Apex, Arizona Archaeology Project
2025 Season (Year 4)

Prepared for the United States Forest Service, Kaibab National Forest
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1. ADMINISTRATIVE SUMMARY

This report details the methods, data, theories, and findings of the 2025 Apex, Arizona Archaeology Project's field school. The field school operated between May 26 and June 20, 2025. 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.

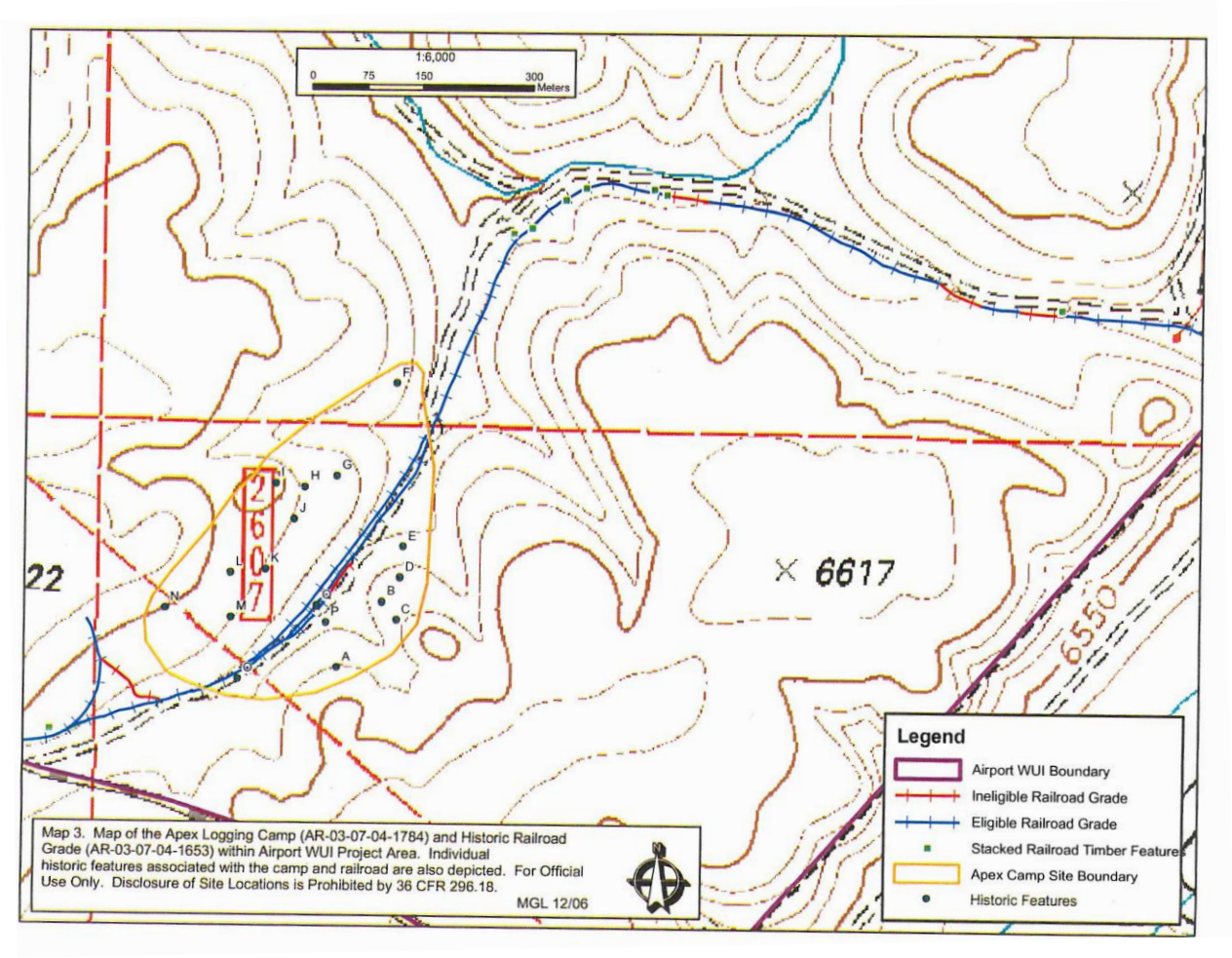

Figure 1: 2006 GPS map of Apex (United States Forest Service 2006:15)

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 2025'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 six students participate in our field school: LeAnn Pearson Capener, Alex Liu, Damon Marcinko, Hunter Newman, Lucie St. Clair, and Chelsea Tenney. We also had two unofficial Passport in Time volunteers between June 7 and June 11: Adrienne Dale, and Michelle Neathammer. This report is derived from their site forms, field notes, photographs, and other documentation.

Lucian Hester, an NAU undergraduate anthropology student, was hired through NAU's Interns-to-Scholars program, operated through the Office of Undergraduate Research and Creative Activity. Lucian scanned, digitized, and transcribed numerous field documents, such as maps, notebooks, tour surveys, and photo logs. He also completed an experimental archaeology project to investigate the tools and materials used to create the Apex Jack-o-Canterns found in 2023 and 2024. He presented his findings at the April 2026 NAU Undergraduate Research Symposium in Flagstaff, Arizona (see Appendix B).

In August 2025, we used the remainder of our United States Forest Service student stipend funding to fund student research projects. Projects included processing soil samples from our 2025 excavation unit (Marshall 2025), exploring the history of the Saginaw and Manistee lumber mill in Williams (Gagne 2025), researching the numerous car parts at Apex (Harwood 2025), investigating our ceramic maker's marks (Liu 2025) and identifying common ceramics patterns across the site (McAlister 2025), mapping alcohol-related artifacts at Apex (O'Hara 2025), digitizing and georeferencing tape-and-compass maps in GIS (O'Donnell 2025), and researching the various cold cream jar brands (St. Clair and Tenney 2025). Two previous Interns-to-Scholars students (DeWire 2025; Levesque 2025) were awarded funding to pursue publication of their undergraduate research.

2.2. Funding

Funding for 2025 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 $1,901.00 student stipends to each of our four field school students and the $600 stipends provided to each of our research project students. A $5,000 grant from Arizona Humanities paid for the teaching assistant/tour guide salary and new

supplies for our Welcome Center, including updated tour photographs, a canopy, and materials for a new scavenger hunt activity.

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*. For an analysis of the artifacts associated with Prohibition and post-Prohibition alcohol consumption at the site, please consult Rachael O'Hara's 2026 Master's Thesis: *Sköl! Alcohol Consumption and Swedish Immigrant Identity in the Prohibition Era at Apex Logging Camp*.

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; Figure 2). 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.

