quartermaster and local businesses a new option for transportation of goods and supplies.



Figure 21. Brittany Kahl and Vicki Vogel processing artifacts in the field lab.

Knapped Stone and Glass

Artifacts made of stone using pre-contact techniques were very sparsely distributed throughout the excavation units and along the cut bank exposure in the upper soil.

A large broken flake tool made of tan Hogback quartzite was found near the surface in Level 1 of Unit 1 (acc #22-0042-015; Figure 22, top). This tool fragment is 6.76 cm at the longest point, and 2.8 cm wide. It is 1.40 cm thick. The rounded edge has been sharpened. The tool displays a hinge fracture, suggesting that it broke during manufacture or resharpening.

A brown chalcedony decortication flake has retouch on the cortex side near the striking platform but is not otherwise retouched (acc #22-0042-417; Figure 22, lower left). It probably was used as a unifacial cutting tool. A fine-grained gray chert flake has been unifacially retouched along two edges to create a scraper (acc #22-0042-149; Figure 22, lower right).

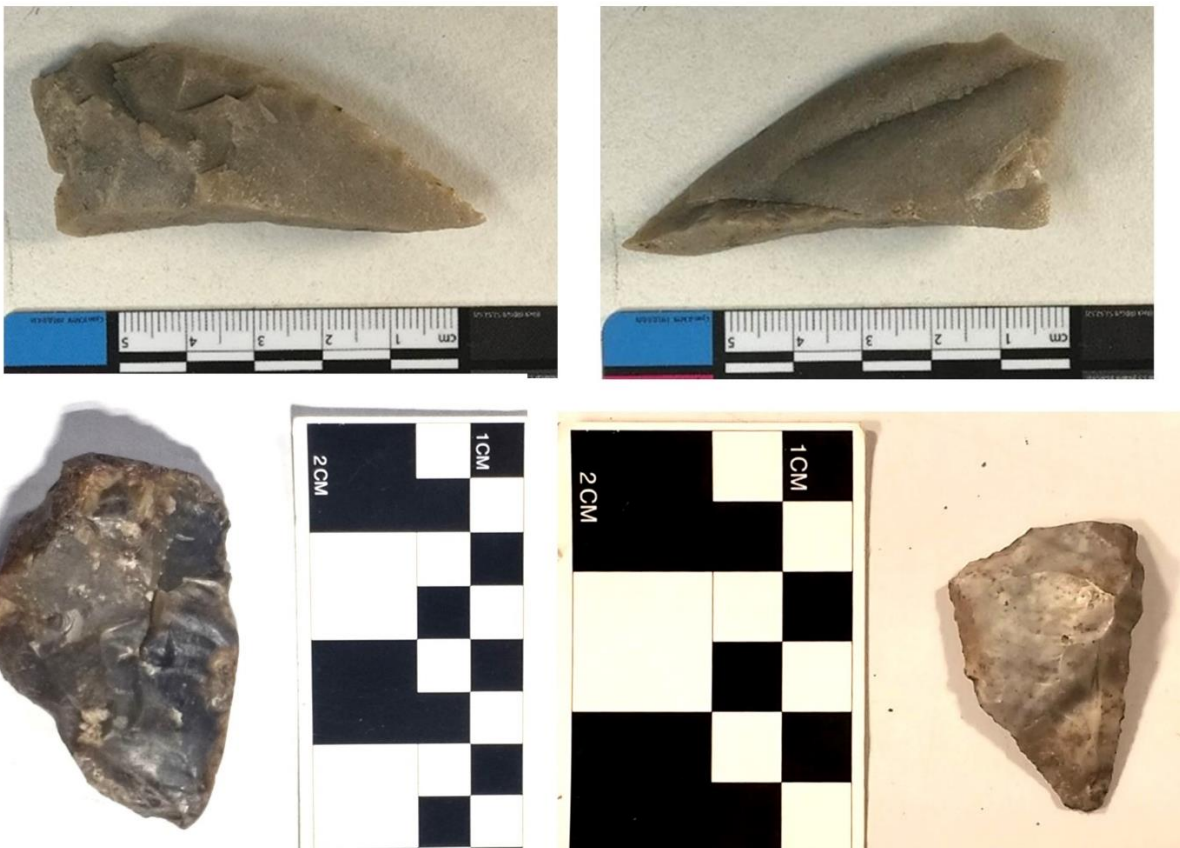


Figure 22. Top, broken quartzite flake tool from Unit 1 Level 1 (acc. #22-0042-015); lower left, retouched decortication flake of brown chalcedony from Unit 5 Level 3 (acc #22-0042-417); lower right, unifacial tool of gray chert from Unit 3 Level 2 (acc #22-0042-149).

Two cores and some tiny flakes were found near the surface of Unit 4. These artifacts are of locally occurring gray or purple chert (acc #22-0042-400; Figure 23). In all 11 flakes and pieces of shatter were found in the excavations. These pre-contact artifacts are widely scattered throughout the excavation units, occurring at several depths. They seem to represent items present in the soil when laundress houses and outbuildings were constructed.

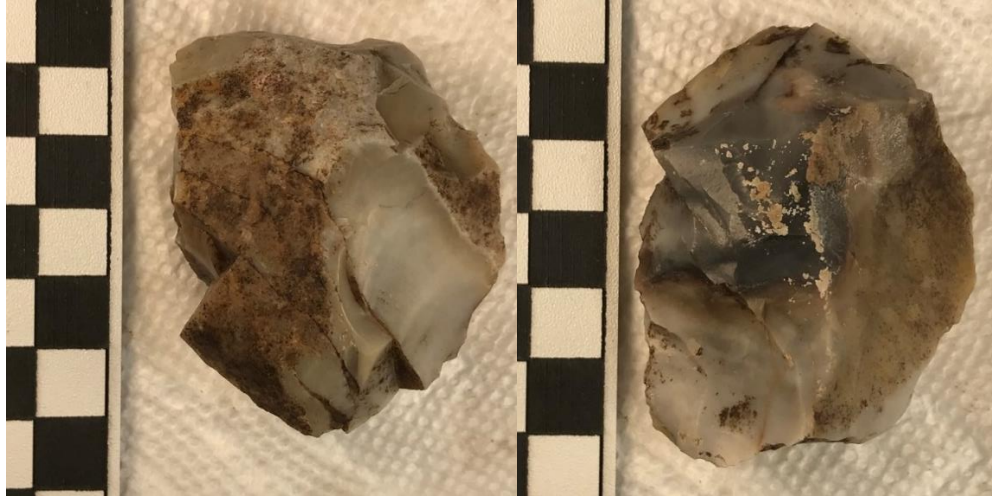


Figure 23. A gray chert core from near the surface in Unit 4 bears distinct flake scars on two surfaces (acc #22-0042-400; centimeter scale).

Five flakes deliberately struck from bottle glass show that older stone-knapping techniques were being applied to modern materials at the site (acc #22-0042-014; Figure 24). These artifacts indicate the shaping of thick pieces of glass to create cutting and scraping tools. The five flakes were found in Level 1 of Unit 1. The two flakes on the left side refit to make one longer glass flake. These are likely made from a dark green glass bottle with a large kickup in the base, as those bottles have especially thick glass.

Knapped glass has been found at other military posts regularly visited by Native Americans. This indicates recycling of discarded factory-made items by indigenous persons who had retained knowledge of stone knapping (King and Haecker 2018).

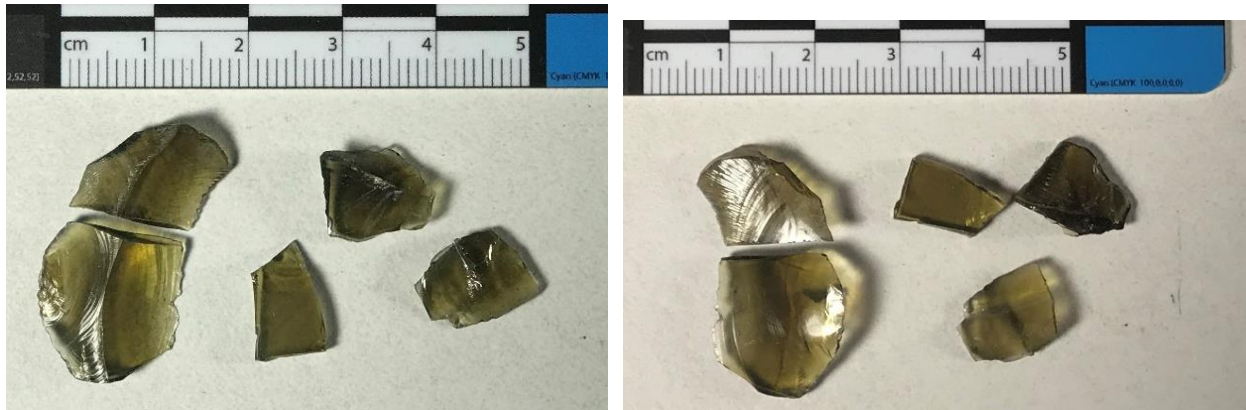


Figure 24. Flaked glass, ventral and dorsal sides (acc #22-0042-014).

Bricks

A light gray fire brick fragment was found during surface survey on the terrace east of the excavation units (acc #22-0042-006; Figure 25). It is not known whether this artifact was on the surface originally or displaced for example by road construction or bottle hunters. Lichen on the end of the brick attests to it being on the surface for at least several years. In any case, the brick is consistent in age with other items from the early years of Fort Meade.



Figure 25. Evens and Howard fire brick found on surface of 39MD45 (acc #22-0042-006).

