Apex, Arizona Archaeology Project
2024 Season (Year 3)

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1. ADMINISTRATIVE SUMMARY

This report details the methods, data, theories, and findings of the 2024 Apex, Arizona Archaeology Project's field school. The field school operated between May 27 and June 21, 2024. The Great Depression-era logging headquarters was established by the Saginaw and Manistee Lumber Company in 1928 and disassembled when the company's lease expired in 1936. The nearly 30-acre site is located in Coconino County, Arizona on the Kaibab National Forest and designated FS Site Number 03070401784 and SHPO number AR-03-07-04-1784. Figure 1 shows the general location of the site boundaries, Loci A through Q, the general track of the historic railroad, and the general topography.

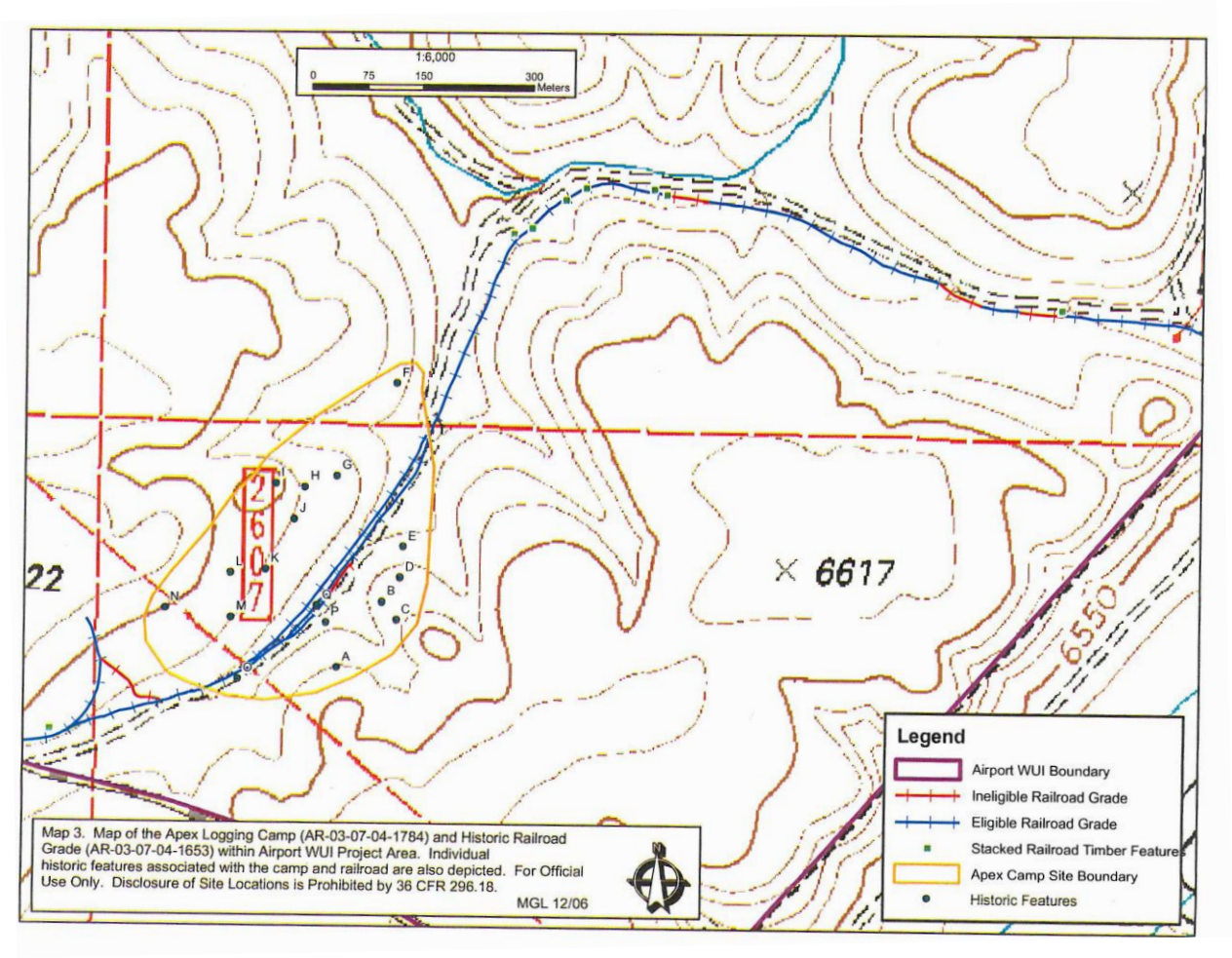

Figure 1: 2006 GPS map of Apex (United States Forest Service 2006:15)

2. PROJECT DESCRIPTION

The Apex, Arizona Archaeology Project is a collaboration between the Northern Arizona University Department of Anthropology and the Kaibab National Forest. Its goals are to record and research Apex, Arizona, a 1928-1936 logging camp located along the Grand Canyon Railway in northern Arizona. Our research is founded on previous work conducted by the

Kaibab National Forest archaeologists, who submitted a Heritage Site Summary Report of Apex in 2006 and a Cultural Resource Record in 2017.

2.1. Personnel

Summer 2023's field work was directed by Dr. Emily Dale, an Associate Teaching Professor at NAU and a historical archaeologist. A Teaching Assistant, Rachael O'Hara, a Master's student at NAU whose research focuses on the impacts of Prohibition on alcohol-consumption at the site, was paid with a grant awarded by Arizona Humanities. Rachael supervised student work, led public tours, and assisted with any other necessary duties related to the field school. We had eight students participate in our field school: Lorna Baker, Matt Harwood, Marc Hillis, Makenzie Long, Sarah O'Donnell, Devony Martell, Ricky Raffaele, and Bailey Stalford. We also had three Passport in Time volunteers between June 8 and June 12: Fran Maiuri, Carl Evertsbusch, Adrienne Dale, and Shannon Stoller. This report is derived from their site forms, field notes, photographs, and other documentation.

Zulia DeWire, an NAU undergraduate anthropology student, was hired through NAU's Interns-to-Scholars program, operated through the Office of Undergraduate Research and Creative Activity. Zulia scanned, digitized, and transcribed numerous field documents, such as maps, notebooks, tour surveys, and photo logs. She also completed a research project on the powdered cocoa brands found at the site during the 2022, 2023, and 2024 seasons, and the way advertising may have allowed for seemingly competing brands to be sold at the same site. She presented her findings at the April 2025 NAU Undergraduate Research Symposium in Flagstaff, Arizona (see Appendix B). Devony Martell completed an Undergraduate Research course in Spring 2025 and investigated the gendered toys at the site. She presented her findings at the April 2025 NAU Undergraduate Research Symposium in Flagstaff, Arizona (see Appendix B). Finally, Anna Foley, a Geography, Planning, and Recreation B.S. student at NAU completed her experiential learning requirement in Spring and Summer 2024 by creating a Story Map of Apex. The Story Map is linked on the Apex, Arizona Archaeology Project website and will eventually be linked to the Kaibab National Forest page as well.

2.2. Funding

Funding for 2024 field work was provided by numerous organizations. Northern Arizona University funding and student college fees paid for Dr. Emily Dale's summer course salary, transportation, and student supplies. The Kaibab National Forest's Youth and Veteran's Engagement Grant provided funds to pay $1,849 student stipends to each of our four field school students. A $5,000 grant from Arizona Humanities paid for the teaching assistant/tour guide salary and new supplies for our Welcome Center, including canopies and water jugs.

3. HISTORICAL CONTEXT AND RESEARCH GOALS

The Apex, Arizona Archaeological Project is still building its knowledge of Apex's history, the backgrounds of its residents, and its relationships with other industries in the area. The history of the Grand Canyon Railway and Apex have been extensively explored by Williams' historian Al Richmond (1988, 1990, 2017; Richmond and Pearsall 2004), and Forest Service archaeologist Pat Stein (1995) wrote a comprehensive account of logging railroad resources in the area. This overview explores what we currently know about Apex and our broad research goals that guide the questions and methods of our field work.

For a more detailed overview of the larger historical contexts of the Great Depression, American ideas of how whiteness, masculinity, and labor intersected, a summary of the historical documents associated with Apex, and an analysis of how the artifacts reveal such trends, please consult Timothy Maddock's 2024 Master's Thesis: Life, Work, and Identity at Apex, Arizona: The Archaeology of a Twentieth-Century Logging Camp and Company Town.

3.1. History of Apex

The following historical context is pulled directly from the Research Design submitted to and approved by the Arizona State Historic Preservation Office in 2020 (Dale and Hangan 2020).

3.1.1. The Grand Canyon Railway

The Grand Canyon Railway, spanning nearly 64 miles from Williams, Arizona to the Grand Canyon, was originally built for industry. Numerous mining claims, notably those at Anita (Collison 2014:172), logging camps, and cattle and sheep ranches that developed across the landscape along the main line and spurs of the railway, bringing supplies in and goods out. Eventually, the railway was incorporated into the growing tourism of the Grand Canyon. Despite the obvious usefulness for such a railway, the construction of the Grand Canyon Railway was an onerous and time-consuming undertaking that took nearly 10 years to complete.

In 1893, William "Buckey" O'Neill, one-time mayor of Prescott and sheriff of Yavapai County, set his sights on the copper prospects in northern Arizona (Griswold 2006:2; Richmond 2017:3). Needing an efficient way to move the ore, O'Neill sought ways to build a north–south railway from the existing Atlantic and Pacific line that ran east–west through Flagstaff and Williams (Richmond 2017:6). After years of fundraising and lobbying, O'Neill finally had the funding and support to incorporate the Santa Fe and Grand Canyon Railroad in 1897. Surveys and grading of potential routes began the next year (Richmond 2017:6). Sadly, O'Neill died that same year before any tracks were laid while serving as a Rough Rider alongside Teddy Roosevelt in the Spanish-American War (Richmond 2017:10).

In 1899, while roadbed construction began (Richmond 2017:9), legislative battles, competition with other railroad companies, and logistical troubles began to plague the Santa Fe and Grand

Canyon Railway (Richmond 2017:10–11). Still, by 1900, the company completed construction between Williams and Anita Junction, a prominent section house and mining town about 45 miles to the north once a three-hour stagecoach trip from Williams. Passengers there alighted the train and then boarded stagecoaches to continue the remaining five-and-a-half hour journey to the Grand Canyon (Richmond 2017:12), which was undoubtedly a difficult if not grueling experience. Unfortunately, with the Grand Canyon so close, the Santa Fe and Grand Canyon Railway Company succumbed to the debts incurred from the cost of the construction and looming costs of completing the railroad. They were absorbed into the Santa Fe Pacific Railroad and their owner, the Atchison, Topeka, and Santa Fe (AT&SF) in 1901 (Richmond 2017:14).

After acquiring the railway, the AT&SF realized that the previous owner had cut several corners as they hurried to complete construction (Richmond 2017:29). The new owners began a series of improvements, including widening the railbed and adding sidings along the line. The AT&SF also turned their attention to completing construction of the last 10 miles to the Grand Canyon. They finished by September 1901, only one month after gaining control of the route (Richmond 2017:30), and the first train arrived at the Grand Canyon on September 17, 1901, marking the first all-train access of the canyon as a tourist destination (Griswold 2006:2; Richmond and Pearsall 2004:6).

Over the next few years, the AT&SF improved and added several new bridges, trestles, section houses, cattle and sheep loadings, water tanks, sidings, wyes, and spurs. They continued to upgrade lines, replace ties and tracks, and provide general maintenance to the railbed and associated facilities. They also partnered with Western Union Telegraph Company and Bell Telephone Company to gain access to telegraph and telephone lines (Richmond 2017:38). Beyond the line's use as a transport for ranchers, miners, and loggers, the Grand Canyon Railway increasingly served as the main mode of travel for tourists to the Grand Canyon.

By the 1920s, a new competitor to the railroad emerged: the car (Richmond 2017:149). The construction of better roads, rather than the older dirt and gravel, and the declining cost of automobiles, meant that an increasing number of Americans visited the Grand Canyon by automobile. In 1927, more visitors arrived at the park by car than by railroad for the first time (Fuchs 1952:310; Richmond 2017:151; Richmond and Pearsall 2004:20). The AT&SF slowly started sending fewer and fewer trains every year, closing station houses, and dismantling spurs. The last train arrived at Grand Canyon Depot in 1968 (Collison 2014:172; Richmond 2017:152) and the tracks and usable ties were removed in 1974 (Collison 2014:172; Richmond 2017:155).

3.1.2. Apex

Logging camps popped up around the American West to supply towns, mines, and railroads, and archaeologists have rigorously examined the lives of lumber workers (e.g., Chung 2015; Dale 2015, 2016, in review; Dixon and Smith 2017). Railroads especially need lumber. Fortunately,

the Grand Canyon Railway sat in the middle of one of the largest stands of ponderosa pine in the state of Arizona (Richmond 2017:79). As the heart of this forest, Williams became a center for logging operations in 1893, when the Saginaw Lumber Company purchased the timber rights to what is now much of the Kaibab National Forest. The demand for wood by businesses, ranchers, residents, mines, and the Atlantic and Pacific Railroad led to immediate success. The company expanded their reach to providing lumber to areas to the south, like Phoenix, that lacked access to timber. The Saginaw Lumber Company also built a mill in Williams. Looking to expand, the Saginaw company partnered with the Manistee Lumber Company in 1899 and established the Saginaw and Manistee Lumber Company of Arizona (Richmond 1988:75, 2017:80). The new company was able to provide nearly five million ties a year for the railroad, timbers for the numerous mines in the Francis District, like those at Anita, and building materials for the construction boom at the Grand Canyon.

By the 1920s, the Saginaw and Manistee Lumber Company had finished their leases south of Williams on the Kaibab National Forest and near Bellemont on the Coconino National Forest (Richmond 2017:81). They needed new places to cut. In 1928, the Forest Service established the Tusayan Ranger District between Williams and the Grand Canyon, and the logging company contracted with the AT&SF to provide timber in exchange for a spur and sidings at Apex. The 1930 Coconino County census recorded 415 men and 18 women in the "lumber and furniture industries" and 382 men and 2 women working for the "steam and street railroads" out of the 4,477 men and 2,575 gainfully employed adults (Lamont and Steuart 1931:20).

Located at milepost 52 of the Grand Canyon Railway, Apex was originally built as a passing track in 1901 (Richmond 1990:52, 53, 2017:36–37). The name Apex likely came from the site's location at the top of the longest and steepest grade of the railroad (Richmond 1988:75). In 1928, the site was expanded by the Saginaw and Manistee Lumber Company as the location of their company operations (Crump 1993:60–61; Richmond 1988:76, 2017:36–37). The Santa Fe constructed a section house, a 31-car siding, an 85-car wye, and a spur to the logging town on behalf of the lumber company. The spur extended 26 miles to the east to the edge of Grand Canyon National Park, but the community of loggers, their families, and related employees lived and worked at the main camp of Apex (Richmond 2017:83). The Saginaw and Manistee also had three of their own engines and their own engineers (Richmond 2017:87–88). The camp's many uses made Apex a regular stop, and the amenities allowed the loggers to work year-round (Richmond 1988:81–82).

Both based out of Michigan, the Saginaw Lumber Company and the Manistee Lumber Company brought with them many of the Swedish and Swedish-American residents who had made the Midwest their home. Over time, Norwegian and Finnish workers joined their ranks, making Apex a largely Scandinavian logging camp (Richmond 1988:80, 2017:86). In addition to the Scandinavian workers, several Mexican workers were also employed at Apex by the Santa Fe.

The Saginaw and Manistee Lumber Company did employ Mexican workers, but solely at their mill and box plant. On July 3, 1909, the Williams News reported an accident from June 29, where three Mexican men, belonging to the same section crew, were injured while blasting rocks with dynamite along the grade near Apex (Richmond 2017:42–43). One stick did not explode, so the three men went to investigate when the explosion occurred. The Atchison, Topeka, and Santa Fe transported the men to Albuquerque, where one of the men died. The newspaper did not record their names.

Richmond notes that there were seven houses on the east side of the rail line and seven more houses and the school on the east (Richmond 1988:78, 84). Two oil tanks, a water tank, sheds, and maintenance buildings served the locomotives. Al Richmond and Don Bufkin conducted on-site interviews with former residents of the town to draw a map of building locations, and Kaibab National Forest archaeologists located remnants of several structures that coincide with Bufkin's map. The locations of several buildings are still unmapped, however. As timber is a non-renewable resource, especially in the timeframe necessary for the Saginaw and Manistee Lumber Company to remain profitable, Apex was built to be movable (Crump 1993:61; Richmond 2017:83). The railroad bed and tracks on the Apex spur were deemed temporary as well (Richmond 2017:86). Little effort was spent making the main line, which was more of a dirt track road where ties sank into the ground, efficient. Housing for single male employees consisted of reused boxcars, which could be placed on flatcars and moved to the next location off the railroad (Richmond 2017:83). Family housing was slightly more permanent, with a kitchen, a living room, and one bedroom. Arvid Anderson, the superintendent, had the largest house which boasted two bedrooms. Still, family housing was portable; they sat on temporary wood or stone foundations and, with their unique "L"- or "T"-shaped design, could come apart in the middle and placed on flatbeds as well. When the workers were in Apex, a commissary car, kitchen and dining car, and the supervisor's car were parked in town (Richmond 1988:78). The Kaibab (Stein 2006:4–5) identified several domestic trash scatters, with glass shards, buckets, shoe soles, tin cans, and ceramic sherds, indicating the past locations of houses. Other features, such as brick piles with machine parts, suggest the sites of logging- or railroad-related maintenance buildings.

Beyond the basic necessities for camp workers, Apex also had some amenities for the town's families. In 1929, Apex School District Number 3 opened its doors to the few children who lived at the camp (Crump 1993:61; Richmond 1988:80, 2017:84). Similarly built out of reused boxcars on a timber foundation, the one-room school operated until 1936. Three women, Margaret Longley, Katherine Sipp, and Rose Wilson, held the position of schoolteacher over those seven years, overseeing no more than 15 students over eight grades for $130 plus board. Interestingly, despite the racial tensions in Arizona and the United States at that time, Apex's and Anita's schools were unsegregated. The Scandinavian children that made up the majority of the town's youths attended school with both Mexican and Native American students whose parents worked for the railroad. Meanwhile, only fifty miles away, Williams' schools were segregated. The 2006

Kaibab National Forest survey of Apex identified the potential location of the Apex schoolhouse and found scattered wooden boards, metal scraps and tin cans, two limestone rubble piles, and a possible privy (Stein 2006:6).

Apex was also home to a company store, which sold tobacco, canned goods, soap, and other domestic goods (Richmond 1988:78–79, 2017:91). Wages were livable, especially for the Depression, yet, like all company stores, prices were higher. Unfortunately, the store was the closest location to purchase groceries or merchandise. The store was resupplied by truck from the company commissary in Williams, meaning, on special occasions, employees could drive the paved road to Williams or the Grand Canyon to purchase goods. The store's location has not been identified.

The Santa Fe abolished the Apex section on June 1, 1930, retired the wye and interchange track and removed the rails, switches, and ties in 1942, and closed the siding in 1954 (Richmond 2017:37). The Saginaw and Manistee finished their lease in June 1936 (Richmond 1988:87, 2017:93). The school was one of the last buildings to be moved, holding its final classes through spring 1936. Then, the loggers and their families moved on to the next timber lease while the maintenance crews, section crews, and other railway employees stayed behind to dismantle the camp and spur. In 2001, milepost 52 was renamed Imbleau after roadmaster Sam Imbleau who died that year (Richmond 2017:185). Archaeological surveys conducted by the Kaibab National Forest have found few remnants of structures beyond wooden outlines of foundations, bricks, building platforms, and raised rail beds (Stein 2006:4–5), supporting the historical information that the camp and associated spurs were dismantled after the Saginaw and Manistee completed their lease and the Grand Canyon Railway ended service.

3.2. Research Goals

The Apex, Arizona project aims to ask new questions about an unaddressed period of Arizona and Southwest history from a site that is in danger from development and looting. Through our survey and excavation, we will address three main themes that are important for understanding the site itself, but are also important for understanding the larger local, state-wide, and national trends of consumption, identity, and industry along the Grand Canyon Railway, in northern Arizona, and during the American Depression.

3.2.1. Function and Landscape

As the site was designed to disappear and no modern maps record all current features, the general site layout and the relationships between industrial features, domestic features, and the general landscape are unknown. While several individual sites have preliminary maps (Stein 2006), the level of detail between the maps is inconsistent, the scales are different, and several features are completely unmapped or lack GPS points. A major goal of the project is to create maps using GPS equipment, such as a total station or Trimble, to plot building foundations, the

railroad bed, trash scatters, and other industrial and domestic features to understand the layout and function of site features.

Research questions within this theme include: Can surveys and limited excavation elucidate site layout and the functions of individual features? What are the relations between buildings and associated features?

3.2.2. 1900s Industry

Apex is associated with both the logging and railroad industries during the post-statehood boom of Arizona's economic development and growth. The logging camp, therefore, can inform on the interplay between extractive and tourist industries during the 1900s. A goal of this project, overlapping with the first goal, is to understand the geographic relations among logging and railroad features. We will also explore the different economic strategies at the distinct sites and the workforces employed by the two companies.

Research questions within this theme include: What was the relation between the AT&SF and the Saginaw and Manistee Lumber Company? Is this revealed through distinct features at Apex? Is there evidence of the AT&SF's largely Hispanic and Native American labor force and the Saginaw and Manistee's Scandinavian employees?

3.2.3 Consumer Behavior

The mass production of consumer goods that began during the 1800s made name brands and luxury goods increasingly available during the 1900s. Apex, while a company town, was also home to families and a schoolhouse. The site, in existence from 1928 to 1936, also straddles the majority of the Great Depression and Prohibition. A final goal of the project is to explore the way social, economic, and gendered identities were expressed through consumerism, consumption, and shifting economic strategies in Arizona and the United States.

Research questions within this theme include: What do the trash scatters reveal about domestic and working life at the camp? In the face of isolation and a company store, do artifacts reveal curtailed agency and choice? How can artifacts inform on life during the Great Depression more generally? Is there evidence of different choices between single men and families, between employees and supervisors, or between domestic contexts and the schoolhouse?

4. FIELDWORK AND METHODS

Fieldwork for the 2024 season took place between May 27 and June 21. While at the site, we conducted survey, mapping, photography, excavation, and artifact analysis at four separate site loci. The weather was warm, with temperatures ranging between the low 50s to the mid-90s during the day. We did encounter several windy days, which made mapping difficult as it disrupted the longer tape measures as we attempted to measure distances of several meters. The

large number of ferrous cans at the site possibly contributed to struggles in making tape-and-compass maps, as there were times the compass did not want to cooperate. The wind also blew away smaller, lighter items from the excavation unit and screen, such as charcoal, which may have reduced the count of those artifacts, though not substantially. Throughout the field season, we had two Olympus TG-6 cameras, the "Red Camera" purchased in 2023 and a new "Black Camera". Overall, though, work was smooth, with no meaningful delays or problems.

4.1. Catch and Release

A key component of our research was "catch-and-release" archaeology, meaning that all artifacts were recorded, photographed, and drawn in the field and left there. This includes excavated artifacts which were collected and then placed in the bottom of the unit alongside a 2024 quarter with a layer of burlap at the bottom, before the unit was backfilled.

4.2. Survey and Mapping

Each Locus we surveyed during the 2024 season was mapped, photographed, and recorded. We used separate feature forms at each Locus, concentration, or feature to record distinct information about the feature. We recorded tape-and-compass map measurements on a tape-and-compass map form, listed artifacts on artifact forms, and kept photograph logs.

Our first step at each Locus was to create a tape-and-compass map. We began every tape-and-compass map by establishing a datum, a point from which the entire locus, if possible, was mapped. Datums, for which we used a wooden stake with pink flagging tape around the top, were typically placed near the center of a Locus in order to more easily capture all the artifacts and features. Datums were left at the site at the end of field work in case we wish to visit the site again and were mapped in by Kelsey Gruntorad of the KNF using a GPS unit. To determine compass degrees, our compasses were declinated to +10°. Smaller loci were mapped onto feature forms, where all other site descriptions were recorded, while larger loci, distances and degrees were mapped onto separate pieces of large metric graph paper. Scale for each locus varied, based on size and level of detail that needed to be captured. In nearly all cases, some parts of the feature were too far away to reasonably map on the same or connected piece of graph paper, and multiple pieces of paper were used, and their distance and direction from the datum were recorded on all map papers. After, or during, mapping, overview photos of the loci were taken as well as photos of key points on the map.

We next began recording artifacts in each Locus, concentrations, and features using artifact forms. For smaller features or less common artifacts, we conducted as near a 100% artifact count as possible. In larger features or with incredibly common artifacts, we conducted a 10% artifact count and extrapolated that number out to the whole feature. For example, in a can dump, we may have conducted a 100% of shoe soles, but a 10% count of hole-in-top cans. During this count, we collected diagnostic artifacts for separate recordation. Dubbed the "cool thing pile",

such artifacts included items with writing, decoration, or clear function. Each of these diagnostic items received a separate line on the artifact form and individual pictures. Once recordation of the site was completed, the collected artifacts were returned to as close to their original location and position as possible.

4.3. Excavation

Per the ARPA permit and Research Design, we only opened one unit in the 2024 field season. We identified possible locations of subsurface materials by searching for depressions that may represent the locations of former privies. Based on our focus on management housing, we elected to excavate the depression at Locus M as a 1m x 1m unit. It was also the most accessible of the potential privy pits in the area, especially when compared to the depression at Locus K, which was beneath a tree.

Excavations followed the stratigraphy, where present, and started new, arbitrary sublevels after 10cm of no soil change. All excavated soil was screened using a 1/8" screens, and additional artifacts were recovered from the screen. The soil was collected onto tarps for backfilling. Students completed paperwork for the tops of each level, recording soils, artifacts, features, organic and inorganic materials, and other contents in the unit. They also photographed the tops and bottoms of each level. All artifacts were left in situ until completely exposed, artifact counts were tallied as they were collected, and all artifacts were photographed together at the end of each unit.

To close the unit, we placed a piece of burlap gardening fabric across the bottom of the unit to delineate the end of our excavations, put a 2024 quarter in a plastic bag on top, and then placed all the removed artifacts in the bottom of the unit, then backfilled it with the excavated soil.

4.4. Metal Detecting

In 2024, the Northern Arizona Metal Detectors volunteered their services. On June 3 and June 10, Bear Thomas and Ron Wickenheisser provided demonstrations of proper metal detecting techniques and instructed students and Passport in Time Volunteers on use of metal detectors (Figure 2). While the exact model of their metal detectors is unknown, Northern Arizona University's Department of Anthropology has two Minelab Equinox 800s that we used.

Figure 2: Bear Thomas (right) demonstrates metal detecting procedure to Bailey Stalford. Photo by Emily Dale.

The main goal of the metal detecting was to explore areas of the site where there was little surface debris or artifact scatter to determine the extent of the camp. On June 3, they explored the areas between Loci KLM and N and towards the railroad grade and southwest of Loci KLM and S. A few isolated finds, such as an intact Old Quaker bottle and a logging chain, confirmed historic presence in these areas, but no large concentrations of artifacts or new Loci were discovered. The original, Forest Service-defined southwest boundary of the site is likely correct. On June 10, they explored the area across from the parking/port-a-potty area on the east side of the railroad grade and north of Locus E. Similarly, beyond a few railroad spikes near the railroad grade, no artifact concentrations were discovered. The Forest Service's northeastern boundary of the site, then, is also likely correct.

5. LOCUS SUMMARIES

The archaeological field school conducted survey, excavation, mapping, photography, artifact analysis, and historical research of several features at the site. In 2006, the USFS recorded Apex and identified 17 features, they designated as Loci A through Q. Our project will be re-recording these features, as well as identifying new ones. In Summer 2024, we surveyed Loci K, L, M,

resurveyed Locus J, which was preliminarily surveyed during the 2022 field school, excavated a unit in Locus M, and identified one new Locus, designated Locus V (Figure 3). Per a hand-drawn map by Al Richmond and annotated by an unknown party (pers. comm. Richmond 4/8/2025), these areas were the former location of the homes of upper management and long-term Scandinavian employees. The 1930 census of the "Saginaw Logging Camp" (U.S. Bureau of the Census 1930), recorded on April 26, 26, and 28, 1930, provides more information on each of the families Richmond notes lived in these homes.

Arvid Anderson, a Swedish immigrant and naturalized citizen, who arrived in America in an unknown year, was 41 years old. He was listed as a mechanic, though Richmond describes him as the superintendent. His wife, Margaret, was 26. They married around 7 years previously, when Arvid was 32 and Margaret was 19. Margaret was born in Oklahoma, while her parents came from Missouri. Their three children, Clement, 7, Leonard, 6, and Elma, 3, were all born in Arizona. Clement was recorded as having attended school, while neither Leonard nor Elma did.

Gus Erickson also immigrated from Sweden, arriving in the United States in 1913 and becoming a naturalized citizen. His occupation is listed as a Railroad Fireman. He was 33. His wife, Simone, was 24, and was born in Arizona to parents from Iowa and Idaho. She was 15 and Gus 24 when they were married. Their two children were both born in Arizona. Their 5-year-old son both attended school and could read and write. His name is illegible in the census. Their daughter, 4-year-old Barbara J., had not attended school.

Eric Matson immigrated from Sweden in 1909 but was still an Alien. He was a 39-year-old Loader Man. His 28-year-old wife, Lilly, was also a Swedish immigrant, though her date of arrival and naturalization status were both unknown. They married 6 years previously, when Eric was 33 and Lilly was 22. Their oldest son, 5-year-old Harry, both attended school and could read and write. They also had two daughters, 4-year-old Ellen and 3-year-old Mary. All three of their children were born in Arizona.

A Frank Matson was also recorded in the 1930 census. The 46-year-old immigrated to the United States from Sweden in 1902 and was a Naturalized Citizen. Frank worked as a Brakeman for the Railroad as part of the "Section House Crew", presumably for the Atchison, Topeka, and Santa Fe Railroad. The next recorded location was the Saginaw Logging Camp, so it's possible the Section House was the Apex siding. It is currently unclear if Frank is related to Eric Matson.

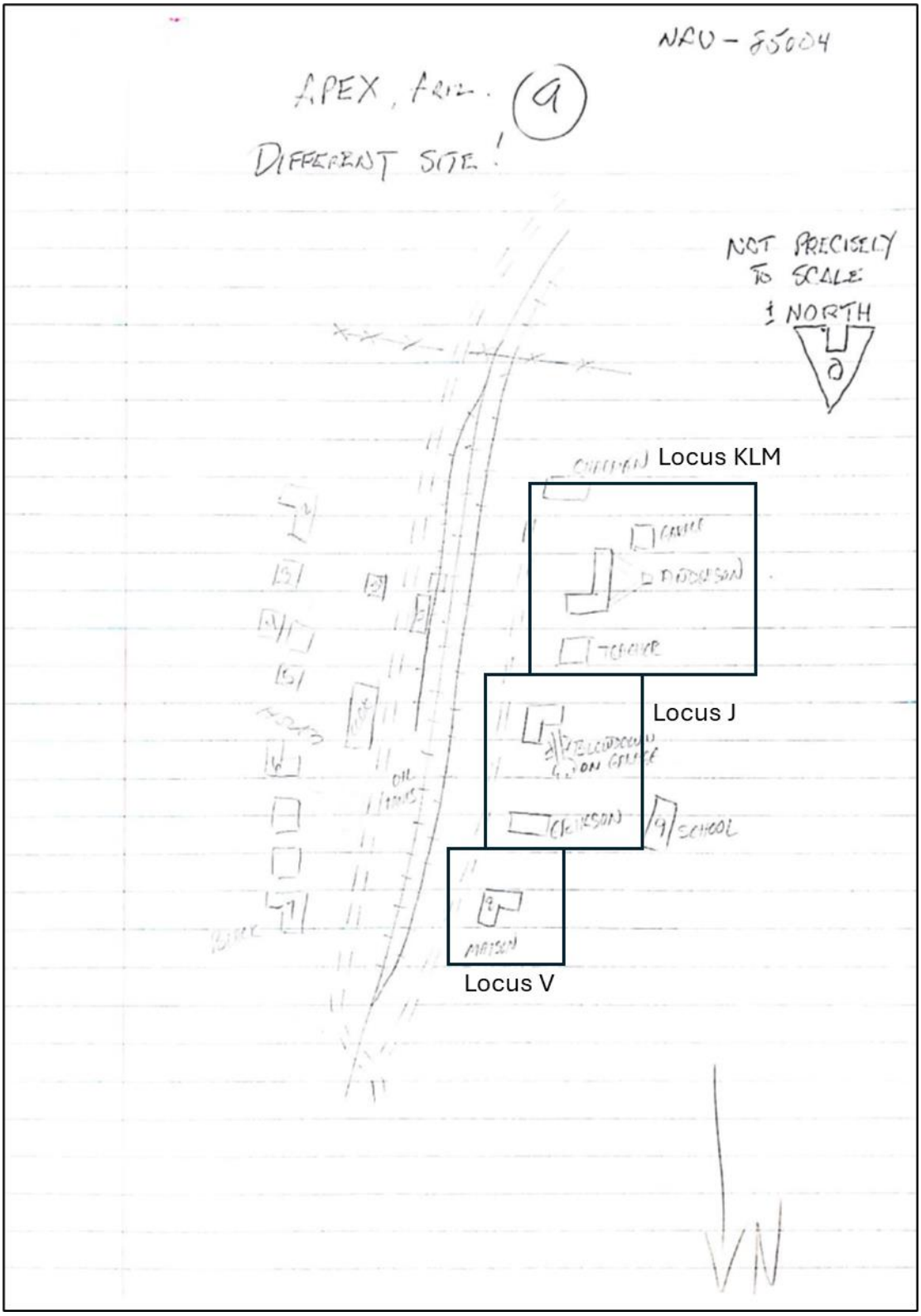

Figure 3: Map of Apex, based on Al Richmond's interviews. Boxes indicate the presumed locations of 2024 fieldwork.

As many of the Loci contained multiple structural remains, artifact scatters, and other areas of distinct activity, we often subdivided the areas into smaller units of analysis, often based on common artifact type or distinct functions, and based on visible concentrations of activity. For example, can dumps are locations of intentional and dense artifact disposal where the primary artifact type is historic can, but also contain other artifact types deposited at or around the same time period. Besides "Can Dump" common terminology used was "Wood Scatter", "Artifact Scatter", and "Privy", based on common artifact types or important features.

The photographs in this report are not inclusive of all of the photographs taken over the 2024 field season. All photographs and photo logs have been provided, separately, to the Kaibab National Forest. The included maps do not represent final maps of the site. The Apex, Arizona Archaeology Project is still working with NAU to access appropriate software, such as Adobe Illustrator and ArcMap, to complete more professional and cohesive versions. The large size of some maps, especially the map of Locus KLM, created other challenges in terms of scaling them to fit appropriately in this report.

Compared to the 2022 and 2023 field seasons, we recorded far fewer artifacts in 2024, likely due to the fact that we only recorded one large, dense can dump (Locus J) and artifact scatters were far more disperse on the west side of the railroad tracks. Conversely, we recorded far more diagnostic artifacts, likely a combination of distinct preservation conditions (the west side of the tracks has far fewer trees, which means more artifacts are exposed on the surface rather than buried under pine needles), the more settled nature of management families on the landscape, and the larger crew size we had this year.