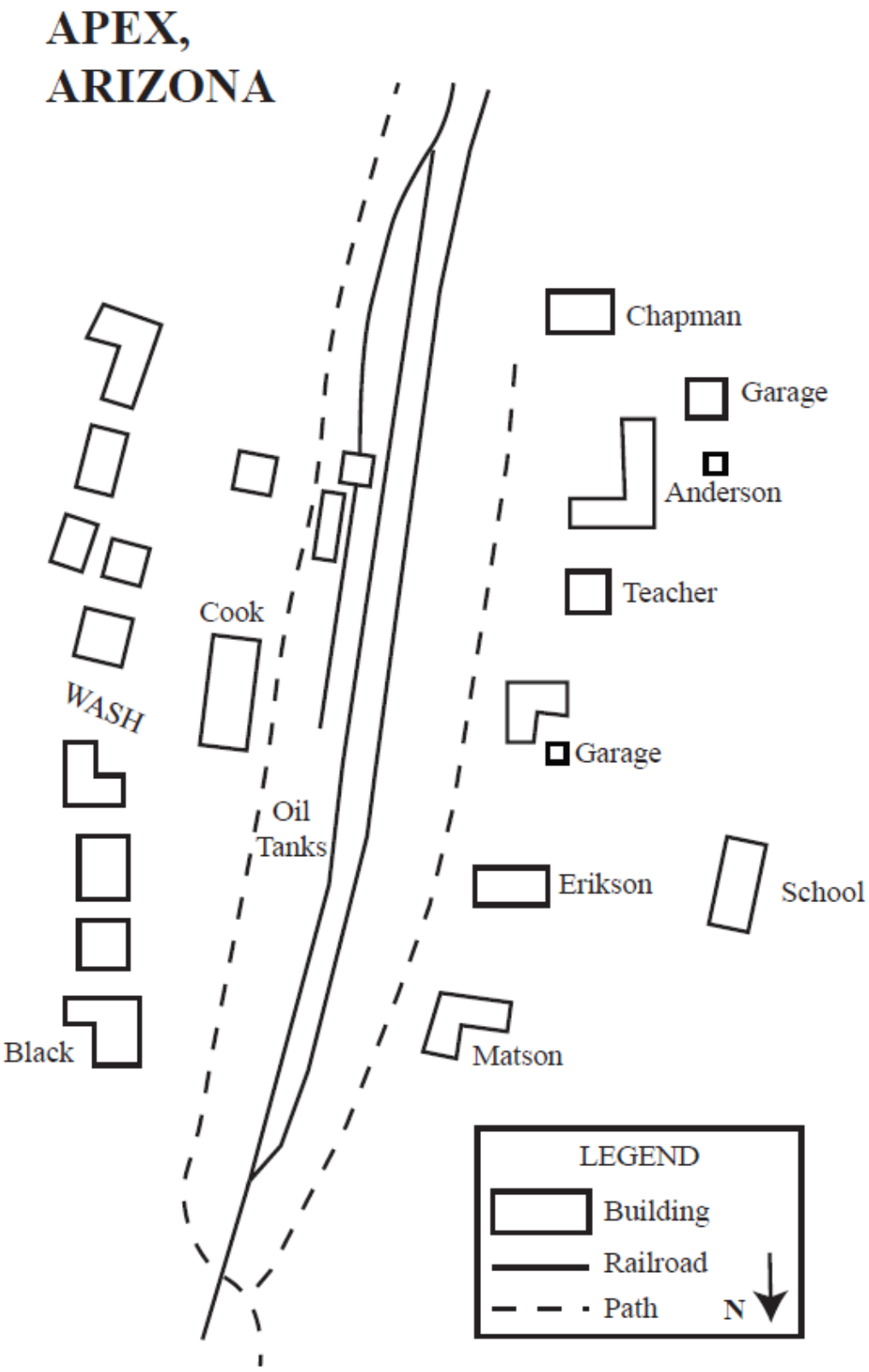

Figure 2: Map of Apex, based on Al Richmond. Digitized by Emily Dale.

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 2025 season took place between May 26 and June 20. While at the site, we conducted survey, mapping, photography, excavation, and artifact analysis at three separate site loci. The weather was warm, with temperatures ranging between the low 50s to the mid-90s during the day. The wind occasionally 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 "Black Camera", purchased in 2024. 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. We were unable to track down a 2025 quarter.

4.2. Survey and Mapping

Each Locus we surveyed during the 2025 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 Nash Overell of the KNF and Rachael O'Hara 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% count 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 2025 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 a wooden frame embedded in the soil at Locus N as a .5m x .5m unit.

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 (no 2025 quarter could be found), and then placed all the removed artifacts in the bottom of the unit, then backfilled it with the excavated soil.

5. LOCUS SUMMARIES

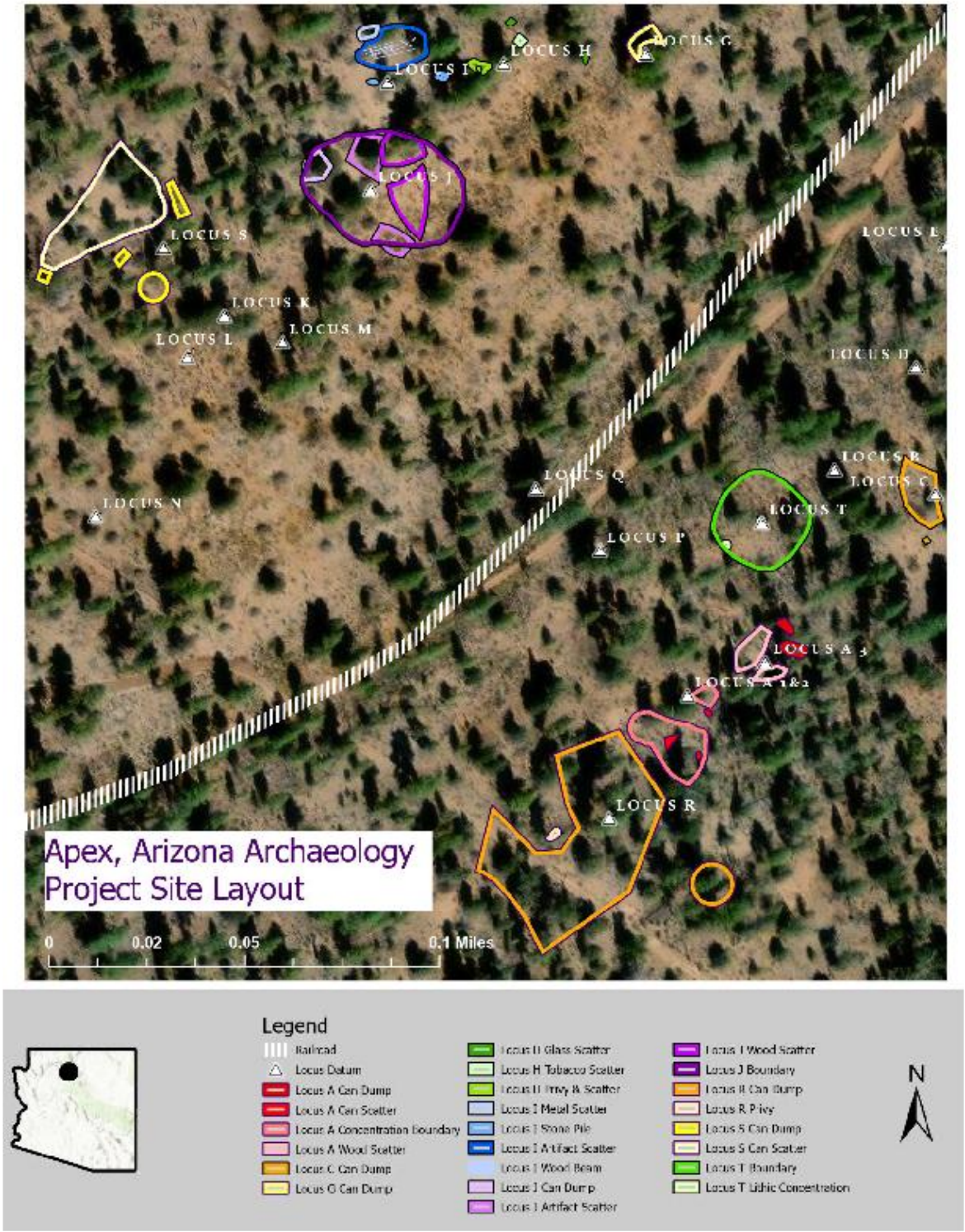

Figure 3: Georeferenced and digitized tape-and-compass maps of Apex. Map by Sarah O'Donnell.

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 (Figure 3). Our project will be re-recording these features, as well as identifying new ones. In Summer 2025, we surveyed Loci H, I, and N, excavated a unit in Locus N, and recorded a new concentration at Locus L. Locus H is a likely privy depression and associated artifact scatter. Locus I was the location of the schoolhouse. And Locus N is believed to be the site of the timber sales office. All three are located on the west side of the railroad grade.

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 2025 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 created other challenges in terms of scaling them to fit appropriately in this report.

5.1. Locus H

Locus H, a privy depression and associated artifact scatter on the west side of the site, was recorded, but not mapped, by the KNF in 2006 and described as "small tobacco tin dump, brown whiskey bottle […], ceramic tin, coffee tins, large pit (privy?)—1m deep, 2.5m diameter w/ milled lumber, gray enamel plate, wash tub" (United States Forest Service 2006:5). Downhill of the schoolhouse and northwest of Locus J and west of Locus V, Locus H was likely the outhouse for the adjacent residences.

Our recordation of Locus H in 2025 identified four discrete activity areas: Privy, Glass Scatter 1, Glass Scatter 2, and Tobacco Scatter (Figure 4).