Approximately half of the brick remains with measurements of 6 inches on the longest side from the whole side to the longest point on the broken end. It is 4.1 inches across the top by 2.6 inches thick. A partially legible maker's stamp reads EVENS & HO on the top line and ST LOUIS on the bottom line. This refers to the Evens & Howard Fire Brick Company of St. Louis, Missouri. Originally known as the Cheltenham Fire Brick Works, this company started operation in 1837. It was taken over by Evens and Howard in 1867.

Beginning in 1837, the brickworks manufactured handmade fire brick, machine made retorts, furnace blocks, sewer pipe, and wall coping. Known as the Cheltenham Fireclay Works after 1855, the 133-acre plant mined local clay on the factory grounds (Figure 26). Evens and Howard took over in 1867. They obtained clay from three mines, two in St. Louis and one in Glencoe, Missouri. Because they could ship either by rail or by river, the company advertised quick shipping. Evens and Howard Fire Brick Company products became so popular that they were known nationwide and internationally. Several fires in the 1800s destroyed buildings and initiated construction of new ones at the plant. The company was held in such high regard that they continued to thrive despite the fires. The demand for building materials was high, and the company expanded to produce sewage pipe and tile.

This brick was likely acquired at Fort Meade for use in a chimney. The 1900 Evens & Howard catalog illustrates fire brick in various shapes and sizes. The brick from Fort Meade appears to be a basic "square" fire brick model. The stamp on the brick is not time-diagnostic.

Three reddish pink or reddish buff bricks were found in the privy feature (acc #22-0042-218, -247, and -248). These bricks are not stamped. These probably were manufactured locally. The bear impressions from grass, suggesting that they were dried directly on the ground. Sturgis had a brickworks by 1887.

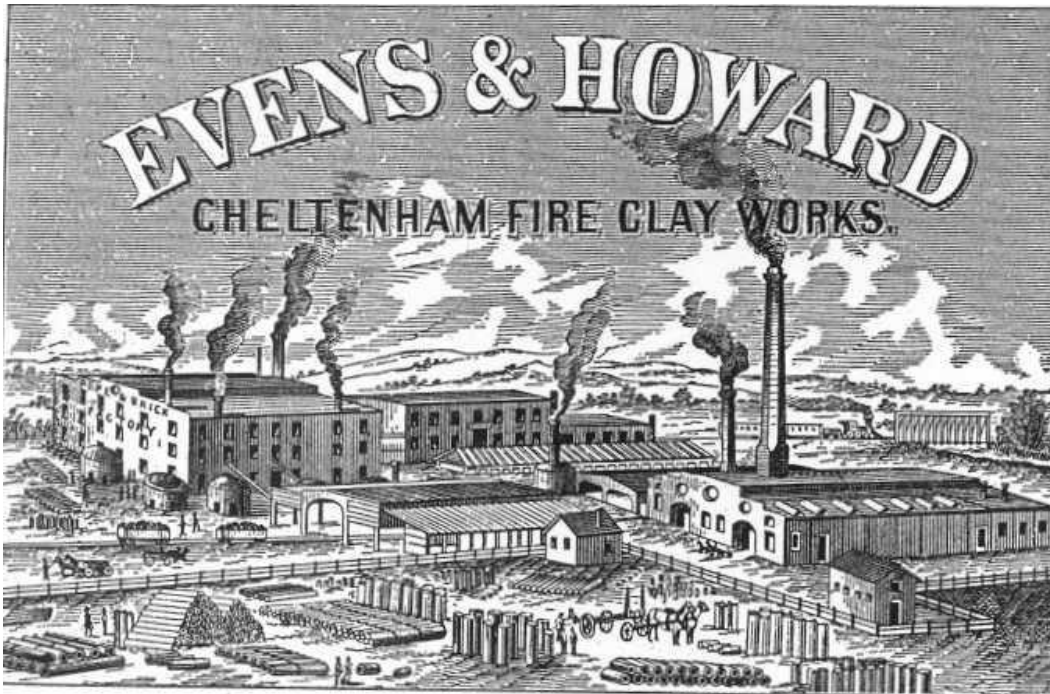


Figure 26. Evens & Howard brickworks, St. Louis, about 1880.

Nails

The two excavation blocks contained several hundred nails, including both cut and wire nails. Wire nails were invented in France in the early 1800s. By 1850, the French had invented machines to manufacture wire nails, and the gradual change from cut to wire nails began. The period from 1850 to 1888 was the high point of the cut nail industry. By 1902, the wire nail industry accounted for almost 100 percent of nail production (Adams 2002; Rosenberg and Kvietok 1982). Rosenberg and Kvietok (1982:86) developed the following approximation of wire nail to square nail occurrence in sites of different ages is:

- 0% wire nails, pre-1887
- 0-20% wire nails, 1887-1889
- 21-75% wire nails, 1889-1895
- 76-99% wire nails, 1896-1902
- 100% wire nails, post-1902.

Overall, the wire nail to cut nail ratios at 39MD45 fit this scheme, with wire nails making up 38% of the nails from the combined excavation units (Table 1). Assuming the buildings represented by these nails were the original laundresses' houses razed in 1889, the percentage of wire nails accurately reflects when the houses were constructed. In other words, the earlier date indicated by the nails, as opposed to the rest of the artifact assemblage, probably indicates that they were used in the earlier phase of construction of laundress housing, while the assemblage as a whole includes materials from the occupation of the later houses. It also seems likely that nails were salvaged for reuse, also biasing the wire-to-cut nail ratios toward earlier dates.

The percentage of wire nails was slightly higher in Units 4-6, associated with the log structure, than in the units associated with the privy. Wire nails made up 46% of the nail assemblage in Units 4-6 and 33% in Units 2 and 3. The lowest wire-to-cut ratio was in Unit 2,

likely because later materials were discarded elsewhere, such as in the privy or the possible trash pile in the southeast corner of Unit 6 (Figure 27). This tends to support the observation that the effluent feature in Units 2-3 is older than the privy pit in Unit 3, which cuts through the other feature, but it is clear that the privy was used for deliberate disposal of artifacts from later use of the site. Unit 3, which included the privy pit, contained 80% of the nails found sitewide.

Unit	Wire Nails	Cut Nails	All nails	Percent wire	Excavation Block
2-3	159	326	485	33	Privy (combined)
4-6	38	50	88	43	Log Structure (combined)
Site total	197	376	523	38	Both

Table 1. Percentage of wire nails in excavation units, 39MD45.

No clear pattern by depth emerged from the Unit 3 data, which was the only sample large enough for meaningful interpretation. The upper three levels contained 33, 40, and 39% wire nails; Levels 4, 5, and 6, contained 36, 48, and 42% wire nails; and the lowest two levels had 19 and 25 percent wire nails, respectively. This rather random pattern probably reflects the disposal of nails of various ages in the refilling of the privy pit after its initial use as a privy. At the same time, the lower two levels seem to represent either older materials being discarded or an earlier episode of filling the pit with trash. Items in the lower levels exhibited evidence of burning in a hot fire (i.e., melted glass bottle fragments), further indicating more than one episode of filling the pit. This unit also contained three screws of various sizes.



Figure 27. Sample of nails from Unit 2, wire nails at top and cut nails below: left, Level 4, 50-55 cm below datum; right, Level 8, 70-75 cm below datum.

Unit 6 contained a concentration of 11 very small tacks in Level 1. At least half of these are clinch tacks used to attach shoe heels, thus expanding evidence of shoe discard from the privy area to the hypothesized log structure feature.

In Unit 3, the most frequent type of identifiable nail was the box nail, making up 29% of the nails that could be classified as to type, closely followed by common nails, making up 28% of the assemblage. Roofing nails comprised 7% and fine finish (furniture) nails and brads each made up 6% of the Unit 3 assemblage. This unit also contained sheathing, masonry, flooring, and rose-head nails. The units associated with the log structure (Units 4-6) had 38% common nails, 25% finish nails, 11% brads, 6% fine finish (furniture) nails, and only 4% box nails. Units 4-6 did not contain any recognizable flooring or roofing nails, despite their containing the log structure feature. The distribution profile of complete nails by length shows no significant difference between Unit 3 and Units 4-6.

Glass

Beer Bottles

Prior to 1873, beer was distributed only in barrels and kegs. After that year, the development of pasteurization techniques made bottling and shipping beer in glass bottles practical. Anheuser was the first company to use the process.

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 (acc #22-0042-004; Figure 28, left). 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).



Figure 28. Left, beer bottle base with M.G.+ mark; right, beer bottle with A&DH mark (acc #22-0042- 004 and -055).

Another beer bottle has the maker's mark "A & DHC" with mold mark "8" (acc #22-0042-005; Figure 28, right). 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 when an unknown party 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 and mold marks were found at Ft. Bowie with dates ranging from 1865 to about 1880 (Herskovitz 1978:8). A website by the Bureau of Land Management and Society for Historical Archaeology provides a date of about 1860 through 1884 for these bottles (Sha.org/bottle/machinemadedating).

No finish or shoulder is present on a beer bottle from Level 7 of Unit 3 (acc # 22-0042-315; Figure 29, left). The maker's mark on the base, "D. S. G. Co" with mold mark 8 readily identifies the bottle as manufactured by DeSteiger Glass Company (Herskovitz 1978:8). Investigators at Fort Bowie documented 49 DeSteiger bottle fragments bearing mold marks 8, 19, 39, G.H., and J. DeSteiger Glass Company bottles have been found in archaeological sites across the American West. Dates for the company are given as 1879 through 1896 (Toulouse 1971:167). There is no record of which brewery purchased the bottles the company made.