5.1. Locus J

Locus J, a domestic scatter on the west side of the rail line, was mapped by the KNF in 2006 and described as "large structural area—abundant milled lumber, domestic refuse (buttons, etc..), crown caps, machinery parts, graphite (?) rods, Clorox bottles, some green glass" (United States Forest Service 2006:5; Figure 4). In 2022, the Apex, Arizona Archaeology Project field school conducted a rudimentary survey of the artifacts in the area, with a focus on the large can dump northwest of Locus J at the base of the hill that contains Locus I, the schoolhouse. We did not conduct a full survey of the area in 2022, however, and our initial identification of artifact locations within the Locus were not well-defined, with items assigned either as in the Locus J Can Dump or more generally within Locus J. As a result, we determined that a more thorough and explicit recording of Locus J details was necessary. Ashley Mlazgar, the 2022 Teaching Assistant, visited the site on June 8, 2025 and confirmed the areas that were surveyed that year.

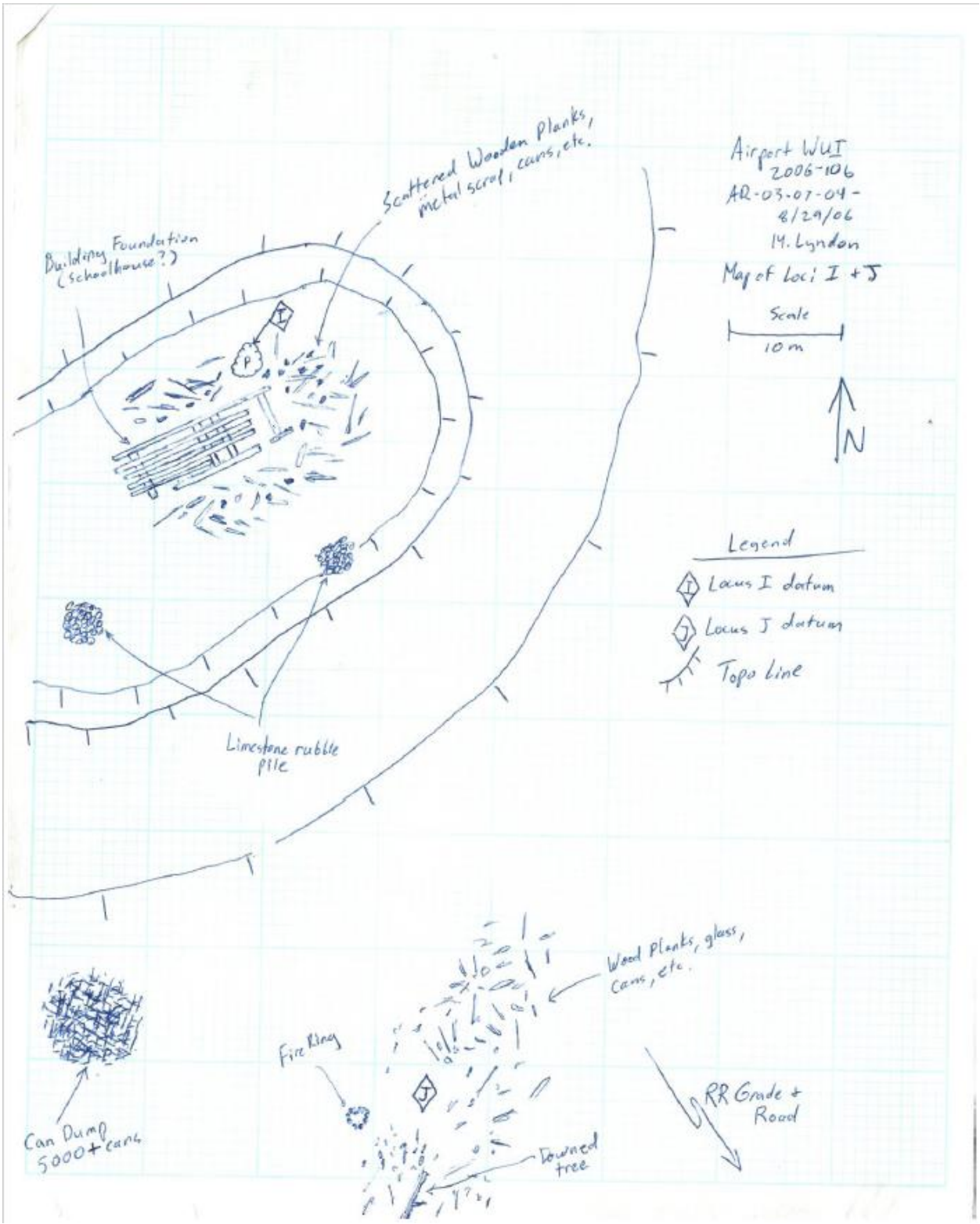

Figure 4: Forest Service Map of Locus I and Locus J (United States Forest Service 2006:11). Note the downed tree and fire ring at Locus J and the can dump northeast of the Locus J datum.

Locus J is mostly likely the remains of a domestic structure and possibly, per Al Richmond's map (Figure 3), the garage and home of the Ericksons. Richmond describes a "blowdown on garage", which is most likely the downed tree in the center of Locus J.

Our recordation of Locus J in 2024 identified seven discrete activity areas: Wood Scatter 1, Wood Scatter 2, Artifact Scatter 1, Artifact Scatter 2, Cand Dump 1, Stone Pile 1, and Stone Circle 1 (Figure 5).

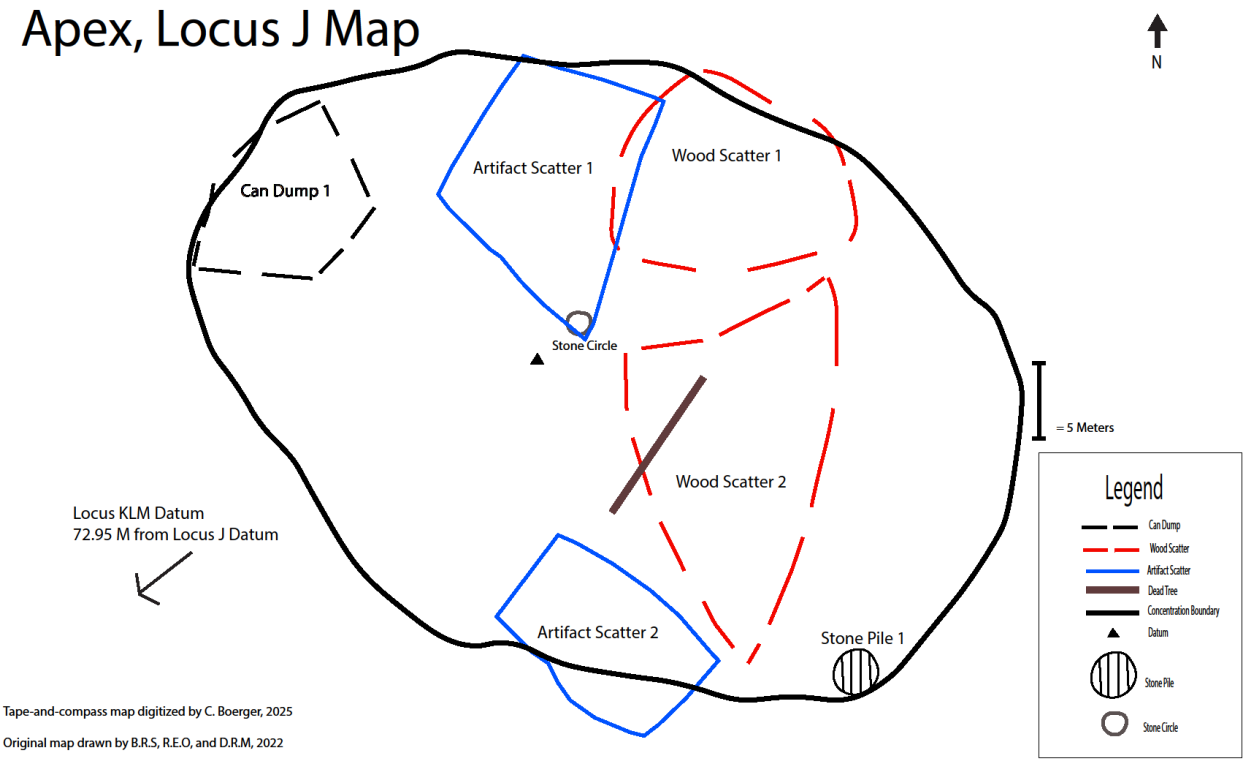

Figure 5: Map of Locus J. Drawn by Bailey Stalford, Rachael O'Hara, and Devony Martell. Digitized by Caroline Boerger.

Wood Scatter 1 (WS1) at the north end of the site and south of Locus V, is a dense scatter of over 100 wood boards and wood fragments and railroad ties, pointing to the possible location of a building (Figure 6). Per Richmond's map, this may have been the location of the Erickson home. Other architectural items include chains, gears, vents, an insulator, metal rods. The broad artifact scatter within the wood points to a domestic use, including dozens of mason jar parts, food cans and bottles, and ceramics. Make-up, toys, and decorative items, including decorative glassware and metal fish, point to a family unit. Notable artifacts include: a gas tank for what was most likely a Model-T, Kerr and Boyd mason jar elements, a Princess Pat make-up lid, a Listerine bottle base, Heinz and Best Foods condiment bottles, "Norway" sardine cans, Delaware Punch, Coca-Cola, and Mission Dry soda bottles, a post-Prohibition alcohol bottle, three Lee

buttons, ceramics made in Japan, a Dietz lantern part, a Pabst Blue Ribbon bottle opener, a Barcalo wrench, and a toy car.

Figure 6: Locus J, Wood Scatter 1, looking south. Photo by Lorna Baker.

Wood Scatter 2 (WS2) is at the center of Locus J and bisected by the downed tree. Per Al Richmond's map, this was possibly the location of a garage (Figure 7). Over 100 wood boards, fragments, and beams with railroad spikes are found throughout WS2, along with asbestos, sheet metal, and a pipe. Artifacts are sparser here, than in WS1, but are still largely domestic in nature, including cans, glass, ceramics, utensils, toys, and apparel. Notable artifacts include a Webster's Cottage Cheese foil, a Monarch Finer Foods can, a Cracker Jack Screamer Whistle, and a Tip-Top Toy Air Express toy plane.

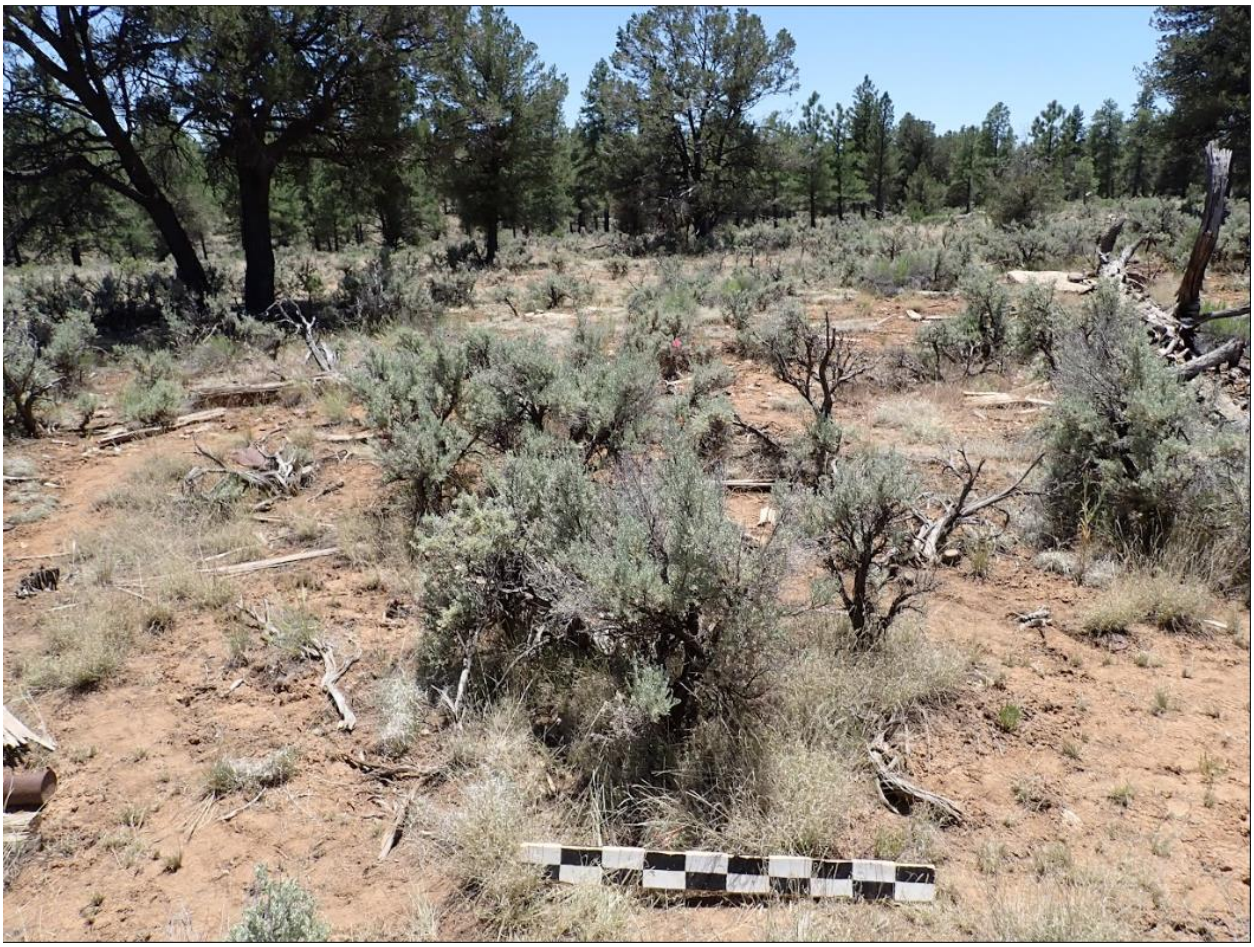

Figure 7: Locus J, Wood Scatter 1, looking south. Note the downed tree at the top right. Photo by Bailey Stalford.

Artifact Scatter 1 (AS1) is located west of and adjacent two WS1, between Locus J and the base of the hill with Locus 1 (Figure 8). The scatter is disperse, with cans, glass shards, and ceramic sherds making up the bulk of items in equal numbers. There are also numerous elements of apparel, including buttons, buckles, shoe parts. Stove parts, an ash shovel, and stove vents are also present. Notable artifacts include a cornhusking glove part, Lipton Tea can, a Marinello make-up lid, a Norway sardine can, a Log Cabin Syrup can, Clorox fragments, and a Haas and Baruch Company bottle. A stone circle at the south end of AS1 contains ashy soil and numerous pieces of glass and ceramic.

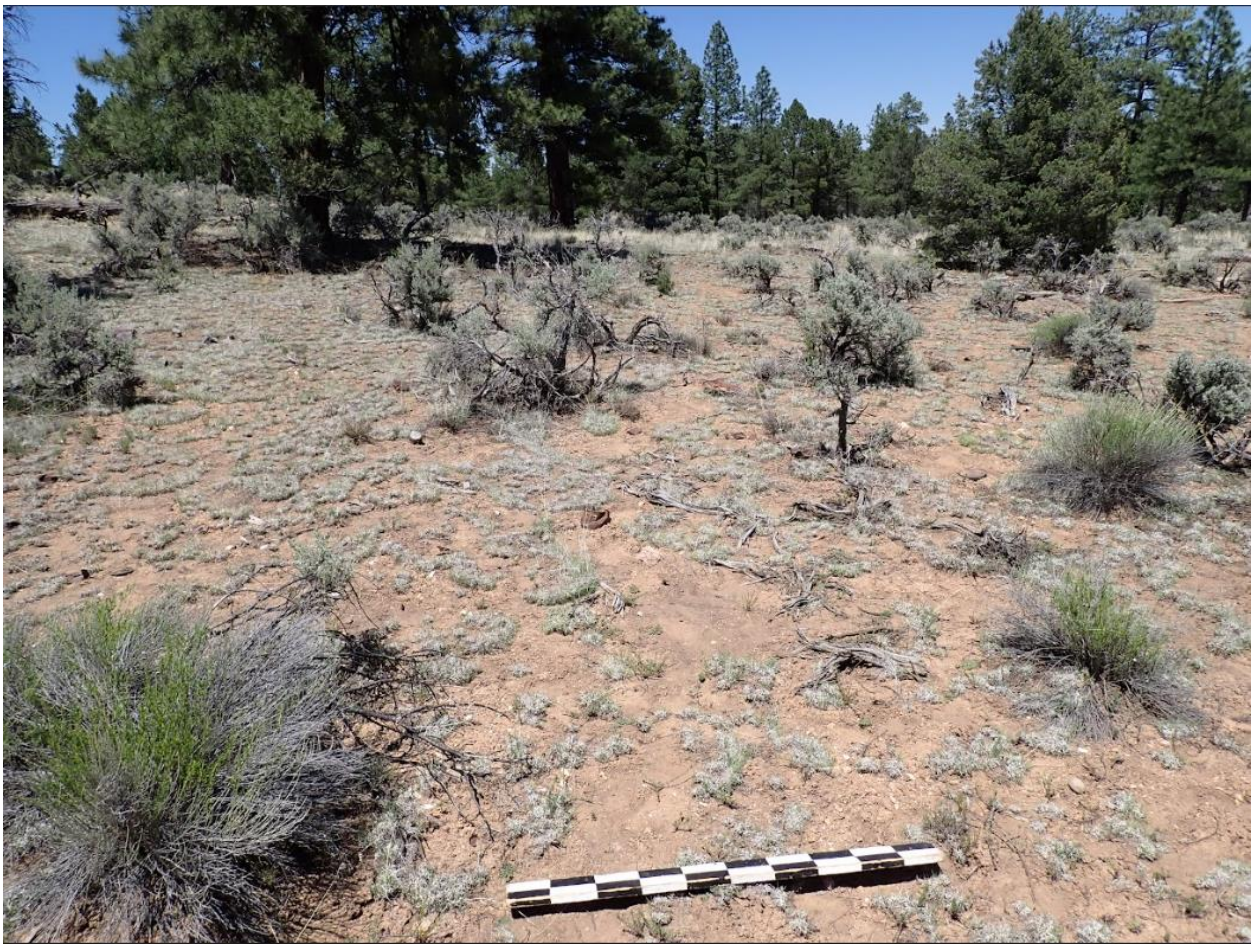

Figure 8: Locus J, Artifact Scatter 1, looking northeast. Photo by Bailey Stalford.

Artifact Scatter 2 (AS2) is at the south end of the site and mostly consists of metal artifacts, such as cans, pot lids, a saw blade, wire, a large barrel, and stove components (Figure 9). Chewing and cigarette tobacco cans are also present, along with porcelain fragments, wood fragments, and one shoe sole. Notable artifacts include a Mentholatum jar, a Mum's deodorant jar, Copenhagen tins, a Northern California fish tin, a Hiram Walker and Sons cap, a plastic bead, 7 fragments of oyster shell (the only ones found at the site so far), a Homer Laughlin Ravenna plate fragment, and a mason jar lid with a logo of a dolphin leaping through waves.

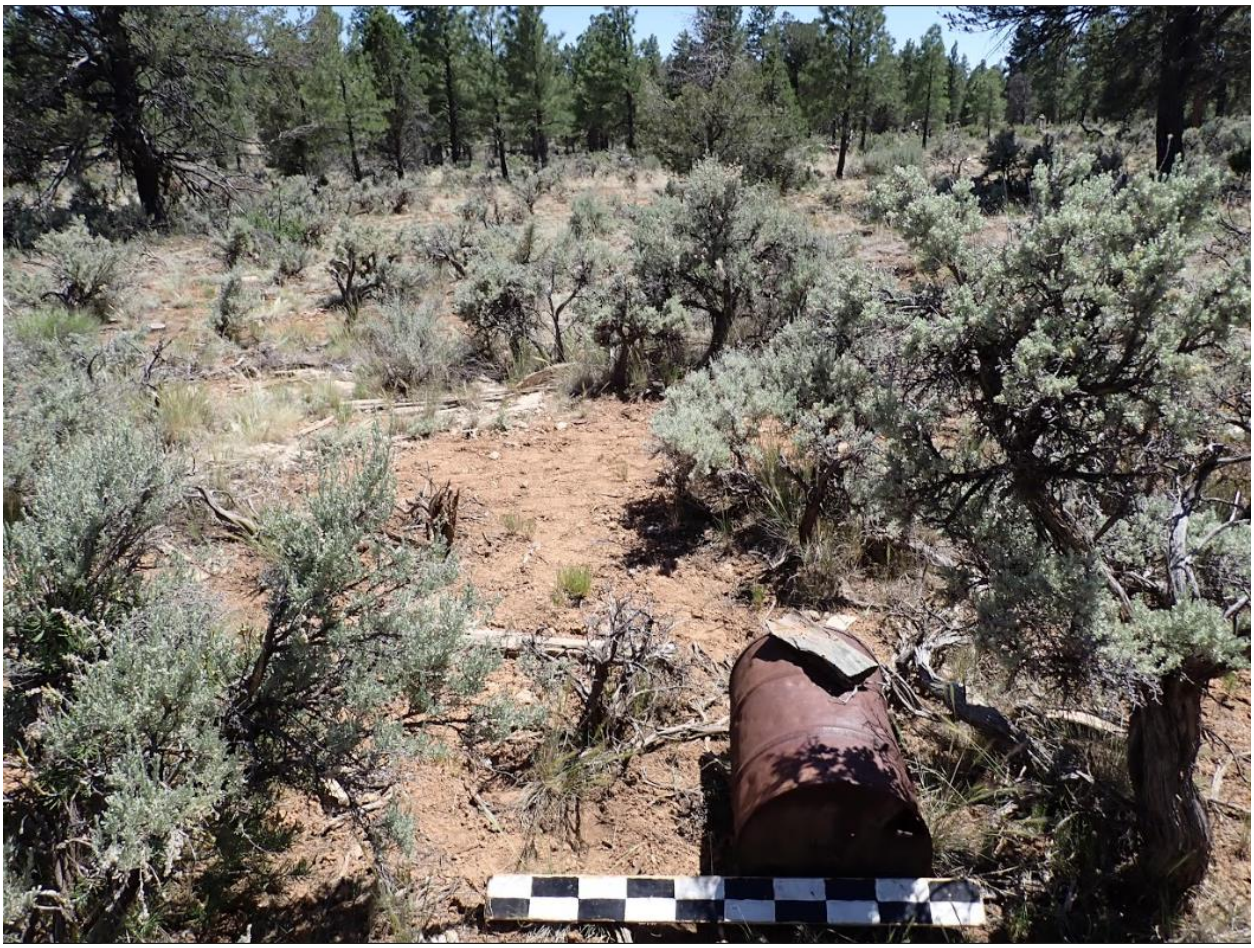

Figure 9: Locus J, Artifact Scatter 2, looking south. Photo by Bailey Stalford.

Can Dump 1 (CD1) is located on the west edge of Locus J, at the base of the hill where Locus I is located (Figure 10). CD1 was previously recorded in 2022, but with a larger crew, we were able to make a more thorough accounting of artifacts in 2024. New artifacts were found and previously-recorded artifacts re-recorded, though some artifacts recorded in 2022 were either not recorded or not found again. The artifacts in CD1 are overwhelmingly domestic, with approximately 750 cans, 500 glass shards of all colors, 200 ceramic shards, mostly porcelain, and 50 miscellaneous metal fragments. A concentration of porcelain and glass fragments is on the north side of CD1. There are far too many diagnostic items, including bottles with maker's and filler's marks, to list them all here. Instead, we will discuss those with a known function. The glass is mostly from bottles and jars for food and beverages (Kerr, Heinz, Coca-Cola, Flagstaff Brooks, Hiram Walker & Sons whiskey, Globe Bottling Company soda bottle, Mission Orange Dry) and sanitation and hygiene products (Clorox, Little Boy Bluing, Dr. Caldwell's Pepsin Syrup, Mum's deodorant bottle, Pond's cold cream jar), and cans are overwhelmingly for food (Northern California sardine, Ovaltine, Calumet and Clabber Girl Baking Powder, Norway sardine cans, Budweiser Malt Syrup Extract, Uruguay beef tin), Other notable artifacts include

two Mission Dairy Cottage Cheese lids, a 3-in-1 oil can, a Homer Laughlin Trellis pattern plate fragment, Teddy Alls and Pay Day buttons, and a Crystal White Scouring Cleanser can.

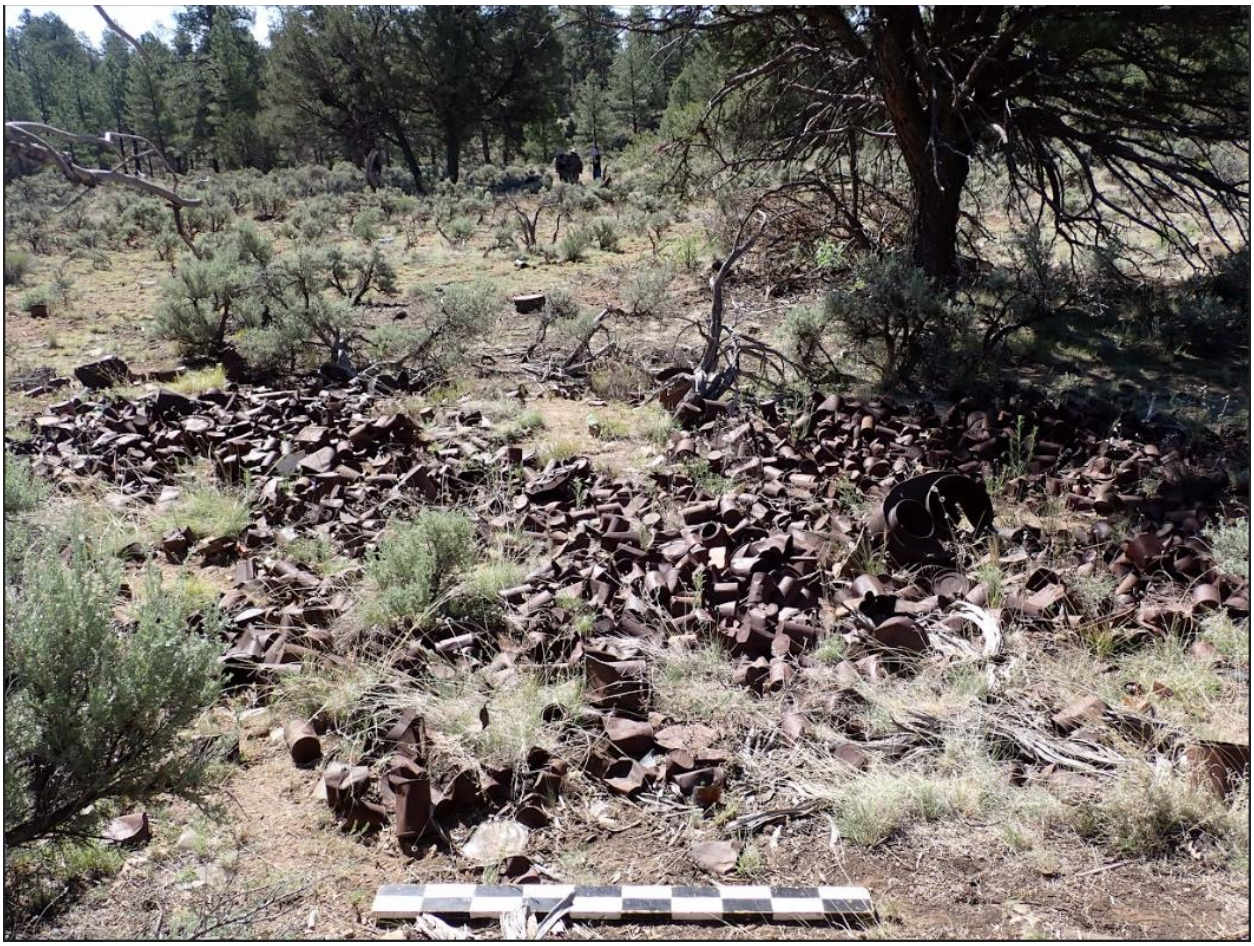

Figure 10: Locus J, Can Dump 2, looking east. Photo by Fran Maiuri.

Stone Pile 1 (SP1) is located at the east edge of Locus J, and likely was constructed from larger stones gathered and removed from in and around Wood Scatter 2, which is relatively free of rocks compared to the surrounding areas (Figure 11). The stone pile is generally about 3.3 meters long north-to-south, and 2.8 meters long east-to-west. There are several artifacts in and around SP1, mostly colorless bottle glass, with some light amber, cobalt, milk, and amber shards, hole-in-top cans, flat ferrous metal, wood fragments, 1 WIE fragment, and 1 tobacco can. Most items are small and broken.

Figure 11: Locus J, Stone Pile 1, looking east. Photo by Bailey Stalford.

As Locus J is fairly large, there are isolated artifacts scattered throughout the areas that did not contain enough material culture to designate as unique concentrations. Diagnostic artifacts, however, were recorded individually. The area between AS2 and CD1 contained a toy Avery tractor, a Chase & Sanborn Tea can, a rusted enamelware bowl, and a grinding stone. The area around the northeast perimeter of Locus J, between AS1 and WS2 contained a motor oil can, a Kerr mason jar, a birdcage, and a pipe.

5.2. Locus KLM

Locus KLM was originally recorded as three separate Loci by the Forest Service in 2006, none of which were mapped. Upon closer inspection of the area, however, we determined there was little separation between the Loci, as trash and building scatter was consistent across the area. As such, while we retained individual designations in line with the Forest Service, where Locus K and Locus M are privy depressions and Locus L is a building outline, we designated the larger artifact and wood scatter between and around the individual Loci as the larger Locus KLM. We believe this was the home and garage of Arvid Anderson, the camp superintendent, who had a larger house and a separate garage. Per Al Richmond's 1984 map, the home of the teacher was

likely at the north end of Locus KLM, but the disperse nature of the wood scatter and lack of extant foundations make it impossible to discern the location of any closely-placed, individual structures.

Our recordation of Locus KLM in 2024 identified ten discrete activity areas: Locus K, Locus L, Locus M, Wood Scatter 1, Wood Scatter 2, Wood Scatter 3, Artifact Scatter 1, Artifact Scatter 1, Artifact Scatter 2, Can Dump 1, and Stone Circle 1 (Figure 7). The lack of large can dumps at KLM suggests that they used Locus S, just to the west of KLM to deposit the majority of their trash.

The Locus KLM map is very large, and we have not yet digitized it as a result.

Locus K

Locus K was described by the KNF as "structural area – lots of limestone blocks, milled lumber; cans, trash; at least 1 wooden structure; "CRYSTAL WHITE SCOURING CLEANSER" can; lid, large (privy) pit; "BEAR BRAND" metal screw top."

We defined Locus K as continuous artifact scatter in and around the privy at the north end of the Locus that is mostly concentrated under the tree growing southeast of the Privy (Figure 12). The privy is approximately 1.7 meters north to south, 1.8 meters east to west, and .5 to .75 meters deep (Figure 13). The privy itself contains few artifacts. Most artifacts were domestic, with a majority related to food and food preparation, such as food cans, bottle glass, an enamelware pot, ceramic dishware shards, serving and baking trays. Other artifacts include architectural materials, such as metal sheeting, hinges and clamps, insulated cables, and chicken wire, tobacco and snuff tins, and carbon battery rods. A large concentration of broken alcohol and beer bottles sits at the east end of the site. Notable artifacts include a possible folding chair frame, Clorox and Mentholatum bottles, and alcohol bottles from the American Medicinal Spirits Company, Seagram's whiskey, and the unknown manufacturer of Rectifer-19 whiskey.

Figure 12: Locus K, looking east. Photo by Matt Harwood.

Figure 13: Locus K Privy looking north. Photo by Matt Harwood.

Locus L

Locus L was described by the KNF as "wooden structure outline; glass, metal, ceramics; carnival glass dish."

We similarly defined Locus L as the area in and directly surrounding the five wood beams still forming a square foundation (Figure 14). Based on Al Richmond's map, this may have been the location of the Andersen garage, but the foundation is not fixed to the ground, meaning it may have been moved since the 1930s. In addition to the beams, which still contain nails, there are over 100 wood board fragments. A bundle of chicken wire and barbed wire along with a pile of nails is located at the northwest edge of the foundation, suggesting they possibly had chickens or used chicken wire below their foundation to keep rodents out. Common artifacts include glass shards (mostly amber, but also colorless and cobalt), ceramic shards, springs, cans and buckets. Notable artifacts include Calumet Baking Powder and Copenhagen cans, a Pennsylvania cigar tin, Rectifier-19 whiskey bottle, an Old Forester bourbon bottle, and numerous amber Owens-

Illinois bottle bases, likely from beer bottles, that originated in their Alton, Illinois plant in either 1932 or 1933 (Factory code 7).

Figure 14: Locus L, looking southwest. Photo by Matt Harwood.

Locus M

Locus M was described by the KNF as "large (privy pit) – near tower. Milled lumber, trash, other poss. structures."

We also defined Locus M as consisting of only the privy pit and its associated artifacts (Figure 15). The privy pit contains six distinct beams, largely arranged in a squared-C shape, with the south beam of what was once likely a square moved. Wood board fragments are scattered throughout the Locus Artifacts in and around the privy include cut bone, glass, cans, wire mesh, possibly from a window screen or similar architectural element, leather fragments. Notable artifacts include an Uruguayan meat can and an "ARIZ." light green bottle base.

Figure 15: Locus M Privy looking west. Photo by Lorna Baker.