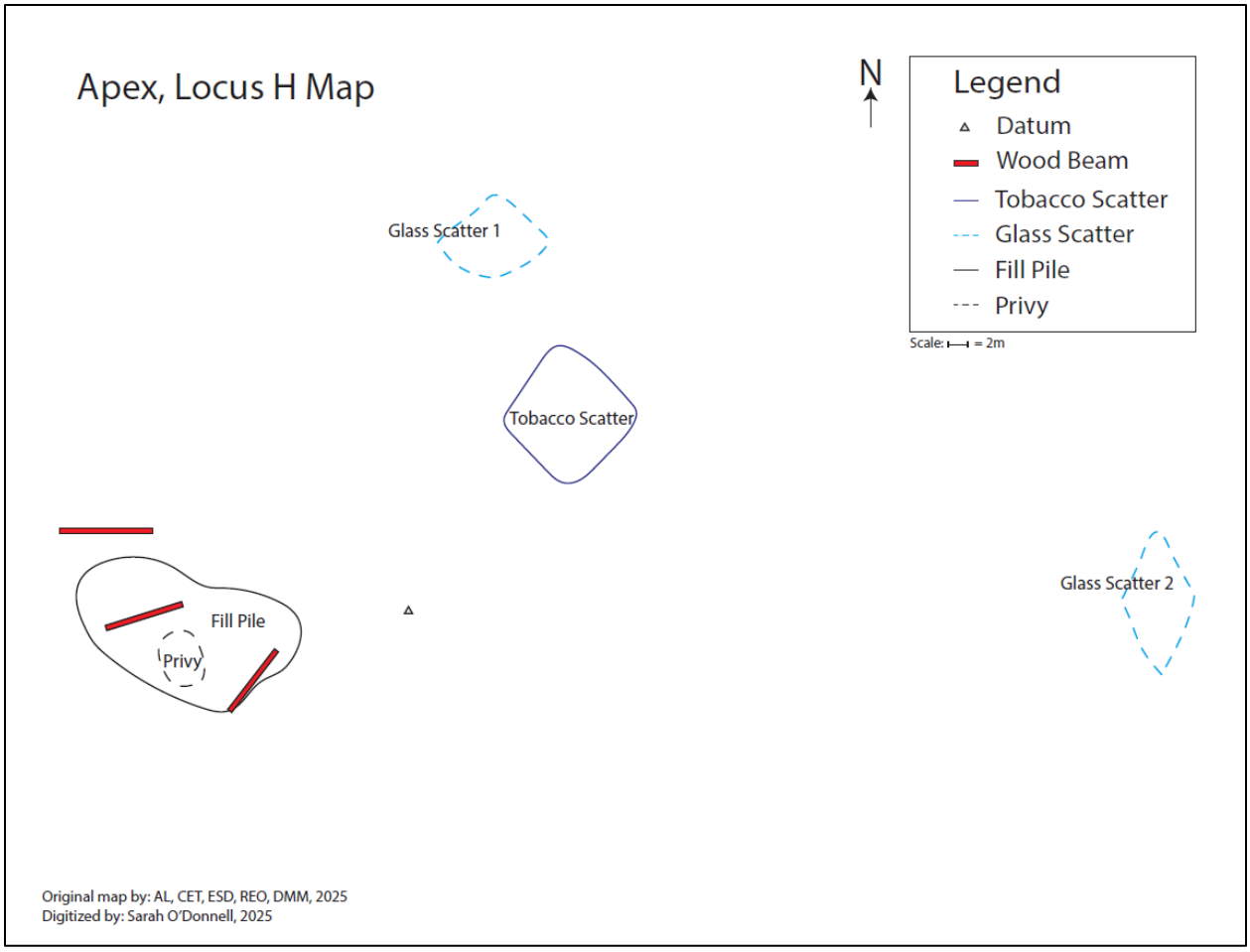

Figure 4: Digitized tape-and-compass map of Locus H. Map digitized by Sarah O'Donnell.

Figure 5: Locus H Privy, facing north. Photo by Damon Marcinko.

The Privy depression is located at the west end of the Locus (Figure 5). Surrounded by a pile of rock removed when the privy was originally dug, two beams lie on the edges of the privy. A third beam is placed at the north edge of the privy fill pile. Artifacts associated with the privy include an Obear-Nester bottle base, a Hazel-Atlas bottle base, a Copenhagen can lid, and a mechanical part that matches and likely belongs to a possible clock from Locus V recorded in 2024.

Figure 6: Locus H, Glass Scatter 1, facing east. Photo by Damon Marcinko.

Glass Scatter 1 (GS1) at the north end of the site is a scatter of over 150 colorless, amber, and milk bottle fragments (Figure 6). Ceramic, undecorated WIE sherds, a shell button, a Norwegian sardine can represent some of the few non-glass artifacts at GS1. Diagnostic glass includes a whiskey bottle from R216, a likely Dr. Caldwell's Syrup medicine bottle, and an American Medicinal Spirits company bottle.

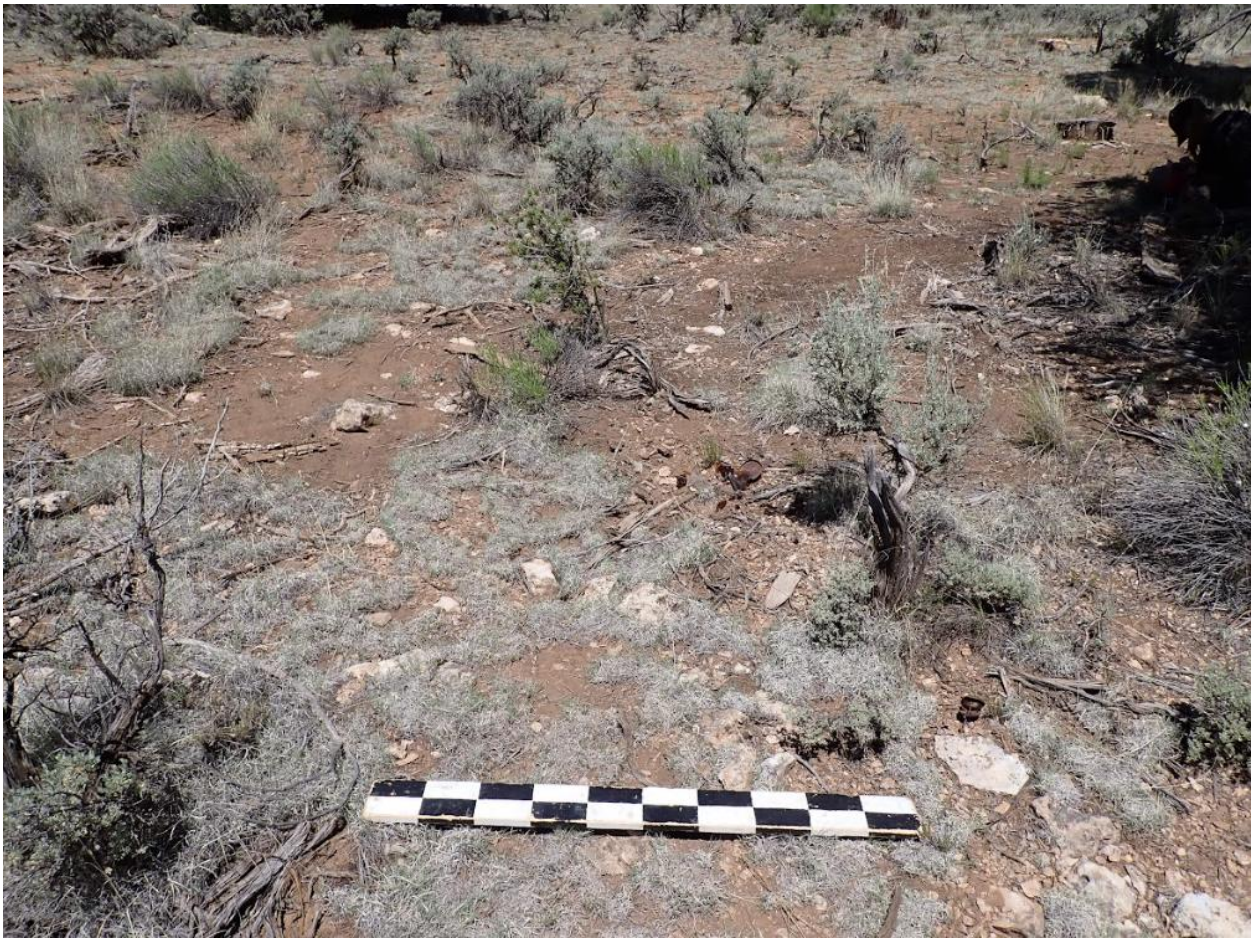

Figure 7: Locus H, Glass Scatter 2, facing west. Photo by Damon Marcinko.

Glass Scatter 2 (GS2) is at the east end of Locus H and next to the northwest edge of Locus V (Figure 7). Nearly 70 glass shards and 30 undecorated WIE shards, along with a can lid make up the sparse artifacts at this concentrated scatter. Diagnostic items include a Clorox bottle and four shards of a Four Roses whiskey bottle.