Figure 29. Left, beer bottle bottom with DeStieger Glass Company mark 3 (acc # 22-0042-315; right, beer bottle with mueslet closure and foil label from Unit 6, Feature 7 (acc #22-0042-317).

A clear or light green glass beer bottle neck and top found in Unit 6 near the log structure feature retained its wire closure and foil label (acc #22-0042-317; Figure 29, right). The label reads “Exquisite American Pilsner.” 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. His 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 at 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 30. Complete beer bottles from Unit 3, with modern beer bottle for comparison (acc #22-0042-317 and -318).

The privy feature in Unit 3 contained two complete beer bottles (acc # 22-0042-317 and 318; Figures 29, left and 30). These could not be identified as to brewer. They exhibit oblique spiral striations, indicating production by blowing glass into a mold in a circular or swirling motion. Judging by a distinct difference in the color of the glass, each bottle apparently bore a foil label on the neck below the blob-type finish.

Other Bottles

Feature 3 contained a bottle base made from dark green glass (acc #22-0042-033; Figure 31). The estimated diameter of the bottle is 2 ½ to 2 ¾ inches (68-70.7mm). The base is very thick glass with a small kickup, suggesting the contents created substantial pressure and needed a stronger bottle to prevent explosion. No maker's mark is visible on the bottle base; however, several possible flake scars are. It is possible this bottle base is the source for the dark green flakes described above.

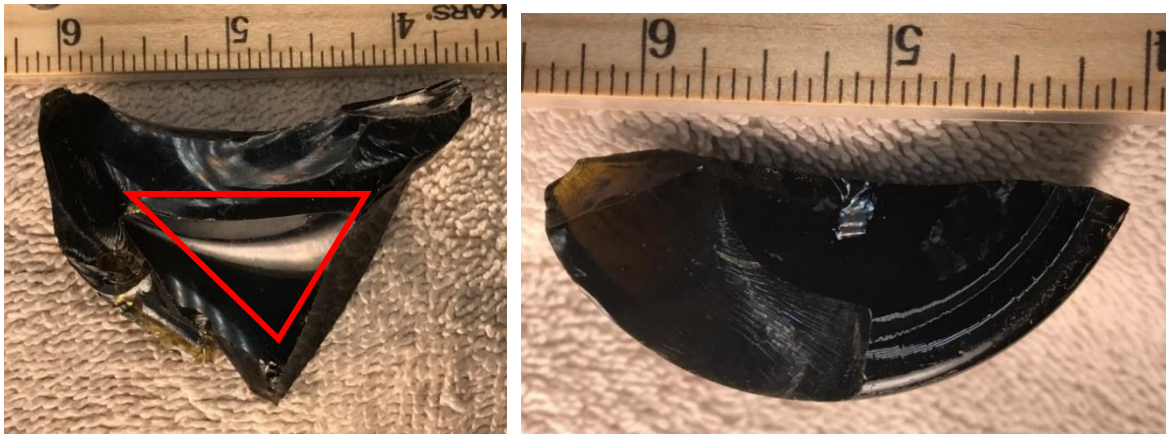


Figure 31. Dark green bottle base, Unit 2, Feature 3 (acc #22-0042-033). The red shape denotes the intact portion of the bottle interior. The exterior of the base is on the right.

Two bottle fragments, one from the privy in Unit 3 and one from near the log structure wall in Unit 6, are clear glass with what is called a brandy finish (Figure 32). These bottles have no screw threads, indicating a cork stopper. The closure of the first one is 1.1 inches (27.88 mm) in external diameter and 0.56 inches (14.2 mm) in internal diameter. It appears to have had a flat front and back with rounded shoulders. The main side mold seam is pronounced and extends up into the finish or rim, ending about a half inch below the top. The glass contains three or four elongated air bubbles, which suggest it was manufactured before 1920. The bottle is too incomplete for more exact dating. Three pieces of the second bottle refit into a brandy finish top. At least one side of the bottle was flat. It is too incomplete to be dated.

A complete bottle from the privy feature in Unit 3 probably contained patent or prescription medicine; however, the base has no maker's mark (acc #22-0042-319; Figure 33, left and center). The shape and size of this free-blown bottle are consistent with medicine bottles; however, this one does not have an embossed brand name that might confirm this interpretation.

A possible medicine bottle fragment of clear glass as found in the Level 3 of Unit 3 (Figure 33, right). There appears to be an "N" with a circle around it. Assuming that is the entire maker's mark, this was a bottle made by the Obear-Nester Glass Company in East St. Louis sometime between 1894 and 1915 (Toulouse 1971). It is not known what the contents of the bottle would have been; however, the company specialized in pharmaceutical containers.



Figure 32. Side and front view of bottle neck and rim from Unit 3.



Figure 33. Complete bottle and fragment with maker's mark, both from Unit 3.

A small fragment of a square or rectangular bottle is embossed with the letter R and S (Figure 34, left). This may be from a sarsaparilla tonic bottle from Dr. J. C. Ayer and Company. Tonics containing sarsaparilla root, along with many other ingredients, were popular from the mid-1800s well into the twentieth century. They were marketed as curing a great many ailments, but it is notable that sarsaparilla has antibacterial qualities and was listed in the US Pharmacopeia as a treatment for syphilis from 1820 to 1910. Many formulations had high alcohol content, as well. If this is indeed a fragment of a sarsaparilla medicine bottle, its presence at a frontier Army post is not unexpected.



Figure 34. Left, embossed bottle fragment; right, example of an Ayer's sarsaparilla bottle.



Figure 35. Left, bottle base from Unit 6, interior and exterior views; right, ca. 1850 French muscat bottle.

An aqua bottle base from Unit 6 has a pronounced basal indentation or “kickup (Figure 35, left). Bottles with this feature have been in use from the seventeenth century to the present day, and the presence of a kickup is not an indicator of manufacture date. The bottle also has a pontil scar, indicating that it was free blown, suggesting a date before the 1860s. The bottle has a flared-out heel (portion adjacent to the base). No exact match could be found; however, French muscat wine bottles from the early to mid-1800s are similar (sha.org/bottle/bases.htm; sha.org/bottle/body.htm#Free-blown%20bottle%20bodies).

Bottle closures include corks, lids, and the crown cap. One crimped metal crown cap was found in Level 4 of Unit 3 (acc 22-0042-403). The patent for crown caps was issued on February 2, 1892, but they did not come into common use until about 1895 because of skepticism about whether such a simple device could actually work (Rosenberg and Kvietok 1981).

A cork closure for a small glass bottle is indicated by a small metal stopper that would have been fitted inside a cork (acc #22-0042-456; Figure 36). Unit 6 yielded this metal (probably brass) stopper. It is embossed with “C.H. Selick, New York.” This company produced a variety of perfumes popular with men and women around the turn of the century (The Manufacturing

Perfumers' Association of the United States 1918). Cork perfume bottle stoppers with glass inserts were used from 1870 to 1920, those with metal inserts were used primarily from 1900-1910 (perfumbottles.org/dating-commercial-perfumes).



Figure 36. Left, metal insert for cork stopper (acc #22-0042-456); right, example of C.H. Selick perfume bottle with similar stopper.

Other Glass

The dark green glass at upper center in Figure 37 may be part of the bottle from which flakes were knapped (see Figure 31). The thin curved glass at the upper right may be from the chimney of a kerosene lantern. The curved heavy glass at the lower right is likely a container, perhaps a beverage bottle. The curved amethyst piece in the middle is from a bottle. It all makes the window glass at the lower right seem mundane, and yet it is important, too, in showing that the houses of Soapsuds Row had glass windows, at least by the late 1880s. Several pieces of window putty were also found in Unit 3.



Figure 37. Sample of glass from one level of the Unit 3 privy fill.



Figure 38. Left, glass tumbler fragment right, two fragments of jar or glass with a rim designed for a friction-fit lid.

In addition to bottle glass, the excavation units contained fragments of a clear glass tumbler and a vessel designed to take a friction-fit lid (Figure 38). The latter may have been a jelly glass; however, it is too fragmentary to reconstruct.

Ceramics

Consistent with accessioning policy for the South Dakota State Archaeological Research Center, this discussion divides household ceramic into four categories: coarse earthenware, fine earthenware, stoneware, and porcelain.

Coarse earthenware includes redware, yellowware and brownware. These ceramics are fired at comparatively low kiln temperatures and are quite porous. After firing this ceramic is completely opaque and when broken, the surface is granular and earthy looking. The paste color ranges from pinkish buff to brown. Some vessels, such as flowerpots, are not glazed. If they are glazed, the enamel is a distinctly different color in cross section (Rosenberg and Kvietok 1981).

Stoneware normally indicates a utility item requiring durability, such as crocks, jugs, pans, and mugs. Sometimes this ceramic is referred to as “grayware.” Vessels are made from a fine dense clay with low porosity. The color of paste in broken profile is pearl to dark bluish gray, mustard yellow, or reddish brown to deep blackish brown. The sherds are generally thicker in cross section. The glaze tends to look pitted or have an “orange peel” texture. Stoneware rarely crazes, meaning it does not often have surface cracks. (Rosenberg and Kvietok 1981).

Fine earthenware includes pearlware, ironstone, whiteware, and semi-porcelain. They are normally fired at higher temperatures than the coarse wares. The paste varies from cream to white and has various degrees of absorbency. All of the bulleted types below are clear glazed and may exhibit a considerable amount of crazing. They were machine made and factory produced.

- Pearlware has a pearly white surface with a slight bluish tint.
- Whiteware has a thick white and clear glaze that does not stick well to the white paste and often exhibits crazing. In cross section, the paste is porous.