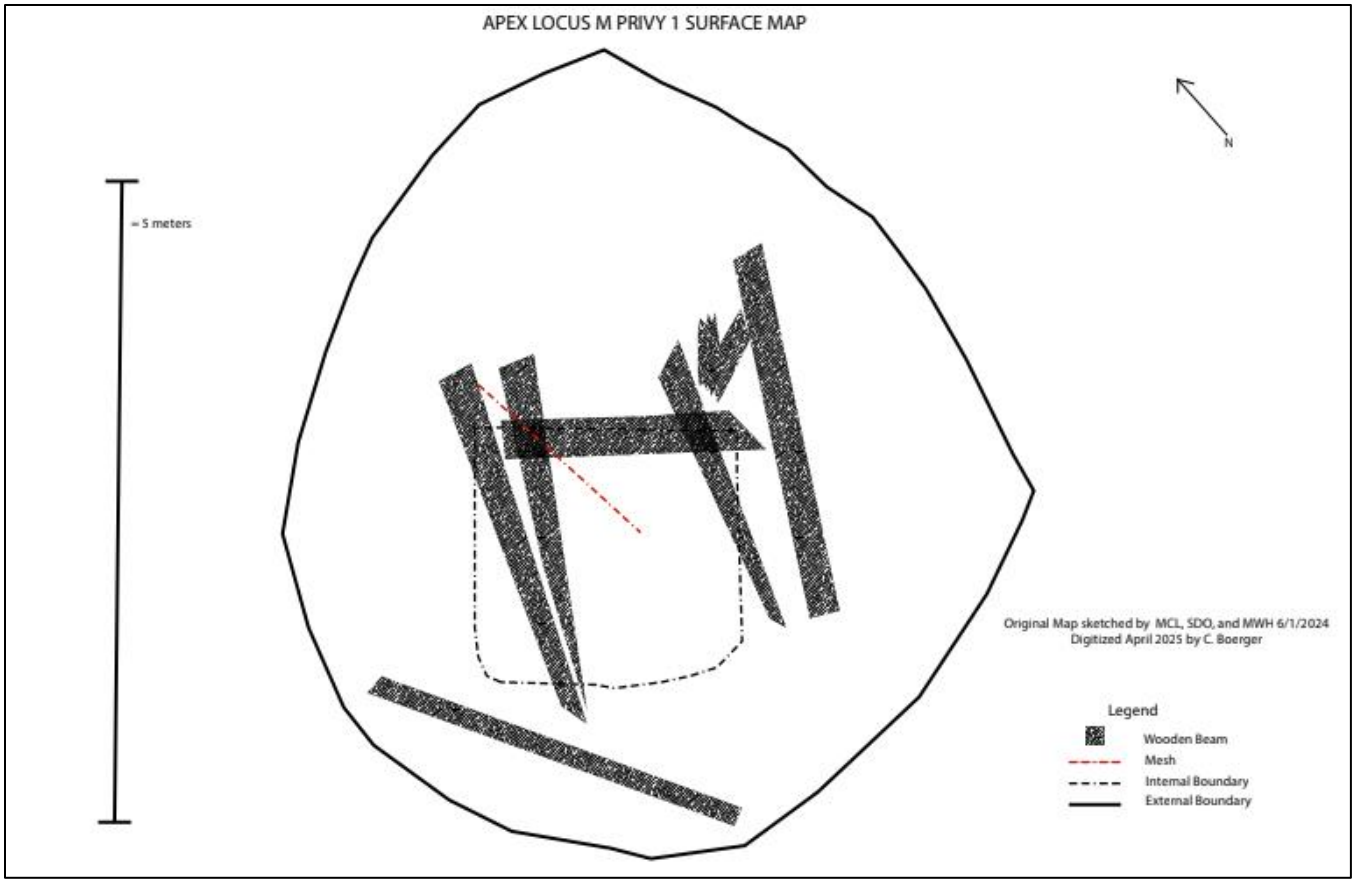

Figure 16: Map of Locus M privy surface. Drawn by Makenzie Long, Sarah O'Donnell, and Marc Hillis. Digitized by Caroline Boerger.

We selected Locus M for excavation for several reasons. Its possible function as a privy would potentially help answer questions about diet and trash disposal at the site. The seemingly still-in-place beams suggested a substantial building. Moreover, compared to the Locus K privy which is located under a tree, it was easier to access, less deep, and accessible from multiple sides, which would make excavation easier and unit collapse less likely.

The 1m x 1m excavation unit was oriented so as to bisect the depression, with the goal of obtaining a good cross-section of the potential privy. As the stones that possibly made up a foundation for the privy pit were slumping into the depression, it was impossible to orient the unit in a direct North-South direction without moving them. As such, we placed the unit along a Northwest-Southeast orientation, meaning we have North, South, East, and West corners. Our highest corner, the east corner, was used as a datum. Unfortunately, the soil remained the same throughout our excavation and no definitively "privy"-esque level was reached. Artifacts and architectural elements were found throughout all levels, however, and we closed the unit before reaching sterile as it became too deep to safely excavate and we ran out of time.

Bruce Phillips, an archaeobotanist and geoarchaeologist who runs BGP Consulting, Inc, volunteered his services. He assisted in the collection of soil samples from Privy 1 (Figure 17), with the goal of discovering botanical remains that could point to fresh fruits and vegetables in Apex residents' diets that supplemented or complemented the largely canned food diet represented in the archaeological record. His report is included in Appendix A.

Figure 17: Bruce Phillips demonstrates proper soil sampling as Bailey Stalford, Devony Martell, Fran Maiuri, and Lorna Baker observe, Locus M. Photo by Emily Dale.

Paperwork maps and photos were taken at the bottom of each level. In all photos, the whiteboard is along the northeast wall, with the north corner of the unit in the upper left.

The surface soil of Privy 1, Unit 1 was full of wood fragments from the boards and beams in the unit. Lots of organic materials, including pine tree needles and cones, had accumulated in the depression, making the soil darker than the soil outside of the depression (Figure 18). It was recorded as a 7.5YR 3/2: Dark Brown. Soil depths for the unit surface ranged from 5cmbd (east corner) to 19cmbd (center). Artifacts collected were a piece of wire mesh and a can lid reading "TO OPEN".

Figure 18: Locus M, Privy 1, Unit 1, Surface, plan view. Photo by Emily Dale.

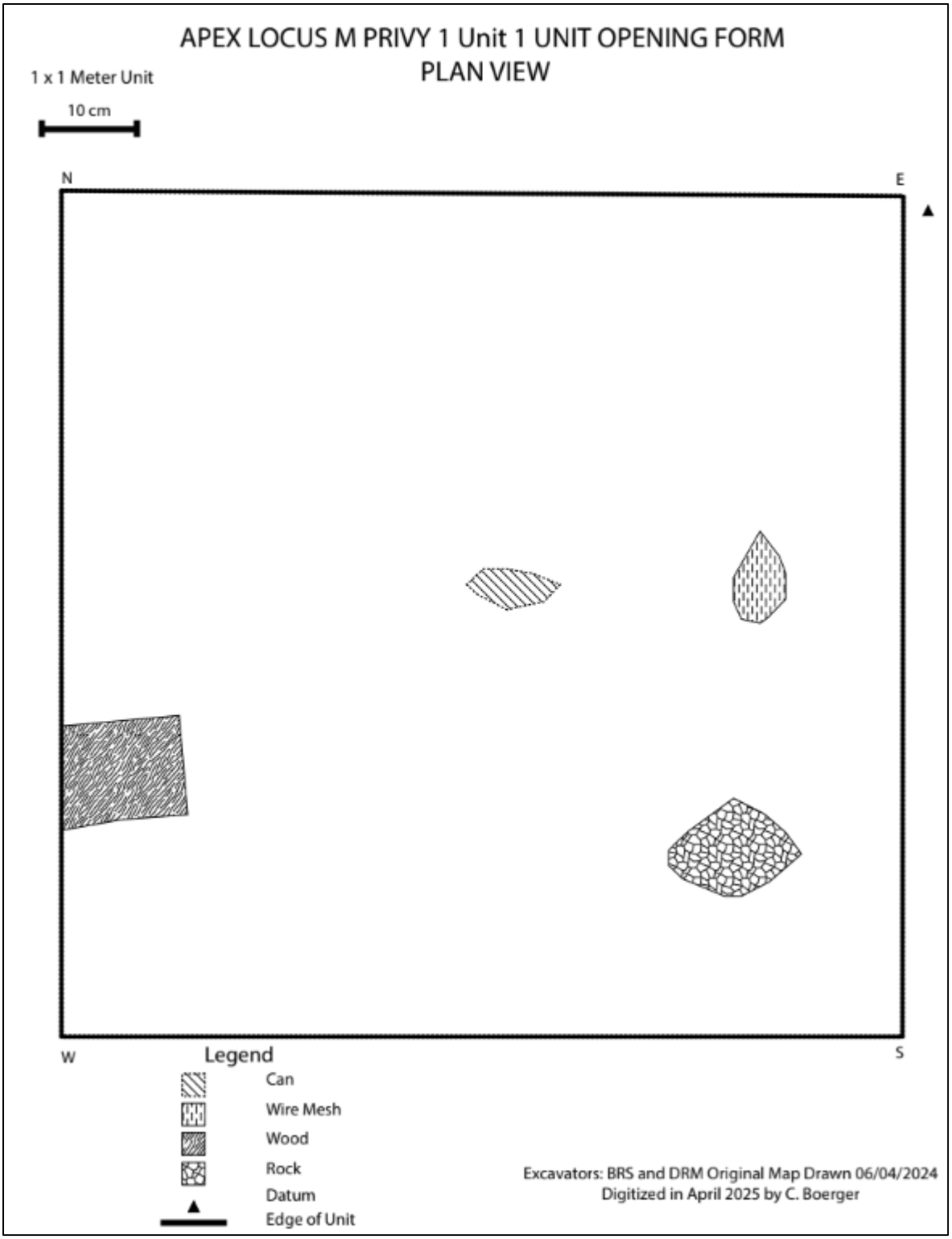

Figure 19: Locus M, Privy 1, Unit 1, Surface Map. Drawn by Bailey Stalford and Devony Martell. Digitized by Caroline Boerger.

Stratum 1, Level 1 (2.5Y 3/3: Dark Olive Brown) ranged in depth from 6 cmbd (East corner) to 22.45cmbd (center) (Figure 20). As with the surface, the soil was a dark color due to the large amount of organic matter, including pine nut seeds, juniper berries, pine needles, and pinecone fragments. Artifacts found in S1 L1 were wire mesh fragments, can fragments, nails, rubber fragments, leather fragments, including a shoe sole, a broken, black, rubber comb, and an unidentified material that is possibly tar paper.

Figure 20: Locus M, Privy 1, Unit 1, Stratum 1, Level 1, plan view. Photo by Bailey Stalford.

Figure 21: Locus M, Privy 1, Unit 1, Stratum 1, Level 1 Map. Drawn by Bailey Stalford and Devony Martell. Digitized by Caroline Boerger.

Stratum 2, Level 1 (10YR 3/2: Very Dark Gray/Brown) focused on the north and east corners, which were the highest areas of the unit, and bringing them down and level with the rest of the unit (Figure 22). As a result, the ending depths ranged from 19 to 22.9cmbd. The soil continued to be rich in organics, but larger pieces, like intact pinecones, diminished compared to previous levels. Artifacts continued to be similar to previous levels, including wire mesh, nails, metal fragments, and an amber bottle base.

Figure 22: Locus M, Privy 1, Unit 1, Stratum 2, Level 1, plan view. Photo by Ricky Raffaele.

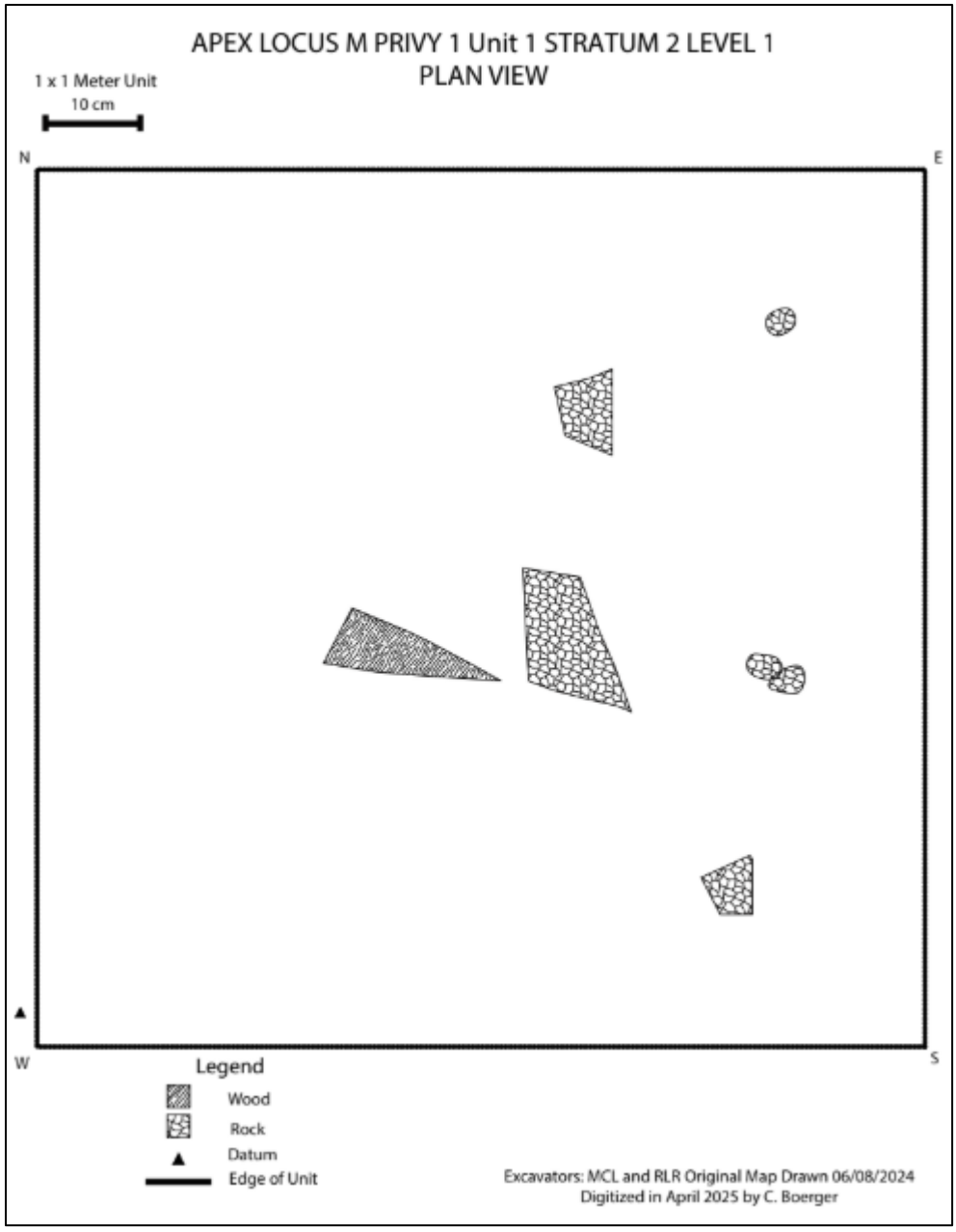

Figure 23: Locus M, Privy 1, Unit 1, Stratum 2, Level 1 Map. Drawn by Makenzie Long and Ricky Raffaele. Digitzed by Caroline Boerger.

Stratum 2, Level 2 (5YR 3/2: Dark Reddish Brown) ranged from 29 to 30cmbd as we brought the whole unit down an additional 10cm and leveled it out (Figure 24). The soil became softer and wetter, and organic materials, namely pine nut shells, pinecone fragments, and decomposing wood fragments, point to continued incorporation of surface materials deeper in the unit. The soil on the northern half of the unit, however, was softer compared to the southern half, which was rockier. Artifacts include bone, an unfired .22 caliber Winchester Repeating Arms Company bullet, colorless and cobalt glass shards, nails, charred wood, rubber, and a bottle cap.

Figure 24: Locus M, Privy 1, Unit 1, Stratum 2, Level 2, plan view. Photo by Marc Hillis.

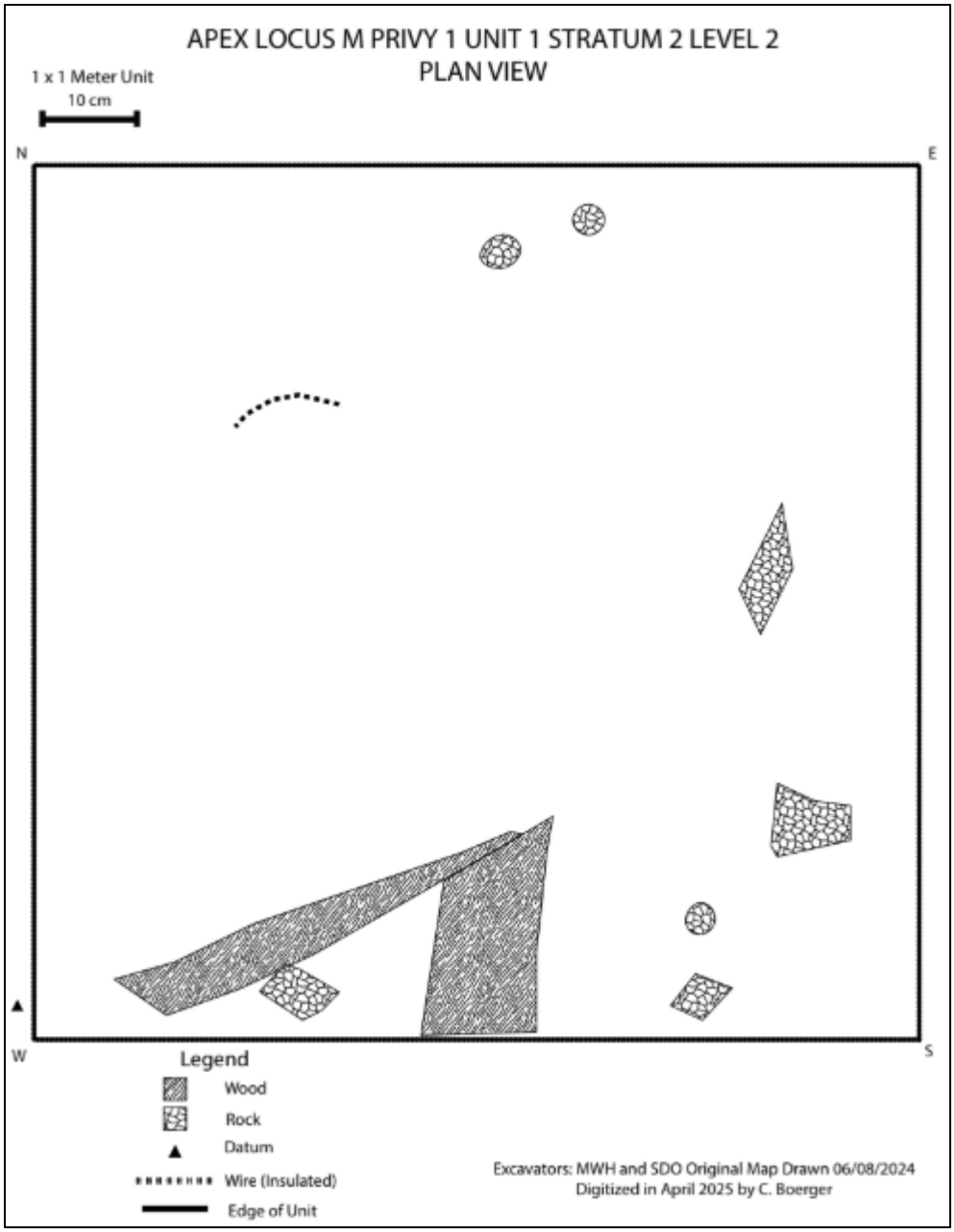

Figure 25: Locus M, Privy 1, Unit 1, Stratum 2, Level 2 Map. Drawn by Marc Hillis and Sarah O'Donnell. Digitized by Caroline Boerger.

Stratum 2, Level 3 (7.5YR 4/3: Brown) ranged between 40 and 42cmbd at the end of level (Figure 26). The amount of charcoal in the unit increased, though its source was unclear in this level. Organic elements continued to decrease slightly. Artifacts included leather, metal, earthenware, and flat glass fragments, a spring, and charcoal.

Figure 26: Locus M, Privy 1, Unit 1, Stratum 2, Level 3, plan view. Photo by Lorna Baker.

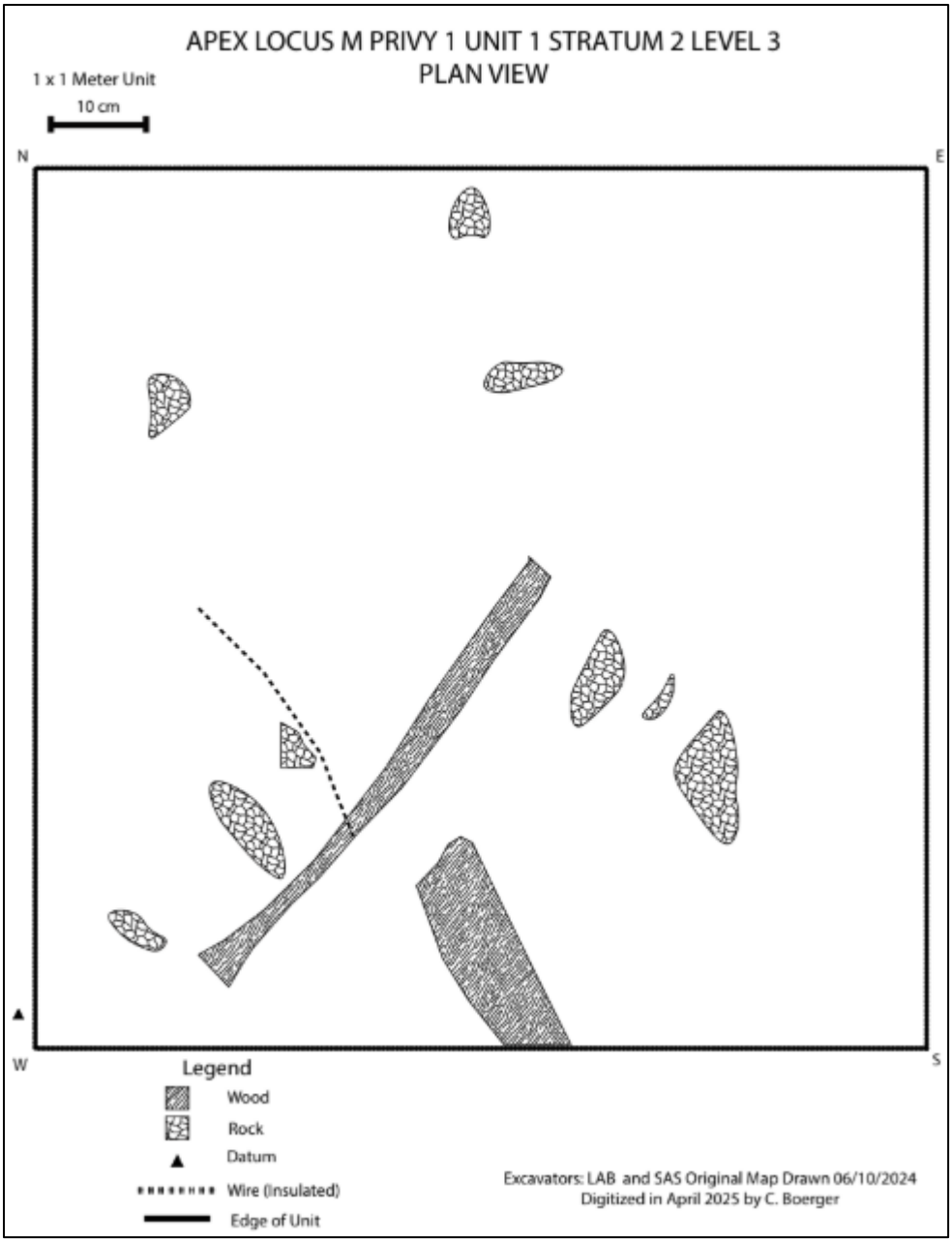

Figure 27: Locus M, Privy 1, Unit 1, Stratum 2, Level 3 Map. Drawn by Lorna Baker and Shannon Stoller. Digitized by Caroline Boerger.

Stratum 2, Level 4 (7.5YR 4/3: Brown) reached a depth between 45cmbd and 50 cmbd, with the southern and eastern corners as the highest point, due to the discovery of a decomposing layer of wood on that side of the unit (Figure 28). Possibly a floor, intact board deposited in the depression, or other architectural element, the wood extends into the south corner and half of the southwest wall, across the unit, and into the east corner. Finishing nails were found at a similar depth, and may have originated in the wood. The soil was still rich in organic matter, including pinecones and seed pods, and evidence of insect activity. Artifacts included roofing, framing,

and finishing nails, colorless, and amber glass, tar paper fragments, a carbon battery rod, a bottle cap, and charcoal. The piece of insulated wire first uncovered in S2 L3 was removed in S2 L4.

Figure 28: Locus M, Privy 1, Unit 1, Stratum 2, Level 4, plan view. Photo by Adrienne Dale.

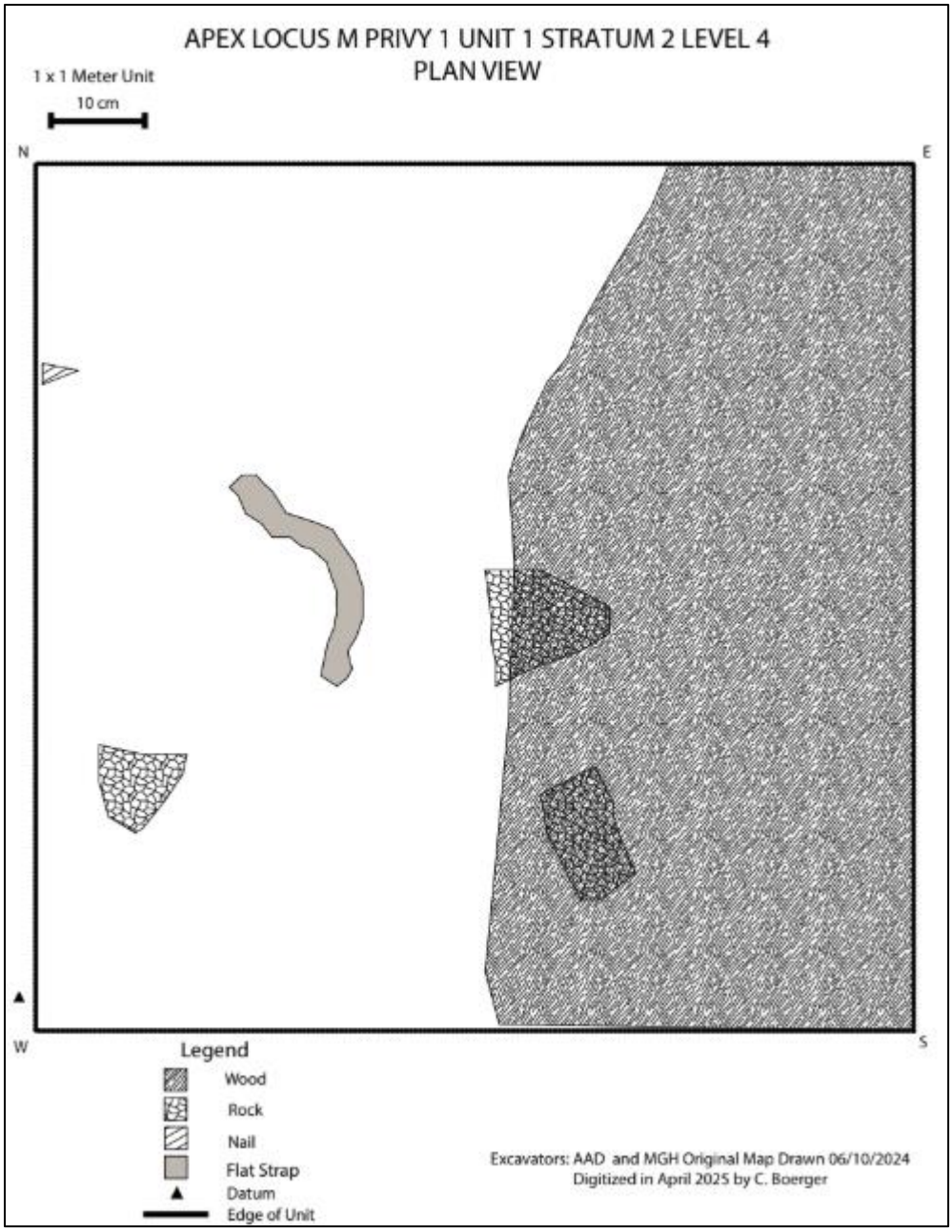

Figure 29: Locus M, Privy 1, Unit 1, Stratum 2, Level 2 Map. Drawn by Adrienne Dale and Matthew Harwood. Digitized by Caroline Boerger.

During Stratum 2, Level 5 (10YR 3/3: Dark Brown), we excavated the northwest half of the unit first down 10cm to around 61cmdb to determine the extent of the wood in the southeast half (Figure 30). We determined the wood was 8cm from the northeast wall and 8cm thick, with the east portion of the board thinner than the south part. Bruce Phillips conducted removal of the wood, and took soil samples from within and just below the wood in the east corner of the unit. Across the unit and below the wood board, the soil was soft, but rocky, especially in the south and west corners (Figure 31). Roots and limestone increased. Artifacts recovered in S2 L5 were

nails, wood fragments, charcoal, colorless and green glass shards, metal fragments, and a metal strap.

The flotation and pollen analysis, completed by Bruce Phillips and Allyana Marshall, an NAU undergraduate student, found no evidence of anthropogenic cultigens. The flotation analysis found high levels of disturbance, including rootlets, plant debris, and animal pellets. The most common organics identified in the flotation data found were piñon seeds, pine needle fragments, and juniper wood fragments. A single purslane suggests at least some deposition during summer, when the plants set fruit. The pollen data similarly revealed the high presence of ponderosa pine and junipers, alongside eleven other species. Piñon and Asteraceae, a flowering plant, were next most common. All pollen represented common, local plants. For more on the sampling, see the full report in Appendix A, and Allyanna Marshall's blog, Apex Flotation Sample Analysis, in Appendix C.

Figure 30: Locus M, Privy 1, Unit 1, Stratum 2, Level 5, plan view. Outline of wood plank revealed with NW half excavated to level. Photo by Fran Maiuri.

Figure 31: Locus M, Privy 1, Unit 1, Stratum 2, Level 5, plan view. Photo by Fran Maiuri.

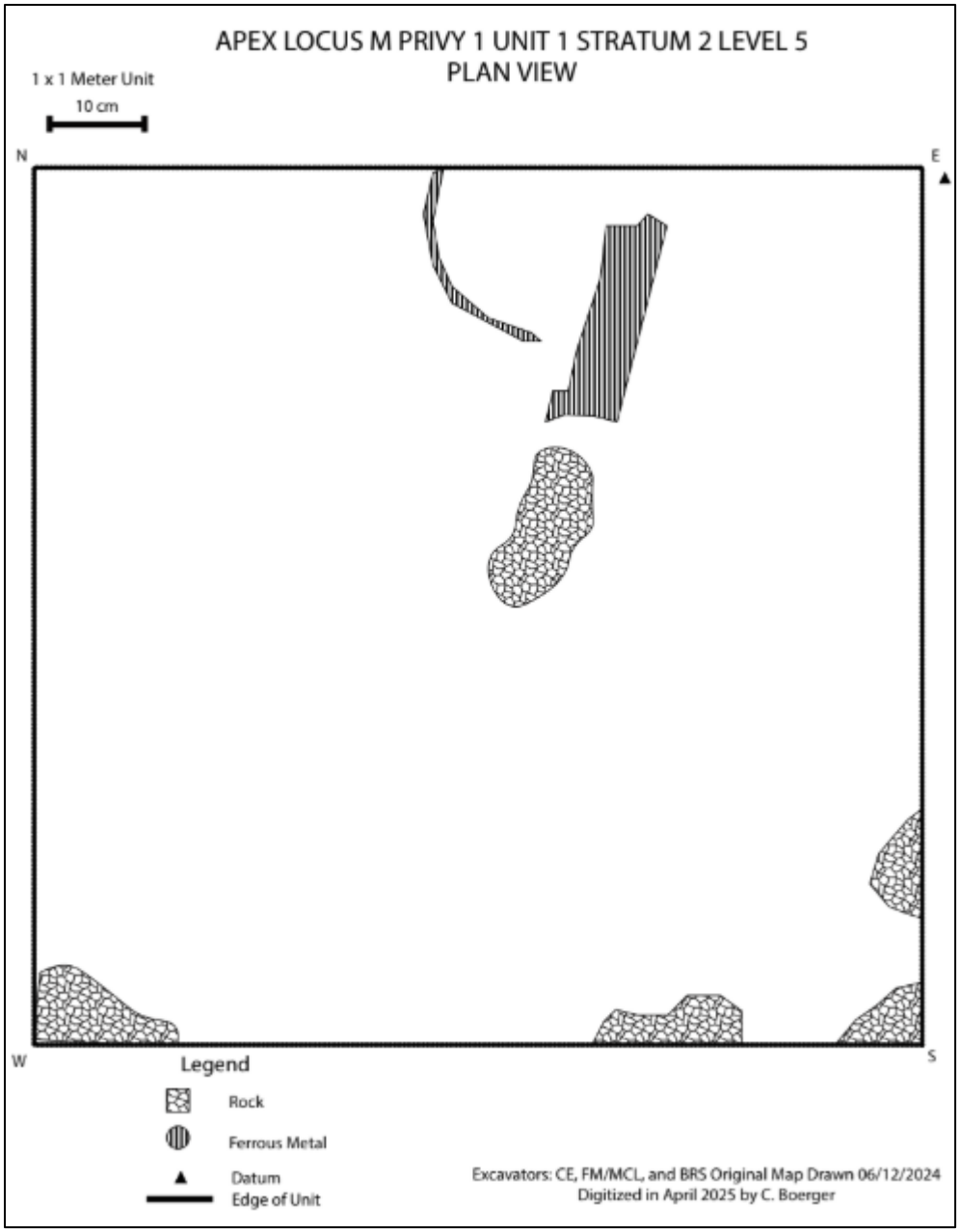

Figure 32: Locus M, Privy 1, Unit 1, Stratum 2, Level 5 Map. Drawn by Carl Evertsbusch, Fran Maiuri, Makenzie Long, and Bailey Stalford. Digitized by Caroline Boerger.

Stratum 2, Level 6 (7.5YR 3/4: Dark Brown) continued soft with lots of rocks and roots down to 69.5 to 72cmbd (Figure 33). Charcoal was concentrated in the north corner, possibly as a result of a root fire or a now-decomposed burnt board. Beyond the charcoal, artifacts included nails, glass shards, a metal sheet, and a bone fragment.

Figure 33: Locus M, Privy 1, Unit 1, Stratum 2, Level 6, plan view. Photo by Sarah O'Donnell.