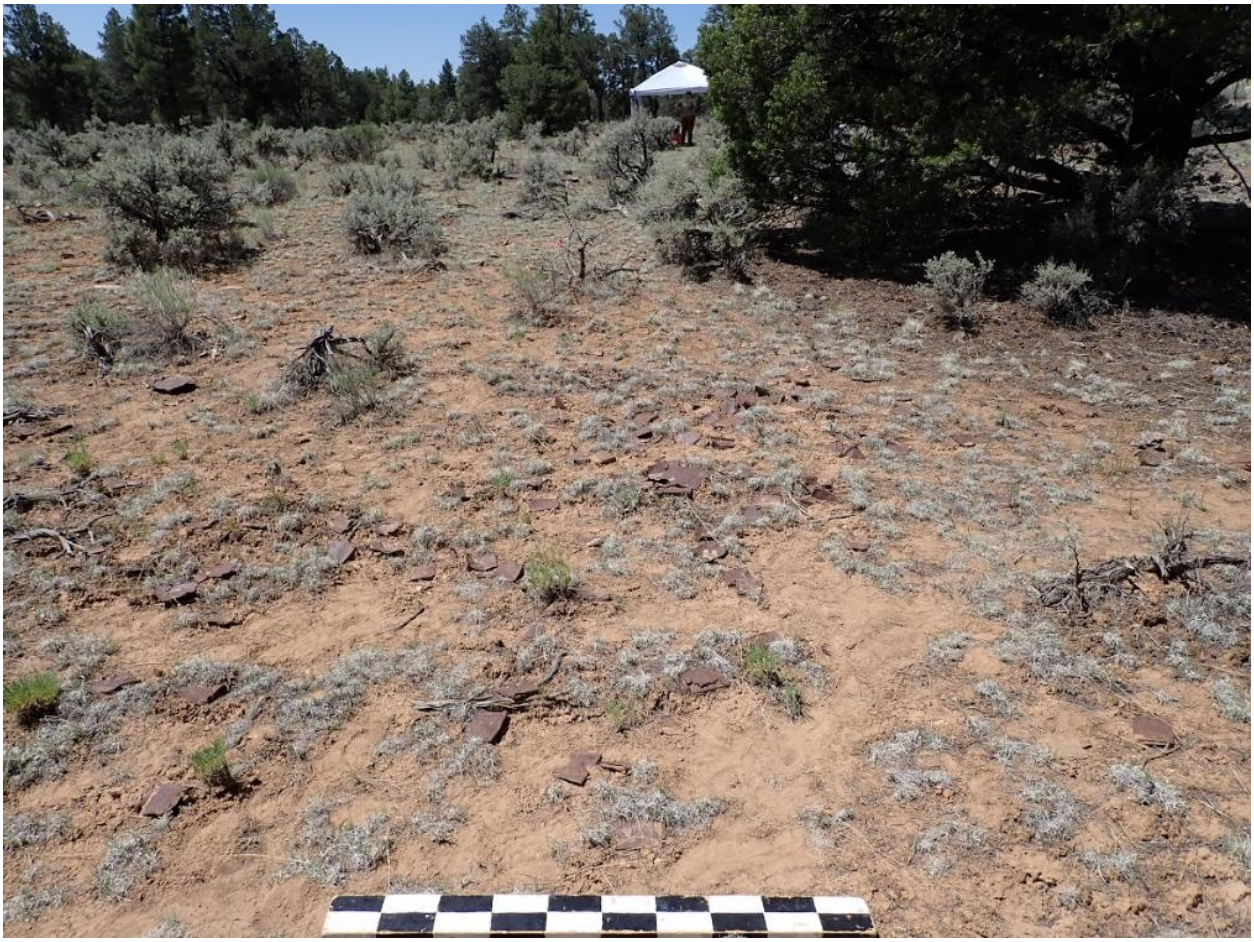

Figure 8: Locus H, Tobacco Scatter 1, facing south. Photo by Damon Marcinko.

Tobacco Scatter 1 (TS1) is located near the center of the Locus H features (Figure 8). As its name suggests, TS1 is predominated by at least 90 upright pocket tobacco cans. Other artifacts, including scrap metal, a shoe sole, and cans, are scattered throughout the tobacco cans. Diagnostic artifacts include six fragments of a Delaware Punch bottle made in Flagstaff and a Clorox base.

5.2. Locus I

Locus I was recorded and mapped by the Forest Service in 2006 (Figure 9), as the former location of the Apex schoolhouse. Located on top of a small hill at the western edge of the site, we excavated one of two depressions downhill and to the west in 2022. However, we did not map or record the schoolhouse itself that year. The Forest Service described Locus I as "poss. school house remains? (10-15m long, ~5 m wide), RR ties nailed/bolted together to form a large wooden platform, few cans, crown caps, Calumet external friction can lid, lots of milled lumber in area, some selenium/clear glass, metal/machinery parts?" (United States Forest Service 2006:5).

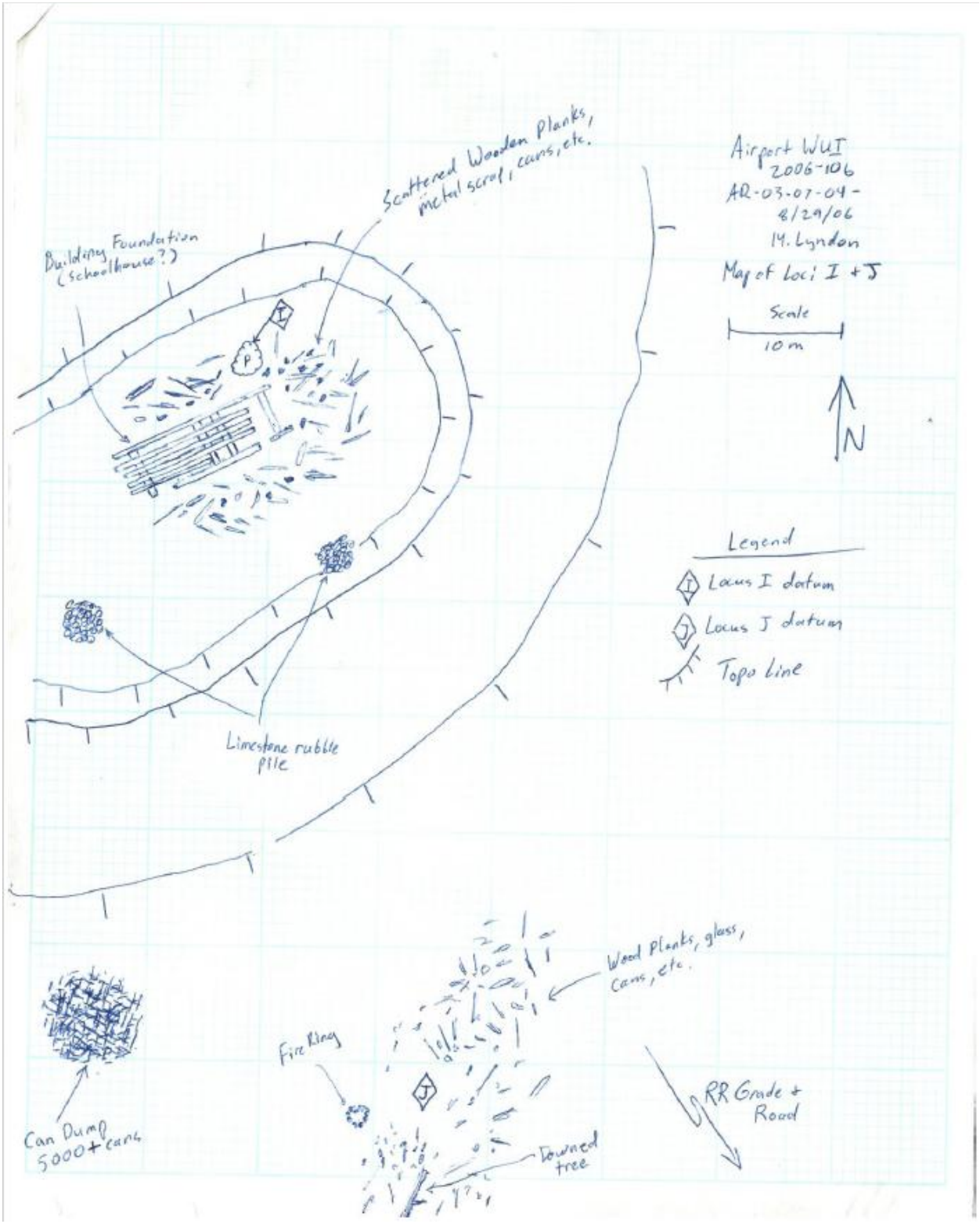

Figure 9: Forest Service Map of Locus I and Locus J (United States Forest Service 2006:11).