- Ironstone has a chalk color to white surface. The paste is usually white and harder than that of whiteware. It is still made today, but peak popularity was 1850-1920. Over time, whiteware became thinner and lighter in color, exhibiting less crazing.
- Semi-porcelain is thicker and opaque, whereas porcelain is translucent. The glaze layer is not distinguishable in a cross section. The paste is white, looks like sugar, and is non-porous. It dates to the late nineteenth century and became the dominant tableware after World War I. Semi-porcelain is also called hotel ware. Most of the decorations on semi-porcelain are transfer prints and are under the glaze.

In South Dakota, these four types are all accessioned as fine earthenware (Rosenberg and Kvietok 1981).

Porcelain is fired at the highest temperature of any tableware. High density clays are used with a light to pure white paste color. Porcelain is known for translucency. Hard paste porcelains have a fused glaze on an extremely hard body. The body has a glassy conchoidal fracture and in cross sections is glassy throughout the body. This type was produced in America after 1880. Soft paste porcelains have a large proportion of powdered glass added to the clay, allowing lower firing temperature. In cross-section soft paste appears as a layer distinct from the glaze. Generally soft paste porcelain was imported from England until the twentieth century. Decoration on both hard and soft paste varieties is generally applied over the glaze due to the high firing temperature required. The maker's mark is either printed or imprinted.



Figure 39. Ceramic artifacts from Level 2 of Unit 3, porcelain fragment at far left, whiteware in middle and blue transferware at right.

At least two vessels are represented by the blue transferware ironstone sherds (Figure 39, right). The stem-and-leaf pattern is similar to, but not a match for the Aldine pattern, registered by the W.H. Grindley Company at Stoke-on-Trent, England in 1898. The Grindley Pottery produced earthenware and ironstone china for foreign markets, including the United States. The

sherds appear to be from a cup because some handle fragments are present. This cup was decorated on both the interior and exterior surfaces (Figure 40). The pattern with scenery remains unidentified; such patterns were very popular around the turn of the twentieth century. Many manufacturers at this time combined floral designs around the edges of plates, bowls, and cups with images of scenery in the center of the plate or bowl or on the outside of the cup; however, Grindley did not do so with the Aldine pattern. A tiny fragment of the maker's mark illustrates a pendant; this element appears on some Grindley marks that depict ocean-going ships; however, an exact match was not found.



Figure 40. Left and center, Refitted flow blue transferware sherds from Unit 2 (left sherd fits to center one); right, reverse side of sherd in center.

A single brown-on-white transferware sherd was identified as English ironstone from the T&R Boote company (Figure 41). The pattern is called Lahore; it was manufactured around 1880. A smaller brown transferware shed could not be identified as to maker or pattern.



Figure 41. Brown transferware sherd from T&R Boote Company, and example of tray with same china pattern.

A white dish or plate fragment has a mostly complete maker's mark reading "H. Burgess Burslem" (Figure 42). Pottery production at Kiln Croft, Burslem and Stoke on Trent, England, took place from 1864 to 1892 (thepotteries.org). This company produced "white granite ware" (ironstone china) for Canadian and American markets.



Figure 42. H. Burgess maker's mark and refitted sherds from site with same mark.

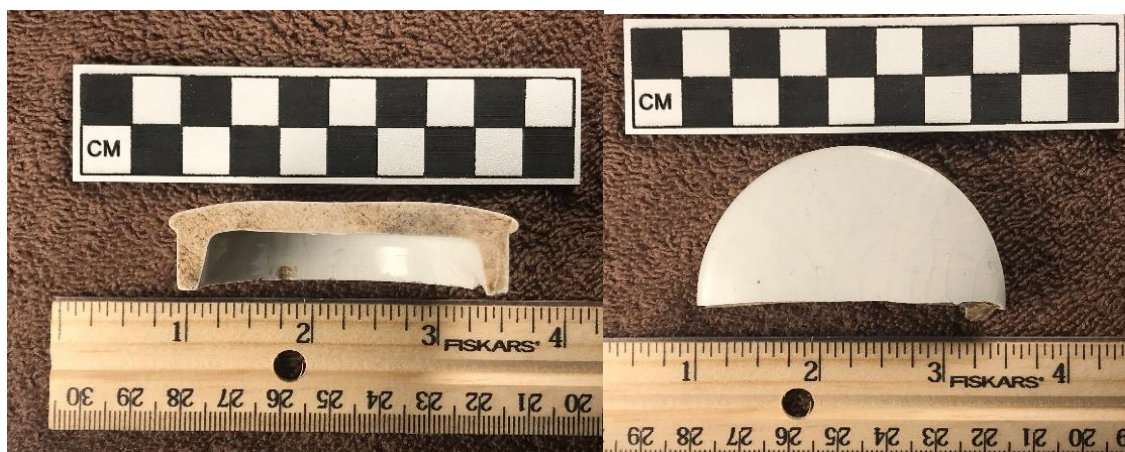


Figure 43. Ceramic lid fragment of unknown function, from Unit 6.

A white ceramic fragment appears to have been from a lid for a condiment or preserves jar; however, no exact match was found to confirm its function. No maker's mark is present on this specimen (Figure 43). Two pieces of a whiteware bowl were also found (Figure 44).

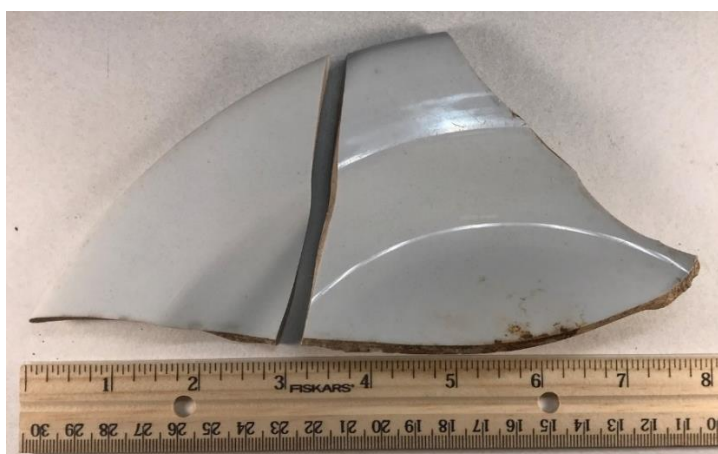


Figure 44. Large fragment of a whiteware dish from Unit 3 (acc #22-0042-107).

Four sherds of stoneware crockery were found; two in the privy feature and two near the log structure. These have a dark brown or orange glaze on the outside and a buff glaze on the inside. These appear to be from a crock or jug.

Metal

Metal Containers. The units containing and near the privy feature contained numerous fragments of metal cans, as well as the metal wash basin.

A rectangular and a round friction-type lid are from containers of unknown function (Figures 45 and 46). The round example may be from a baking powder can.



Figure 45. Obverse and reverse of rectangular can lid

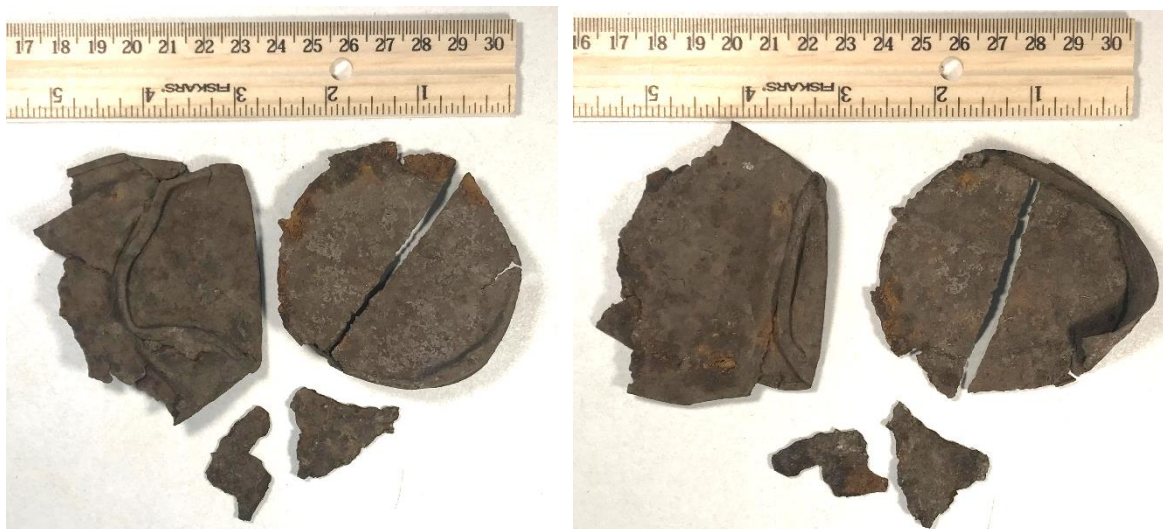


Figure 46. Obverse and reverse of can with friction lid.



Figure 47. Nested tin cans from Unit 2, associated with Feature 3 (acc #22-0042-055).

Two cans were found nested one inside the other in Unit 2 (acc #22-0042-055; Figure 47). Both cans are hole-in-cap tins that likely 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 is allowed to vent to force out excess moisture. Then when the time is right, a drop of solder is placed over the vent hole to complete sealing the can (Rock 1987).

The inner can may have been bent into a container with a rudimentary spout, but it is difficult to make this case with certainty. The outer can was about $4\frac{3}{4}$ inches in diameter and $4\frac{7}{8}$ inches tall. The hole in the top was about $2\frac{1}{4}$ inches in diameter. The inner can was about $3\frac{1}{2}$ inches in diameter and $4\frac{5}{8}$ inches tall. Both cans had been opened with an opener, a device that was invented before 1869.