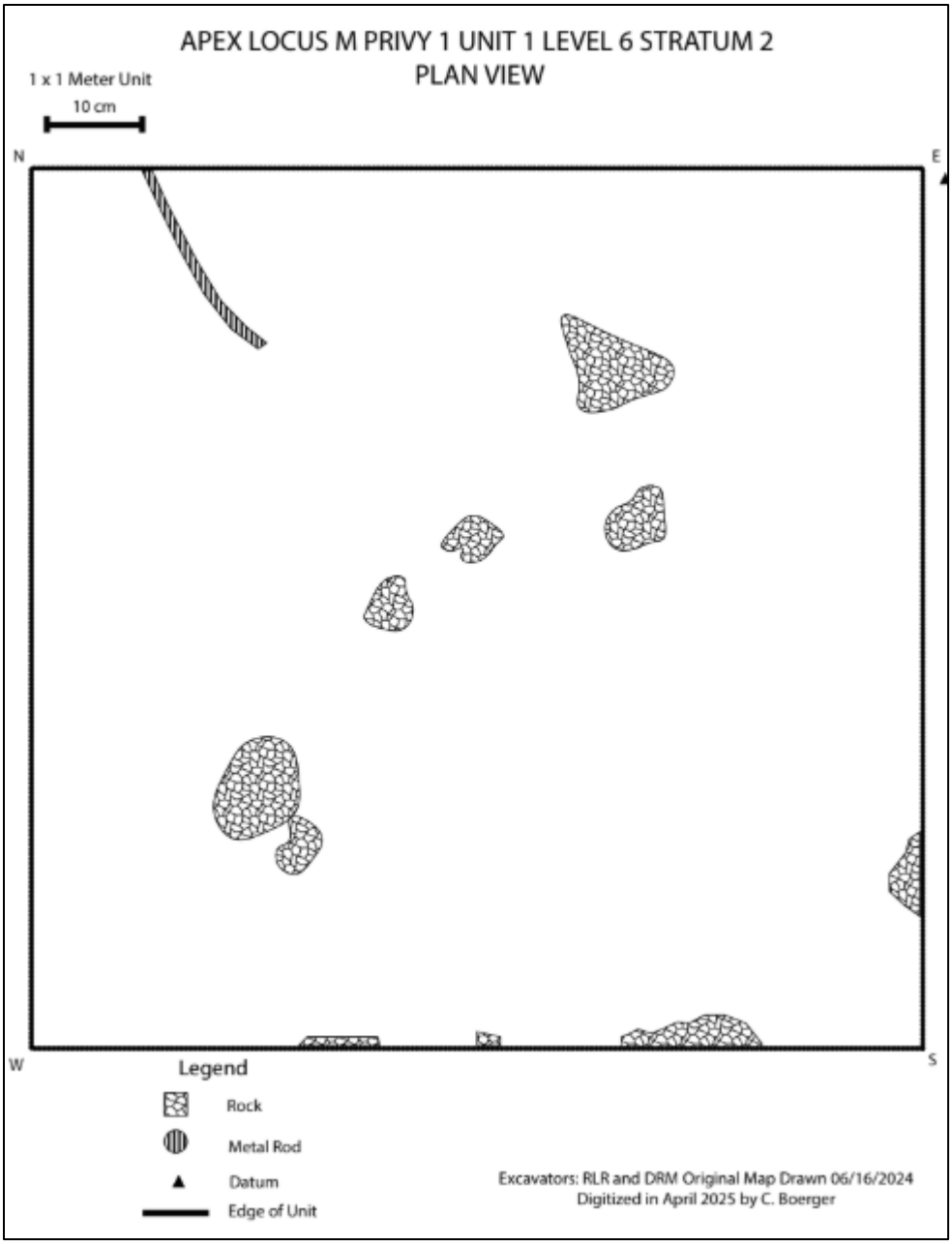

Figure 34: Locus M, Privy 1, Unit 1, Stratum 2, Level 6 Map. Drawn by Ricky Raffaele and Devony Martell. Digitized by Caroline Boerger.

Stratum 2, Level 7 (5YR 3/3: Dark Reddish Brown) was taken down to 80cmbd across the whole unit (Figure 35). The soil continued to be rocky, but very fine. Several artifacts that were first partially uncovered at higher levels were more fully exposed during this level, including a pipe first encountered in Level 6 and a triangular bracket, both in the North corner and embedded in the sidewall. Another metal fragment, a cast iron semi-circular bar was removed from this same corner. Other artifacts were glass (cobalt, milk, light green, and colorless), charcoal, wood, a nail, and tar paper.

Figure 35: Locus M, Privy 1, Unit 1, Stratum 2, Level 7, plan view. Photo by Emily Dale.

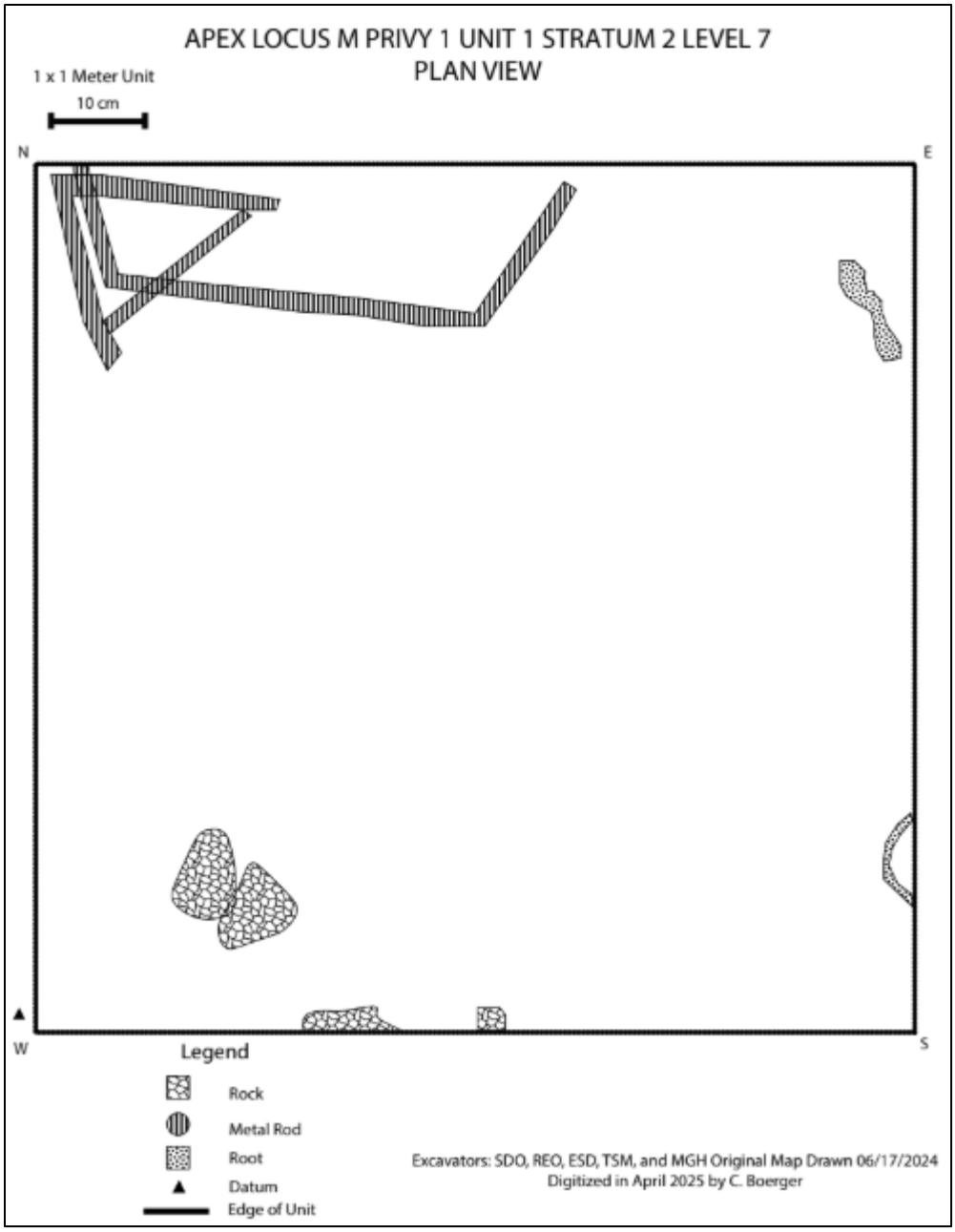

Figure 36: Locus M, Privy 1, Unit 1, Stratum 2, Level 7 Map. Drawn by Sarah O'Donnell, Rachael O'Hara, Emily Dale, Tim Maddock, and Matthew Harwood. Digitized by Caroline Boerger.

Stratum 2, Level 8 (5YR 3/3: Dark Reddish Brown) was our last level of excavation, and the unit ended at 82.5cmdb (Figure 37). The soil was still fine, but rocky. Artifacts removed included a nail, painted wood, charcoal, and tar paper. The triangular bracket and rod in the north corner were left in the unit as they were firmly embedded in the wall.

Figure 37: Locus M, Privy 1, Unit 1, Stratum 2, Level 8, plan view. The whiteboard is mislabeled as Level 7. Photo by Lorna Baker.

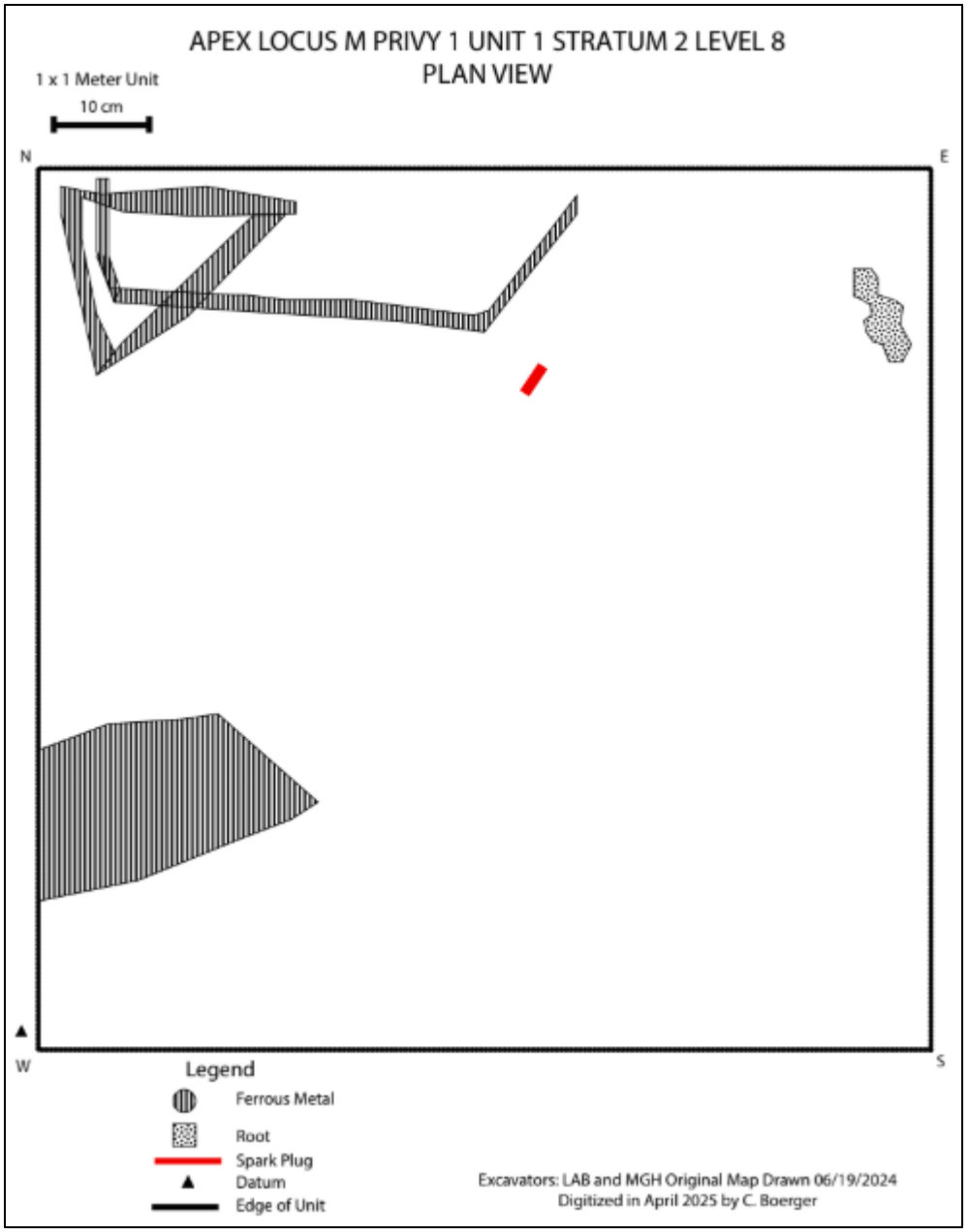

Figure 38: Locus M, Privy 1, Unit 1, Stratum 2, Level 8 Map. Drawn by Lorna Baker and Matthew Harwood. Digitized by Caroline Boerger.

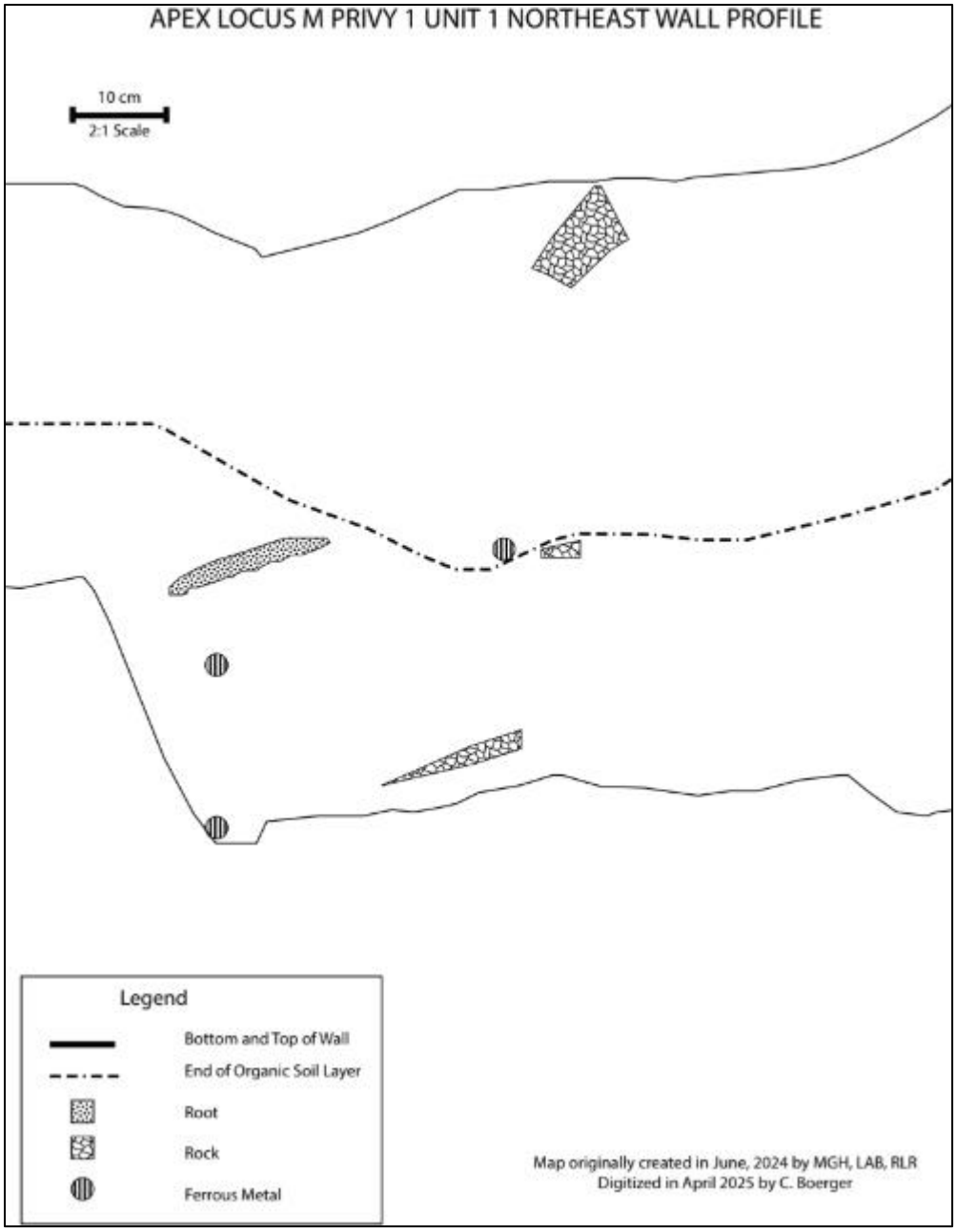

Figure 39: Locus M, Privy 1, Unit 1, Northeast Wall Profile. Drawn by Matthew Harwood, Lorna Baker, and Ricky Raffaele. Digitized by Caroline Boerger.

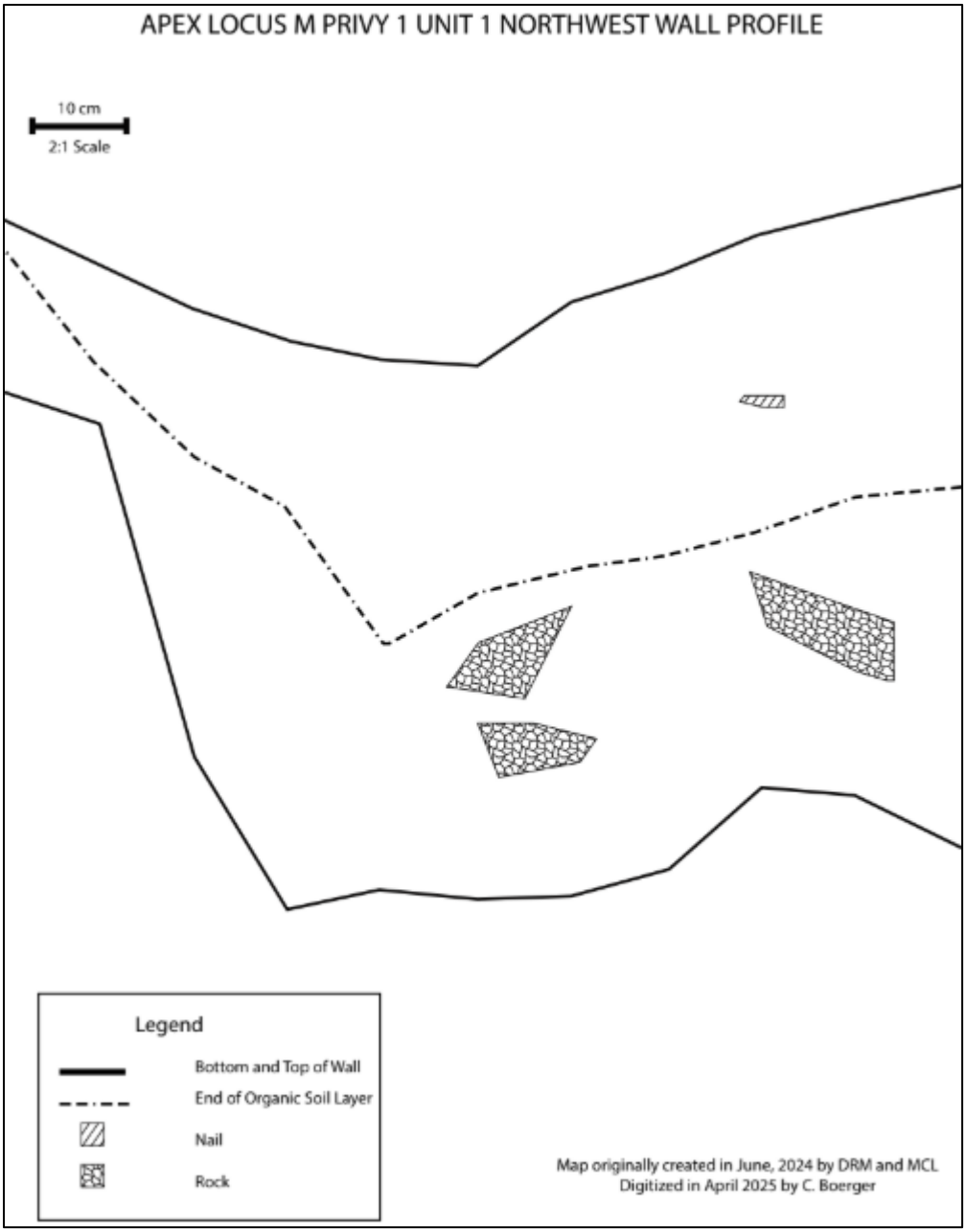

Figure 40: Locus M, Privy 1, Unit 1, Northwest Wall Profile. Drawn by Devony Martell and Makenzie Long. Digitized by Caroline Boerger.

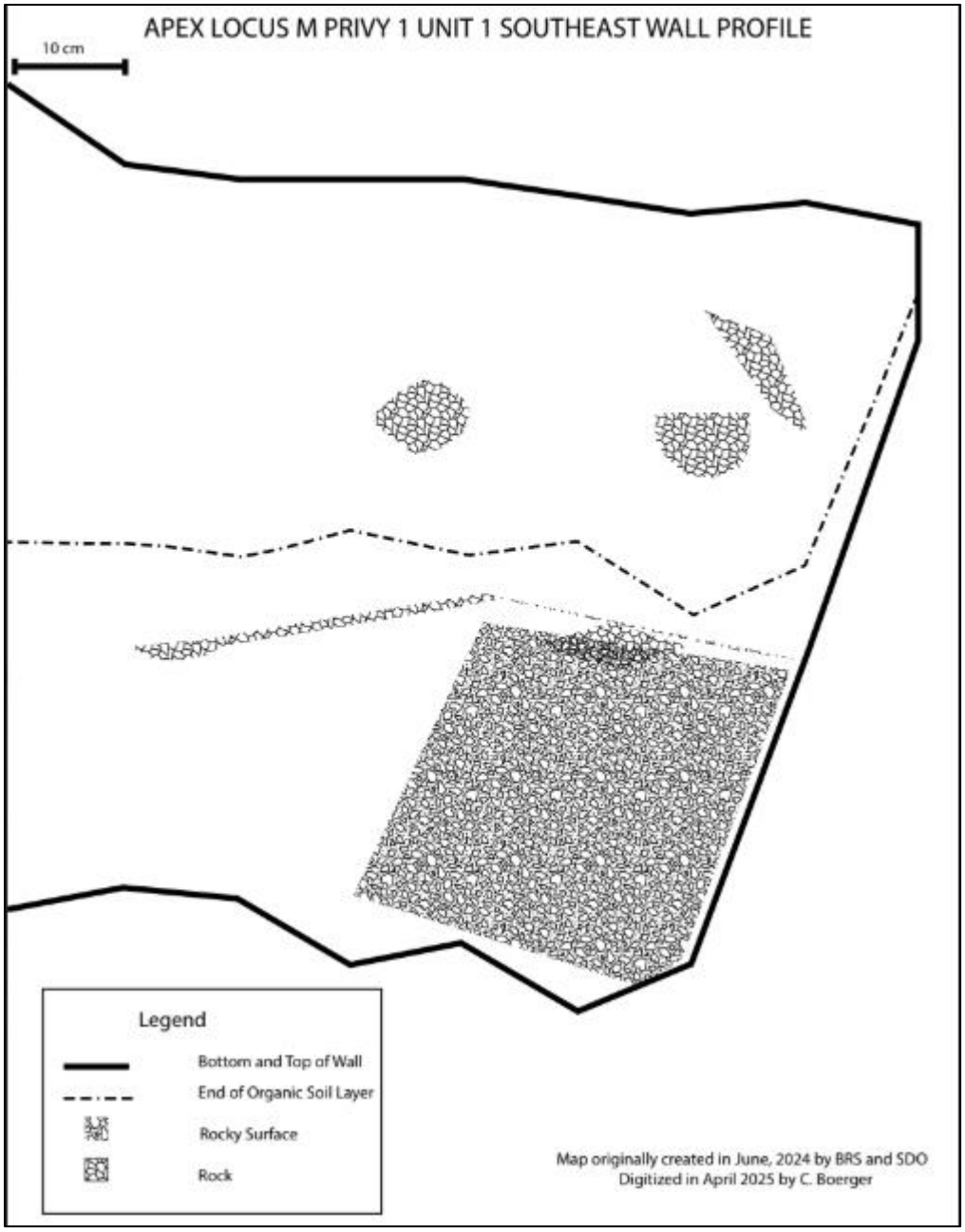

Figure 41: Locus M, Privy 1, Unit 1, Southeast Wall Profile. Drawn by Bailey Stalford and Sarah O'Donnell. Digitized by Caroline Boerger.

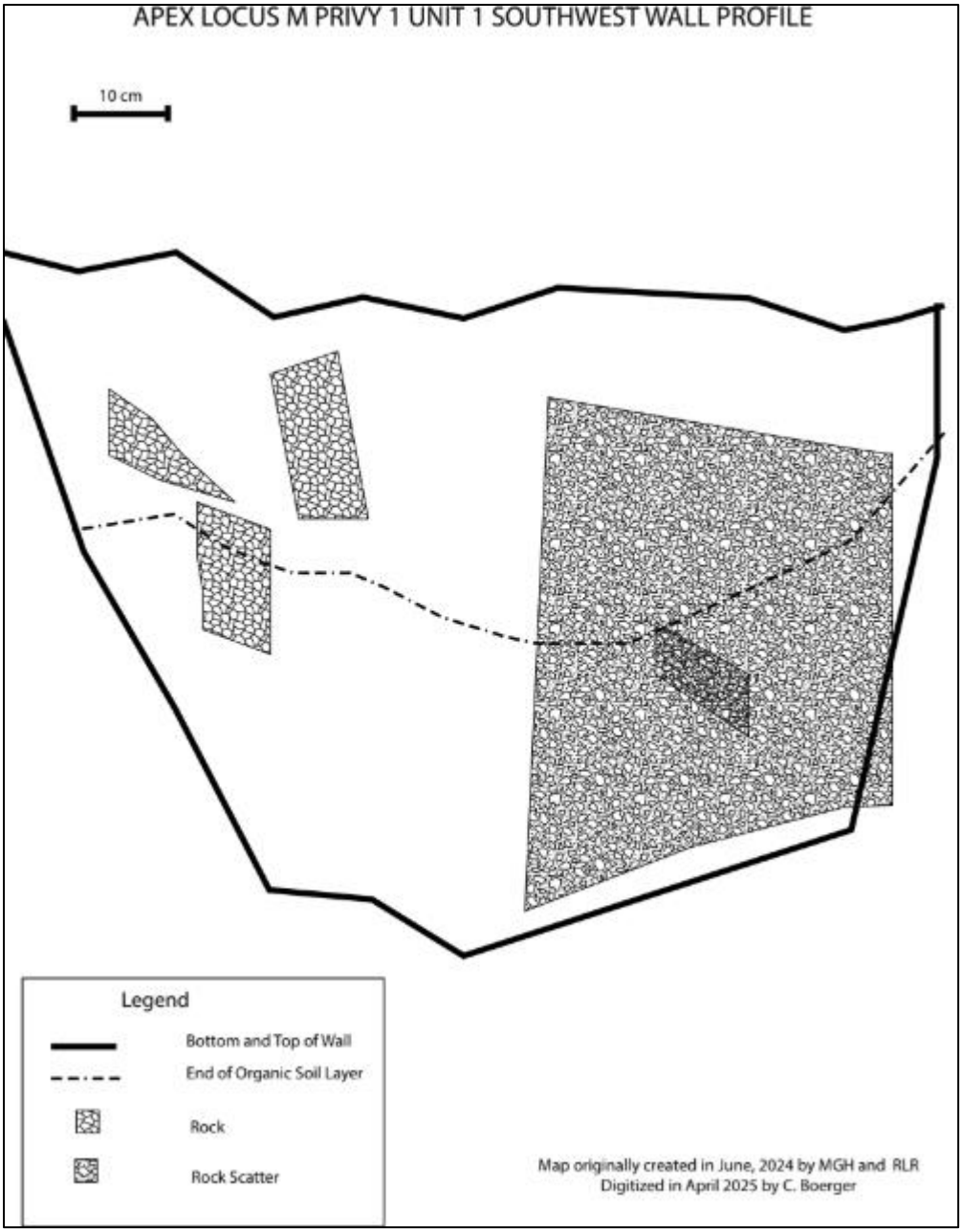

Figure 42: Locus M, Privy 1, Unit 1, Southwest Wall Profile. Drawn by Matthew Harwood and Ricky Raffaele. Digitized by Caroline Boerger.

Overall, the soil in Locus M, Privy 1 was far softer, more organic, and more in line with what we would expect from a privy (Figure 43). As we never reached a layer that was definitively privy soil, as we hoped we would encounter under the wood board, or a layer of artifacts that would indicate the top of a capped privy, we must conclude Locus M is either not a privy, or the privies were dug much deeper than we would expect. The depression, though, is clearly man-made. The pile of stone at KLM WS3 is plausibly stone removed from the excavation of the depression, the

unit did not hit bedrock, as we did at Locus E, and the timbers on the surface suggest a small build, like an outhouse, was built on this location.

Figure 43: Locus M, Privy 1, Unit 1, end of unit, plan view. Artifacts and burlap were placed in the bottom to signal the depth reached in 2024. Photo by Emily Dale.

Locus KLM

As explained above, the areas not directly associated with the two privies (Loci K and M) or the building foundation (Locus L) as defined by the Forest Service in 2006 were designated as part of the larger Locus KLM in 2024 due to the contiguous nature of the artifact scatter.

Wood Scatter 1 (WS1), at the south edge of the Locus and east of Locus L, is a widespread scatter of mostly wood boards and containing nine wood beams (Figure 44). Artifacts were disperse and mostly concentrated at the northeast edge of WS1, closest to Locus M, but included cans, ceramics, glass shards, and ceramic sherds. More permanently, a ferrous rod or pipe is securely fastened into the ground near the center of WS1. Two of the six Culturally Modified Trees at KLM are at the south end of WS1 (and therefore the south end of KLM overall). Both

CMTs have the base stripped of limbs. The tree at the south end of WS1 is 2.2 meters in diameter, and the other, located near the southeast corner of WS1, is 1.57 meters with numerous railroad spikes running up the trunk, possibly for climbing. Notable artifacts include numerous record fragments, a Levi Strauss button, a Budweiser Malt Syrup can, an Akro Agate toy glass cup, a 1929 New Mexico license plate fragment, a pre-contact white chert projectile point fragment, and a contemporary, souvenir-style mahogany obsidian projectile point.

Figure 44: Locus KLM, Wood Scatter 1, looking north. Photo by Rachael O'Hara.

Wood Scatter 2 (WS2), between Locus K and Locus M and near the center of KLM, contains five wooden beams and around 60 wooden board fragments (Figure 45). Permanent features within WS2 are a stone walkway consisting of several flat stones laid generally north to south with other, locally available limestone rocks bounding the path, and a 1.81m diameter Culturally Modified Tree, delimbed at the base, and with 1 railroad spike, a board nailed to it, and 1 piece of wire. Artifacts are sparse, but include cans, bottle caps, ceramics, glass (including part of a Coca-Cola bottle), and wire.

Figure 45: Locus KLM, Wood Scatter 2, looking north. The stone-lined path is near the center of the photo, just above the scale. Photo by Rachael O'Hara.

Wood Scatter 3 (WS3) is located at the center of the north edge of KLM (Figure 46). If the teacher's home neighbored Arvid Andersen's house to the north, as depicted in Al Richmond's 1984 map, WS3 is the most likely location for it. Both the wood and artifact scatter is pretty disperse and areas typically have either wood and no artifacts, or artifacts and no wood. A possible stone alignment of local stone is located at the north edge of WS3, possibly creating a pathway or boundary. There are seven beams, around 70 wood board fragments, and a pile of stones at the south end of WS3, possibly from clearing the area in and around WS3 or removed when constructing the privy pit at Locus M (Figure 47). One dead, felled Culturally Modified Tree has rail spikes in it. Three living CMTs are located along the east edge of WS3. They all have their bottom limbs stripped. Going from north to south, they are 1.79, 2.26, and 1.41 meters in diameter. Common artifacts include cans, roof flashing, decorated ceramics (including part of a toy tea set), glass shards of all colors, springs, barrel hoops, and carbon battery rods. Notable artifacts include a Wesson Oil can, a Vai Brothers wind bottle, a Kerr mason jar lid, a Super X rimfire casing, a Crystal White Scouring Cleanser can, a Copenhagen snuff can, and a Mentholatum jar.

Figure 46: Locus KLM, Wood Scatter 3, looking south. Note the four culturally-modified trees with stripped lower limbs in center and left of photo. The furthest two CMTs are in Wood Scatter 1. Photo by Matt Harwood.

Figure 47: Locus KLM, Wood Scatter 3 stone pile, looking west. Photo by Matt Harwood.

Artifact Scatter 1 (AS1) is at the northeast corner of KLM (Figure 48). A stone pile located at the center likely resulted from removal of the naturally-occurring stone elsewhere at the Locus. Cans are scattered evenly across AS1, while other artifacts, such as amber and colorless glass and fire brick, are concentrated in smaller areas. The fire brick concentration is located at the southern part of the rock pile, and includes about 27 fire brick fragments, including at least 4 Trojan bricks from Gladding, McBean & Company and one Security brick. Other notable artifacts include glass bottle and jar fragments (American Medicinal Spirits Company, Boyd's lined cap, Elmo face cream, Mentholatum, Hinds Honey and Almond Cream lotion, Clorox, California Packing Corporation, Haas, Baruch, & Co Iris Coffee, Mrs. Stewart's bluing, Old Thompson Whiskey), cans (Budweiser Malt Syrup, Royal Baking Powder), ceramics (Buffalo China, Made in Japan), a possible Model-T gas tank, and a toy car with patent number.

Figure 48: Locus KLM, Artifact Scatter 1, looking north. Note the gas tank in the bottom right, and the stone and brick pile near the center. Photo by Lorna Baker.

Artifact Scatter 2 (AS2) is located at the north end of KLM, between KLM and Locus S (Figure 49). The most common artifacts were ceramic sherds, glass shards (mostly amber, colorless, and window), cans, and other metal items. Notable artifacts include a Jack-o-Cantern, a porcelain doll arm, a Stihl file guard for a chainsaw sharpener, a Valet safety razor, a paint brush, a Lifebuoy shaving cream tube nozzle, a Coca-Cola bottle, a Hind's Almond and Honey Cream bottle, a Gephardt Eagle chili powder bottle, and Rectifer-19 whiskey bottles.

Figure 49: Locus KLM, Artifact Scatter 2, looking east. Photo by Bailey Stalford.

Can Dump 1, located just north of WS1, contains approximately 200 cans, mostly food cans, in a concentrated area (Figure 50). Other artifacts are scattered throughout the area, and are similarly related to domestic or kitchen functions, such as porcelain sherds, fragments of a stoneware crock, bottle, jar, and decorative glass shards. Notable artifacts include a cast iron stove fragment embossed “DALE”, two Wesson Oil cans, and a decorative green glass plate.

Figure 50: Locus KLM, Can Dump 1, looking north. Photo by Ricky Raffaele.

Stone Circle 1 (SC1) is located between AS2 and CD1 at the base of a pine tree (Figure 51). A series of 14 local stones were arranged in a small circle, and it contains numerous ceramic and glass shards. A second stone circle was also recorded in WS1, but contained no artifacts. Perhaps these areas were created to hold plants, pet burials, or other culturally significant meanings.

Figure 51: Locus KLM, Stone Circle 1, looking north. Photo by Bailey Stalford.

5.3. Locus S

While Locus S was recorded in 2022, a new, sixth Can Dump associated with the larger pattern of individual can dumps in the area was discovered between Loci KLM and J and east of Locus S (Figure 52). Seemingly belonging to neither KLM nor J, we assigned it as another Locus S Can Dump, CD6. A relatively small can dump on the eastern edge of Locus S, it is primarily composed of ferrous cans, a few glass scatters, ceramic sherds, and bottle caps. Most of the cans are food-related, and other items are largely domestic in nature. Notable artifacts include a Norway sardine can, a Puritan Malt Extract can, and a Seconds without Added Sugar fruit can.