Due to the diffuse nature of the artifacts around the schoolhouse, we did not distinguish between any clear concentrations of artifacts. We did, though, note in the paperwork when artifacts occurred in specific areas (Figure 10).

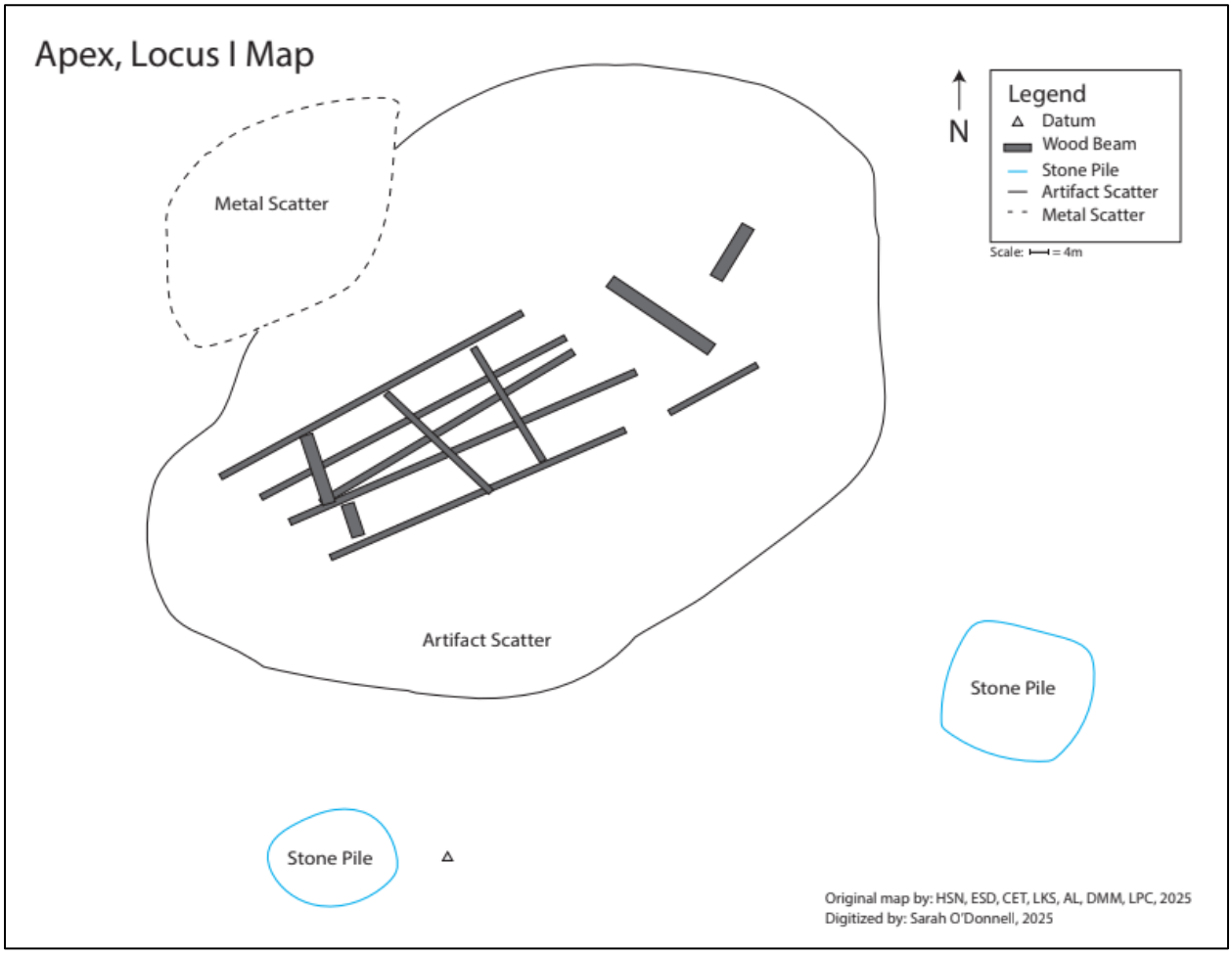

Figure 10: Digitized tape-and-compass map of Locus I. Map digitized by Sarah O'Donnell.

The main feature at the schoolhouse is the remains of the building foundation (Figure 11), consisting of nine in-place foundation beams, held together with twelve ferrous bolts, and three additional beams lying at the north end of the foundation (Figure 12). Over 350 broken fragments of wood planks are scattered around all sides of the foundation, and at least 51 non-ferrous metal straps are concentrated to the west (or behind) the foundation. Two stone piles, one at the southwest corner of the hilltop (Figure 13), and one at the southeast corner extending down the hillslope towards Loci H and V (Figure 14), represent the piles of stones removed to even out the hilltop for the school foundation.

Figure 11: Locus I overview, facing north. Photo by Damon Marcinko.

Figure 12: Overview of Locus I building foundation, facing north. Photo by Damon Marcinko.

Figure 13: Stone Pile 1, at the southwest corner of Locus I, facing south. Photo by Damon Marcinko.

Figure 14: Stone Pile 2, at the southeast corner of Locus I, facing east. Photo by Damon Marcinko.

Artifacts include colorless window glass (concentrated on the north end of the foundation), cobalt, amber, and colorless bottle glass, ferrous cans, a ferrous cup, a possible trunk strap, and a stove pipe or large whistle. Diagnostic items included a Budweiser malt syrup can, Seagram's bottle, a Uruguayan meat tin, Calumet baking powder, Old Dutch cleanser lid, a Harriet Hubbard Ayer cosmetics milk glass jar, a Ford Multi-Malt malt shaker, and a Jolly Time popcorn lid.

5.3. Locus L

Locus L was recorded in 2024 as part of the KLM domestic scatter. A new concentration at Locus L was discovered and recorded in 2025 at the southwest edge of the Loci. We named this feature Can Dump 1 (CD1) and mapped it off of the Locus KLM datum so it can be added to the KLM map. The Locus L tape-and-compass map has not yet been digitized, as we will be adding it to the larger KLM map for final digitization and inclusion in a later report.

Figure 15: Locus L, Can Dump 1, facing southeast. Photo by Hunter Newman.

Locus L, CD1 lies to the west of the Locus L building foundation and KLM (Figure 15). At the center are two beams, aligned in a ‘t’ shape, with artifacts scattered around the beams and extending to the south in a long, pointed oval shape. Artifacts include cans, chicken wire, a thick and long braided cable, WIE fragments, and glass. Diagnostic items include a Canco can, decorated ceramics, a Phillips Milk of Magnesia bottle, a Budweiser malt syrup can, and an R-19 bottle base.

5.4. Locus N

Locus N, located at the south edge of Apex on the west side of the railroad grade and extending west beyond the wire fence, was recorded, but not mapped, in 2006 by the Forest Service. It was described as “small can/trash scatter, prehistoric material near fence, ~100 chert flakes, few plainware shards […], some obsidian, rhyolite?” (United States Forest Service 2006:5). The GPS location for the Locus matches where we surveyed, but the description does not. During our 2025 survey, we were unable to relocate the prehistoric materials, and the historic materials constituted far more than a small can/trash scatter. It is possible that the Forest Service only recorded a portion of the site, as we identified numerous distinct can, glass, and artifact scatters

at Locus N. There is also the possibility that the GPS data are slightly off and that what we recorded as Locus N is actually both the 2006 Locus N and the 2006 Locus M, but the description for Locus M is vague with no drawing, leaving no way to verify.

We believe Locus N was the former location of the timber sales office. Its location at the southern end of the camp, closest to the Apex siding and the AT&SF railroad grade coupled with the number of artifacts that date to late 1920s, the earliest years of Apex's occupation, suggest it may also have served as a staging area for the construction of the rest of the site. Food-related artifacts are also more sparse than at other parts of the site, and are confined to easily consumable goods, like soda and potted meat, rather than cooking items, like baking soda. This points to a non-domestic feature.

Our recordation of Locus N in 2025 identified 12 discrete activity areas: Wood Scatter 1, Wood Scatter 2, Privy, Artifact Scatter 1 (which itself contains three can concentrations and two glass concentrations), Can Dump 1, Can Dump 2, Can Dump 3, Can Dump 4, Can Dump 5, Bottle Dump 1, Stone Pile 1, and Isolated items between Artifact Scatter 1 and Wood Scatters 1 and 2. The Locus N tape-and-compass map has not yet been digitized, so it will be included in future reports.