Figure 48. Obverse and reverse of shaker or sprinkler lid (acc #22-0042-482).

The fill inside the cans was screened and contained some charcoal and burned wood, which were discarded. There were also small metal fragments, a cut nail, a straight pin made of non-ferrous metal which was likely brass, a shoe eyelet, and four small clear glass fragments.

A shaker or sprinkler lid was found in Level 3 of Unit 6 (acc #22-0042-482; Figure 48). This lid is about 1¼ inches in diameter, and is friction fit, not screw on. There are five holes in the lid. The lid is bent.

Metal Handle. A single enamel-covered metal handle was found in Test Unit 3 Level 2 (acc #22-0042-143; Figure 49). It is 3⅞ inches long and about 1¼ inches from the base's mounting to the outer edge of the handle. The inner part of the handle is rolled to prevent the handle from cutting the user. The mounting edges of the handle are beveled slightly outward for mounting to a bowl-shaped pan or basin. Enamelware similar to this was available from both the 1895 Montgomery Ward and 1902 Sears-Roebuck catalogs.



Figure 49. Metal Handle found in Level 2 of Unit 2 (acc #22-0042-143).

Metal Basin. A metal basin, probably of tin, was found near the top of Unit 3 (acc #22-0042-154). The handle illustrated in Figure 49 may be from the same artifact. It measures about 40 cm in diameter and is dish-shaped with a wide rim. It appears to have been a wash basin.

Buckles. Two metal buckles were found in Level 7 of Unit 3 (acc #22-0042-294; Figure 50, left). They measure 30.1 by 24.9 mm at the flattened wide end. Similar buckles were used on both clothing and horse gear.



Figure 50. Left, buckle (acc #22-0042-294); right, piece of scrap metal with wire nails attached (acc #22-0042-476).

Strap Metal. In addition to numerous small strips of flat metal, one larger piece of strap metal was found in Unit 6 (acc #22-0042-476; Figure 50, right). This item has openings to admit nails or screws, and two wire nails are still attached to it. The item's function was not determined.

Hinge. A small hinge was found in Level 5 of Unit 3 (acc #22-0042-232; Figure 51). The plates are about $\frac{3}{4}$ inch by $1\frac{1}{4}$ inch. It was probably used on a cabinet or cupboard door or on a box.

Unidentified Item. A metal item somewhat resembling an overall buckle in size and shape may have been part of a garter belt, but no exact match was found for it (acc #22-0042-215; Figure 51, right). This was found in Level 5 of Unit 3.

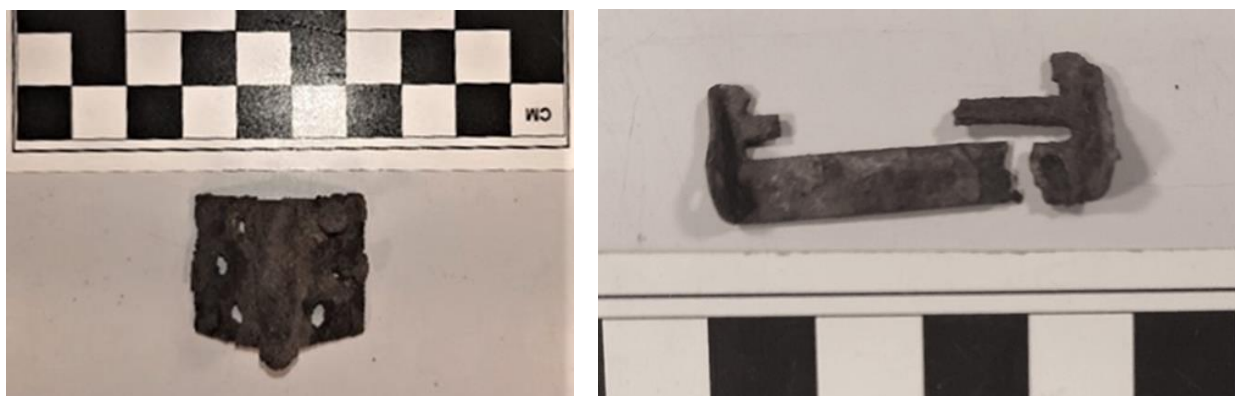


Figure 51. Hinge (acc #22-0042-242) and unidentified object (acc #22-0042-215), both from Unit 3 (centimeter scale).

Fencing Materials. A fence staple and a short length of three-strand barbed wire were found in Level 3 of Unit 3 (acc # 22-0042-162 and -163; Figure 52). Another fence staple was found in Level 7 of the same unit (acc #22-0042-293). Such staples were in use by the time Fort Meade was established and remain in use today. While the barbed wire is too fragmentary to identify with certainty, it probably is one of the following three types, all patented in 1881: Washburn's Seated Barb Three Strand, Nichols's Reverse Grip, or Nichols's Single Grip (Clifton 1970). We were not able to determine a date after which these types were no longer available.



Figure 52. Fencing materials: right, staples (acc #22-0042-163 and -293); left barbed wire (acc #22-0042-163).

Leather and Textile

Fabric. A tiny fragment of woven fabric was found between two rocks in Unit 6 (acc #22-0042-435; Figure 53). The scrap appears to have been partially burned.



Figure 53. Fragment of burned fabric (acc #22-0042-435; centimeter scale).

Footwear. Finding two fragments of a shoe on the surface near the excavation units would not likely have been noteworthy in normal circumstance (acc #22-0042-002 and -003). When eyelets were found subsurface, the documentation of these two small strips looked more important (Figure 53, left). At least two sizes of eyelets were found in several levels of the units near the privy feature. These included Unit 2 where three were found in Level 4 and Unit 3 where four were found in Level 1. Two pieces of a boot or shoe heel found in Level 4 of Unit 3 may represent another piece of the same item that produced the strips of eyelets (Figure 53, right). Shoe eyelets are not useful for dating, but they may indicate the type of shoes once left at the site by the size of the eyelets. Large eyelets suggest work boots or men's shoes. Smaller ones might be dress shoes for women or children. Those of the surface find, suggest either a lace up work boot or man's shoe. Shoe nails were found in both sets of excavation units.



Figure 54. Shoe fragments found on the surface (left; acc #22-0042-002 and -003) and fragments of a boot or shoe heel from Unit 3 (right; acc #22-0042-179).

Two shoe soles were found near the privy pit feature in Unit 3 (Figure 55). One may have been a slipper (acc #22-0042-275). It is 20 cm long. This would be a woman's size 3 or a man's size 5 (which no longer is in use). The other shoe sole is 25 cm long (acc #22-0042-242). This would be a man's size 10; woman's size 9.5 (which did not exist in 1900). In 1900, the average shoe size for women was a 4 and average size for men was a 6. This suggests that the second shoe belonged to a man. Women's shoes were not manufactured in this size historically.



Figure 55. Shoe soles from Feature 6 privy (acc #22-0042-275 and -242).

Button Hook. Unit 3 contained the working end of a shoe-button hook (acc #22-0042-388; Figure 56). These metal devices were used to draw shoe or spat buttons through buttonholes. They were used in the US primarily between 1850 and 1918. The more diagnostic portion of the device is missing, so it is not possible to date it exactly. The privy area of the site contained many eyelets from lace-closure shoes; this artifact expands the type of shoes present at the site to include button-closure types.



Figure 56. Button hook fragment from Unit 3 (acc #22-0042-388).

Buttons

Several buttons were found in excavating units 1-3 (privy area) and 6 (log structure area). Buttons have been made for a long time, and methods of manufacture are long lasting. They are familiar to us all and easy to recognize.

Buttons were more than just fasteners. A button charm string, also called a memory string, was a custom of young women from about 1860 to 1900. Custom dictated that buttons for the string could not be purchased, but rather must be gifts from family, friends, or even suitors. They could be traded, and women would have parties where they exchanged them. The charm string or memory string was displayed in the parlor, as it was common for guests to bring a button for the young lady of the house to add to her collection. Each girl hoped to have 999 buttons on her string, and that her fiancé would add the one thousandth as a folkloric marriage charm (Galler 2019). That was only one reason for hoarding buttons. If you were a laundress of the period, there were reasonably many others. Because of this, and the longevity of manufacture types, it is difficult to ascribe dates to buttons.

Metal buttons are the most common type in the assemblage. Two iron or steel buttons (one 9/16-inch and one 11/16-inch) were found in Units 1 and 3 (Figure 57 A,B,D,F). 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, it is common practice to save buttons for later reuse.

Four buttons of non-magnetic metal, probably brass, were found in Units 2, 3, and 6. Three are 11/16-inch size. All but one have four holes (Figure 57 C). They vary in form and manufacturing method, so probably were not part of a set despite their similarities. The other example is probably brass, 3/8-inch size, and has only two holes (Figure 54G).

One white glass button takes the form of a swirled orb, 3/8-inch size (Figure 57 E). The button is 3/8 thick. Mold marks are visible, and the glass on the lower side is in a snail shape. Beginning in the 1840s, one type of glass buttons was called a “swirlback.” Glassmakers made a swirl on the back of them before cutting off the glass, and a simple metal shank or metal staple was inserted into the hot glass (Fink and Ditzler 1993). The shank is now missing.

A four-hole 5/8-inch shell button was found in Unit 6, and a four-hole 7/16-inch button was found in Level 8 of Unit 3 (Figure 57 G, J). Finally, a single small two-hole bone button was found in Unit 2. This probably was used on an undershirt or drawers. Surprisingly, no embossed military buttons were found. Apart from the glass button, these were everyday, utilitarian buttons. These button types pre- and post-date the estimated age of the site, so they are of little use in narrowing its age.