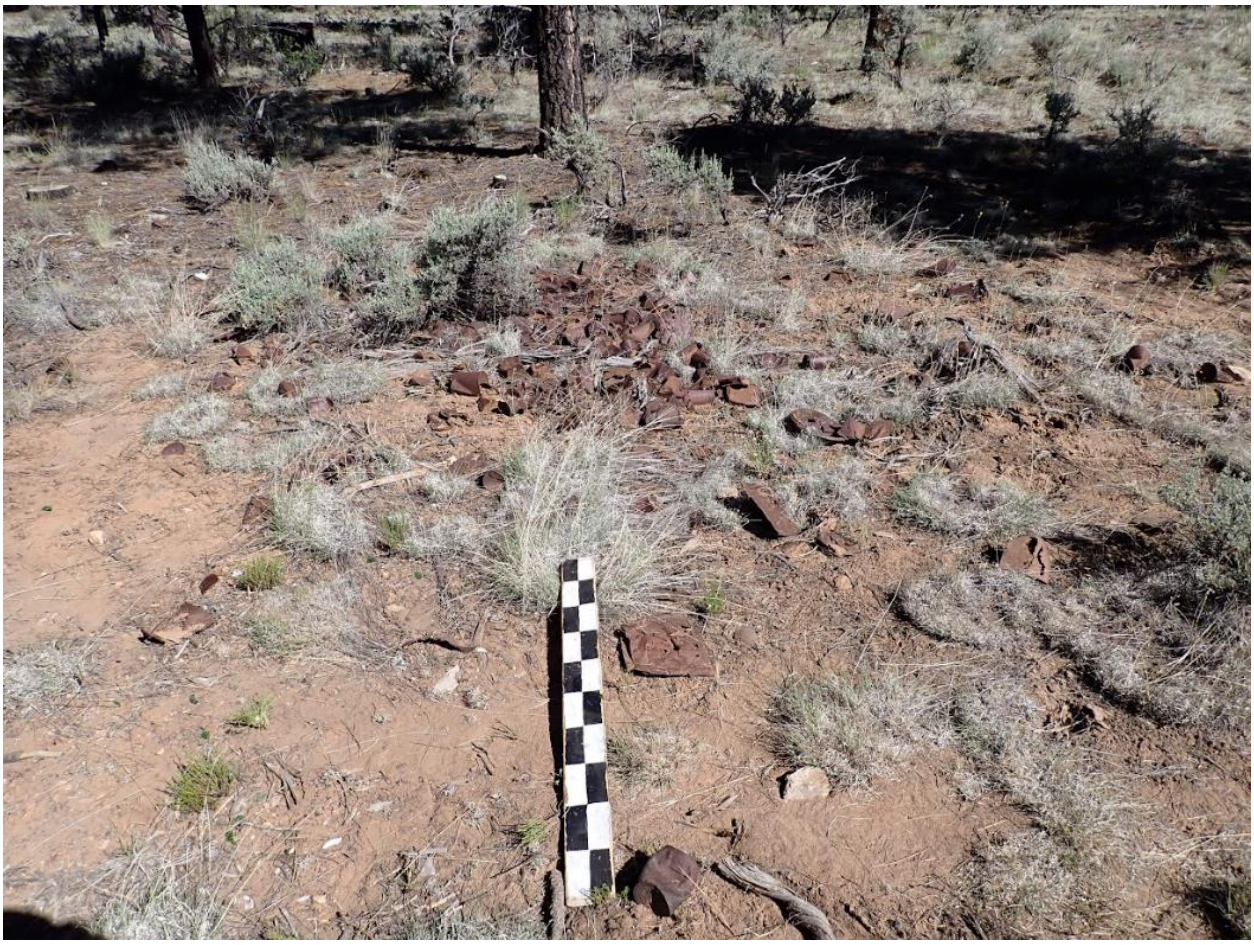

Figure 52: Locus S, Can Dump 6, looking west. Photo by Lorna Baker.

An additional Jack-o-Cantern was found in Locus S, Can Dump 2, and an intact shoe was found between Can Dump 2 and Can Dump 3

5.4. Locus V

Locus V, located between Locus J and Locus G and to the east of Locus H, is a new Locus designation not recorded by the 2006 KNF survey. Per Al Richmond's 1984 map, Locus V is possibly the location of the Matson household. The artifacts point to a more domestic structure.

Our recordation of Locus V in 2024 identified 12 discrete activity areas: Wood Scatter 1, Wood Scatter 2, Artifact Scatter 1, Can Dump 1, Stone Piles 1, 2, 3, 4, 5, 6 (only Stone Piles 3 and 6 contained artifacts), and two areas of isolated, diagnostic artifacts (Figure 53).

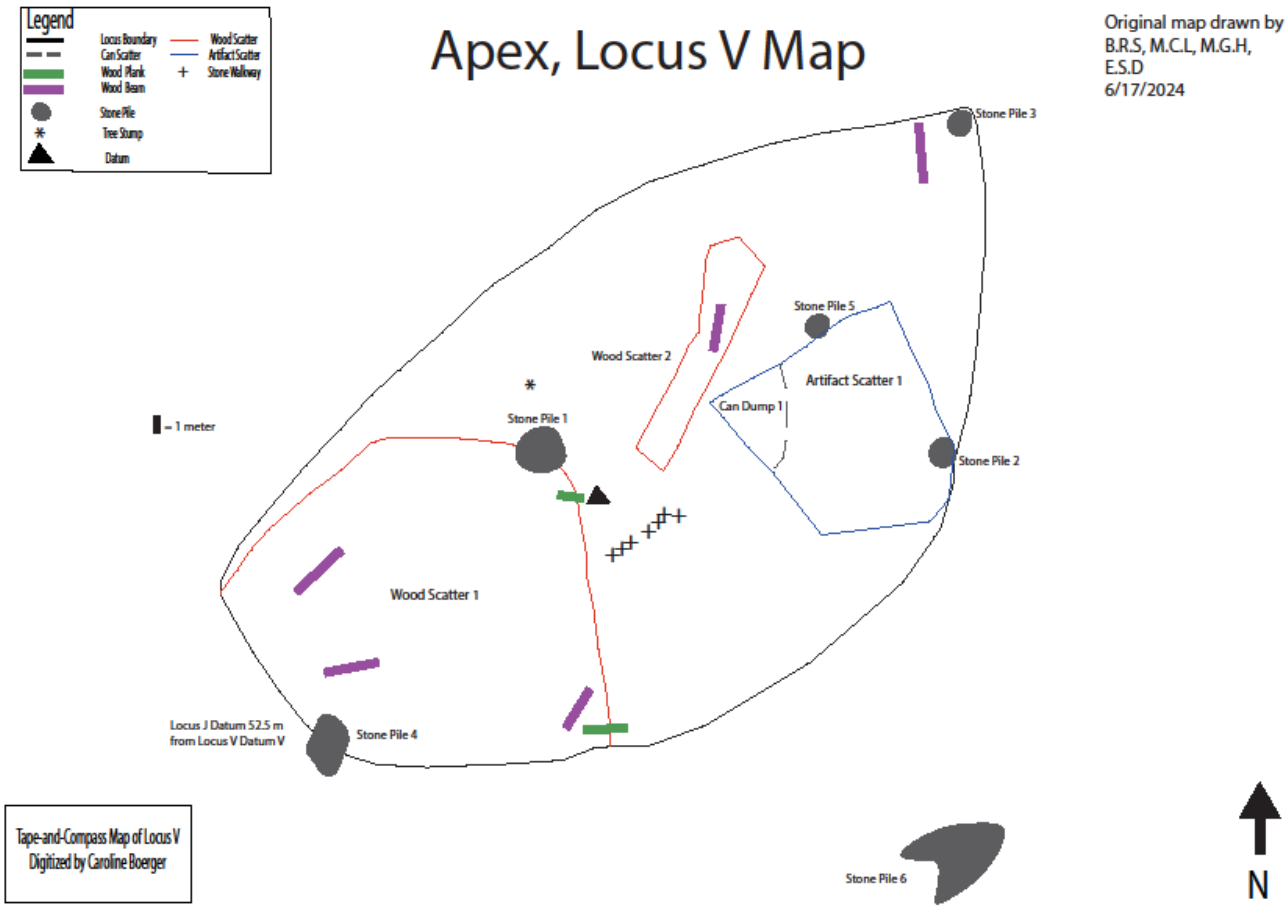

Figure 53: Locus V Map. Drawn by Bailey Stalford, Makenzie Long, and Matthew Harwood. Digitized by Caroline Boerger.

Wood Scatter 1 (WS1), at the southwest edge of the Locus and nearly abutting Locus J, WS1, contained nearly 40 wooden boards and beams (Figure 54). Denver Fire Company and Gallup fire bricks, asbestos, and sheet metal were also possibly part of the original structure. There are two smaller glass scatters at the east end, where most of the glass was concentrated, and a small ceramic scatter at the west end, where most of the ceramics were concentrated. Artifacts in the wood scatter include cans, glass shards of all colors, ceramics, bottle caps, apparel fragments, and stove parts. Notable items include a Fletcher's Castoria bottle, Hires Household Extract bottle, a Nehi soda bottle, a Haines Manufacturing Company Crysta Lites Model T window frame, a Monarch Peanut Butter lid, Ovaltine and Hershey's can lids, Clorox fragments, a wind-up toy tractor, an A.C. Delco spark plug, a small clay, a toy horse and metal frame, both labelled "GERMANY", a Continental Distilling Company bottle, a Corbin lock plate, and a Vai Brothers wine bottle.

Figure 54: Locus V, Wood Scatter 1, looking east. Photo by Makenzie Long.

Wood Scatter 2 (WS2), located near the center of Locus V, was smaller in size and artifact count than WS1 (Figure 55). Eleven milled wood fragments and 1 wood beam, alongside a stove vent, bolt and nut, and stove pipes point to a domestic structure. Other items include cans, glass, and shoe fragments.

Figure 55: Locus V, Wood Scatter 2, looking south. Photo by Makenzie Long.

Artifact Scatter 1 (AS1) is on the east edge of Locus V and consists of a wide array of artifacts, including cans, wood fragments, glass shards, ceramic sherds, and apparel fragments (Figure 56). Notable artifacts include Hershey's, Copenhagen, and Pennzoil cans, a Ford Model-T ignition switch plate, and a tool or lunchbox.

Figure 56: Locus V, Artifact Scatter 1, looking northwest. Photo by Makenzie Long.

Can Dump 1 (CD1), between WS2 and AS1 near the center of Locus V, contained around 100 ferrous cans with scatterings of glass, ceramic, fire bricks, apparel fragments (Figure 57). Notable items include a Denver Hi Fire brick, a Flagstaff bottle base, a toy teacup fragment, and an Argentinian meat tin.

Figure 57: Locus V, Can Dump 1, looking north. Photo by Makenzie Long.

Stone Piles (SP) 1, 2, 3, 4, 5, and 6 are anthropogenic concentrations of locally-available rocks likely constructed from larger stones gathered and removed from in and around Locus V and possibly Locus J, which are relatively free of rocks compared to the surrounding areas. SP1 is located in the center of Locus V (Figure 58), SP2 is located at the eastern boundary, SP3 at the northern boundary, SP4 at the southern boundary, SP5 at the western edge of AS1, and SP6 outside the southeastern boundary of the Locus V concentration. Only SP3 and SP6 contained artifacts, so they will be described in detail.

Figure 58: Locus V, Stone Pile 1, looking east. Photo by Makenzie Long.

Artifacts at SP3 were dispersed both within the rocks and around the pile (Figure 59). It contained numerous nails, wire fragments and metal straps, and flat/window glass. Bottle glass was mostly colorless, but other colors were also present. Apparel fragments, such as buttons, a slide adjuster, and a buckle, and WIE were also found at SP3. Notable artifacts include glass fragments from a Kerr canning jar and an Illinois-Pacific Glass Company bottle, a Hershey's Cocoa lid, and Levi Strauss and Koveralls buttons.

Figure 59: Locus V, Stone Pile 3, looking southwest. Photo by Makenzie Long.

SP6 contained numerous artifacts both within the rocks and surrounding the stone pile, mostly of a domestic nature (Figure 60). Cans, amber and colorless bottle glass, bottle caps, and earthenware sherds were the most common artifacts. Notable artifacts include Clorox and Best Foods jar fragments, Crystal White Scouring Cleanser can, Maxwell House and Hills Brothers coffee cans, a “SHAVING CREAM” tube nozzle, toy train tracks, and a West Clox Big Ben alarm clock frame.

Figure 60: Locus V, Stone Pile 6, looking southwest. Photo by Makenzie Long.

The area between the datum and SP6 was mostly empty, so was not designated as its own concentration within Locus V, but a few dispersed artifacts were recorded in this area (Figure 61). Apparel-related items, such as shoe leather, a button, a clothespin spring, and a bead, an enamelware tub, an unmarked milk glass jar, record fragments, and Hershey's Cocoa and Copenhagen cans were scattered in the area.

Figure 61: Locus V, empty-ish space northeast of SP1 and west of WS2, looking east. Photo by Makenzie Long.

Finally, the area around the stone path and the datum contained an unidentified mechanical part.

5.5. Additional Artifacts

Throughout tours, metal detecting, and staff exploration of the site, we discovered several isolates and previously unknown artifacts in already-recorded Loci. They are briefly addressed here.

In Locus G, we found an additional three Jack-o-Canterns that were previously unrecorded. An intact, 1928 Coconino County, Arizona license plate (11-1276) was found near the parking area on the east side of the road. A rouge compact from the Armand company was found below Locus I on the hill above the 2022 excavation unit. A Thinlarm Alarm clock fragment was found in the large, nearly empty space between Locus N and the railroad. Finally, an intact Old Quaker whiskey bottle was found southwest of Locus J.

6. ARTIFACT ANALYSIS

As Apex was a company town, the presence of a company store meant that many of the artifacts

were found across the site regardless of function or the residents' position within the company, such as Log Cabin Syrup, Calumet Baking Powder, and Copenhagen. As a result, instead of discussing them individually in the Locus descriptions, I will address the more common brands and items in this separate section. Other artifacts appear to be more localized and these patterns merit discussion and will also be addressed below.

The final catalog is too large to put directly in this report, so it has been provided to the Kaibab National Forest separately. The catalog is available in both Access and Excel formats, with artifacts sorted by general type (Ammunition, Buttons, Bottles, Cans, Ceramics, Faunal, Non-Diagnostics, and Other Diagnostics) and then by Locus.

6.1. Food and Drink

As we focused on domestic areas for the 2024 field season, it is unsurprising that food and drink artifacts were commonly recorded. Many of the same brands of food and drink recorded in the 2022 and 2023 seasons were also found during the 2024 archaeological investigations, including Calumet Baking Powder, Hershey's Cocoa, Monarch Peanut Butter, Budweiser Malt Syrup, Orange Crush Soda, and Lipton Tea. This indicates that laborers and management alike had similar access to the same brands. We did, however, see some differences. Coca-Cola bottles were more common on management side of the camp, compared to the popularity of Orange Crush on the laborer side, for example. There were far more canning jars at KLM, J, and V, as well, perhaps pointing the role gendered labor played in food production and preparation.

6.1.2. Foods

Baking Powder cans were found at all Loci surveyed in 2024 (Figure 62). Calumet cans were the most common, accounting for five of the eight baking powder cans recorded. The text varied across the cans, but they generally included the size, Made in U.S.A., and the Absolutely Pure motto. Calumet can sizes included one unspecified, one 8 oz., two 1 lb., and one 10 1b. The 10lb can, interestingly, refers to it as "Bakers" Baking Powder, distinct language from the others. Other baking powder brands include two Clabber Girl Baking Powder cans, both from the Locus J CD1, perhaps indicating a personal preference. One 12 oz Royal Baking Powder can was also recorded.

Figure 62: Baking Powder brands. Left:10-pound Calumet Baking Powder can, Locus J, photo by Fran Maiuri. Top right: Clabber Girl Baking Powder can, Locus J, photo by Ricky Rafaele. Bottom right:12-oz Royal Baking Powder can, inverted, photo by Lorna Baker.

Sardine/fish cans were common, as well, with 13 diagnostic cans recorded at Locus J and Locus V. None were recorded in Locus KLM, but two were recorded at Locus S in 2022. Seven were labelled with some variation of "NORVEGE/NORWAY" or "PACKED IN NORWAY" (Figure 63) Three "NORTHERN CALIFORNIA" oval tins likely held fish. Two fish cans were embossed "PACKED IN VACUUM / DES ETATS UNIS / IMPORTE / D'AMERIQUE" (Figure 63), which translates from French as "From the United States / Imported / From America." We have been unable to find an origin within the United States for these cans, or an explanation as to why a product packed for French markets instead ended up in Arizona.

Less canned meat tins were found at Loci J, KLM, and V, though they were present. As at Locus D and Locus E in 2023, a Uruguayan meat tin, this one of unknown manufacture, was found at Locus M (Figure 63). Another can, labelled "ARGENTINA / M[d or J]éA1A / INSPECCIONADO" (Figure 63). Mdé may be a reference to Mataderos, a Buenos Aires barrio famous for its slaughterhouses. By the 1930s, Argentina's assembly lines and mechanization of meat-packing allowed the country to export more beef than any other nation, with the United States claiming 54.9% of all of Argentina's beef after the late-1920s Meat War (López-Durán and Moore 2018:259). For more on the international meat tins found at Apex, see Emily Dale's blog post, O Can-ada: The Geography of Apex's Canned Meat in Appendix C.

Figure 63: Meat tins. Top left: Argentinian meat tin, Locus V, photo by Devony Martell. Top right: Norwegian sardine can, Locus J, photo by Makenzie Long. Bottom left: French fish tin, Locus J, photo by Ricky Rafaele. Bottom right: Uruguayan meat tin, Locus M, photo by Emily Dale.

Other cans and bottles with intact embossing or labels reveal other foods consumed at Apex by management. A California fruit can labelled “SECONDS WITHOUT ADDED SUGAR” (Locus S) contained fruit, and two Monarch cans (J and V) could have contained any of the companies over 250 products, such as Teenie Weenie peanut butter. Three one-pint Wesson Oil cans (KLM), one of which advertised itself as “A Good Food,” boasted the new spout design introduced in 1929 for easier pouring (Wesson 2021; Figure 64). The presence of cooking oil suggests home-cooked meals.

Figure 64: Wesson oil cans. Top left: Wesson Oil can with new spout and opening instructions, Locus KLM, photo by Ricky Rafaele. Bottom left: Wesson Oil, "A Good Food", Locus KLM, photo by Rachael O'Hara. Right: 1929 Wesson Oil advertisement, demonstrating their new spout (Wesson 1929).

Four cottage cheese foil lids were found at Locus J, all originating in Phoenix-area dairies (Figure 65). Three 10-ounce Mission Dairy Inc. lids, all from the Can Dump, display the company logo of a rayed sun in a square. The company was incorporated in 1928 and bought out in 1944 (Mission Dairy Inc. 2023). A fourth foil is labelled "9 OZ NET / CREAMED / WEBSTER'S / COTTAGE / CHEESE." Webster's Dairy of Glendale was in operation since at least 1933, when they became the first US dairy to put milk in paper cartons (Basa 2008). A 1940 image of the dairy shows the same logo on our foil (McCulloch Brothers 1940).

Best Foods and Heinz condiment bottles were common at the site. Five jars labelled “BEST / FOODS / REG.” or “BEST / FOODS / REGISTERED”, most likely contained mayonnaise and were only found at Locus J. One jar also had “DESIGN / PATENT / 80918”, which was issued on January 27, 1930 to Walter Teague of the Turner Glass Corporation (Teague 1930). The two “H.J. HEINZ CO” bottles at Locus J had product codes on the base for Heinz Chili Sauce (393) and malt, cider, or tarragon vinegar (211) (Cartwright 2006; Lord 2022; Figure 65). A Gebhardt Eagle Chili Powder bottle from KLM indicates that condiments weren’t just used at Locus J. Similarly, A “PACKED / BY CAL. / PACK / CORP.” bottle belonged to the California Packing Corporation, a fruit and vegetable canner and dried fruit processor that had plants across California, and eventually became Del Monte. They canned peaches, apricots, peaches, pears, prunes, grapes, peas, tomatoes, pineapples, among others (Packing Houses of Santa Clara County 2024). The shape suggests a condiment bottle.

Figure 65: Food containers. Top left: Mission Dairy Cottage cheese foil, Locus J, photo by Fran Maiuri. Top right: Sketch of faded Webster’s Cottage Cheese foil, Locus J, drawing by Bailey Stalford. Bottom left: Heinz vinegar (code 211) bottle base, Locus J, photo by Makenzie Long. Bottom right: Heinz Chili Sauce (code 393) bottle base, Locus J, photo by Fran Maiuri.

As in 2022 and 2023, Faunal remains were scarce; only 6 fragments were recovered, and all but two of those came from the Locus M privy surface and unit excavations. Two of the bones had evidence of butchering with metal tools, while the other four were indeterminate as to their correlation to Apex's habitation. One of the butchered bones was a Class V scapula (Kelsey Gruntorad, pers. comm. 6/1/2024).

Seven fragments of oyster or abalone shell were recorded at Locus J (Figure 66). There is no evidence of modifications, the fragments are fairly large, and the exterior shell is still present, all of which suggests they were eaten at the site. Neither the specific species nor their origins are known at this time. They are the only intact shell that has been found at Apex to date.

Figure 66: Oyster or abalone shell fragments, anterior (top) and posterior (bottom), Locus J. Photos by Makenzie Long.

6.1.1. Alcohol

The large amounts of alcohol-related cans and bottles that date to the entirety of the camp's occupation demonstrate that not even Prohibition could keep Apex from beer and liquor. Evidence for alcohol consumption was present at every Locus surveyed for 2024. For more on evidence for beer brewing at Apex, see Rachael O'Hara's blog, Local Brews: Beer, Brewing, and Prohibition at Apex in Appendix C. For more on alcohol-consumption at Apex during and post-Prohibition, see Rachael O'Hara's Arizona History Convention poster, "We Weren't Dry, I'll Tell You That": Prohibition-Era Alcohol Consumption at Northern Arizona's Apex Logging Camp, in Appendix B.

Beer brewing was seemingly common at management housing during Prohibition. Three "HOP FLAVORED / BUDWEISER / MALT EXTRACT SYRUP" (Loci J and KLM) had slightly variable text in terms of line breaks. An email communication with the Anheuser-Busch company revealed that they had no knowledge of why text on the cans might differ (Carlos, Anheuser-Busch Team, Pers. Comm. 12/11/2024). One "PURITAN MALT EXTRACT CO. CHICAGO IL" (Locus S) dates between 1930 and 1933, and the company was purchased by the Pabst Corporation in 1930 (History Colorado n.d.).

Two partial American Medicinal Spirits ("THE A M-S CO") bottles were found at KLM, one at the Locus K privy, and one at AS1 (Figure 68). The company was founded by several whiskey companies in 1920 when Prohibition began (Fields 2022). When whiskey and brandy were approved as medicinal spirits, AMS Co, which controlled half the whiskey in Kentucky and nearly 30% of all the whiskey in the United States, was poised to control the market. Alcohol supposedly helped with tuberculosis, high blood pressure, asthma, heart disease, pneumonia, cancer, anemia, and many other ailments (Michigan). The U.S. Department of the Treasury provided prescription pads to doctors for medicinal alcohol. Patients paid a $3 prescription fee plus the $3 to $4 for the alcohol, making it an expensive loophole to Prohibition. Moreover, a prescription only allowed for one pint every ten days. AMS Co largely disbanded when Prohibition ended and transitioned back to selling legal alcohol.

Following Prohibition's end in 1933, the residents of Apex transitioned to a wide variety of once-again legal alcohol. Twenty-four cylindrical, amber Owens-Illinois bottles found throughout all the Loci were likely beer bottles, all dating to 1932 or 1933 (Figure 67). Twenty-one were produced at the Alton, Illinois factory (plant code 7; Lockhart and Hoenig 2016:303), two in 1932, seventeen in 1933, of which five bear the "G" code for beverages (Lockhart and Hoenig 2016:301), and two with missing dates, of which one bears the "G" beverage code. It is possible that these bottles were purchased in batches. Another two were produced in 1933 at the San Francisco plant (plant code 21; Lockhart and Hoenig 2016:303). A final amber beer bottle bears both the Owens Illinois logo and the Hemingray Glass Company logo (Figure 67). The bottle was manufactured in 1933 at the Muncie, Indiana factory (plant code 26; Lockhart and

Hoenig 2016:303). Hemingray also operated out of Muncie and often partnered with Owens Illinois to produce bottle (Hemingray Glass Company 2024; Lockhart, et al. 2016). They used their “H-in-a-square” logo between 1924 and 1935 and only on beer bottles. Our Hemingray logo seemingly has an error, as a large blob of glass is to the left of the “H”.

Figure 67: Wine and beer bottles. Left: Vai Brothers Wine bottle, Locus KLM, photo by Rachael O’Hara. Center: One of several 1933 Alton, Illinois, likely beer, bottles, Locus L, photo by Makenzie Long. Right: 1933 Hemingray beer bottle, Locus L, photo by Matt Harwood.

Two amber wine bottle bases, found at Locus KLM and V, were from Vai Brothers Wines in Los Angeles, California (Figure 67). The company, founded by two brothers from Turin, Italy, opened in 1907 (Homestead Museum 2019). They survived Prohibition by transitioning to medicinal alcohol, specifically the California Padres Wine Elixir Tonic. They transitioned back to regular wine in 1933, and the company closed in the 1980s. Our bottles seemingly post-date Prohibition as they are labelled “VAI BROS / WINES”. Both were made by the Maywood Glass Company of Los Angeles, based on the intersecting MG logo (Lockhart et al. 2017). Maywood opened in 1930, and one bottle heel reads “4”, possibly a date code for 1934.

Numerous bottles with specific brand names, portions of the Federal Law Forbids warning (Lindsey 2022; Whitten 2004a), Distiller’s (D), Rectifier’s (R), or liquor factory code numbers on bottle bases, or general shape or color, point to a preponderance for whiskey across the sites surveyed in 2024. Based on maker’s marks and distiller’s codes, we identified bottles from Seagram’s, Hiram Walker & Sons, National Distiller’s, Continental Distilling Corporation, Old Quaker, and Old Thompson Whiskey (Figure 68: Spirits beverage containers. Top left: 1935 Latchford Glass Company from unknown Rectifier-19, Locus J, photo by Ricky Rafaele. Top middle: Place: 1936 Hiram Walker bottle, Locus J, photo by Ricky Rafaele. Top right: Seagram’s bottle cap, Locus K, photo by Marc Hillis; Bottom: American Medicinal Spirits Company bottle, Locus K, photo by Lorna Baker.Figure 68).

Figure 68: Spirits beverage containers. Top left: 1935 Latchford Glass Company from unknown Rectifier-19, Locus J, photo by Ricky Rafaele. Top middle: Place: 1936 Hiram Walker bottle, Locus J, photo by Ricky Rafaele. Top right: Seagram's bottle cap, Locus K, photo by Marc Hillis; Bottom: American Medicinal Spirits Company bottle, Locus K, photo by Lorna Baker.

One bottle bears the D-1 Distiller mark for National Distiller's Old Crow bourbon whiskey, Old Taylor whiskey, or Old Grand Dad bourbon whiskey (Anonymous n.d.; Figure 69). The bottle was manufactured by the Owens-Illinois Company in 1935 at Factory 54, the liquor permit number for the Fairmont, West Virginia Factory (Whitten 2004b). The base is also embossed "DES PAT / 91561", which was awarded to Edwin W. Fuerst, assignor to National Distillers Products Corporation on February 20, 1934 for the ornamental design of a bottle. The design is

of a symmetrical leaf pattern on all side and on the heels. Another Design Patent 91,561 bottle with the D1 Distiller code was produced at the Owen's Illinois Company Factory 55, the Huntington, West Virginia plant (Hoenig n.d.) in 1935.

Seagram's was a popular brand, and at least two bottles were present at the site (Figure 68). The company moved its operations to Canada during Prohibition and actively engaged in bootlegging activities until Prohibition ended (Wikipedia 2025). As a result, they were well-prepared to re-enter the American market in 1933. One "FULL PINT" bottle base was manufactured by an unknown bottler with a logo of a C in a diamond (Figure 69). The only listed manufacturer with this mark on the SHA bottle site and Glass Bottle Marks is the Chattanooga Bottle and Glass Manufacturing Company which used this mark between 1901 and 1913 (Lockhart, et al. 2024:194, which is out of line with the site, the bottle date, and Prohibition. A "67" before maker's mark may denote a liquor permit number, but is not recorded in the SHA list (Hoenig n.d.), and the "5" after the maker's mark may denote the year 1935. The bottle is marked with "DES. PAT. 92901", which was assigned to William Guyer on July 31, 1934 on behalf of Seagram's. The Distiller's code is cut off at the end, but possibly reads "D-12[6?], which was assigned to Seagram's Calvert Extra, Calvert Whiskey, Four Roses, Seven Crown, Vandermint Liquer, White Satin, and Wolfschmidt's Vodka brands (Anonymous n.d.). Another, nearly intact, bottle with the same Distiller's code, Design Patent, and Maker's Mark (though with a 7, possibly for 1937, rather than a 5), was only "HALF PINT", and also bears the Federal Law Forbids warning on the shoulder, and a "MADE IN [U.S.?]" on the base. A metal screw-on cap from a Seagram's bottle was found at Locus K (Figure 68).

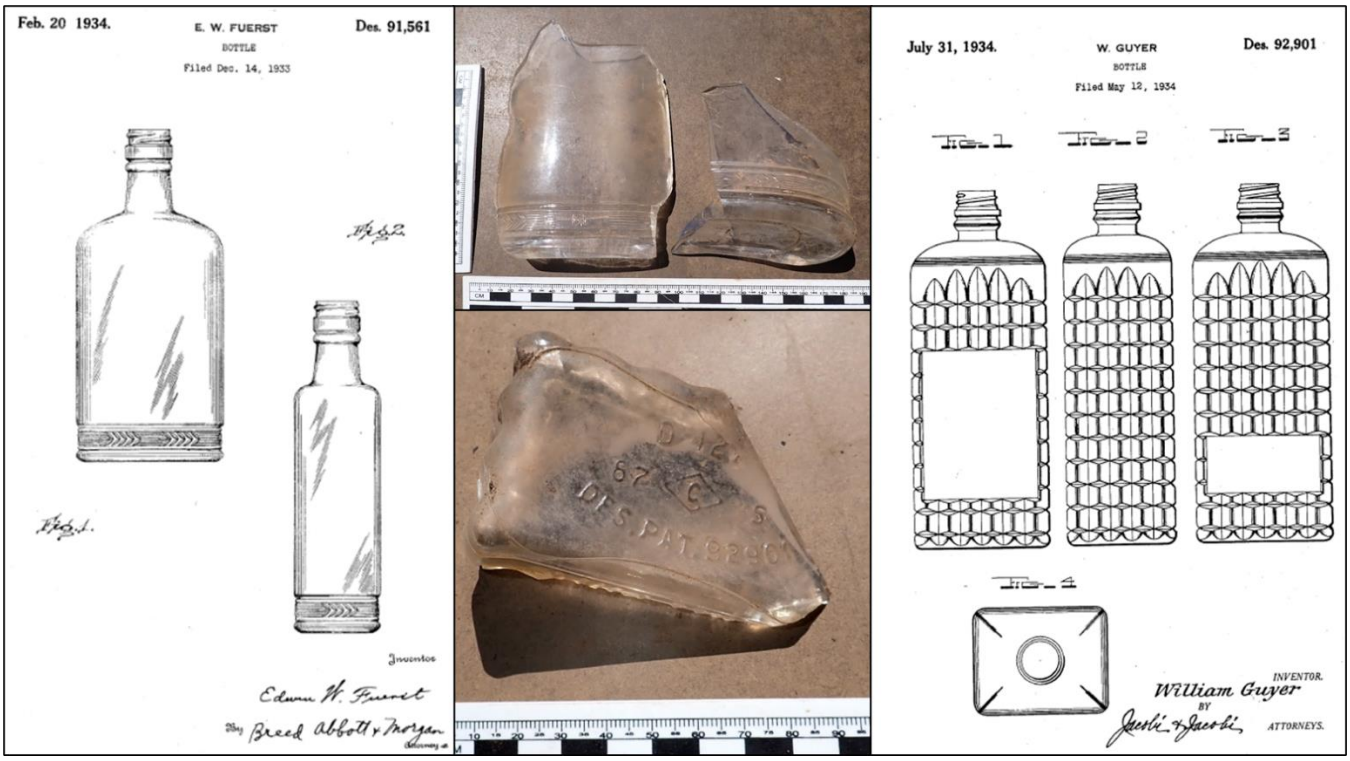

Figure 69: Patented alcohol bottle design. Right: Design Patent 91,561 for National Distilling (Fuerst 1934). Top center: 1935 National Distiller's whiskey bottle, Locus J, photo by Sarah O'Donnell. Bottom center: 1935 Seagram's bottle with unknown maker's mark, Locus K, photo by Lorna Baker. Left: Design Patent 92,901 for Seagram's (Guyer 1934).

One bottle from the Continental Distilling Corporation was found at Locus V (Figure 70). It has a molded diamond pattern over the body and a zig-zag pattern around the base, possibly marking it as a Rittenhouse Square Straight Rye Whiskey bottle (Fields 2023). The bottle was produced in Philadelphia under distiller permit number D-18 (Anonymous n.d.). The company was granted a state-issued license to operate a distillery by Pennsylvania in September 1933, three months before Prohibition ended (Fields 2023).

Figure 70: Rittenhouse Rye Whiskey. Left: Continental Distilling Corporation bottle, Locus V, photo by Ricky Rafaele. Right: 1934 Continental Distilling Company advertisement for Rittenhouse Rye Whiskey (Philadelphia Enquirer 1934:15). Note the similarity in bottle design.

Hiram Walker & Sons was a favored brand at Locus J. A nearly intact amber bottle, broken into three pieces, including the rubber cap, was found in CD1. The cap, still attached to the finish, is labeled "HIRAM WALKER & SONS. INC." with the W in a crown logo. The body is decorated with a molded designs of swirls, lines, and arcs around the body with a flat panel on the center front. The bottle was made by Owens Illinois in 1934, though the plant is unknown as the first number of the factory code is missing. The base also has "R134", which presumably belongs to Hiram Walker, though it is not listed on the User Permit Numbers page (Anon n.d.). The Federal Law Forbids warning is on the shoulder. Another rubber cap from AS2 has the W in a crown logo of the company. A 1936 bottle base with the Owens Illinois liquor permit code of 90 for their San Francisco Plant (Hoenig n.d.) and the D-23 Distiller's code for their Walker's Deluxe and Mountain Ridge Bourbon Brand (Anonymous n.d.) was also found in CD1 (Figure 68). A similar bottle with the San Francisco plant code, D23 mark, and an Owens Illinois date code of 1937 was found at Locus V.

An intact Old Quaker bottle was found by Bear Thomas while he was metal detecting the western boundary of the site near KLM (Figure 71). The bottle was manufactured by Owens Illinois in 1935 at their Terre Haute, Indiana factory as revealed by the liquor permit plant code of 62 (Whitten 2004b). The base is also embossed with the D 134 Distiller permit number that belonged to Schenley for their Old Quaker brand (Anonymous n.d.). The shoulder displays the Federal Law Forbids warning.