Wood Scatter 1 (WS1), south end of the Locus, was the location of a building, with over 100 fragments of wooden boards, 6 architectural beams forming a building foundation, 8 beams forming a window frame, 19 additional wooden beams, and 30 fragments of window glass (Figure 16). The beams form a foundation with closely associated window frame (Figure 17) and a separate partial wall (Figure 18). Common artifacts include colorless, amber, and green bottle glass (concentrated inside the foundation, as though several vessels were broken in-situ), undecorated WIE, nails, railroad spikes, tobacco and oil cans, buckets, bottlecaps, mesh fragments, carbon battery rods, shoe fragments, and a stove pipe. There is a noted lack of food cans in this area of Locus N. Diagnostic artifacts include a "UNION OIL / COMPANY" hand sprayer, a Lubrite motor oil can, milk bottles from Phoenix and Flagstaff, a Uruguayan meat can, an Orange Crush bottle, a Christmas tree clip labelled "GERMANY", and a culturally modified tree.

Figure 16: Locus N, Wood Scatter 1 overview, facing northwest. Photo by Rachael O'Hara.

Figure 17: Locus N, Wood Scatter 1, close-up of foundation and window frame, facing northwest. Photo by Rachael O'Hara.

Figure 18: Locus N, Wood Scatter 1, close-up of possible intact wall alignment, facing northeast. Photo by Rachael O'Hara.

Wood Scatter 2 (WS2), at the middle of the eastern edge, was smaller in size and artifact count than WS1 (Figure 19). Eighty-nine wood fragments, eight wooden beams, and four planks comprising a wooden frame embedded in the ground, in which we conducted this year's excavations (see below). General artifacts scattered throughout WS2 include colorless bottle glass, food cans and lids, shell buttons, bottle caps, nails, and decorated WIE ceramics. Diagnostic artifacts include Illinois-Pacific Glass Company, Obear-Nestor, American Bottle Company, Hazel Atlas, Owens Bottle Company, Latchford Glass Company, and Owens-Illinois bottle bases, a Hills Brothers coffee can, a Wyoming Red Edge shovel handle, shards and the screw-cap for a Harry E. Wilkens whiskey bottle, and a can labelled "IMPORTE d'ESPAGNE" (a possibly French tin imported from Spain). A concentration of glass at the north border of WS1 contained 75 fragments of amber, green, and colorless glass, and Remington-UMC No. 12 centerfire shotshell husk (Figure 20).

Figure 19: Locus N, Wood Scatter 2, facing east. Photo by Alex Liu.

Figure 20: Locus N, Wood Scatter 2 glass scatter, facing east. Photo by Alex Liu.

Figure 21: Locus N privy, facing north. Photo by Lucie St Clair.

The Locus N privy is located at the southeast corner of the site, in between the eastern ends of WS1 and WS2 (Figure 21). Five wooden beams are still in place around the privy depression, one plank is inside the privy, and other wood fragments are scattered around. Artifacts are sparse, but include a concentration of undecorated WIE shards, stoneware and porcelain tea ware sherds, glass shards, cans, bottle caps, and carbon battery rods.

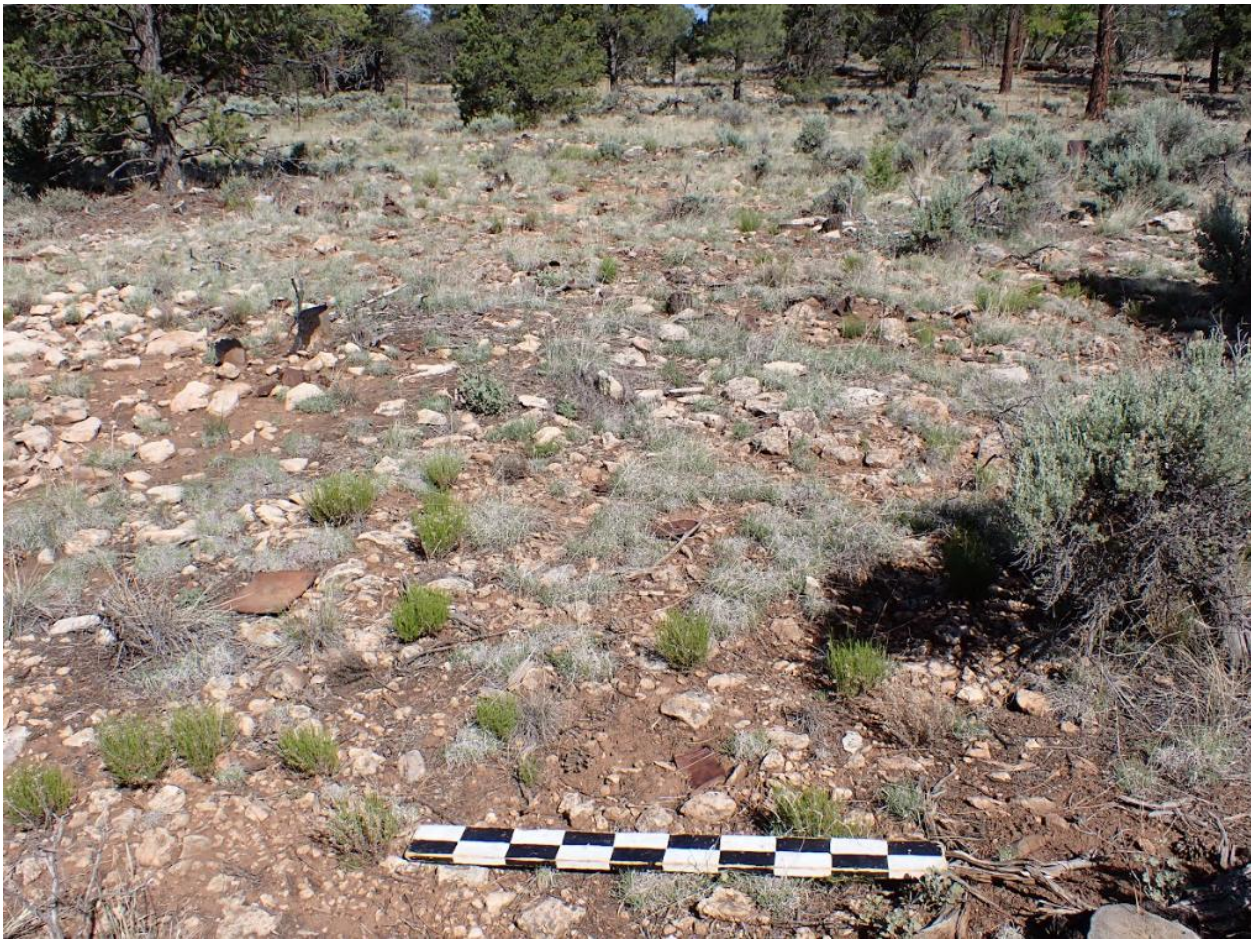

Figure 22: Locus N, Artifact Scatter 1 overview, facing northwest. Photo by Rachael O'Hara.

Artifact Scatter 1 (AS1) is near the center of the Locus and consists of a large, continuous scatter of artifacts across a broad area (Figure 22). Three smaller concentrations are inside of AS1. General artifacts across AS1 include cans, stove parts, buckets, nails, colorless, amethyst, green, amber, cobalt, and milk glass shards, and porcelain and earthenware ceramics.

Figure 23: Locus N, Artifact Scatter 1, Can Concentration 1, facing south. Photo by Rachael O'Hara.

Can Concentration 1, at the north edge AS1, consisted of nearly 100 hole-in-top, cylindrical cans and can lids, jar fragments, stove parts, and miscellaneous metal. An “IMPORTE d’ESPAGNE” can is the only one with writing (Figure 23).