Included with the buttons is a brass collar stud (Figure 57 K-L). These items were used to fasten men’s collars (sewn-in neckband or detached collar) at the front of the throat. The large, flat end was inside next to the wearer’s skin, and the smaller bulb was inserted through small holes in the collar. This allowed the wearer to fasten the detachable collar together and to the neck band of the shirt.

Hair comb. Three fragments of hard rubber appear to be teeth from combs (acc #22-0042-129, -256, and -339). These were found in the privy feature. This again indicates the importation of personal items.

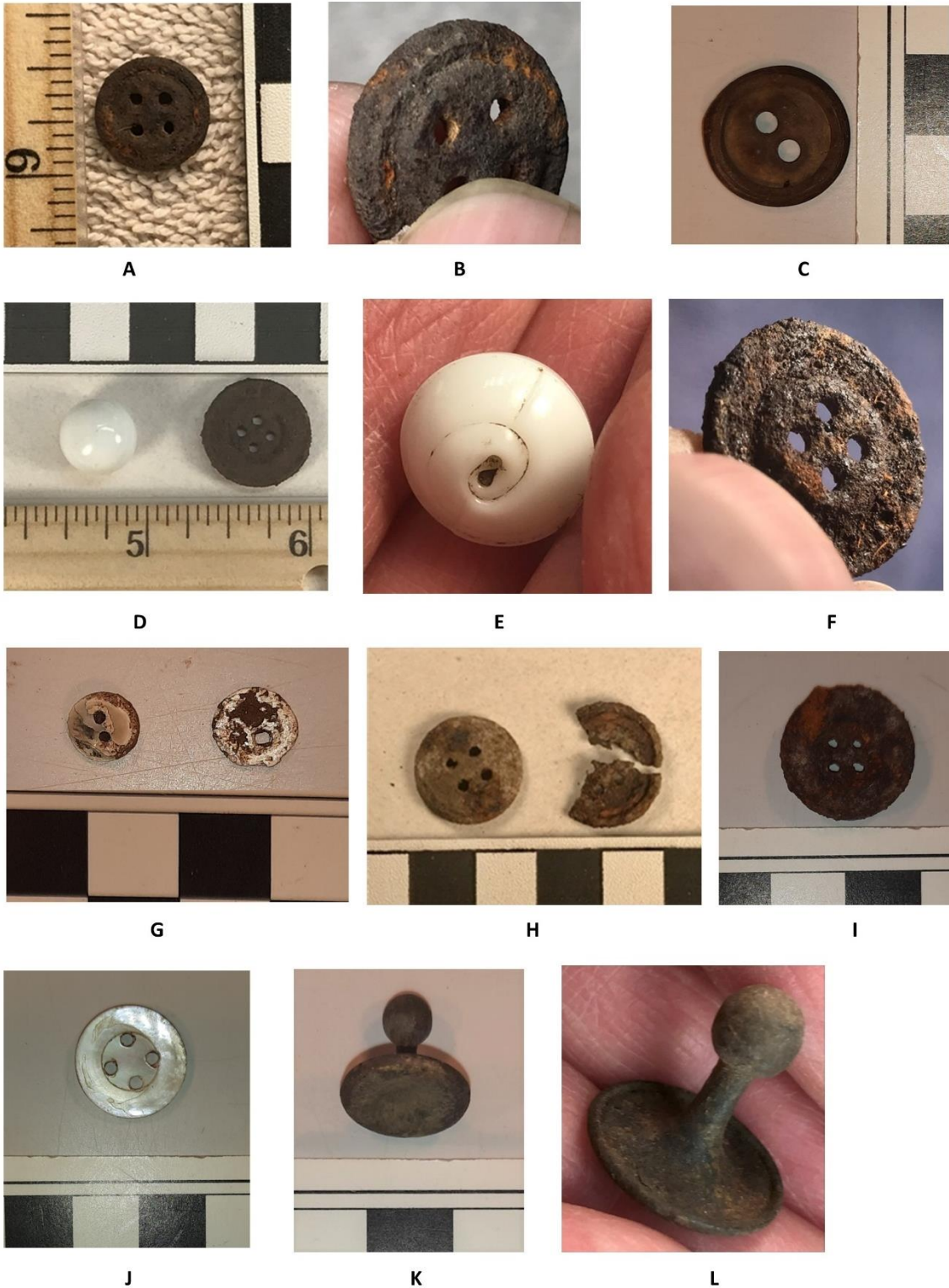


Figure 57. Buttons from 39MD45 excavations. A-B, iron button from Unit 1, Level 2; C, brass button from Unit 2, Level 1; D-F, glass shank button and iron button from Unit 3, Level 2; G, brass and shell buttons from Level 8 of Unit 3; H-I brass buttons from Unit 6; J, shell button from Unit 6; K-L, collar stud from Unit 3, Level 4; centimeter scales.

Tobacco Tags. Five complete and one fragmentary tobacco tags were found in the excavation units (Figure 58). All are round, but two different sizes are represented.



Figure 58. Tobacco tags from Level 4 of Unit 3 privy fill (Acc #22-0042-090); centimeter scale).

It is notable that tobacco tags were the only indicator of smoking found during the 2023 project. No pipestems, tobacco cutters, or other smoking paraphernalia were found in the excavations. The tags were used for labeling twist or plug tobacco starting in the 1870s and continuing in use through the 1920s. Many people collected the tiny tin medallions or saved them to redeem for prizes such as pipes or even furniture (Storino 1995). Quite a few companies used the round shape, and samples can be viewed on web sites such as Etsy. An example of a tag attached to a tobacco known to have been sold locally is below, along with an advertisement from a Rapid City newspaper (Figure 56).



Figure 58. Photo on the left is from an artifact collecting web site, from the right an advertisement in *The Black Hills Union*, a Rapid City newspaper dated Friday April 26, 1895.

The absence of pipe smoking paraphernalia could mean that the tobacco was being used to smoke as hand rolled cigarettes, as “snuff,” or as chewing tobacco. Tobacco also had medicinal uses, but given that each plug represents a “nickel’s worth,” there is more use than might be considered for one’s health.

Snuff was an inhaled product, with 16,000,000 doses consumed in the United States in 1905. To make snuff, tobacco from Virginia, Tennessee, or Kentucky was favored. This tobacco was considered to be of a higher grade than that used to make plug tobacco. Additional flavors in snuff were provided by additions such as rose and other floral oils, claret, honey, tamarind, and other herbal products. The tobacco was pulverized first in apothecary mortars, then through millstones. Generally, the finer the snuff, the higher the grade. After grinding, the snuff is fermented at between 90 and 140 degrees, with fermentation taking from 20 days to three months. At this point the consistency is something like “shoe black.” Perfumery and flavors are kneaded in last, maybe with a little salt and then the snuff is ready for packing, generally in stone jars (*Citizen-Republican*, May 18, 1905). From this information on the historic manufacture of snuff, it does not seem the tobacco tags from 39MD45 represent snuff use.

Prior to the Civil War, pipes, plugs, and cigars were the most popular means of tobacco use in the United States. The popularity of smoking cigarettes rose in the late nineteenth century, especially following the Crimean War. British soldiers brought the cigarette smoking habit home with them, allowing it to spread from there. In America pipes and cigars remained the primary indulgences, with middle-aged, middle-class men considered effeminate or un-American if they smoked cigarettes. This changed with the invention of the cigarette rolling machine. This machine could produce 120,000 cigarettes per day. Hand rolling cigarettes increased in popularity alongside, or perhaps prior to, the machine rolled variety, and remained popular especially in poor or rural areas (Sullivan 1999).

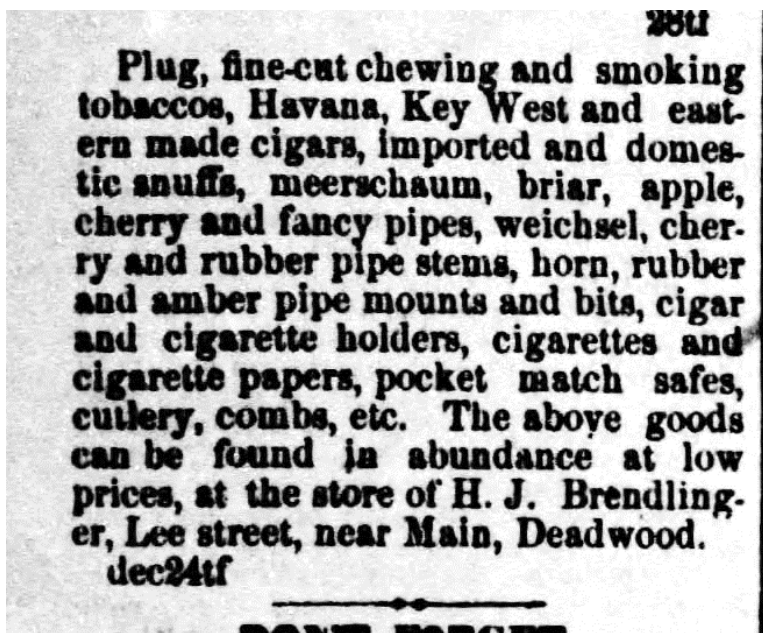


Figure 59. Advertisement from *The Black Hills Daily Times* May 2, 1880, page 2.