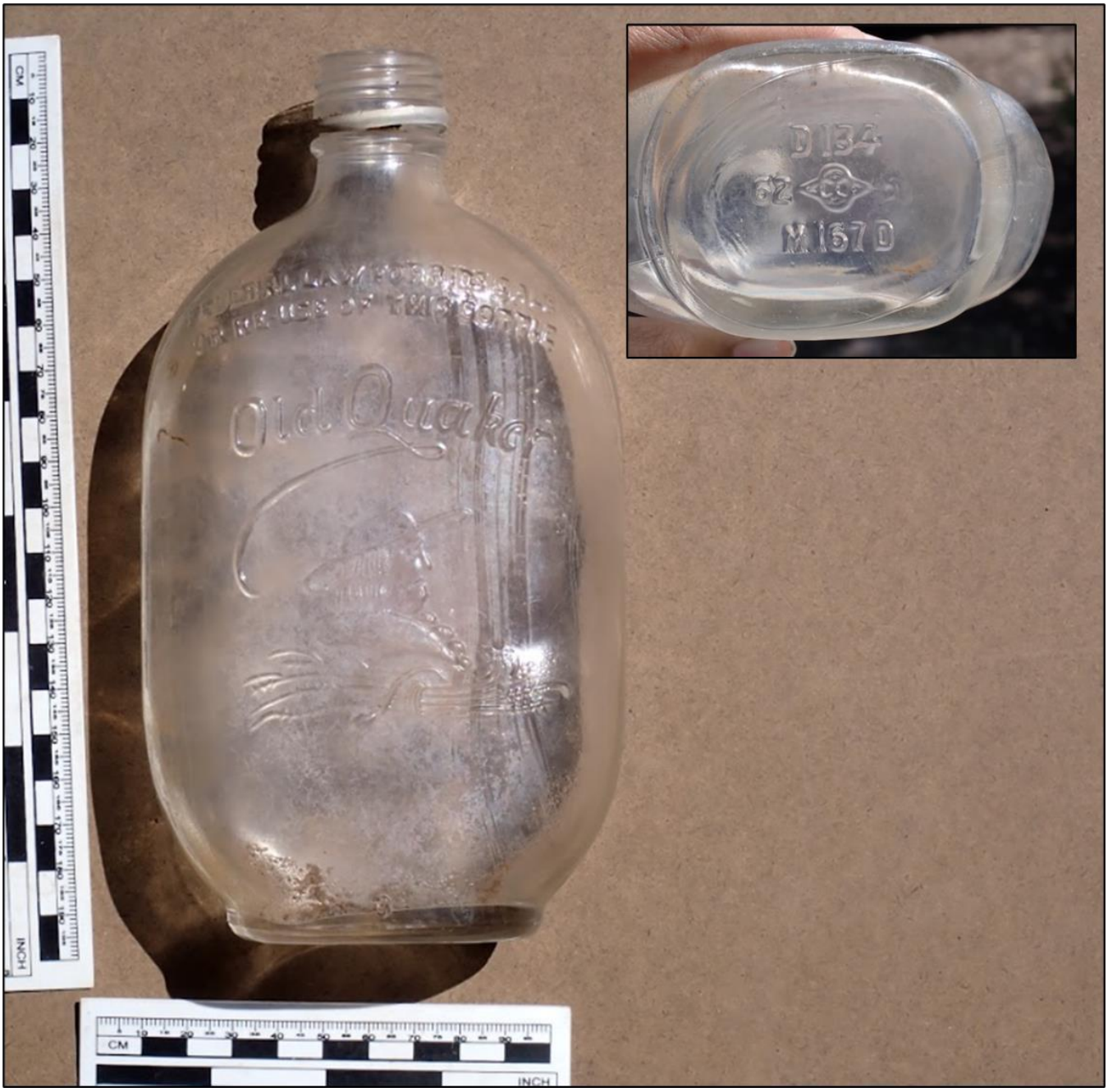

Figure 71: Intact Old Quaker bottle front and base (inset), Isolated find. Photos by Lorna Baker.

Other likely whiskey bottles include an Obear-Nester (Whitten 2004c) bottle with the D-8 Distiller code that belonged to Glenmore Distiller's Old Thompson Whiskey line (Anonymous n.d.). A colorless base is embossed with D-10, the Distiller permit number for Brown Forman's Old Forester bourbon (Anonymous n.d.)

Five bottles from Loci KLM and J bear the unidentified Rectifier number of R-19 (Figure 68). Rectifiers purchased whiskey from a distiller than added something to it to change the taste, such as creating blended whiskeys (Lockhart 2010b:56; Veach 2016). Four of the five bottles were manufactured by the Latchford Glass Company of Los Angeles (Lockhart 2017). The bases display other information. All but one are Buffalo or Philadelphia Eagle in shape; two are for "ONE PINT" while one is a "HALF – PINT"; the sole round base dates to 1935 and has the Liquor Permit 84 for the Latchford Glass Company's factory in Los Angeles (Hoenig n.d.). As we only have the bases of these bottles, no other filler's marks or other identifying elements can be found to help discover who Rectifer-19 was at this point.

Unidentified alcohol bottles include: A 1934 colorless base with Owens Illinois factory code 88, for the Vernon, California plan (Hoenig n.d.) and a Distiller code of D525, which is not listed anywhere; A colorless base with Owens Illinois liquor permit number 54, for their Fairmont, West Virginia Plant (Hoenig n.d.); A 1933, "12 OZ." Owens Illinois bottle with DES. PAT. 80567, which was assigned to Edwin W. Fuerst on February 25, 1930 for a "Flask" (Fuerst 1935), and a plant code of 136, which is not listed anywhere; and five other alcohol bottles represented solely by Federal Law Forbids warning.

6.1.2. Non-Alcoholic Beverages

Evidence for non-alcoholic beverage consumption beyond was also discovered during the 2024 field season. One aqua, paneled bottle fragment is marked "NON-ALCOHOLIC" (Locus KLM), though it is unclear what type of beverage it contained as there is no additional writing. A Lipton's Tea can (Locus J), "THE MOST DELICIOUS / THE WORLD PRODUCES" dates between 1932 and 1944 (Mills 2015:347-357). A bottle with a Common Sense-style finish and embossed "ONE PINT / LIQUID" (Locus KLM) likely contained milk. Powdered cocoa, including four Hershey's cans, four Ovaltine cans, and one Walter Baker & Co can were limited to Loci J and V. For more on the canned cocoa powders, see Zulia DeWire's blog in Appendix C, and her NAU Undergraduate Symposium poster in Appendix B. Both are titled Just Add Water: How Early Advertising Shaped Cocoa Powder Diversity at Apex, Arizona.

Coffee was also popular (Figure 72). A Maxwell House Coffee can and a 2-pound Hill Brothers coffee can were both found at Locus V. A Chase & Sanborn's can (Locus J) advertised that their "TEAS / ARE ALSO / DELICIOUS", suggesting it was one of the coffee company's coffee cans. A Haas, Baruch & Company bottle contained "IRIS COFFEE". The Los Angeles-based grocery store opened in 1890 and soon became the first chain to create their own private label, Iris, that eventually sold tomatoes, spices, prunes, salmon, and coffee (Smart & Final 2025; Stueven 2024).

Figure 72: Coffee containers. Left: 2-pound Hills Brothers coffee can, Locus V, photo by Rachael O'Hara. Center: Chase & Sanborn coffee can lid, Locus J, photo by Sarah O'Donnell. Right: Haas, Baruch, & Company Iris Coffee bottle, Locus KLM, photo by Devony Martell.

Soda bottles were common at all of the 2024 Loci. Identified soda brands at worker housing include Orange Crush, Coca-Cola, Delaware Punch, Mission Dry Orange, Nehi, and Hire's Root Beer. The two Delaware Punch bottle shards (Locus J) are unremarkable and contain no further information than its contents. Orange Crush was far less common in 2024 than in previous years, as only one bottle was recorded (Locus J). Orange Crush's competitor, Mission Orange Dry was seemingly more popular amongst management (Loci J and K) with at least two definite examples, two likely examples, and myriad shards of their signature black glass. One of the bottles is labeled as "SPARKLING", while two bear the 1926-1930 "S inside a star" logo of Vernon, California's Southern Glass Company (Lockhart et al. 2019; Figure 73). The Nehi bottle (Locus V) is molded in the unique bottle design of braided lines running up the body that was patented in 1924 (Lockhart 2016a:391; Figure 73). Advertising for Nehi soda was notably risqué, often depicting a woman's legs with stockings up to her knees, hence Ne-Hi (Muse 2024).

At least eight Coca-Cola bottles, or likely Coca-Cola bottles, were found at J, KLM, and V, including their patented hobble-skirt design and bottles with a stepped, bulbous base and straight sides that does not appear in the Coca-Cola company bottle chronology (Coca-Cola Company 2025; Figure 73). One hobble-skirt bottle (Locus KLM) bears the Southern Glass Company logo and a filler's mark of "PRESCOTT / ARIZ.". Several bottling plants operated out of Prescott in the early 1900s, and many used some variation of the city and state on their bottles (Tessman 2002. A Coca-Cola bottling plant was established in Prescott in 1916 (Early Coke 2024). Two hobble-skirt bottles (Loci J and V) were produced in "FLAGSTAFF / ARIZ.", while a third likely Coca-Cola bottle (Locus J) was manufactured by "FLAGSTAFF / BROOKS / ARIZ.", aka Skylight City Bottling Works.

Figure 73: Soda Bottles. Top left: Hobble-skirt Coca-Cola bottle from Southern Glass Company and Prescott, Arizona, Locus KLM, photo by Emily Dale. Bottom left: Bulbous-based Coca-Cola bottle, Locus KLM, photo by Rachael O'Hara. Center: Nehi soda bottle, Locus V, photo by Ricky Raffaele. Top right: Southern Glass Company Mission Orange Dry bottle, Locus J, photo by Makenzie Long. Bottom right: Globe Bottling Company soda bottle, Locus J, photo by Ricky Raffaele.

One "HIRES / HOUSEHOLD EXTRACT" bottle "FOR HOME USE" from Philadelphia, Pennsylvania was found at Locus V. Charles Elmer Hires advertised his root beer as both a soda and a health product or medicine to impart "strength and pure blood, which soon gives a person a clear and healthy complexion" (Burnett 2019). During Prohibition, he leaned more heavily into his product as a soda. The extract would be added to yeast, sugar, and water. It is possible that Apex residents were familiar with these instructions, as it would have been similar to the process used on the malt syrup extracts to produce beer.

Other likely soda bottles were found in 2024. An American Bottle Company bottle appears to be made on an outdated mold, as the A.B. Co. logo was in use between 1906 and 1916 (Lockhart, et al. 2021:347), while the 30N points to the Newark, Ohio plant in operation between 1925 and 1930, with 1930 being the date. Lockhart, et. al. (2021:367) do note at least two anachronistic bottles bearing the same "A.B.Co. / X / 30N" as our base that reused an old baseplate with new code sets attached. A colorless "FLAGSTAFF / BROOKS" bottle originated at the Skylight City

Bottling Works. A bottle neck embossed with a globe and the word “GLO[BE]” came from the Globe Bottling Company of Los Angeles, which produced soda and other beverage bottles (Figure 73). A full history of the company was not found, but they were established by at least 1936, when they received trademark 340,194 for Wines (United States Patent Office 1936:v). A round, aqua bottle base at Locus M reads “ARIZ.”

Notable bottles, jars, and jugs of indeterminate function were also found that represented those made the by the American Bottle Company, Glass Container Corporation, Hazel-Atlas Glass Company, Illinois Glass Company, the Illinois Pacific Coast Company (including their IPGCo and IPG in triangle logos), the Latchford Glass Company, the Long Beach Glass Company, Maywood Glass Company, Obear-Nester Glass Company, Owens Bottle Company, Owens Illinois Glass Company, Pierce Glass Company, the Southern Glass Company, Turner Brothers Company. Unknown maker’s or filler’s marks include; a colorless “BISHOP’S” French square base; “Δ / PC” inside a triangle; two metal, screw-on lids, one for a bottle and one for a jar, seemingly depicting a dolphin leaping through waves (Figure 74); and two colorless, cylindrical bottles with the writing inverted on the base so it’s visible from the inside, reading “No 72 T / 13” and “NO. 73T / 12”.

Figure 74: Unidentified dolphin-in-waves logo. Left: Internally-threaded jar lid, Locus J, photo by Bailey Stalford. Right: Bottle lid, Locus J, photo by Makenzie Long.

6.1.3. Food Preparation and Service

As in 2022 and 2023, evidence of canning was common at Loci J, KLM, and V, perhaps even more so than elsewhere. In addition to the myriad shards of non-diagnostic mason jar body and

finish fragments, some with lids still attached, canning jars came in a variety of shapes and sizes. At least four Boyd's Genuine Porcelain Lined Caps were recorded in 2024.

Kerr was by far the more popular brand of canning jar, with at least 15 jars found across all three Loci. Jar bases typically read "KERR GLASS MFG CO. / 6 / PAT / AUG 31 / 1915 / SAND SPRINGS OKLA.", dating from 1915 to the 1920s (Lockhart 2016:140). Only two identifiable Kerr body fragments were discovered, both likely from Kerr Self-Sealing Jars, dating from 1904-1943 (Lockhart 2016:142). One reads "[AU]G 31 1915 / [MA]SON" while the other reads solely " "SE[…]", but with the quotations and the fancy, diagonal font characteristic of Kerr. Seven lids were found, all with the Kerr cursive logo found dating from 1914 to 1974 (Lockhart 2016:138), one reading "Kerr / MASON / PAT'D, one reading "Kerr / ECONOMY / JAR CAP", and five reading "Kerr / MASON / PAT 8-31-15". Unfortunately, Lockhart, et al.'s Kerr article does not detail dating information for lids.

Two glass Ball canning jar lids were recovered, both reading "TO OPEN INSERT KNIFE / BELOW RUBBER / Ball" The Ball logo on both depicts the loopy "B" and a smaller "a" used between 1933 and 1962 (wikiHow Staff 2024). One still has the metal lid attached around the glass seal. In 1930, Ball introduced the two-piece closure made of zinc and glass, replacing them in 1934 with two-piece closures made of tinplate (Ball 2025).

All types of ceramic wares are present across the site (Figure 75), including White Improved Earthenwares, stonewares, and porcelains, though Locus V had the fewest sherds. In addition to the numerous undecorated vessels, many fragments are decorated with hand-painted and transfer-printed floral patterns or gilding around the rims, and represent several types of vessels, including plates, teacups, saucers, cups, and bowls. Common ceramic decorative patterns recorded in 2024 include: porcelain dishes, likely from a tea service set, with hand-painted flowers, orange rims, and black bands (Locus K and Locus KLM); porcelain with hand-painted blue swirls, possibly from Japan (Locus J and Locus KLM; see below); turquoise-glazed stoneware (Locus J, Locus K and Locus KLM), and white stoneware with a black band around the rim with pink and blue flowers (Locus K and Locus KLM).

Figure 75: Decorated ceramics. Top left: Various ceramic patterns, including turquoise-glazed stoneware and hand-painted flowers with an orange rim porcelain, Locus KLM, photo by Rachael O'Hara. Bottom left: Blue floral pattern plate, Locus V, photo by Lorna Baker. Bottom center: Black band with floral design, Locus KLM, photo by Lorna Baker. Top right: Transfer-printed floral WIE sherd, Locus J, photo by Fran Maiuri. Center right: Various ceramic patterns, including gilded porcelain and yellow stoneware Locus L, photo by Makenzie Long. Bottom right: Blue swirled porcelain, possibly from Japan, Locus J, photo by Bailey Stalford.

Maker's Marks were rare on ceramics, but those that were identified came from a wide variety of locations (Figure 76). Three porcelain "MADE / IN / JAPAN" plates (J and KLM) date between 1921 and 1941 when ceramics exported from Japan to the United States were required to be marked "Japan" or "Made in Japan" (Hemswell Antique Centres 2022). The fragments at KLM are decorated with hand-painted blue swirls, dots, and flowers. One stoneware Buffalo China plate has no decoration. The backstamp reads "B[UFFALO] / CHINA / EAA", and while it's unclear what EAA stands for, Jeff Burton, et al. (2003:64-65, 68) recorded at least 9 different

"Buffalo China" backstamps, with a variety of different three-letter initials including EAA, FBM, AHE, EJA, AID. These letters are different than Buffalo China date codes, which are either the year or a letter and two numbers (The Restaurant Ware Collectors Network 2025). Finally, two Homer Laughlin China Company maker's marks were found. The Ravenna line began in 1931 and had molded edges and floral patterns on plates, sugar bowls, creamers, gravy boats, baker, platters, cups, saucers (Gonzalez 2025a). Our earthenware plate has pink transfer-printed flowers and orange hand-painted flowers with green and yellow leaves, similar to style R-V-41 or C-A-C-24 on Gonzalez's page. A Trellis line plate, dating from the late 1920s to 1933, had a molded or shaped rim with scalloped edges (Gonzalez 2025b). Our stoneware plate has red transfer-print flowers and molded design of trellises, though the paint is heavily faded. Our plate most resembles the first, unnumbered pattern or the T-27 example on Gonzalez's page.

Figure 76: Ceramic Maker's Marks. Top left: Japanese Ceramics, Locus KLM, photo by Devony Martell. Top right: Buffalo China Locus KLM, photo by Devony Martell. Bottom left: Homer Laughlin China Company Ravenna plate with partial maker's mark (inset), Locus J, photo by

Makenzie Long. Bottom right: Homer Laughlin China Company Trellis Pattern with design (inset), Locus J, photo by Fran Maiuri.

Numerous pieces of blue enamelware with white spots, known as mottled ware or granite ware, came in a variety of forms, such as a bowls or cooking pots (Loci J, K, and V), a kettle (Locus KLM), a pan (Locus J), a handle (Locus J) and an unidentified flat base that was possibly intentionally removed from its original form (Locus V). A white enamelware bowl was recorded at Locus J and a white enamelware kettle lid was found at KLM. The enamelware on management side is largely associated with food preparation, compared to worker housing at Locus D and Locus E, where the enamelware was more commonly associated with food service. The ubiquity of these matching metal-wares perhaps indicates that the company store sold them.

The sites also contain other elements of food preparation and service. A shot glass (Locus L), a ferrous mug (Locus V), serving spoons (J and KLM), a fork (J), butter knives (J and KLM), bread loaf tins (K and V), pan handles (J and KLM), a colander (J), a ferrous pot lid (J), a baking tin (J), a metal mug (V), and a possible lunch box (V) point to homecooked meals.

6.2. Personal

Many of the items found during the 2024 field work at Apex reveal the personal lives of its laborers and inhabitants.

6.2.1. Music

In addition to the hundreds of record fragments recorded at Locus J in 2022, vinyl record fragments were the most common music-related item found in 2024. Fifty-seven record fragments were found in a concentration at Locus KLM, Wood Scatter 1 and another 16 at Artifact Scatter 1. Locus V had three record fragments. A harmonica reed plate was also recorded at Locus V.

6.2.2. Clothing

As in 2022 and 2023, shoe fragments represented the most common clothing-related artifact found at Apex in 2024. Over 40 leather shoe fragments, mostly soles, but also uppers, eyelets, and shoe tacks were found across all three Loci. Most of the shoe leather was black, but a few red/pink shoe heels were also noted. One shoe sole and attached partial upper from Locus J reads “USA / NO. 241.” An intact shoe was found at Locus S, between CD2 and CD3 (Figure 77). The heel appears to have been repaired and under the possibly new sole, the shoe reads “Y / 2½ / 14 IRON / 93 B-1”. It is undetermined what either of these marks mean.

Sixteen buttons and rivets were recorded in 2024. While buttons were found across all three Loci, decorative buttons were slightly more common at KLM, while buttons from work and children’s clothing were more common at J. Six decorative buttons, all sew-through, included

two shell buttons (KLM), two white prosser buttons (V), a ferrous button with a fish-eye face (J), and a red bakelite button with a fish-eye face (KLM). Of the remaining thirteen buttons, or rivets, all have but two have brand names, and all were likely on denim clothing. The unlabeled rivets (Locus V) are decorated with embossed designs on the top, one with tulips and one with a leaf pattern. Three “LEE / LEE” buttons from the Lee’s company were found together in Locus J (Figure 77). Two “LEVI STRAUSS & CO ☆” (KLM and V) were likely for adult clothing, while a “KOVERALLS / L.S. & CO” rivet belonged to the Levi’s children’s line of clothing (Figure 77). The denim, unisex overalls had a drop seat and were advertised to “Keep Kids Kleen” (Panek 2017). They were sold nationwide, for about $2 a pair by 1920, and by the 1930s, they came in a variety of fabric patterns (Munnichs n.d.). A “PAY / DAY” button (Locus J) came from a J.C. Penney-owned line of work clothing (Shuck 2024). Two “TEDDY / ALLS” buttons (Locus J) remain a mystery, as no information could be found on the manufacturer (Figure 77), though the name suggests children’s clothing.

Figure 77: Apparel. Top left: Teddy Alls and Pay Day buttons, Locus J, photo by Fran Maiuri. Top right: Lee rivets, Locus J, photo by Lorna Baker. Bottom: Intact shoe with writing inside sole (inset), Locus S, photos by Makenzie Long.

Five beads were found (Figure 78), three at KLM. A red bakelite bead is in a vague snowman shape with two rounds end connected by a tapered center. A blue glass or bakelite bead is flat on end and comes to a point at the other. A bright blue round glass bead has a single hole through the center. The sole bead from Locus V is a transparent blue bead with a wrinkled texture on the surface reminiscent of a brain. The Locus J bead is orange with a possible polygonal shape.

Various clothing buckles for suspenders, belts, brace/hose support, straps, four safety pins (Locus KLM and V), a clothespin (Locus V), and two ferrous, wire clothes hangers (J and KLM) are the other elements of clothing found in 2024. Several of the buckles have decorative elements, including one marked “FEB” (Figure 78).

Figure 78: Adornment. Top left: Clothing buckle with decorative twist in middle, Locus J, photo by Sarah O’Donnell. Top right: Trouser or skirt hook marked “FEB”, Locus V, photo by Ricky Raffaele. Bottom left: Round blue bead, Locus KLM, photo by Ricky Raffaele. Bottom center-left: Oblong blue bead, Locus KLM, photo by Shannon Stoller. Bottom center-right: Polygonal orange bead, Locus J, photo by Makenzie Long. Bottom right: Double red bead, Locus KLM, photo by Matt Harwood.

6.2.3. Health and Hygiene

Numerous artifacts associated with the personal health and hygiene of Apex’s residents were found across the site, such as a black rubber comb fragment (Locus M) and nail file (Locus J; Figure 79). A fragment of a likely medicine bottle from Locus J has measurement lines on the side. Two Hind’s Almond and Honey Cream bottles were found at Locus KLM. A “LAMBERT PHARMACAL COMPANY” bottle base contained Listerine (Figure 80). The Owens-Illinois mark dates it to 1935, though the factory code of “4” is unclear, as Lockhart and Hoenig

(2016:303) record this as belonging to the Clarksburg, West Virginia plant in 1929 and the Brockport, New York factory from 1963-1985, with no one using it in 1935.

Shaving accoutrement likely point to clean-shaven faces on Apex's management men, including a porcelain shaving mug (Locus J; Figure 79) and likely straight razor (Locus J; Figure 79). Shaving cream was evident from a lead tube nozzle labeled "SHAVING CREAM" (Locus V). A lightning-bolt or stylized "N" logo was also present, but not identified. Another shaving cream tube nozzle (Locus KLM) reads "LIFEBUOY Shaving Cream." Lifebuoy Soap was introduced in 1895 by the Lever Brothers who went on to popularize the term "B.O." during ads that used a foghorn to mimic the phrase (Wikipedia). They merged with Margarine Unie in 1929 to create the Unilever Company, and Lifebuoy Shaving Cream was launched in 1932. Finally, a "VALET" safety razor blade (Locus KLM) was produced by the Autostrop Safety Razor Company (Gillette Adjustable Razors n.d.; Komboloi 2017; Figure 79). Starting in 1906, they produced numerous razor styles, including the Valet AutoStrop, which was introduced in 1921. The design allowed shavers to run the blade over the strop to sharpen while still inside the razor. Their motto was "Valet Razor Strops Itself." Production ended in 1946.

Figure 79: Personal grooming artifacts. Top: Nail file, Locus J, photo by Makenzie Long. Center left: Shaving mug, Locus J, photo by Sarah O'Donnell. Center right: Autostrop Valet safety razor, Locus KLM, photo by Shannon Stoller. Bottom: Possible straight razor, Locus J, photo by Bailey Stalford.

Seven Mentholatum milk glass jars were found (Figure 80), two at Locus J and five at Locus KLM, making it the most common medicine found in 2024. The ointment, named after its two main ingredients of menthol and petrolatum, was advertised as a salve for a variety of ailments, including coughs, muscle aches, the common cold, cuts, bruises, burns, congestion, hay fever, and for use as an aftershave (Buffalo Rising 2017). A round, cobalt blue bottle with nested triangles on the base came from a Vick's Vapo-Rub Jar (Locus KLM; Figure 80). The blue color likely dates it to after 1911, while the concentric triangle logo was in use until the late 1930s (Whitten 2004d). Similarly to Mentholatum, Vick's was advertised for a variety of uses, but most commonly for the common cold, flu, pneumonia, and other upper respiratory ailments.

Figure 80: Health and Hygiene containers. Top left: Mentholatum jar, Locus KLM, photo by Lorna Baker. Top right: Vick's Vapo-Rub jar, Locus KLM, photo by Matt Harwood. Bottom: 1935 Lambert Pharmacal Company Listerine bottle base, Locus J, photo by Fran Maiuri.

At Locus V, a Charles H. Fletcher's Castoria laxative bottle might indicate the presence of children or a laborer with a more sensitive stomach, as the product was touted as "the kind the baby cries for" and specifically marketed towards mothers for their children (Lockhart, et al. 2014; Wilson 2013). Locus J, meanwhile, had a bottle of Dr. Caldwell's Syrup Pepsin, another laxative. Our bottle was manufactured in Monticello, Illinois, which dates it to between 1905,

when the company opened a new factory, and 1934, when the company name changed (Griffin 2012). Both bottles were produced by the Pierce Glass Company using their "P in a circle" logo (Lockhart et al, 2018:87-88). Pierce Glass Company is a known, common manufacturer of Syrup Pepsin bottles (Whitten 2004e).

Other items point to the presence of women at management housing. Two Mum Manufacturing Company milk glass jars from Locus J contained deodorant. One bottle is labelled "[PHILA.] PA.", which dates it to prior 1933, when the company moved headquarters after being purchased by Bristol-Meyers (Mike 2021). A second, intact jar, is labelled "NEW YORK" (Figure 81), dating it to between 1933 and 1935, when the name was discontinued. The brand was heavily advertised towards women.

For more on the health and hygiene artifacts, see Madeleine Levesque's blog, Sweat, Stink, and Self-Care: Health and Hygiene at Apex in Appendix C and her Arizona History Convention poster of the same name in Appendix B.

Two make-up compacts were identified in 2024. At KLM, one broken non-ferrous compact half still has the glass mirror intact and nested inside the body. A second compact, found on the hill below the Locus I schoolhouse, was found during metal detecting (Figure 81). From the Armand Company, founded in 1915, the round, silver make-up compact base likely contained the company's unique cold cream powder, which contained both face powder and cold cream (Bennett 2023b). A unique cosmetic introduced in 1918 and available in a refillable compact starting in 1921, Armand's Cold Cream Powder and Cold Cream Rouge came in a round, pink and white box, and sold $1 per compact, with refills sold at $8 per dozen.

Four different brands of cold cream were also likely present. A milk glass Pond's jar (Locus J) is in the shape of a rounded diamond. An "Elmo's" jar (Locus KLM) was made by one of the most popular make-up companies of the 1940s, who made rouge, lipstick, face powder, and face cream (Bennett 2023a; Compactstory 2014). The cursive font dates the jar to after a logo update in the 1920s. The cleansing/cold cream, which is the most likely contents of our milk glass jar, was advertised to be used in place of soap and water. Two ferrous lids at Locus J likely belonged to milk glass jars as well, and therefore to cold cream or lotion bottles. The Princess Pat company produced rouge compacts, creams, lipsticks, and powders starting in 1921 (Clayman n.d.; Compactstory 2016; Figure 81). Our lid most resembles those found on the skin cleanser, which came in a milk glass jar. The Marinello Company produced face powders, creams, lipsticks, rouge, and soap, with an increase in their product lines starting in the 1920s (Compactstory 2015, 2017; Figure 81). The company founder, Ruth Maurer, wrote a syndicated beauty column, pamphlets, and textbooks. The logo on our lid, where the "M" resembles an elephant, was replaced in 1926 when the company adopted a more Art Nouveau style. As with the Princess Pat lid, it may have belonged to a milk glass cold cream jar. For more on the make-

up found at Apex, see Sarah O'Donnell's blog Faces of the Past: Exploring Beauty at an Historic Logging Camp in Appendix C.

Figure 81: Women's grooming products. Top left: Princess Pat jar lid, Locus J, photo by Lorna Baker. Top right: Mum's New York deodorant jar, Locus J, photo by Ricky Raffaele. Bottom left: Marinello jar lid, note the elephantine look of the "M", Locus J, photo by Ricky Raffaele. Bottom right: Armand Compact Rouge compact, Locus I, photo by Emily Dale.

6.2.4. Tools

While not a site of labor, the evidence of hand tools at Loci J and KLM indicates that the workers brought their own tools to Apex with them or were expected to maintain their

residences. Seven fragments of small coping, fret, pull, or hacksaw blades, two handsaw blades, one file (Locus KLM), and part of a lithic grinding stone (Locus J; Figure 82) demonstrate the generic tools used at these parts of the site and the tools used to maintain them. A Stihl file guide or file holder was used to hold a chainsaw blade in place during sharpening (Figure 82). Stihl was founded in 1926 in Waiblingen, Germany (Stihl 2023). Our file guide is labelled part "5605 750 4329", which corresponds to a 3/8" chain pitch and 9.32mm file diameter (Stihl 2025).

An adjustable crescent wrench (Locus J) is embossed "DROP-FORGED / BARCALO // MODEL N10 / BUFFALO" (Figure 82). Barcalo Manufacturing was founded in 1896 in Buffalo New York and began making wrenches in 1914 (Alloy Artifacts 2024). In 1919, it introduced its Model N adjustable crescent wrench series under Design Patent 59,785 for its unique teardrop hanging hole in the handle, which our wrench has. The model number (4, 6, 8, 10, 12, or 15) corresponded to the length in inches. While the number after the N in our wrench is nearly worn away, the wrench is 10" long. Sometime in the mid-1920s, Barcalo replaced the model number with the size in inches. As our wrench still has the model number, it likely pre-dates Apex and was brought to the site by an employee.

A more baffling find was a Boss Manufacturing Company cornhusking glove (Locus J; Figure 82). Labelled "THE "BOSS" ", the flat, S-shaped non-ferrous piece of metal has a triangular hole in the center with the metal bent down. The hook would sit on the palm of the user to slit the corn husk and remove the ear from the stalk (Staff 2021). The Illinois-based work glove company specialized in gloves for farmers (Boss 2025) and had two patents for the Boss brand, Patent 505,711 in 1893, and an updated version that most resembles our example, Patent 810,098 from January 16, 1906 (Walter 1906). The patent is titled "Corn Husker" and no common, alternative uses for this object could be found.

Figure 82: Tools. Top: Barcalo adjustable crescent wrench, Locus J, photo by Emily Dale. Center: Stihl file guide, Locus KLM, photo by Shannon Stoller. Bottom left: Embroidery or sewing scissors, Locus KLM, photo by Rachael O'Hara. Bottom center: Grinding stone, Locus J, photo by Sarah O'Donnell. Bottom right: The "Boss" cornhusking glove, Locus J, photo by Ricky Raffaele.

Two bullets possibly point to gun ownership at Locus KLM. Unfortunately, neither are readily dateable, and could be related to modern hunting activity in the area. Both are from the Winchester Repeating Arms Company. A "SUPER X" rimfire shell casing post-dates 1921, when the brand was introduced (Winchester 2025). No measurements were taken to know the caliber. An intact .22 caliber rimfire bullet is impressed with an H. As it was found in the privy excavations in Stratum 2, Level 2, it is more likely to belong to Apex's time period.

Several clocks were found in 2024. An alarm clock frame (Locus V) has still-visible writing around several holes on the back, indicating the previous location of dials that controlled the clock's function. "F" meant Fast, while "S" meant Slow, and small ticks along the hole allowed the user to adjust the speed of the clock along a spectrum. "TIME" was placed over the hole on the left, while "ALARM" over the right-most hole had a feathered arrow indicating to turn dials clock-wise. A non-ferrous stand is at the bottom to hold the clock upright. While specific dates and models were most commonly ascertainable from the face, based on the writing and arrangement of holes, this frame belonged to a West Clox Big Ben Alarm Clock (Adams, Biolchini, and Stoddard 2024; Clayman n.d.). The Western Clock Manufacturing Company, or Westclox, opened in 1885 in Illinois. Their Big Ben model was one of America's most popular alarm clocks, selling for around $2.50 until World War I. Between the 1920s and 1940s, there were radium dial versions of this clock. A similar clock body was found at KLM, but it was too rusted to identify any writing.

A second, identifiable clock was an isolated find between Locus KLM and Locus Q in an area with no other artifacts. The non-ferrous, silver "THINLARM" clock body was made by the William L. Gilbert Clock Company. Charles E. Williams, the company's Secretary and General Manager, filed Trademark 160,059 for "Thinlarm" on March 2, 1922. He also filed Patent 1,418,895 on June 6, 1922 for a "Metal Clock" on behalf of the company that likely served as the design for the exterior, and Albert P. Hodge filed patent 1,433,372 on October 24, 1922 for "Clock" that likely served as the basis for the interior gears.

A small pair of embroidery or sewing scissors (Locus KLM) points to the domestic labor of women (Figure 82). A ferrous paintbrush ferrule marked "VULCANIZED / IN RUBBER / 3½ INCH" (Locus KLM) was originally 3½" wide and likely indicates the inside or outside of the homes or furniture were painted. Several pieces of blue-painted wood were found in the Locus M privy excavation, further indicating attempts were made to spruce up the homes. A Dietz lantern part (Locus J) belonged to an unknown make and model. One can (Locus KLM) demonstrates the connection between Apex and the Atchison, Topeka, and Santa Fe Railroad. Embossed "A.T. & / S.F. RY" on the lid, the can has been flattened, but was a square with horizonal ribs.

6.3. Other

This section discusses a variety of other artifact types that do not fit into the aforementioned categories, including Toys, Tobacco, Domestic Items, and Transportation.

6.3.1. Toys and Children

Numerous toys and toy parts were recorded in 2024, likely a reflection of the numerous children living at Loci J, KLM, and V, and the proximity of the schoolhouse at Locus J. Compared to toys found in 2022 and 2023, the 2024 toys were more likely to be made of more durable materials, like cast iron, possibly pointing to the ability for management to afford more expensive toys, or

to be less concerned if they were broken or lost. Two toys found in 2024 match toys found at the Kitchen/Dining Hall in 2022. A Cracker Jack Screamer Whistle (Locus J) was prize ID number Z-0415 or Z-0545 and was made by the Tyler Can Company of Baltimore, Maryland in the 1930s or early 1940s (Toth n.d.). A second Screamer Whistle was found at Locus A, Concentration 2. A cast iron toy gun (Locus V) is nearly identical to a toy gun found at Locus A, Concentration 2. It resembles a Browning 1910 or Colt 1911.