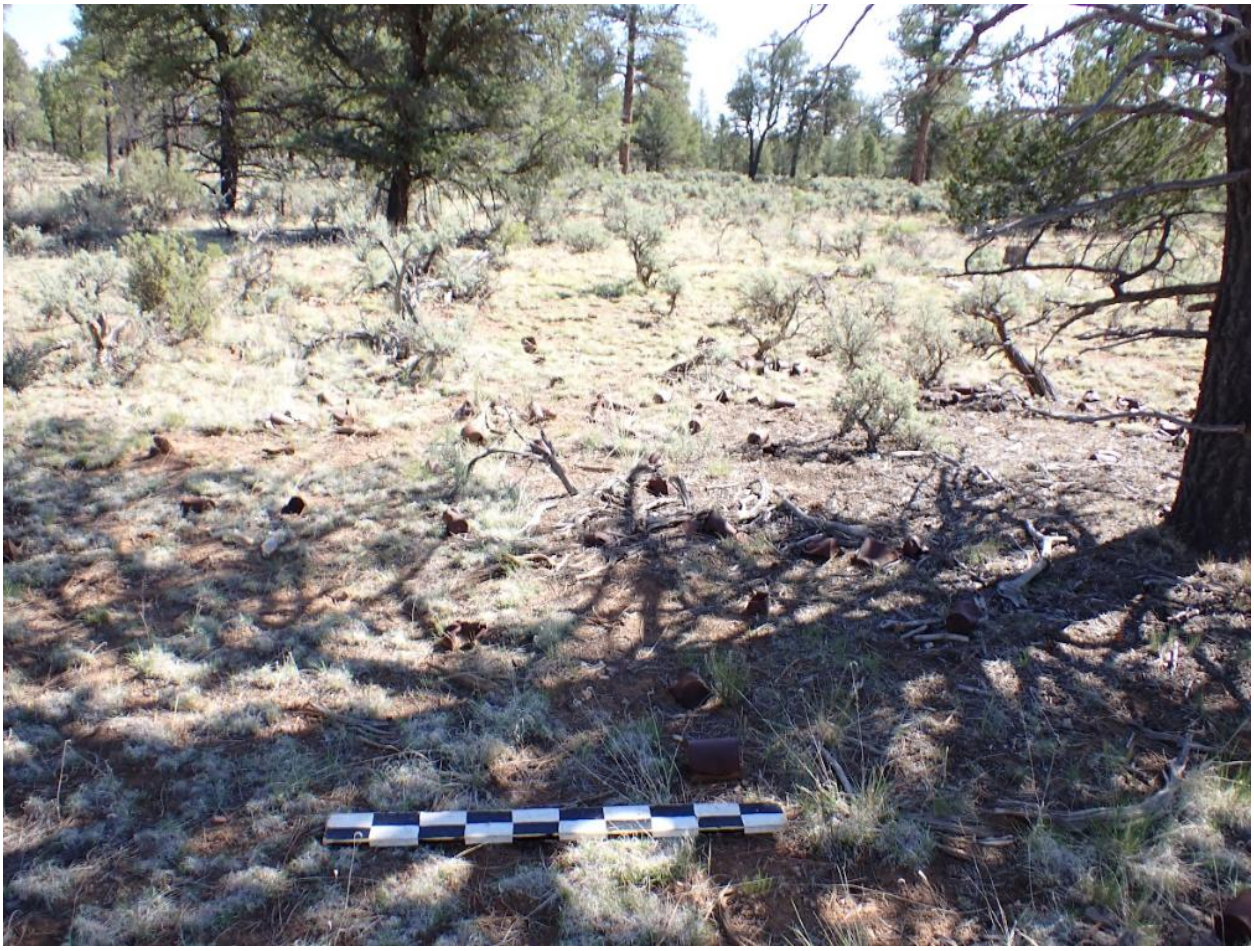

Figure 24: Locus N, Artifact Scatter 1, Can Concentration 2, facing northeast. Photo by Rachael O'Hara.

Can Concentration 2 occupies the southern half of AS1 and consisted of over 350 cans, including tobacco, food, and hole-in-top cans and buckets (Figure 24). Stove parts, metal scraps, bottle caps, shoe fragments, colorless and cobalt glass were also found. Diagnostic items include Owens-Illinois, American Beverage Company, and Hazel-Atlas bottle bases, an Uruguayan meat can, a porcelain plate from the Tashiro Shoten Limited Company of Japan, a Budweiser malt syrup can, a Coca-Cola bottle from Flagstaff, shards from a Harry E. Wilkens whiskey bottle, and a Norwegian sardine can. A concentration of glass inside of CC2 inside of AS1, in the southern corner, contained over 250 shards of glass in a small area. Colorless glass predominated and came mostly from jars and bottles. Products included O-Cedar, Mentholatum, Fletcher's Castoria, Orange Crush (bottled in Flagstaff), and Singer sewing machine lubricating oil. A few cans, including Copenhagen and Ovaltine, were also present.

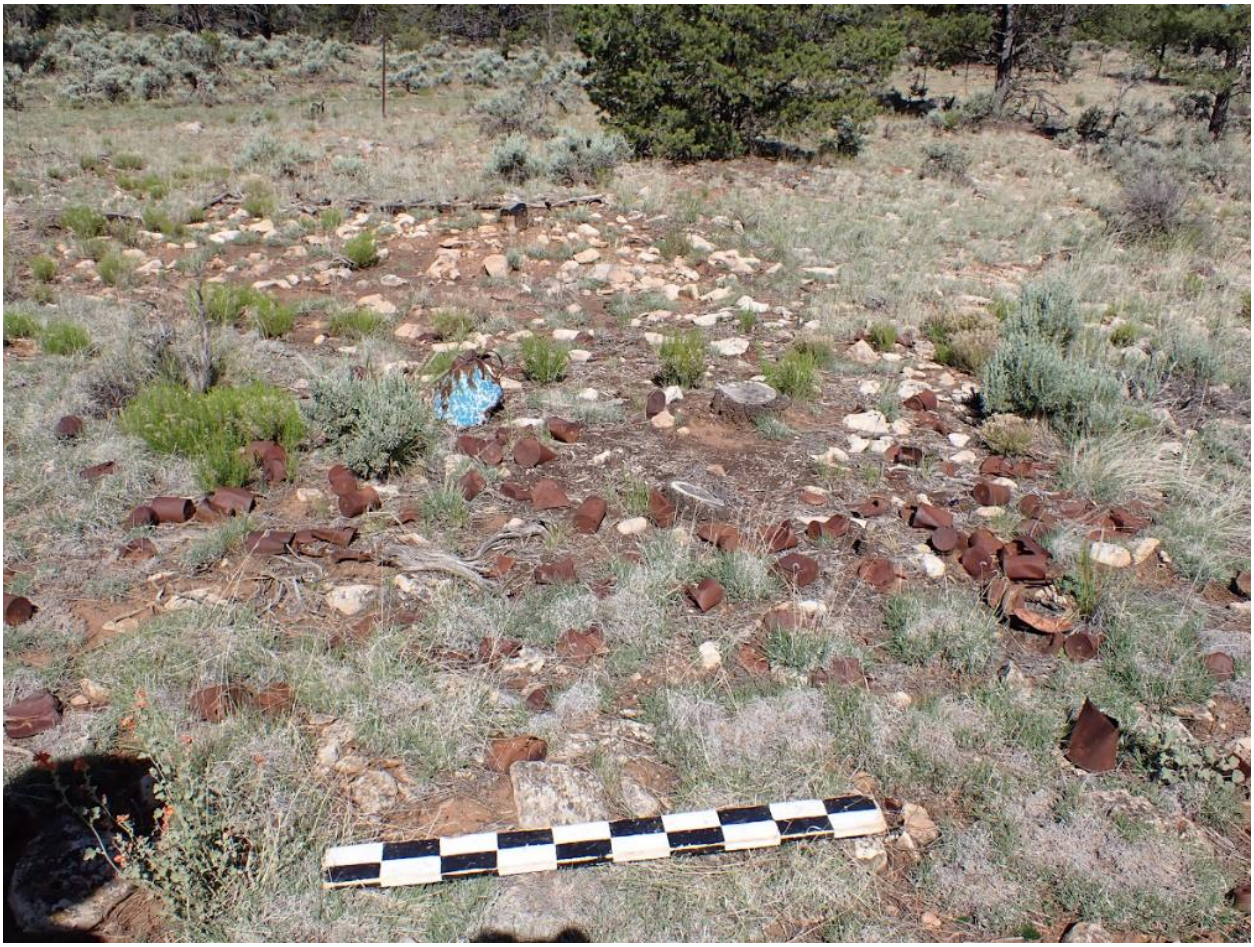

Figure 25: Locus N, Artifact Scatter 1, Can Concentration 3, facing west. Photo by Rachael O'Hara.

Can Concentration 3, at the northwest corner of AS1, contained over 100 cans, including food and tobacco, bottle caps, ceramics, colorless, green, and amber glass, and various miscellaneous metal fragments (Figure 25). Diagnostic artifacts included a Pond's cold cream jar, a Boyd's porcelain lined cap, a mason jar, a Chamberlain's Remedy bottle, an A.S. Hind's Honey and Almond Cream bottle, a Flagstaff milk bottle, a Clicquot Club bottle, a Norwegian sardine can, and a can that was "MADE IN FRANCE."