Whether the tobacco was in use as plug or cigarettes, both would have been easily available as seen by the advertisement above (Figure 59). In 1900, approximately seven pounds of tobacco were consumed on a per capita basis for every adult in the US. Of this about four pounds average were in the form of chewing tobacco, 1.6 pounds of pipe tobacco, and 0.3 pounds of snuff. In 1900, less than one pound of tobacco per capita was consumed as cigars or cigarettes. By 1918 that changed as cigarette consumption surpassed all other forms of tobacco use (Fiore et al. 1993).

Pen Nib. The nib of an ink pen was found in Level 3 of Unit 6, near the log structure feature (acc #22-0048-446; Figure 60). The nib is broken at the tip. It contains no maker's marks and cannot be dated or sourced; however, it suggests a degree of literacy among the residents of Soapsuds Row.



Figure 60. Pen nib from Level 3 of Unit 6 (acc #22-0042-446; centimeter scale).

Slate and Chalk. Unit 3, containing the privy feature, yielded many small pieces of slate, as well as several pieces of tailors' chalk. Although slate occurs locally, these fragments are more fine-grained and uniform than the local stone, and probably represent an imported slate board. The same levels contained small fragments of what appear to have been flat sticks of chalk, like tailors' chalk today. One can speculate that the slate and chalk were used to keep track of laundry orders. An outbuilding used for laundry at a site in Kentucky contained fragments of a slate board, in that case bearing a written date of 1901 (Stottman and Prybylski 2004:51). The tailors' chalk may have served alternative or additional purposes: marking clothing for alternations and stain removal (Wilcox 1881).

Mirror. Four small fragments of mirror glass were found near the privy (acc #22-0042-261, -297, -311, and -393). They are too small to allow further identification of their form or use.

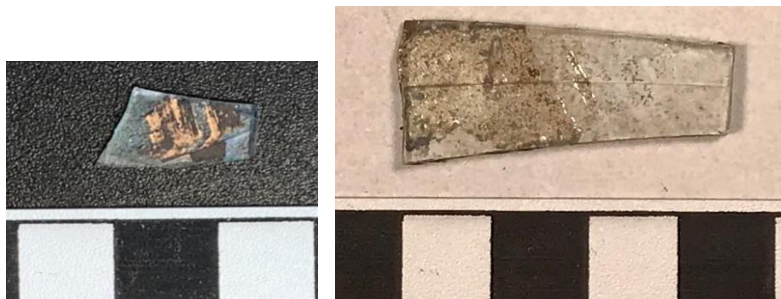


Figure 61. Mirror glass fragments with silver backing (acc # 22-0048-261 and -297; centimeter scale).

Pitch Pipe. Two fragments of a pitch pipe were found in the southeast corner of Unit 6, along with other items datable to around 1920-1940 (acc #22-0042-485; Figure 62). This item does not bear a maker's mark and no date could be established for it. The fragments are from a disc-shaped, eight-tone pitch pipe and consist of two plates holding brass reeds (Figure 60).



Figure 62. Fragments of a pitch pipe and a loose brass reed (acc #22-0042-485).

Bone and Food Remains

Bone. Residents of Soapsuds Row had several options for acquiring meat: hunting wild game; receiving rations in the form of fresh meat (usually beef), canned beef, or smoked beef or pork; buying meat from butchers in Sturgis or from the post sutler; or raising and butchering their own livestock. Although rations to laundresses had been discontinued, the soldier husbands of laundresses would have been eligible for daily rations sufficient to sustain one adult. Bone scrap from the excavation units indicates that meat came from a variety of sources.

By the time Fort Meade was established, the formerly abundant local game animals were depleted by the demands of the gold rush. Bison, deer, mountain sheep, and bear had been largely hunted out. Nevertheless, two wild species are present in the bone assemblage: sage grouse or prairie chicken and deer or antelope. This indicates that some hunting was taking place, perhaps after the gold rush had died down and local animal populations were able to recover somewhat. Edible fish were not common in the Black Hills, and thus are not believed to have been a significant source of protein until after artificial stocking of streams began.

Bone was found throughout the site, with the greatest concentration in and near the privy feature. By far the most common type of bone in the site is from beef cattle. It is not possible to tell from the limited sample obtained from the 2022 excavations whether any this was from residents' livestock, as opposed to purchased or rationed meat; however, the find of bones from a young pig show that some livestock was being raised and slaughtered on site.

Two observations about the beef bone may shed light how it was obtained and used. First, most of the bones in the assemblage are those often made into soup or broth. Second, some have been "creatively butchered" as they are sawn and cut in irregular places, as though making them small enough to stir in a large pot or cauldron. The cutting looks expedient, sawing until the bone could be snapped and moving on to the next piece. This raises the possibility that people were cutting the bones secondarily (reusing bone scrap to render tallow), as opposed to

making clean cuts for steaks or roasts. It is not possible to tell whether bone was being cut up and boiled for edible broth or to render tallow for soap-making, or both, but it is notable that a high proportion is cancellous (spongy) bone, which produces the most marrow fat for tallow. In other words, ribs, vertebrae, and pelvis bones are more common than would be expected if the bone were solely or primarily food scrap. One long bone is broken, but not cut. This appears to be a domesticated sheep bone.

A strip of metal from a can that opened with a key could be from canned meat; however, it is more likely that this item was from a coffee can. Canned meats and sardines were sold in tins with a key that would peel back the entire top of the can, rather than just a strip. Canned hams were not available until after 1925, which is too late for the site deposits.

Plum Pit. Screened sediment from Unit 3 contained a single charred plum pit (acc #22-0042-271). Whether this was from wild plums, which grow in the area, from canned plums, or from dried prunes was not determined. Fruit was important at frontier posts where scurvy remained a real threat during the nineteenth century.

Eggshell. Tiny fragments of eggshell occurred throughout Unit 3 in and near the privy feature. These are assumed to be from chicken or duck eggs consumed by the residents of Soapsuds Row.

Fluted Paper. A charred fragment of fluted paper was found in Unit 3, near but not inside, the privy feature (acc #22-0042-077; Figure 63). This resembles a modern-day cupcake paper; however, its original function is not clear. A British newspaper article suggests that fluted paper items were a popular addition to table settings by 1879. These were used for holding candies, fruit, and the like (*Staffordshire Daily Sentinel*, January 17, 1879). Even on the American frontier, fashions closely followed those of the American and European urban areas. The newspaper article states:

Someone has now invented pretty fluted paper cups or moulds, shaped in various ways. Some resemble basins, others are like jelly glasses or custard cups. Miniature tubs are filled with cheese and put on a dish and served to each person as required. Mince pies or tarts are placed singly, in larger shapes. Ices and creams in glasses fill others; also candied fruits, which look very dainty in these receptacles.



Figure 63. Fragment of fluted paper (acc #22-0042-077).

Clothes Pin Spring

A clothes pin spring was found in Unit 3, Level 1, in association with the privy feature (acc #22-0042-115; Figure 64). While not providing conclusive evidence, this find is consistent with use of the site by laundresses.

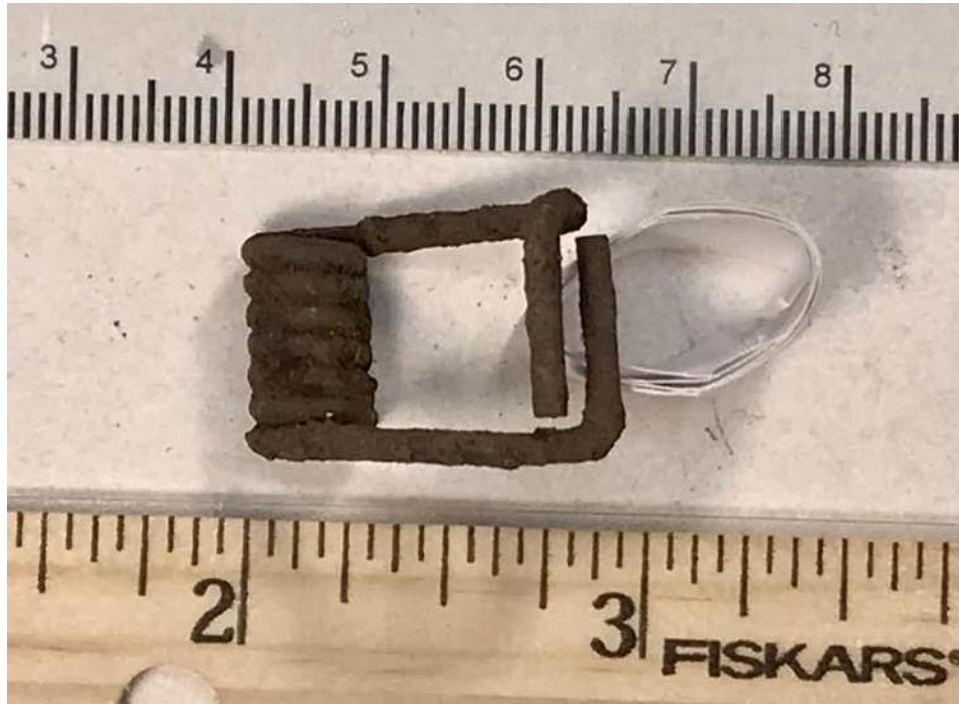
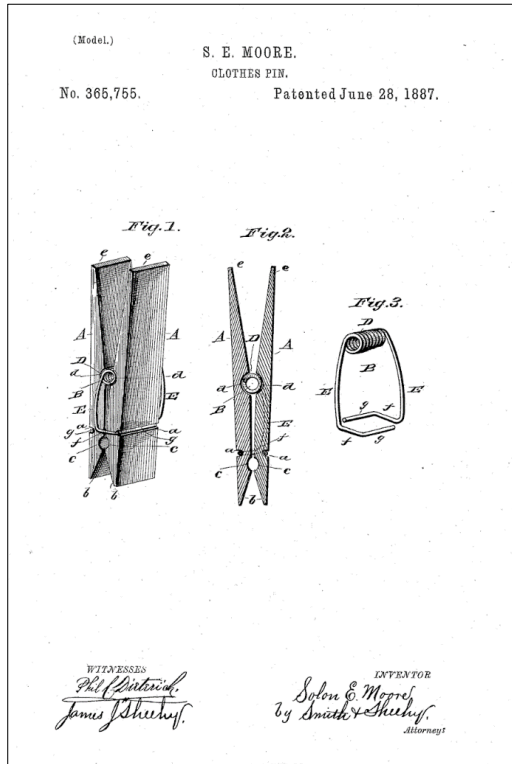


Figure 64. Clothes pin spring tipped up so both ends of the spring are visible (acc #22-0042-114).