Stereotypically "boys" toys commonly centered on themes of transportation and included cars, trains, tractors, and planes. Several ferrous metal parts of toy train tracks (Locus V), cars (Loci KLM, J), tractors (Locus KLM), and wind-up vehicles (Locus M) were found across the area. For more on boys' toys, see Devony Martell's blog, Planes, Trains, and Automobiles: Boy Toys from Apex, in Appendix C, and her NAU Undergraduate Symposium poster, Planes, Trains, and Automobiles; Boy Toys in the 1930's Apex Logging Camp, in Appendix B.

A broken wind-up toy bore the phrase "LICENSED / UNDER PATENT / N^{O} 1,334,539". Walter H. Huth was awarded this patent in 1920 for a "Toy Fighting Tank". The Marx Company licensed the patent in January 1930 for "substantial royalties" (Peter n.d.) to create a climbing tractor that could pull, climb, and push. A 1930 Montgomery Ward Catalog listed the toy at 49 cents.

A toy plane (Locus J; Figure 83) was manufactured by the Tip-Top Toy Company of San Francisco (Buttaggi n.d.; Rinker n.d.). The company made pewter die-cast cars, trucks, Airstream trailers, and other vehicles in a single color to reduce costs. Our plane is labelled both "AIR EXPRESS" on the fuselage and "C / 165" on the tailfin. Lockheed produced their first Air Express in 1928 (Wikipedia n.d.). The tail of the plane, though, reads "C / 165", possibly making it modeled after a Cessna C-165 Airmaster which was a personal aircraft owned by private pilots, introduced in 1938 (Jones 2023).

A cast iron car frame (Locus KLM) was embossed "PAT 1895968" (Figure 83), which was awarded to J.E. Brubaker in January 1933 on behalf of The Hubley Manufacturing Company for a Toy Vehicle. The patent allowed for a common chassis that could be adapted to numerous types of die-cast vehicles, like tow trucks, woodie wagons, and cars (Wikipedia 2023). Hubley produced several toys modeled on real cars, such as the 1934 Chrysler Airflow, 1930s Studebaker, and the 1937 Lincoln Zephyr. The broken car at Apex most resembles a 1930 Ford Coupe.

The exhaust stack and front mechanisms of an "AVERY" tractor was found at Locus J (Figure 83). The Avery Company began manufacturing tractors in 1891 (Wendel 2023). Their unique engine resembled a train engine instead of a conventional steam engine. The company folded by

the end of WWII. They partnered with toy Hubley Manufacturing Company to produce miniature tractors (Wikipedia 2023).

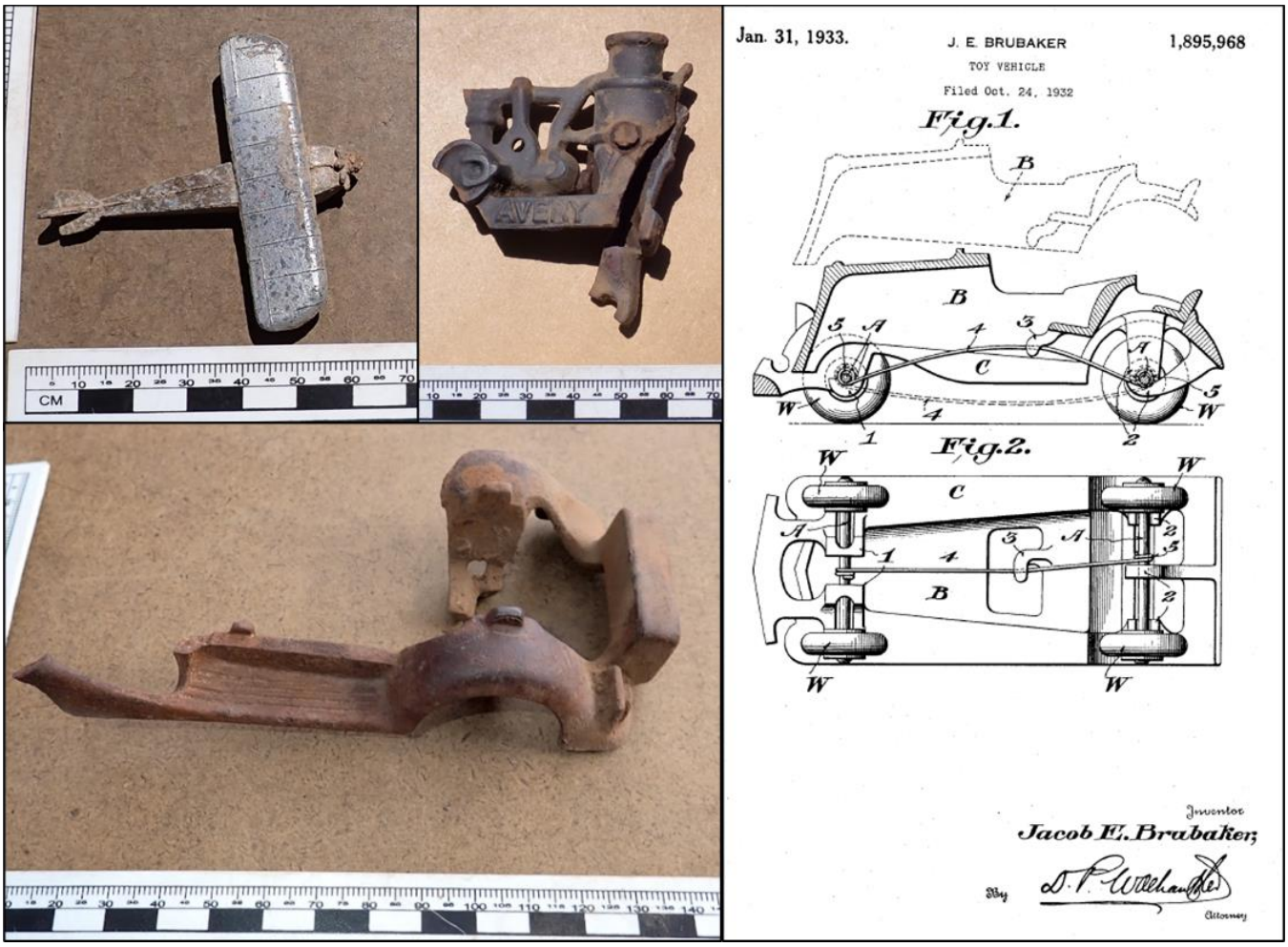

Figure 83: Transportation-themed toys. Top left: Tip-Toy Toy Air Express, Locus J, photo by Bailey Stalford. Top center: Avery tractor, Locus J, photo by Sarah O'Donnell. Bottom: Cast iron car body under Patent 1,895,968, Locus KLM, photo by Sarah O'Donnell. Right: Patent 1,895,968 (Brubaker 1933).

"Girls" toys were evident from a porcelain doll arm (Locus KLM; Figure 84), and seven fragments of porcelain toy tea sets (Loci J, KLM, and V).

Possible unisex toys were also found at the 2024 Loci. A terracotta horse marked "GERMANY" between its legs (Figure 84) may be related to a ferrous metal stand also reading "GERMANY" (both Locus V). It is unclear if the toy originated in Germany or is meant to represent a German horse. A spoon-bowl shaped ferrous item resembles a toy stringed instrument (Locus J; Figure 84). A small amber cup (Locus KLM) bears the crow-clutching-marbles logo of the Akro-Agate company (Figure 84). Founded in 1911, the Clarksburg, West Virginia company eventually

controlled 75% of the marble market. They attempted to diversify their offerings several times by producing pressed glass products, such as inexpensive miniature glass children's. Our cup is likely part of their first attempt to make "juvenile" tea sets during the early 1930s (Hardy and Hardy 1992:111). The initial run of dishes came in topaz, green, and blue in a pattern now called "Stippled Band", due to the pattern around the rim (131). The 8-, 17-, or 24- piece sets included a creamer, cups, a pitcher, plates, saucers, a sugar bowl, a teapot and lid, and tumblers (131). The box for the Play-Time glass dishes depicted young boys and girls playing together (130). The line was unpopular and discontinued by WWII (111). Finally, a writing slate fragment was found at Locus V, downhill from the schoolhouse, perhaps indicating that children took their schoolwork home.

Figure 84: Other toys. Top left: Terracotta "Germany" horse, Locus V, photo by Ricky Raffaele. Top right: Porcelain doll arm, Locus KLM, photo by Shannon Stoller. Bottom left: Akro-Agate toy cup, Locus KLM, photo by Emily Dale. Bottom right: Toy instrument, Locus J, photo by Lorna Baker.

6.3.2. Tobacco

Evidence for tobacco use was found across all three 2024 Loci. Upright tobacco tins were more prominent at Loci J and KLM, though none had any identifying marks as to brand. None were

recorded at V. Fourteen Copenhagen flat oval cans were recorded, including at four KLM, three at V, and eight at J, seven of which were in the Locus J Can Dump. The cans were embossed with both the earlier "COPENHAGEN / SNUFF" (1906-1935) logo and later "COPENHAGEN SATISFIES" slogan (1935-1990) (Rock 2015a), indicating a popularity across the timeline of Apex's occupation. Both the cans recorded at Locus V had the earlier "SNUFF" label. One cigar can (Locus L) was embossed "FACTORY N^{O} - 17 / 50 / […] DIST PA". The First District of Pennsylvania was famous for their cigarettes and cigars (Hyman 2010). No record of who owned Factory Number 17 could be found, but 50 likely refers to the number of cigars originally in the tin.

Some possible evidence for tobacco use by women was found at KLM. A black rubber cigarette holder handle (Figure 85) could have been used by anyone, but by the 1930s they were largely advertised to women who were increasingly able to smoke in public (McNamara 2016).

Figure 85: Black, rubber cigarette holder, Locus KLM. Photo by Shannon Stoller.

6.3.3 Domestic

"Domestic" items is used here broadly to discuss the variety of artifacts that reveal strategies for maintaining and decorating households. This includes cleaning items, decorative artifacts, and household appliances and furniture.

The household cleansing products at management housing stand in contrast to those found at laborer housing in 2023. First, far more Clorox bottles are present. Second, far fewer canned cleansers are present, and the preferred brand is different. Instead of the more common Old Dutch Cleanser found elsewhere, management housing seemingly preferred Crystal White.

At least twelve Clorox bottles were found across all 2024 Loci, all represented by amber glass shards (Figure 86). Writing on the bottles varies, with "CLOROX" found on finishes, shoulders, bodies, heels, and bases. All our bases read "REG. U.S. / CLOROX / PAT. OFF." Based on the arrangement of writing on the bottles (see The Clorox Company 2025), we have examples that date after 1929, when the company added the Clorox diamond trademark on the bases; between 1929 and 1931, when Clorox added additional text to the neck, shoulder, and heel; and between 1932 and 1936, when the company added a second line of text on the shoulder.

Four cans of Crystal White Scouring Cleanser, one at Locus J, one at Locus KLM, and two at Locus V, were recorded (Figure 86). The product seems multi-use as the can declares it "CLEANS – SCRUBS – SCOURS". The Peet Company was founded in 1872 and made a line of Crystal White soap products (Colgate-Palmolive Company 2025), including laundry soap and soap flakes (History Colorado n.d.). The Peet company merged with Palmolive in 1926, which further merged with Colgate in 1928 (Colgate-Palmolive Company 2025; History Colorado n.d.).

Two bluing bottles point to in-house clothes washing (Figure 86). A Mrs. Stewart's Bluing bottle (Locus KLM) dates to sometime post-1920. While the company was founded in the 1880s, the company moved the bottle embossing from the face to the shoulder, where our bottle is embossed, around 1920 (Mrs. Stewarts Bluing 2025). Sales of Mrs. Stewart's Bluing peaked in 1946, after which bleach largely replaced bluing for laundry purposes (Thiede 2018). A bottle of Little Boy Blue Bluing (Locus J) was created by the Condensed Bluing Company (Isa 2017) who received a trademark for the name in 1914. The name "Little Boy Blue" was meant to evoke the children's nursery rhyme about a shepherd and the whiteness of his sheep. Advertisements for the product often featured fairy tale characters or Fuzzie and Wuzzie, a pair of cartoon bears, perhaps connoting the product's suitability for cleaning children's clothing.

Figure 86: Domestic Cleaning. Top left: Clorox bottle base and finish, Locus J, photo by Matt Harwood. Top right: Little Boy Bluing bottle, Locus J, photo by Fran Maiuri. Bottom left: Crystal White Scouring Cleanser can lid, Locus KLM, photo by Matt Harwood. Bottom right: Mrs. Stewart's Bluing bottle, Locus KLM, photo by Lorna Baker.

Practical elements of domestic life are represented across the area by numerous stove parts, including cast iron pieces, such as legs and body parts, stove pipes, roof flashing, vents, and one coal/ash shovel (Locus J). Compared to other parts of the site, the stoves at Loci J, KLM, and V are more substantial in size and material, suggesting uses beyond just heating. One cast iron stove part (Locus KLM) reads "7-14 / DALE / 112 / RIGHT" (Figure 87), though it is unknown what this means. A "SPARK" cast iron stove part (Locus J; Figure 87) came from the Spark Stove Company of Oakland, California (Rego 2016). The company produced coal, wood, and gas-powered ranges between 1913 and the 1950s, along with a cookbook in 1926.

Figure 87: Domestic artifacts. Top left: Spark Stove Company stove part, Locus J, photo by Ricky Raffaele. Bottom left: Small skeleton key, Locus J, photo by Emily Dale. Right: Cast iron stove part, Locus KLM, photo by Ricky Raffaele.

At the KLM area, artifacts point to knick-knacks, furniture, and dishware, such as candy dishes or ashtrays, as a means to adorn the home. A porcelain figurine fragment displays an unknown animal, possibly a cat or dog, sitting on green grass, with its tail wrapped around its body (Figure 88). A decorative hinge with a thick barrel, molded leafs and rounded pin knobs (Locus K; Figure 88), while another has curved leafs and a spring inside the barrel (Locus KLM). A deep, colorless glass molded dish has a scalloped rim and sides with a radiating ray pattern incised on the exterior base. A pink carnival glass dish with a blue tint at the rim, has ridges on the body, and a molded floral design around the rim. A light green glass tube, possibly of uranium glass, decorated with vertical lines impressed up the body measures 5.3cm in diameter and may have been a vase or drinking glass (Figure 88). A possibly matching plate has radiating lines around the rim and body, and concentric circles in the center of the base (Figure 88). Amethyst glass fragments molded with a pentagonal design of triangles and domes may have been a decorative dish, ashtray, or candy bowl. A possible folding chair frame consists of two nested rectangles, connected in the center with a fastener that allows the inner piece to swivel. A third piece of metal, with twisted wire, possibly created the back. Modern folding chairs were first patented in 1855, with other patents awarded in 1911 and 1947 (Wikipedia 2025).

Figure 88: Locus KLM Decorative Items. Top left: Molded aqua plate, photo by Ricky Raffaele. Bottom left: Molded aqua vase or drinking glass, photo by Matt Harwood. Top right: Animal figurine, photo by Rachael O'Hara. Bottom right: Decorative hinge, photo by Lorna Baker.

A souvenir-style projectile point also at Locus KLM (Figure 89) points to possible connections between Apex residents and the growing Native American craft industry of early 20th-century Northern Arizona. The point, made of mahogany obsidian, is unifacially knapped. Verkamp's Curios and Fred Harvey's Hopi House both operated in Grand Canyon Village during Apex's

operation, selling Native-made pottery, blankets, and jewelry. The history of the lithic souvenir trade is currently unknown, and no information could be found. An authentic, likely pre-contact, white chert projectile point was also found in KLM, near the souvenir point, suggesting a propensity for collecting Native goods. For more on the souvenir projectile point, see Caroline Boerger's blog, Lithic Look-Alikes: A Glimpse into the Souvenir Trade in Northern Arizona, in Appendix C.

Figure 89: Souvenir-style projectile point, Locus KLM. Photos by Lorna Baker.

Locus J was also decorated with a wide range of items. The residence at J was illuminated by a colorless, glass lamp body bulb (Figure 90). Matching pieces of a green glass set with molded flowers possibly consisted of stemware, plates, and a dish (Figure 90). A matching piece was also found at Locus S, Can Dump 6. An amethyst glass dish, decanter, or other similar object is molded with a star design in the center and raised circles and diamonds forming a hexagon around the star (Figure 90). A shallow bowl has a large snowflake made up of dots and loops molded on the exterior base (Figure 90). Locus J has a flat, ferrous metal fish with one hole punched in the tail and one hole in the body suggesting it was hung on the wall or from the ceiling. Finally, a birdcage has a square hole in the side, possibly where the door was, and a hook on top for hanging; the bottom is missing. A small, decorative skeleton key (Figure 87) may have been used for a box, cupboard, or other piece of home furniture.

Figure 90: Locus J Decorative Items. Top left: Amethyst dish, photo by Sarah O'Donnell. Bottom left: Decorative bowl, photo by Bailey Stalford. Top right: Green candy dish with molded flower pattern, photo by Sarah O'Donnell. Bottom right: Lamp body, photo by Lorna Baker.

Locus V had the fewest artifacts related to domestic decoration. Colorless domed fragments with a scalloped edge and protrusions on the points are similar to the lid, candy dish, or ashtray fragments found at Locus D. A decorative colorless candy dish lid with panels around the body has an inset base for nesting inside a dish.

Five additional Jack-o-Canterns were recorded during the 2024 field season, bringing the total to seven across the site (Figure 91). Three were found at Locus G and one at Locus S, both previously surveyed in 2022. A fifth was found during surveys of KLM. In total, one was found at Locus C, one at Locus KLM, one at Locus S, and four at Locus G. Interestingly, all the locations where Jack-o-Canterns were found were in proximity to where children lived, perhaps indicating a Halloween tradition. For more on the Apex Jack-o-Canterns, see Makenzie Long's blog post, A Halloween Blog: Meet the Jack-O-Canterns of Apex in Appendix C.

Another modified can at Locus J, was cut with a knife to form a nine-point sun or star design (Figure 91). Perhaps, like the Jack-o-Canterns, it was illuminated with a light source.

Figure 91: Modified cans. Left: Apex Jack-o-Canterns from, from left to right, Locus G, Locus S, Locus C, Locus KLM, Locus G, Locus G, and Locus G, photo by Makenzie Long. Right: Sun-ray can, Locus J, photo by Fran Maiuri.

6.3.4. Transportation

There is some evidence for bicycles at Apex. A likely bike chain (Locus KLM), measuring around 56.6cm long, appears to be a 1" pitch chain, or "skip-tooth" or "skip-link" chain, which dates from the early 1900s to the 1950s (Stromberger 2011; Worden 2020). In this configuration, the chain fits sprockets which are one inch apart compared to modern chains, which are one half-inch apart. At least one known (Locus J) and two possible (Locus KLM), 3-in-One Oil cans were recorded and may point to bicycle maintenance (Figure 92). The product was originally advertised for bicycle care maintenance (WD-40 Company 2025), though the multi-use oil was also recommended for a variety of domestic and industrial tasks, including pianos, furniture polish, and gun lubrication, as revealed in advertisements. The name highlighted the oil's ability to accomplish three uses in one application: lubrication, rust prevention, and cleaning. While the company name is 3-in-One Oil, our can lid reads "3 IN 1 OIL CO. N. Y. ☆." It appears to be the 10 oz size.

Several pieces of evidence point to the presence and use of multiple cars across the 2024 Loci. Two license plates were found. The left half of a 1929 New Mexico license plate with a Zia sun containing "29" for the year was found at KLM. It was seemingly intentionally cut in half. The "15" at the start of the plate number does not correspond to any geographic area, as New Mexico

did not start county prefixes on license plates until 1947 (Johnston and Miller n.d.). Originally, the plate would have been cream with red writing. An isolated, intact Arizona license plate was found northeast of Locus E and southwest of the parking area during metal detecting (Figure 92). The date "1928" is vertical down the left side of the plate with the number "11-1276" is in the center. The "11" was the code for Coconino County in 1928 (Hammer 2025; Wikipedia 2025). "ARIZONA" reads across the bottom. It originally had a copper background with red lettering. Four round holes, one in each corner, and two elongated oval holes at the top secured it to the car. Per Richard McGaugh of the Flagstaff Westerners (pers. comm. June 4, 2025), Arizona issued new plates each year, which may explain why there are so many license plates at Apex.

A "PENNZOIL" can (Locus V) dates to post 1913, when the company was founded out of the South Penn Oil Company (Wikipedia 2025). A second oil can (Locus J) was manufactured by Canco, whose logo post-dates 1923 (Rock and Davis 1989:198), and reads "S.A.E. / 30" on the top. Two knife-cut holes, one a small, neat rectangle, and the other more crudely cut, let the oil out of the can. The Society for Automotive Engineers (S.A.E.) was founded in 1905 to set standards for the growing automotive industry (Sanite Oil Company 2023). They developed a numerical classification system to rate the viscosity of motor oil. A rating of 30 means it has a viscosity rating of 30 at 100° Celsius.

Several car parts likely belonged to at least two Model Ts. A rectangular Model T ignition switch plate is labelled "Ford" (Locus V; Figure 92). A still working dial on the left side has switch positions for "BAT DIM OFF ON MAG". This type of battery-powered switch plate replaced the earlier crank starters in Model Ts and was in use between around 1919 and 1925 (Lang's Old Car Parts 2025). Two gas tanks (Locus J and Locus KLM) are elongated oval cylinders with a hole on one end of each side with an internal thread for a gasket and a metal strap around the body (Figure 92). They most closely resemble the 10-gallon Model T Oval Fuel Tanks recorded on several classic car enthusiast forums and sales pages and in a 1904-1928 historic video of Ford factory workers manufacturing the gas tanks (King Rose Archives 2016:5:03 to 7:09). The oval gas tank replaced the earlier round shape starting in 1920 (McCalley 2007). Early Model-T gas tanks were located underneath the front seat (Ford Motor Company 2024), and since the gasoline was gravity-fed to the engine, it was often easier to drive up steep slopes backwards. Production on Model-Ts ended in 1927.

Figure 92: Transportation artifacts. Top left: 3 in 1 oil, Locus J, photo by Sarah O'Donnell. Bottom left: Model T oval fuel tank, Locus J, photo by Matt Harwood. Top right: Ford ignition switch plate, Locus V, photo by Devony Martell. Bottom right: 1928 Arizona license plate, Isolate, photo by Emily Dale.

Finally, a ferrous rear curtain window frame is labelled "HAINES MFG. CO. CRYSTA LITES // CRYSTA LITES ROCHESTER, N.Y." Outside of Ebay listings and private Model T forums, no publicly available information could be found on either the company or the specific brand. Model-T and classic car sellers, however, consistently link the window frame to Model Ts. An original box describes Crysta Lites as "The improved glass rear curtain lights for Fords." The box also describes Crysta Lites as being both Trademarked and Patented, but a search of the US Patent and Trademark website found no patents for either the product or belonging to the company.

An AC Delco Spark Plug points to the possibility of other car models at Apex, more specifically a General Motors car. A 7cm long x 3.5cm diameter porcelain spark plug reads "A.C." in blue on the body. The Albert Champion Company began producing spark plugs in 1907 (Schreiber 2024). Champion soon left the company, but the next year, he partnered with General Motors to produce spark plugs for their Buicks, Cadillacs, and Oldsmobiles. The newly-formed Champion Ignition Company branded their spark plugs as "AC" to avoid competition with his earlier company's "Champion" spark plugs. A lawsuit eventually required him to rename his new

company the AC Spark Plug Company in 1922. While Model Ts did use Champion spark plugs (Boggess 1997), they did not have a contract with the AC Spark Plug Company.

6.3.5. Architecture, Electrical, and Utilities

Numerous fire bricks were recorded at Locus KLM (at least 35) and Locus V (at least 8). None were found at Locus J. Impressions on bricks found at Locus V include those for Denver Fire Clay Company, and one for "GALLUP" (Figure 93). The Gallup Fire Brick Company operated between 1920 and 1960 and had "GALLUP" molded in 1" letters in the center of the brick (van Drunen 2013:32), while the Gallup Brick & Tile Company was around by at least 1929, when they were sued. A concentration of fire bricks at Locus KLM AS1 was mostly made up of "TROJAN" bricks impressed with the maker's mark for Gladding, McBean & Company. The architectural terra-cotta company was founded in 1875 in California to take advantage of a large clay deposit near Lincoln (Gladding McBean 2024). Their Trojan bricks were made at factories across California between 1926 and 1962 (Mosier n.d.). None of the examples on-line contained both the Gladding, McBean, & Company logo and the word Trojan, as ours do, making it difficult to narrow the date range or location of manufacture.

Electrical elements point to access to electricity for a variety of uses. Carbon battery rods were found across Locus J, Locus KLM, and Locus V. A porcelain insulator (Locus J) is impressed with the T-in-a-circle logo of the Trumbull Electric Manufacturing Company (Gish n.d.; Figure 93). They began using the logo sometime in the 1920s, and it appears in their 1937 catalog (Foreman 2025).

An electrical element of unknown function at Locus J consists of a non-ferrous rectangle with several non-ferrous wires coming off of it (Figure 93). Two sets of two wires come out of the top with colorless glass "insulators" holding the two wires in places. At least seven wires come out of the bottom with a larger colorless glass 'insulator' holding them together before they separate again. Non-ferrous plugs are at the end of those wires.

Figure 93: Architectural Artifacts. Top: Electrical element, Locus J, photo by Bailey Stalford. Bottom left: Gallup brick, Locus V, photo by Ricky Raffaele. Bottom right: Trumbull Electric Manufacturing Company insulator, Locus J, photo by Sarah O'Donnell.

Finally, six standing Culturally Modified Trees (CMTs) were recorded at KLM. They all have stripped limbs at the base and form a sort of semi-circle around the southern perimeter of the Locus. Two are in WS1, one in WS2, two in WS3, and one outside the perimeter of WS3. A seventh, downed tree is in WS3. Railroad spikes were noted three of the CMTs, including the one in WS2, which also had a board nailed to it, and one piece of wire. We posit these were used as utility lines to bring telephone or other utilities to the superintendent's house.

6.4. Mystery Objects

Several objects recorded in 2024 feel like they should be identifiable, but no information on them has been found. They are grouped here as their functions are currently unknown.

Figure 94: Unidentified Objects. Top left: Flat metal with “th” in corner and cut edge, Locus K, photo by Lorna Baker. Top center: Anthropomorphic figure, Locus J, photo by Makenzie Long. Top right: Object with ratcheted dial, Locus V, photos by Ricky Raffaele. Bottom left: “Can” with spindle through center and gear on one end, Locus J, photo by Lorna Baker. Bottom right: “JS” can lid, Locus KLM, photo by Shannon Stoller.

Several manufacturers or fillers had their logos on cans, but their identities are unknown. One flat oval can (Locus J) displays a club, like the playing card suit, in an impressed circle. Club Chewing Tobacco had clubs as their logo, but their cans were cylindrical. A square, hinged lid (KLM) has “J S” punched into the top of the lid, seemingly by the manufacturer due to the uniformity of size, depth, and edges on the holes (Figure 94). The J consists of 13 holes, while the S consists of 17, two of which are unpunched, as though the punching mold was broken.

At Locus V, a non-ferrous rectangle has several square, circular, and polygon holes in the face (Figure 94). The front has a ratchet gear in a socket on the top of and attached to a ferrous dial.

Due to a ratchet gear, the dial can only turn one direction, and tick marks record some sort of setting. It is clearly some sort of mechanical part.

Other unidentified metal objects were found across the 2024 Loci. A 21-centimeter-long ferrous "can" from Locus J has a spindle stuck through the middle and a gear attached to one end (Figure 94). Also found at Locus J was a ferrous, almost-anthropomorphic possible mold, decorative topper, or toy (Figure 94). There are holes and tabs throughout the body, as though it was attached to something else. The figure appears to be wearing a hat and has ears. Finally, a broken, flat metal plate (Locus K) has a decorated scalloped edge in tiers, where the outside edge is higher than the inside edge (Figure 94). The upper right corner reads "th", as complete text, with an upside-down triangle below it.

6.5. General Conclusions

The 2024 field season provided confirmation of some of our 2022 and 2023 conclusions. Common brands display likely reliance on the company store for key staples like Calumet Baking Powder, Maxwell House Coffee, Copenhagen chewing tobacco, Old Dutch Cleanser, and perhaps even Budweiser Malt Syrup Extract. More unique items, like the cosmetics, children's toys, and clothing brands, point to origins outside of Apex

The artifacts and features from 2024 highlight new aspects of Apex's community. The discrepancy in tobacco products between the bunkhouse and management housing point to different strategies of nicotine consumption, possibly based around occupational necessities. Far more evidence of at-home canning was found in 2024, pointing to the labor of Apex's women. The toys, too, were different and more numerous than those found elsewhere at the site. They were commonly made of more durable materials like cast iron, and often had maker's mark, pointing, perhaps, to management children affording more expensive toys or less likely to repair or continue playing with broken toys. Finally, the quantity of alcohol was much higher at management housing, especially at the purported home of Arvid Anderson. Perhaps, then, alcohol-consumption was a social activity facilitated by management.

7. PUBLIC TOURS

Throughout the May to June field season, we conducted 13 tours, resulting in nearly 112 visitors to the site (Figure 95). Funding from the Arizona Humanities paid for Rachael O'Hara to serve as tour guide, Welcome Center materials for visitor comfort, such as canopies and water coolers. Tours were organized through the Kaibab National Forest, Grand Canyon Historical Society, Arizona Site Stewards, Flagstaff Westerners, Riordan Mansion and Grand Canyon Conservancy, and numerous friends and family of project staff. We also provided a September 2024 tour through the Flagstaff Festival of Science.

At the end of each tour, site visitors were given a short, voluntary, and anonymous survey to fill out about their experiences at the site. A 2023 NAU IRB application determined that the tours

and surveys did not qualify as human subject research. The findings of those surveys were written as a report for the Arizona Humanities.

Figure 95: Tours. Top left: Hat Ranch Field School with Adrienne Dale, Matt Harwood, and Emily Dale at the screen, photo by Ricky Raffaele. Bottom left: Bailey Stalford talks with Hat Ranch staff and students, photo by Ricky Raffaele. Top right: Rachael O'Hara, third from right, leads a tour of the Flagstaff Westerners, photo by Makenzie Long. Bottom right: Rachael O'Hara gives the safety briefing to the Flagstaff Festival of Science tour, photo by Emily Dale

8. CONCLUSIONS AND FUTURE DIRECTIONS

The 2024 field season was an overall success. We trained several students in historical archaeology and public archaeology methods and engaged with over 100 members of the public. We also demonstrated the depth of information and data present at the site.

We will continue field work in 2025. Our 2022, 2023, and 2024 field seasons have explored a breadth of Loci across the site and provided comparative samples about the lives of the diversity of people who lived and worked at Apex. Accordingly, our 2025 season will focus on Locus B

and Locus P, to finish recording the Loci on the east side of the railroad grade. If time permits, we will also explore Locus F, a likely industrial part of town where Al Richmond believes the water or oil tank was erected.

8.1. Publications

The lead-up to and results from the 2024 field season have already been published in a variety of venues. Most notably, Emily began the Apex, Arizona Archaeology Project Artifact Blog, hosted on the NAU Department of Anthropology website, where students, staff, and others write about specific artifacts or artifact categories they are interested in from the site. Student posters are in Appendix B, while blogs are located in Appendix C. The following table lists the numerous paper and poster conference presentations, invited talks, newspaper coverage, and journal articles emerging from our 2024 field season so far:

Name	Title	Date	Venue	Mode
Anna Foley	Apex Archaeology Project: Digging Up the History of Vanished Lumber Town in Arizona's Kaibab National Forest	May 2024	--	Story Map
Sarah O'Donnell	Catch-and-Release Archaeology: A Path Towards Solving the Curation Crisis	August 2024	Pecos Conference	Paper Presentation; Second Place, Cordell/Powers Prize Competition
Emily Dale and Rachael O'Hara	A 250% Increase in Jack-o-Canterns: Historical Archaeology at a 20th-Century Northern Arizona Logging Camp	August 2024	Pecos Conference	Poster Presentation
Emily Dale	O Can-ada: The Geography of Apex's Canned Meat	September 2024	Apex, Arizona Archaeology Project Artifact Blog	On-Line Blog Post

Makenzie Long	A Halloween Blog: Meet the Jack-O-Canterns of Apex	October 2024	Apex, Arizona Archaeology Project Artifact Blog	On-Line Blog Post
Madeleine Levesque	Sweat, Stink, and Self-Care: Health and Hygiene at Apex	November 2024	Apex, Arizona Archaeology Project Artifact Blog	On-Line Blog Post
Sarah O'Donnell	Faces of the Past: Exploring Beauty at an Historic Logging Camp	December 2024	Apex, Arizona Archaeology Project Artifact Blog	On-Line Blog Post
Emily Dale	Trading Pines for Wines: Consumer Ties Between the 20th-Century Arizona Timber and California Fruit-Packing Industries	January 2025	Society for Historical Archaeology	Conference Presentation
Rachael O'Hara	We Weren't Dry, I'll Tell You That": Prohibition-Era Alcohol Consumption at Northern Arizona's Apex Logging Camp	January 2025	Society for Historical Archaeology	Paper Presentation
Rachael O'Hara	Local Brews: Beer, Brewing, and Prohibition at Apex	January 2025	Apex, Arizona Archaeology Project Artifact Blog	On-Line Blog Post
Alex Mason	The Rise of Flashlights in Apex, Arizona: A Technological Shift from Lanterns	February 2025	Apex, Arizona Archaeology Project Artifact Blog	On-Line Blog Post
Caroline Boerger	Lithic Look-Alikes: A Glimpse into the Souvenir Trade in Northern Arizona	March 2025	Apex, Arizona Archaeology Project Artifact Blog	On-Line Blog Post

Emily Dale, Rachael O'Hara, and Madeleine Levesque	Historical Archaeology in Arizona	April 2025	Arizona History Convention	Exhibit
Rachael O'Hara	We Sure Weren't Dry': Uncovering Apex's Culture of Alcohol in the Prohibition Era	April 2025	Arizona History Convention	Poster Presentation
Madeleine Levesque	Health and Hygiene in the Depression-Era United States: Apex, Arizona	April 2025	Arizona History Convention	Poster Presentation
Allyanna Marshall	Apex Flotation Sample Analysis	April 2025	Apex, Arizona Archaeology Project Artifact Blog	On-Line Blog Post
Zulia DeWire	Just Add Water: How Early Advertising Shaped Cocoa Powder Diversity at Apex, Arizona	April 2025	NAU Undergraduate Research Symposium	Poster Presentation
Devony Martell	Planes, Trains, and Automobiles; Boy Toys in the 1930's Apex Logging Camp	April 2025	NAU Undergraduate Research Symposium	Poster Presentation
Rachael O'Hara	We Sure Weren't Dry': Uncovering Apex's Culture of Alcohol in the Prohibition Era	April 2025	NAU Graduate Poster Symposium	Poster Presentation; Winner Viewer's Choice
Devony Martell	Planes, Trains, and Automobiles: Boy Toys from Apex	May 2025	Apex, Arizona Archaeology Project Artifact Blog	On-Line Blog Post
Zulia DeWire	Just Add Water: How Early Advertising Shaped Cocoa Powder	May 2025	Apex, Arizona Archaeology Project Artifact Blog	On-Line Blog Post

	Diversity at Apex, Arizona			
Emily Dale and Timothy Maddock	Two Years of Public Archaeology at Apex	June 2025	Grand Canyon History Symposium	Conference Proceedings
Emily Dale and Rachael O'Hara	Training Historical Archaeologists for the Southwest	Forthcoming	Journal of Arizona Archaeology	Journal Article

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APPENDIX A

NAU 2024 Apex Field School Flotation and Pollen Analyses

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Apex was a small logging community on the Kaibab National Forest; the site was occupied from 1929 to 1936. During the 2024 Northern Arizona University field school at Apex, students excavated a privy located believed to be associated with the home of Arvid Anderson, the camp superintendent, and his family of his wife and three young children. Two sediment samples for pollen and macrobotanical (flotation) analyses were collected from the southwest corner of Level 5. Subsequently, the two samples were submitted to BGP Consulting for subsampling, flotation, and pollen processing and analyses. The prime analytical goal was to identify economic resources (e.g., plant food) used by the family; environmental information was also sought. Additionally, a plank of wood within the privy was examined.