Clothes pin springs cannot be precisely dated because they have remained similar over time. American mass production of clothes pins began in 1840. Although 146 separate patents for clothes pins were filed between 1852 and 1887, the type found at 39MD45 quickly became the most ubiquitous. David Smith's 1853 patent application explained that his design could not "be detached from the clothes by the wind as is the case with the common pin and which is a serious evil to washerwomen." Smith's design contained two prongs with a small spring wedged between. The patent stated that

...by pushing the two superior [upper] legs together the inferior [lower] ones are opened apart so that the instrument can be safely placed on the article of clothing hanging on the line. This done the pressure of the fingers is to be removed so as to permit the reaction of the spring to throw the inferior legs together and cause them to simply grasp the piece of clothing and the line between them (Greenbaum and Wilson).

Solon E. Moore improved the device, calling it a "coiled fulcrum" and patented his improvement in 1887. Until World War I, most clothes pins were produced in Vermont, first by the National Clothes Pin Company, and later by the United States Clothes Pin Company (Wilkof 2017). Mail order catalogs carried them, as illustrated by the 1902 Sears ad below at the right (Figure 65).



Clothes Pins.

No. 23R8115 Hoyt's Spring Clothes Pins are made of white basswood and the spring is one continuous piece of galvanized spring wire. Simple and convenient and the cheapest when durability is considered.
Weight, per gross, 3 pounds. Price, per dozen.....3c
Per gross..... 25c

No. 23R8117 U. S. Clothes Pins, patent spring, 12 dozen in box.
Weight, per gross, 4½ pounds.
Price, per gross, 65c; per dozen..... 6c

No. 23R8120 Clothes Pins, standard goods, full count.
Weight, per gross, 3½ pounds.
We do not sell less than one gross.
Price, per gross..... 15c
Price, per box, containing 5 gross..... 53c

No. 23R8122 Metallic Spring Clothes Pin. Will never split or fall off in the severest storm or freeze to the clothes in the greatest frost. They are made of wire, heavily galvanized, so that it is impossible for them to rust. They have been tested in all sorts of weather and found to be all we claim. Weight, per dozen, 6 ounces.
Per gross, 76c; per dozen... 7c

Figure 65. Solon Moore's 1887 clothes pin design and the ordering description from 1902 Sears catalog.



Figure 66. Hooked pin, straight pin, safety pin, and brass straight pin from Unit 3 (centimeter scale).

Pins and Needle. Only one needle was found (acc #22-0042-081). Five definite and three possible straight pins were found, all but one in Unit 3. A straight pin had been modified by creating a hook at the end for use in fine crochet or darning work (acc #22-0042-038; Figure 66 left). The pin is 1 inch (26.4 mm) long and made of ferrous metal. It was found in Level 1 of Unit 2. In addition, one safety pin was also found in Unit 3 in the privy fill (acc #22-0042-379; Figure 66).

Abrading Stone

A piece of limestone found in Unit 5, Level 2, appears to have been used as an abrader or smoothing stone (acc #22-0042-410); Figure 67). Its more specific use is not evident.



Figure 67. Stone from Unit 5 with wear indicating use as an abrader (acc #22-0042-410).

Animal Shoe

A single, worn horseshoe with several nails still attached was found near the wall of the log structure in Unit 6 (acc #22-0042-487; Figure 68). The wear pattern on the horseshoe suggests it was used on the front foot of a horse used for pulling heavy loads (Figure 68).



Figure 68. Horseshoe from Unit 6 (acc #22-0042-487) showing nails (left) and heavy wear on front of shoe (right).

Ammunition

Lead Ball. A single lead ball was found in the privy fill in Unit 3 (acc #22-0042-485; Figure 69, left). It appears to have been ammunition for a cap-and-ball pistol that used .31 caliber balls. Such firearms generally went out of use by the end of the 1870s. This one may indicate that someone was using an older gun.



Figure 69. Left, lead ball (acc #22-0042-485); center and right, cartridge (acc #22-0042-112), showing lack of headstamp.

Cartridge. A cartridge case was found in the top level of Unit 3 (acc #22-0042-112; Figure 69). It is crushed, making measurement difficult, but it appears to be from a .38 caliber long centerfire cartridge. The lack of a headstamp suggests that this was not military-issue ammunition. Colt and other American manufacturers made this cartridge in various forms beginning in 1874 (Logan 1959:126).

Other

Very small amounts of coal, coke, and clinker were found in the excavation units. Nine pieces of melted glass and extensive spalling on some ceramics indicate that some of the privy fill consisted of the remains of trash burning piles that were discarded into the privy pit.

ANALYSIS AND CONCLUSIONS

With the exception of the southeast corner of Unit 6, the southernmost of the excavation units, all 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 minimum span that encompasses all datable artifacts from the site is the 22-year interval from 1878 to 1900. The limited extent of the excavations did not permit a full understanding of the features or a glimpse of the pre-fort history of the site. 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, some clear bottle glass, and a bolt and nut. 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.

Table 2 presents 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 1900, 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 1.

Item	Estimated age of comparable specimens	Intercept with use of Ft. Meade
Button hook	1850-1918	1878-1913
Fluted paper cup	1879-present	1879-1930
Beer bottle bottom from DSG Co.	1879-1896	1879-1896
Beer bottle bottom	1865-1884	1878-1884
Beer bottle bottom	1860-1884	1878-1884
Partial bottle base, circled N mark	1895-1915	1895-1915
Brown transferware sherd T&R Boote	Ca. 1880	1880-?
Burgess stoneware sherd	1864-1892	1878-1892
Crown bottle cap	1895-present	1895-1930
Evens & Howard fire brick	1867-1950	1878-1930
Clothespin spring	1887-present	1887-present
Beer bottle neck with foil label and muselet	1891-1905	1891-1905
Bottle fragment	Pre-1920	1878-1920
Barbed wire	Post-1881	1881-?
Perfume bottle stopper	1900-1910	1900-1910

Table 2. Datable artifacts from 39MD45.

Not surprisingly, the material from 39MD45 differs greatly from the material from nearby 39MD293, a military dump. The latter contained thick stoneware dish fragments stamped QMC for Quarter Master Corps, 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 II vintage. The contrast between the two assemblages is the result of their different ages, as well as one being only used as a dump while the other was primarily a dwelling and workplace.

The main feature in Units 4-6 is a remnant of a log structure. Excavations were not sufficient to define the size, construction, or function of this structure; however, it may well be one of the original log laundress houses, later briefly used to house the families of Lakota enlistees and civilian employees.

The other set of units (1-3) contained two prominent features: a privy pit and a complex feature possibly related to soap production. Components of the latter include an ash concentration overlying oxidized sandy sediment, a concentration of small gravel, and a line of some kind of effluent that had rehardened into a coral-like substance. Some cattle bone and two nested 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 draining off 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 site is cancellous bone, such as vertebrae, ribs, a pelvis, and skull portions. Tallow-bearing bone marrow is concentrated in such cancellous bone. The soil matrix is moderately alkaline, making it hard to determine whether the substance consists of calcium (carbonate or phosphate) 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. In the presence of heat and fat molecules, bone-derived calcium phosphates are transformed into calcium carbonate compounds (mineral calcite). The exact result depends on several factors, including temperature, size and abundance of fat molecules, pH of the surrounding matrix, and time (Erceg et al. 2022). Without more analysis, it is possible only to tentatively hypothesize this chemical process may have resulted in the line of hardened effluent.

The privy pit contained a wide variety of materials, from dishes to building materials to personal items. Gender indicators included sewing supplies, two shoes, a collar stud, and bits of a woman's decorative hair comb. A fragment from a perfume bottle stopper may reflect women's presence at the site, as well as showing that some luxury good made their way to this out-of-the-way frontier post. The presence of one man's shoe and one likely 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 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). This pattern held in Ireland, as well, 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 or immoral activity, the number of beer and liquor bottles is too small to suggest more than household consumption, and nothing else was found that might be an index of extralegal activity. One chain of speculation might identify the glass fragment embossed with RS as from a bottle of sarsaparilla tonic, which was frequently used to treat syphilis during the period in question; however, this interpretation rests on shaky ground. Syphilis was common at military posts, but it was certainly not limited to any particular class or sex. In terms of class, the 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. Imported English dishware and the perfume bottle stopper from New York are goods that rise above the bare necessities of frontier life. Apparently, such imports were reaching Fort Meade very early in its history. While documentary evidence draws a strong class difference between the families of enlisted men, including the laundresses, and those of the officers, their household items were not sharply different in quality.

Further conclusions about the site are not warranted by the limited amount of data collected during this preliminary work. It is anticipated that future work at the site will provide more details about the lives of the Fort Meade laundresses and their families, as well as clarifying the function of the log structure (Feature 7) and the potential tallow-rendering feature (Feature 3).

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