Located on the Colorado Plateau, the site is situated on two hilltops and flanking slopes, overlooking the former railroad spur line running through the center of the small valley; elevation ranges range from 6,580 to 6,620 feet above mean sea level. Located within the Rocky Mountain (Petran) Montane Conifer Forest (Pase and Brown 1994), native vegetation consists mostly of a ponderosa pine (*Pinus ponderosa*) canopy and grass-shrub understory; piñon pine (*Pinus monophyla*), juniper (*Juniperus* sp.), and sagebrush (*Artemisia* sp.) are commonly interspersed among the taller pines. At lower elevations to south and southwest, vegetation turns to Great Basin Conifer Woodland (Brown 1994), dominated by piñon and juniper. Scattered grasslands and parks are found in both communities.

Flotation (h1)

When charred, plant remains become inert and no longer subject to decay. Uncharred remains typically decay in soil within 200-300 years, depending on climate and edaphic conditions (Miksicek 1995; Schiffer 1987). Thus, charred remains in prehistoric context are expected to represent human activity rather than occurring naturally or through bioturbation. Charred remains are typically recovered by flotation: sediment samples are agitated in water, and the plant remains that float to the surface are collected, sorted, and analyzed. Charred seeds, maize cob fragments, and rare squash rinds reflect subsistence activities. Recovered charcoal could have been fuel, construction material, or possibly containers, such as baskets. A wide range of available plants were used in numerous ways and differential preservation reveals only part of the picture. As historic contexts in Arizona usually are less 200 years old, uncharred plant remains recovered by flotation also must be considered as potentially introduced by people, as well as intrusive animals.

Methods (h2)

Flotation samples were processed using a Flote-Tech flotation machine. The gravel portion of the sample was examined for artifacts and then discarded. During analysis, each dried light fraction was first passed through a series of geologic sieves with mesh sizes of 2, 1, and 0.355 mm. Such presorting produces subsamples with similar size particles, which are more effectively scanned. Each fraction was then sorted at 7 to 40X under a binocular dissecting microscope. Charred seeds were identified with the aid of modern comparative material and standard references (e.g., Martin and Barkley 1961). Typically, 20 pieces of wood charcoal are randomly picked from the 2 mm screen, snapped to expose a fresh cross-section, and identified using comparative material and references (Minnis 1987; Hoadley 1990). Besides the wood plank, only one specimen was large enough to be manipulated and identified.

Seed density (the number of seeds per liter) and standardized richness (the number of taxa per liter) were calculated. Both measures are generally higher in thermal features and intensively used contexts, and lower in seasonal, less intensively used contexts (Miksicek 1987, 1995).

Then the relative degree of disturbance was calculated. Originally inspired by Kwiatkowski (1986) and augmented by Miksicek (1995), the disturbance index qualifies the integrity of a sample according to the number of animal pellets, insect parts, and uncarbonized remains (scale of 0-5 each). Disturbance indices tend to be higher in young, near-surface samples, such as the current assemblage, and lower in deeper, ancient samples, as uncharred plant remains decay with time (Miksicek 1995).

Finally, densities of individual taxa recovered in each sample were determined. Due to the small size of the assemblage, average density and ubiquity calculations were not warranted (Miksicek 1987).

Results (h2)

Common plant names are used throughout this chapter. Nomenclature follows Kearney and Peebles (1960) and Brown (1994). One uncharred and one uncharred taxon were identified in the flotation assemblage (Tables 1 and 2); no cultigens were found. Both samples had a low parts/liter index and numbers of parts/liter, suggesting that the samples did not represent discreet dumping episodes, which would have introduced more a more abundant and diverse plant assemblage. Disturbance indices were very high. Nearly all of both light fractions consisted of rootlets, other unidentifiable fibrous plant debris, and animal pellets. In prehistoric contexts, such high disturbance indicators typical suggest that a portion of the original assemblage has been lost to formation processes. In the current assemblage, however, uncharred remains could also result from human introduction, as plants would not have been buried long enough to decay.

Table 1: Taxa identified in flotation samples, Privy 1, NAU 2024 Apex field school.

Family, Genus, or Species	**Common Name**	**Seasonal Availability**
Non-wood		

Pinus monophylla	Piñon seed	Late summer-early fall
Pinus ponderosa	Pine needle fragment	Year-round
Wood		
Juniperus sp.	Juniper	Year-round

Table 2: Flotation data, Privy 1, NAU 2024 Apex field school.

FS	**5**		**6**	
Parts/liter	2.0		13.3	
Taxa/liter	2.0		6.7	
Disturbance Index	80.0		93.3	
Non-wood				
	Count	Parts/liter	Count	Parts/liter
Unidentifiable seed	5	5.0		
Unidentifiable seed fragment	(1)	1.0		
Piñon seed	1	1.0	3(1)	13.3
Pine needle fragment			20	66.7
Vesicular material	1	1.0		
Wood (count))				
Juniper	5			

() Charred specimens

A purslane seed from FS 8 was the only identifiable non-wood specimen, suggesting deposition in the summer when the plants set fruit. The uncharred seed might have been introduced recently through bioturbation. Sparse charred wood specimens reflected the general impact of camp life, where fires served many purposes and charcoal was unintentionally strewn across the site. The plank in the depths of the privy was ponderosa pine; where the lumber was prepared is unknown. Also recovered were burnt pieces of Bakelite, a popular plastic first synthesized in 1907; bakelite buttons and other items have been recovered during Apex field excavations (Maddock 2024). All pieces found in the 2024 assemblage were too small to determine the original product(s) manufactured.

Pollen (h1)

Pollen grains are male cells carrying genetic material necessary for reproduction, and range in size from about 8 µm to 120 µm (0.008 mm-0.12 mm). For pollination, pollen is carried by wind (anemophilous) and by animals (zoophilous). At any time, varying amounts of pollen are in the air (pollen rain). Pollen assemblages resulting from the pollen rain are expected to reflect surrounding plant communities. As pollen falls to the ground, it is incorporated into sediment. In a strict sense, most pollen recovered from unconsolidated sediment is not fossilized, but is nevertheless called fossil pollen. In cultural settings, pollen assemblages are affected by human activity, obscuring the natural pollen rain. Pollen is often found in contexts that would not happen naturally; in such cases,

the pollen can be interpreted culturally. In a sense, fossil pollen grains are artifacts, and can therefore be used to examine certain aspects of behavior, such as subsistence.

Methods (h2)

Sediment samples were sent to the Paleoecology, Palynology, and Climate Change Laboratory at University of Colorado-Denver, for pollen extractions. Sample bag contents were mixed thoroughly, and 10-gram subsamples were taken. Approximately 19,666 grains of *Lycopodium* tracers were added to estimate pollen concentration. Hydrochloric acid was added to each sample to dissolve *Lycopodium* tablets and carbonates. After rinsing with deionized water, potassium hydroxide was added, and samples were heated in a hot water bath for 10 minutes to deflocculate consolidated clay and organics and to remove humic acids. To reduce the heavier matrix fraction, the material was then sieved through a 180 µm-mesh screen. Smaller sands and large silts were removed using a suspension and decant method. The sample was then treated with hydrofluoric acid to remove remaining silicates. An acetolysis mixture of acetic anhydride and sulfuric acid was added to the sample and placed in a hot water bath for eight minutes. The sample was then washed with glacial acetic acid. The remaining residue was washed with water and alcohol, stained with safranin, and suspended in glycerol.

At BGP Consulting, extracts were mounted on slides and examined at a viewing power of 400X on an Olympus BHTU compound microscope. Subsequent percentage calculations were based on 100-grain counts. Identifications were aided by BGP Consulting reference material and keys (Kapp et al. 2000; Moore et al. 1991). Each fossil pollen grain was identified to the generic level when possible. If a grain could not be differentiated from similar genera, it was identified only to the family level. Pollen grains that were broken, corroded, or deteriorated beyond recognition were assigned to the "degraded" category.

Pollen concentrations (grains/gram) were calculated with the following formula:

Concentration = (pollen grains counted/tracers counted) X (tracer concentrations/sample mass)

Pollen concentration values are estimates of the quantity of fossil pollen preserved in each gram of sediment. In natural settings, these values can indicate sedimentation rates, pollen production and dispersion rates, and the effects of differential preservation. In cultural settings, concentrations can indicate the intensity of site and/or feature use. Because many factors can influence pollen concentrations, they must be interpreted with discretion. The figures are estimates; differences on an order of a magnitude or more are likely significant (Susan Smith, personal communication, 2016).

Degraded pollen assemblages are not uncommon in the Southwest (Hall 1981, 1985; Holloway 1981). Many factors cause pollen deterioration, and the process is not well understood. Mechanical factors can cause grains to be crushed or torn apart, whereas chemical agents can affect their structural integrity. Chief among chemical agents is the cycle of wetting and drying (Holloway 1989), which commonly affects open-air sites. Another factor is high heat, which can oxidize and

destroy pollen grains. Also affecting the number and distribution of pollen types is the amount of sporopollenin in grains of different plants. Sporopollenin is a highly resistant organic compound that allows pollen to be preserved in sediments and other settings. Because Asteraceae often have large amounts of the compound and hence preserve well, they are often over-represented in the pollen record.

Results (h2)

Nomenclature and plant ecology follow Kearney and Peebles (1960); plants are discussed using their common names, except for Cheno-Ams, and high- and low-spine Asteraceae. Other sources for flowering season are Gish (1989), Rea (1997), and Smith (1995). Thirteen taxa were identified in pollen samples (Tables 3 and 4); no cultigens were found.

Table 3: Taxa identified in pollen samples, NAU 2024 Apex field school.

Scientific Name	Common Name	Flowering Season	Pollination
Cacti			
Platyopuntia	Prickly pear	Spring–early summer	Insect
Riparian			
Typha	Cattail	Summer	Wind
Trees			
Juniperus	Juniper	Late winter–early spring	Wind
Pinus	Pine	Late spring	Wind
Quercus	Oak	Spring	Wind
Herbs and shrubs			
Artemisia	Sagebrush	Summer	Wind
Asteraceae, high-spine	Includes sunflower, seepwillow, desert broom	Spring–fall	Wind/insect
Asteraceae, low-spine	Includes bursage, ragweed	Summer–fall	Wind
Ephedra	Mormon tea	Spring	Wind
Eriogonum	Wild buckwheat	Spring-summer	Insect
cf. Fabaceae	Resembles members of the Pea family	Spring–fall	Insect
Liliaceae	Lily family	Spring	Insect
Poaceae	Grass family	Spring–fall	Wind
Solanaceae	Nightshade family	Spring-fall	Insect

Table 4: Pollen data, NAU 2024 Apex field school.

FS	**7**	**8**
Concentration (grains/gram)	48,330	38,664
Types/sample	11	8
%		
Degraded	11.0	9.0
Juniperus	5.0	
Pinus ponderosa-type	52.0	50.0
Quercus	2.0	3.0

Artemisia	2.0	2.0
Asteraceae, high-spine	2.0	3.0
Asteraceae, low-spine	18.0	28.0
Ephedra	1.0	
Eriogonum	1.0	
cf. Fabaceae	2.0	1.0
Liliaceae		1.0
Poaceae	3.0	3.0
Solanaceae	1.0	

Measures of productivity (number of samples with sufficient amounts of pollen for analysis), pollen concentration, percentage of degraded grains, and the numbers of pollen types per sample reflect the integrity of the data set and validity of interpretations. FS 7 had a greater pollen concentration, higher number of types, but higher proportion of degraded grains than FS 8, indicating mixed degrees of preservation (Bryant and Hall 1993). These measures in both samples, however, were well above thresholds used to determine data reliability. That is, samples containing fewer than 2,000 grains/gram, high percentages of degraded grains (>40%), and few types per sample (four or fewer) to be poorly preserved and that data do not accurately reflect the original pollen assemblage (Bryant and Hall 1993; Hall 1981). Both Apex samples are considered reasonably good representations of the past environment, though some data may have been lost to the elements.

Ponderosa-type pollen dominated both assemblages; piñon pine-type and low-spine Asteraceae were subdominant. The high pine frequencies in both samples suggested deposition in the early to middle summer, when the conifers typically flower. A relatively high proportion of juniper pollen in FS 7 indicated some deposition in the late winter/early spring when juniper trees flower. Collectively, the assemblage generally reflected mixed pine forest with an understory of bursage and various grasses, herbs, and shrubs. No other frequencies were unusual. The lack of pollen aggregates of any type indicated that flowering plant parts were not disposed of in the privy.

Conclusions (h1)

In summary, two paired flotation and pollen samples were analyzed. A single uncharred purslane seed may have been introduced by site residents or through bioturbation. Other uncharred remains included unidentifiable seed fragments. Ponderosa pine was the only wood identified, found in both charred and uncharred states. High disturbance indices showed that the feature was heavily impacted by bioturbation. Pollen samples generally reflected a mixed pine forest with a bursage and grass understory. No evidence of cultivated or imported plant foods was identified in either assemblage.

Despite lacking clear evidence of subsistence activities, the assemblage provides foundational empirical data to build on. For example, flotation samples from the previous field season showed vast differences in parts/liter and the types of remains within each sample, representing individual

dumping episodes, each potentially reflecting differing site activities. In contrast, the flotation samples in the current assemblage are comparable in most respects, suggesting general site deposition rather than dumping episodes. Within pollen samples, comparability also suggested more generalized deposition than discreet deposits. With further excavations and analysis, a larger sitewide flotation dataset will help identify modes of deposition; more pollen data will make subtle differences, such as pine blooms, more apparent. Future research can include a site plant inventory and limited plant specimen collection and collection of surface pollen control samples, further bolstering the empirical dataset.

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APPENDIX B

Student Posters, 2024 to 2025

Just Add Water: How Early Advertising Shaped Cocoa Powder Diversity at Apex, Arizona

Zulia DeWire
NAU Undergraduate Research Symposium
April 2025

NORTHERN ARIZONA UNIVERSITY
Department of Anthropology

Just Add Water: How Early Advertising Shaped Cocoa Powder Diversity at Apex, Arizona

Zulia DeWire

NORTHERN ARIZONA UNIVERSITY
Office of Undergraduate Research and Creative Activity

Abstract

Apex, Arizona was a company lumbering town that was in operation between 1928 and 1936. The population of Apex mainly consisted of working men and their families. While some brands found at Apex, such as Calumet Baking Powder, seem to have a complete monopoly at the site, there were multiple brands of powdered cocoa drink found, including Walter Baker, Hershey's, and Ovaltine. Due to the high quantities of these brands found at the site it is likely that all three were sold at the company store. An explanation for the large variety in cocoa based products is due to the marketing strategies of the companies at the time.

Advertisements in the 1920s

The 1920s was a boundary pushing decade and is often considered the "Golden Age" of advertising. Companies began to stray away from mass marketing and began focusing on specific demographics (Socolof, 2023). This was mainly due to new industrial advances in both packaging and distribution techniques.

Companies were now able to mass produce products while also being able to safely and quickly transport them to a larger area and consumer base (Annalect, 2015). Consequently, this resulted in multiple brands trying to sell similar products to the same consumer bases. Companies needed to separate their products from their competitors to ensure their product was being sold. Advertising shifted from just simply introducing products to consumers to convincing them that they *needed* to purchase their product or that theirs was superior to the competitor. Many companies did this by market segmentation, targeting specific demographics as opposed to mass marketing. This was often done by advertising in newspaper and magazines that already targeted the specific demographics (Socolof, 2023).

Many new advertising techniques emerged during this time, most notably the use of color, illustrations, and vivid storytelling (Socolof, 2023). By creating engaging narratives and characters, consumers would have a positive association with the brand and, when faced with multiple choices in the store, would be more likely to choose that product over similar ones. These strategies are still used today and are still effective, with 71% of consumers choosing name brand beverages over generic brands according to a 2023 study by Purdue University (Koppes, 2023).

Methods

I first completed a comprehensive search of the artifact catalogue, which was compiled using data from archaeological fieldwork conducted at Apex in 2022, 2023, and 2024. This allowed me to identify all cocoa powder artifacts found at the site.

Then, I conducted a literature search using Google and Google Scholar to locate sources pertaining to the history of the three brands and the history of advertisements in the 1920s.

Finally, Google was used to procure advertisements from Hershey's, Walter Baker, and Ovaltine that dated between 1910 and 1936. Majority of the advertisements that I found were on Pinterest and Etsy. All of the advertisements that were found were then analyzed to find common advertising strategies within each brand.

Cocoa Powder Distribution at Apex

At Apex, Arizona a total of 20 cocoa powder cans and lids have been found. Ten (50%) of the artifacts were Hershey's brand. Six (30%) were Ovaltine. The remaining four (20%) were Walter Baker. Majority of the artifacts were solitary lids with the remaining artifacts being full cans with lids attached. This is due to the fact that the labeling on the cans themselves would have been paper and would have disintegrated leaving the cans themselves unidentifiable. There were no variation of can types or styles found within the respective brands.

In total, three quarters (15/20) of the cocoa products were found in the vicinity of Scandinavian upper management housing. The remaining quarter were found near the laborers' bunkhouse, and near the Kitchen/Dining Hall. The full breakdown of the distribution of artifacts can be found in figure 1.

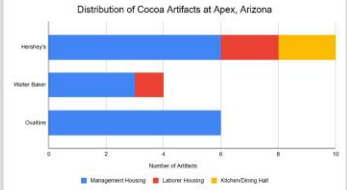

Figure 1: 60% of Hershey's artifacts were found near Management housing, 20% near laborer housing and the remaining 20% near the Kitchen/Dining Hall. 75% of Walter Baker artifacts were found near Management Housing with the other 25% being located near Laborer Housing. All Ovaltine artifacts were found near Management Housing.

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Photos of Apex artifacts were taken by Apex, Arizona Archaeology Project personnel
Hershey's advertisement: https://www.pinterest.com/pin/113997434310393885/
Walter Baker advertisement: https://foldype420.getarchive.net/amp/media/bakercocoa-b24662d
Ovaltine sleep advertisement: https://www.pinterest.com/pin/ovaltine-1936--262194009543029717/
Ovaltine colds advertisement: https://www.reddit.com/r/vintageads/comments/whxi2n/advertisement_for_ovaltine_c_1920

The Cocoa Products

Brand	Advertisement Strategies
Hershey's 	• Hershey's advertisements from this time period were characterized by their **use of children.** • Hershey's also tended to **showcase multiple products** in their advertisements, often pairing their breakfast cocoa with their chocolate bars. • Figure 2 was originally used as an individual advertisement before the image was adapted for the cover of a cookbook in 1934 (Frederick, 1934). • Hershey's directly addressed their competitors in a 1929 ad stating, "Look for the word "Breakfast" on the label. Cocoa not labelled 'breakfast' is inferior to real breakfast cocoa." (Hershey's, 1929).
Walter Baker 	• Walter Baker's cocoa powder advertisements during this time period consisted of people wearing clothing associated with the **upper class**, and doing upper class activities such as golfing • These ads were known for their **use of the mascot**, "La Belle Chocolatiere", or "the chocolate girl". "La Belle Chocolatiere" was originally painted in 1744 by Swiss artist Jean-Etienne Liotard and depicts a **maid** holding a tray with a cup of hot cocoa and a cup of water. Walter Baker adopt "La Belle Chocolatiere" as their mascot in 1881 (Curator's Choice, 2010). • Their advertisements also often highlighted the health benefits of their products (figure 3). Although, not to the extent that Ovaltine did.
Ovaltine 	• Ovaltine had the most diverse advertisements over the three brands with their advertisements falling into two main categories: **health benefits** when made hot, and as a recreational summer drink when **prepared cold.** • The main characters in Ovaltine advertisements also tended to be **younger women.** • Ovaltine was originally created by a pharmacist as "a nourishing elixir for the healthy and the ailing, for young and old, for athletes and couch potatoes" (Heim, 2019). This is shown in many of their advertisements (figure 4). • Unlike Hershey's and Walter Baker advertisements, Ovaltine advertised their cocoa as a cold beverage, not only a hot one. These advertisements mainly consisted of a young woman enjoying the beverage outdoors, as seen in figure 5.

Figure 2: An advertisement promoting both Hershey's Breakfast Cocoa and Hershey's Baking and Drinking Chocolate (circa 1920s)

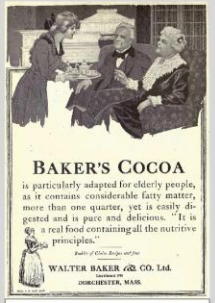

Figure 3: Walter Baker's cocoa advertisement found in the January 1919 issue of Overland Monthly

Figure 4: An advertisement promoting Ovaltine as a remedy for insomnia (circa 1936)

Figure 5: An advertisement promoting Ovaltine Cold (circa 1920s)

Conclusions

The reason that Hershey's, Walter Baker, and Ovaltine cocoa products are all found at Apex is due to the fact that all of the brands marketed their products to different demographics–men, women, children, upper management and common laborers.

- Hershey's mainly advertised their product as a drink for children and often advertised multiple products together.
- Walter Baker advertised to the wealthier population and heavily used their mascot, "La Belle Chocolatiere".
- Ovaltine advertised their products mainly by highlighting the health benefits and the fact that it was also good cold, something that was not advertised by either Walter Baker or Hershey's.
- Demographics in the ads were largely white, as was majority of the population of Apex.

Fieldwork at Apex has not been completed and that this data is based off of the first three years of data collected from the Apex, Arizona Archaeological field school. There are still two more years of fieldwork left to complete at the site and it is highly likely that more cocoa products will be found. Also, it is not known where the company store was located or for certain what was regularly stocked at said store. My research provides a foundation to help interpret future finds at the site.

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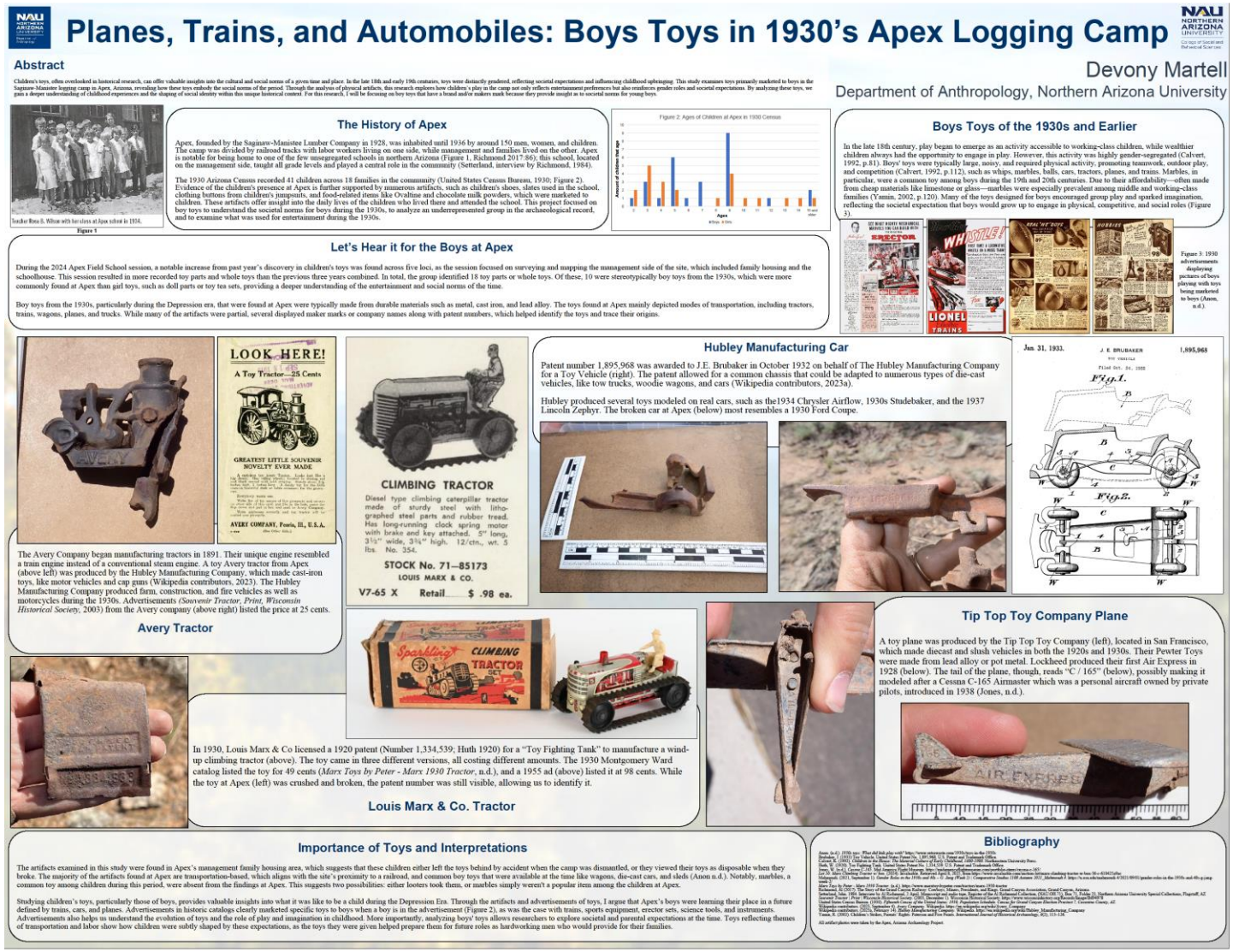
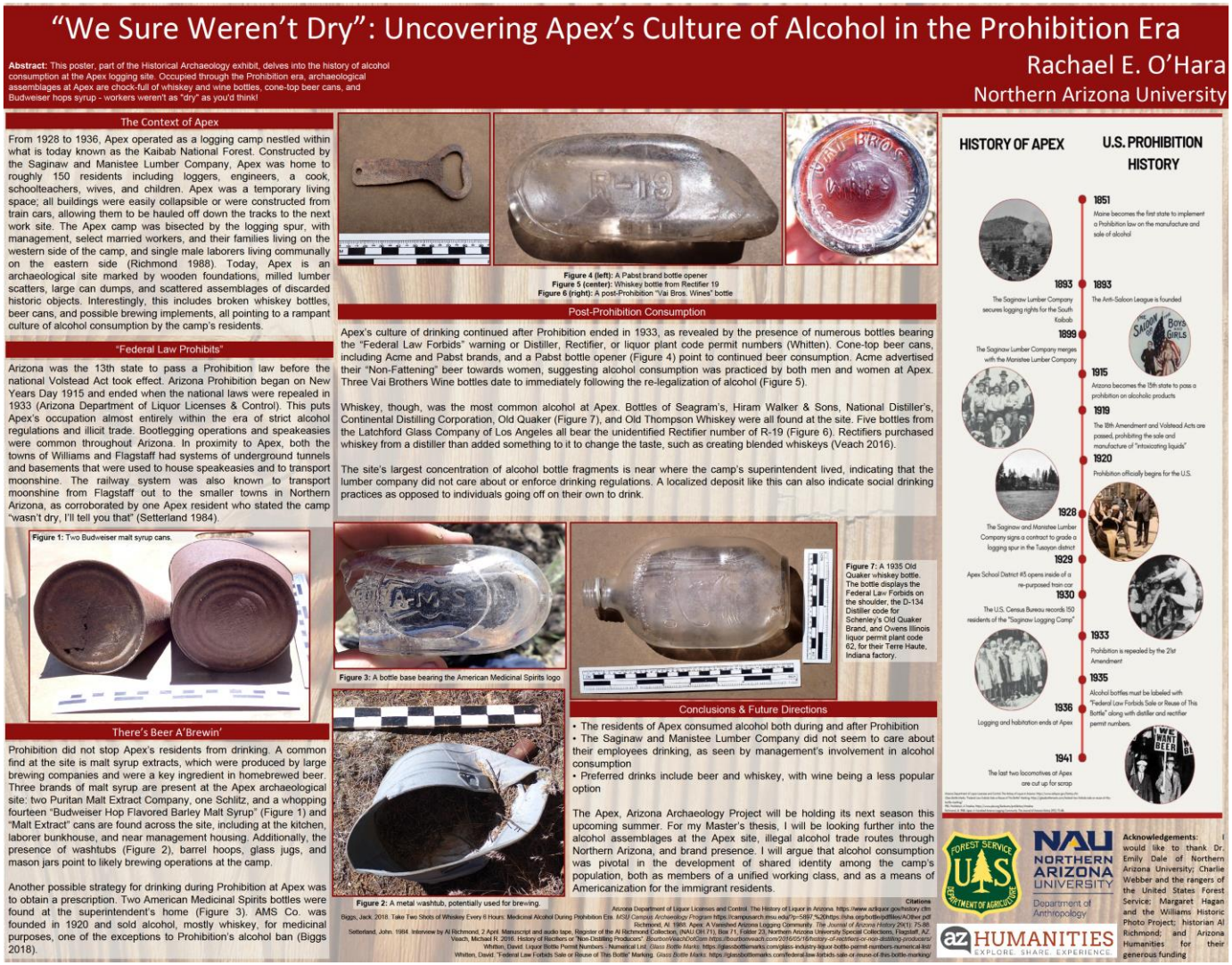
Devony Martell
NAU Undergraduate Research Symposium
April 2025



We Sure Weren't Dry': Uncovering Apex's Culture of Alcohol in the Prohibition Era
Rachael O'Hara

Arizona History Convention
NAU Graduate Poster Symposium
April 2025



Health and Hygiene in the Depression-Era United States: Apex, Arizona
Madeleine Levesque

Notions of Health and Hygiene in the Great-Depression Era United States: Apex, Arizona

Madeleine Levesque,
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Abstract: The United States' views on health and hygiene have been developing for centuries, undergoing several major changes. At the turn of the 19th century and into the early-mid 1900s, new fields of health sciences emerged and beauty standards evolved, impacting American consumption of toiletry items. This culture of cleanliness was very pervasive as shifting notions of health, hygiene, and appearance reached the laborers and occupants of the Depression-era Saginaw and Manistee logging camp of Apex, Arizona, despite being largely isolated from major towns and cities. Based on the artifacts found on site in Apex, it is apparent that residents bought into emerging and popular ideas of health and hygiene, such as the unacceptability of body odor, irregular bowel movements, and unkempt appearances.

Digestive Health

- Gastroenterology grew as a field during the 1930s and 1940s
- A major theme in gastroenterology included 'curing' various afflictions via purgation using laxatives. Constipation was seen as an 'American' disease that reflected sedentism, laziness, and an over-processed, over-indulgent diet (Whorton 1993).
- Advertising posited that constipation and built-up fecal matter would poison the bloodstream and lead to body odor (Whorton 1993).
- It appears that residents of Apex bought into these ideas, as there were numerous laxative bottles found on-site, including Dr. W.B. Caldwell's Pepsin Syrup, Charles H. Fletcher's Castoria Oil (top left), and magnesium citrate/milk of magnesia.
- The presence of multiple kinds of laxatives imply that people had their 'laxative of choice' that was not being provided by the company store.

Body Odor

- By the Great Depression, body odor was generally accepted as unhygienic. Products like mouthwash, flavored toothpaste, and deodorant were marketed en masse.
- Germ theory connected bacterial growth to poor hygiene to body odor.
- By the 1920s, "halitosis," or bad breath, was invented by the creator of Listerine as a medical condition, and the cure, mouthwash, was marketed incredibly successfully (Clark 2015). Lavoris and Listerine mouthwash bottles as well as Pepsodent toothpaste (1915 packaging pictured top right) were found on-site, both mint- flavored.
- Two milk glass containers of MUM antiperspirant deodorant (bottom right) were found on-site. This deodorant was marketed towards women for armpits and genitals, as women's body odor was especially unseemly.
- Even though routine bathing would have been rare at Apex due to lack of running water or showers, it appears people were still conscious of their body odor.

Feminine Hygiene

- Chloride of Lime lids, Old Dutch Cleanser cans, and multiple Clorox bottles were found at Apex, which were likely used as disinfectants for community hygiene purposes for deodorizing and sanitizing communal privies and kitchens.
- A separate shard from a smaller bottle of Lysol was found (bottom right), indicating it had a purpose apart from cleaning/community hygiene.
- Throughout the 20th century, Lysol concentrate was marketed towards women as a feminine hygiene product/odor-eliminating vaginal douche (Eveleth 2013; ad at left from Foose 2019).
- The shard found on-site has a logo similar to the cursive label/watermark found on whole bottles in advertisements marketing lysol as a feminine douche. The glass bottle pictured right is a full-sized version of a Lysol bottle found on Ebay whose watermark appears to be placed on the shoulder, which is where the shard appears to come from as well.

Hair Removal

- Body hair removal was popularized for women in the 1920s with the era of flapper attire, where legs and armpits were exposed by short, sleeveless dresses (Smithsonian Institution n.d.; ad at left from Morrison 2022).
- Men's facial hair removal was already considered basic hygiene by the early 1900s due to the trapping of lice, oil, dirt, odor, sweat, and bacteria in beards and moustaches (Smithsonian Institution n.d.).
- A Gem "butterfly" style safety razor, patented in 1904, was found on-site (left) which could be used to shave at home; straight razors were commonly used in barbershops (National Museum of American History n.d. b.).
- The shift from facial hair removal being a service to accessible at home reflects the expectation that facial hair upkeep be part of basic hygiene routines.
- Other relevant artifacts found on-site include a shaving mug, a Lifebuoy shaving cream tube cap, and a Valet safety razor blade.

Concluding Ideas

- By the time Apex was occupied, the association between health/hygiene and bacteria, body odors, and presentability had been established in mainstream American culture. Based on the artifacts, occupants of Apex bought into these ideas, and seemed to follow and keep up with expectations of cleanliness.
- The fear of smelling bad, and the idea that the body's natural tendency is towards decay, bacteria, etc. was an effective marketing strategy for laxatives, toothpaste and mouthwash.
- Despite the site being rural and isolated from major cities, and the fact that many laborers were Swedish immigrants, these emergent American trends of health and hygiene were so compelling that they kept up with them.

Acknowledgements: I would like to thank Dr. Emily Dale for being an amazing faculty mentor, for her support and encouragement, and for all of the opportunities to expand my knowledge and historical archaeology experience through this project. Thank you to everyone who participated in Dr. Dale's field school for all of the information and photos included in the databases.

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Photos of Apex artifacts were taken by Apex, Arizona Archaeology Project personnel

APPENDIX C

Apex, Arizona Archaeology Project Blogs, September 2024 to June 2025