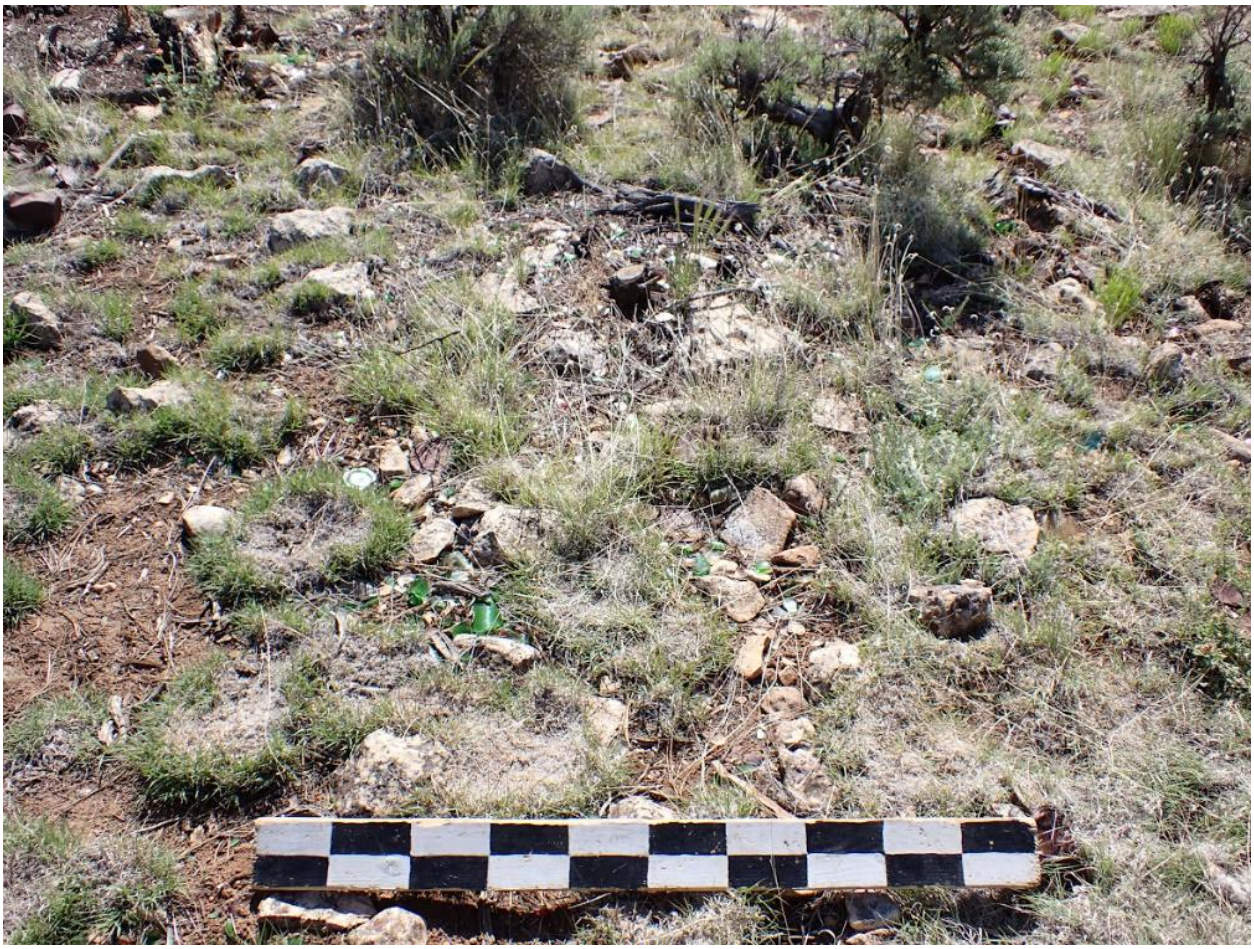

Figure 26: Locus N, Artifact Scatter 1, Glass Concentration 2, facing east. Photo by Rachael O'Hara.

Finally for AS1, a second, standalone concentration of glass, was identified between Can Concentration 1 and Can Concentration 3, mostly concentrated underneath a partially buried bedspring (Figure 26). Over 200 green, 150 colorless, and 60 amber glass fragments, alongside smaller numbers of aqua and black bottle glass are here. Brands include Clicquot Club (likely accounting for the green glass), Coca-Cola, Kerr mason jars, Owens Bottling Company, a Heinz ketchup bottle, Horlick's Malted Milk, Clorox, and Obear-Nestor. A few cans, including Budweiser malt syrup, ceramics, and shoe fragments are also present. An entire flashlight, made from an Eveready case and Sears and Roebuck end cap, was also found.

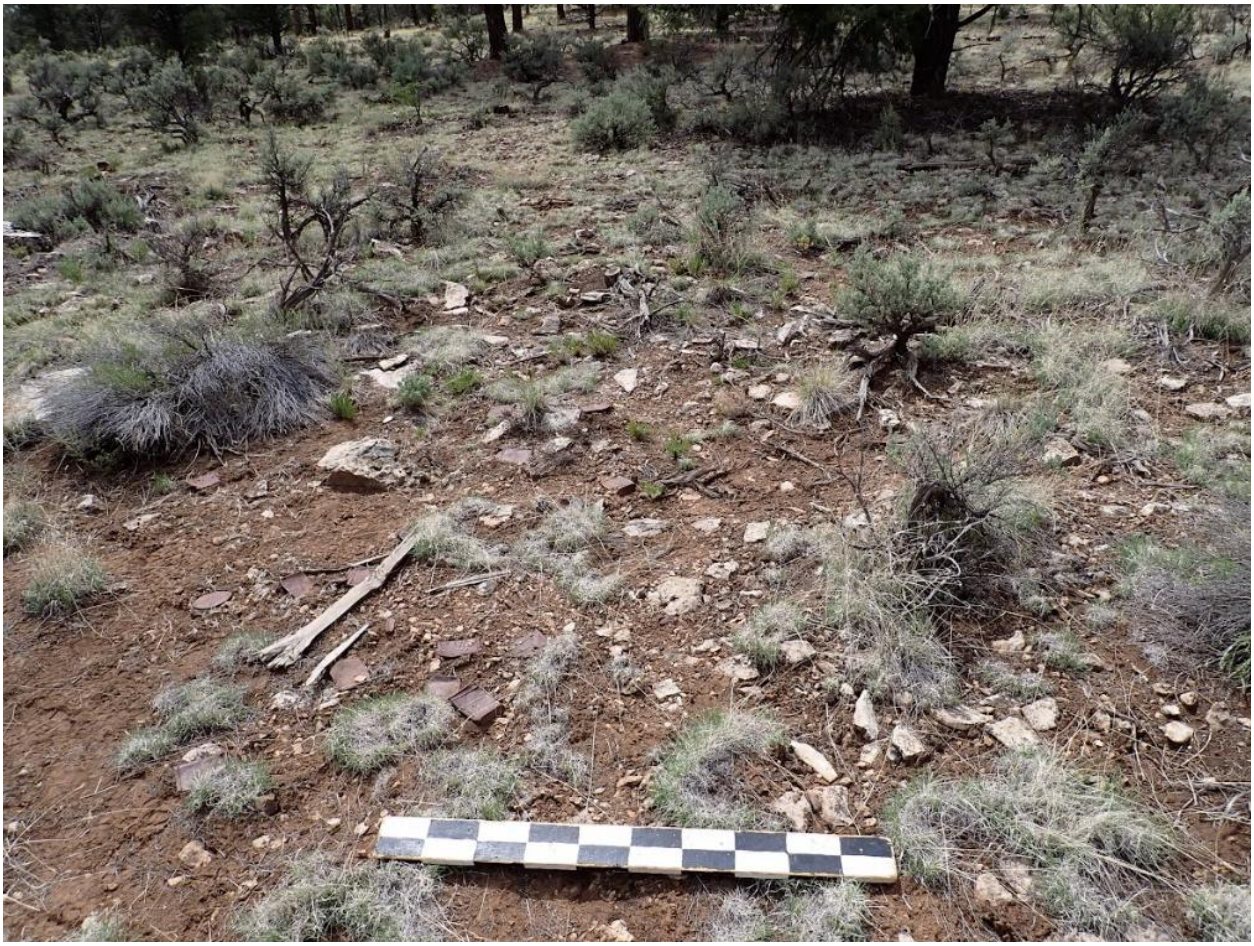

Figure 27: Locus N, Can Dump 1, facing west. Photo by Hunter Newman.

Can Dump 1 (CD1), located at the northeast corner of Locus N, is a small artifact scatter of 24 tobacco cans, 7 pieces of wood, 1 logging chain, and a shovel handle (Figure 27). A Tabasco bottle and California Cap Company lid are also present.

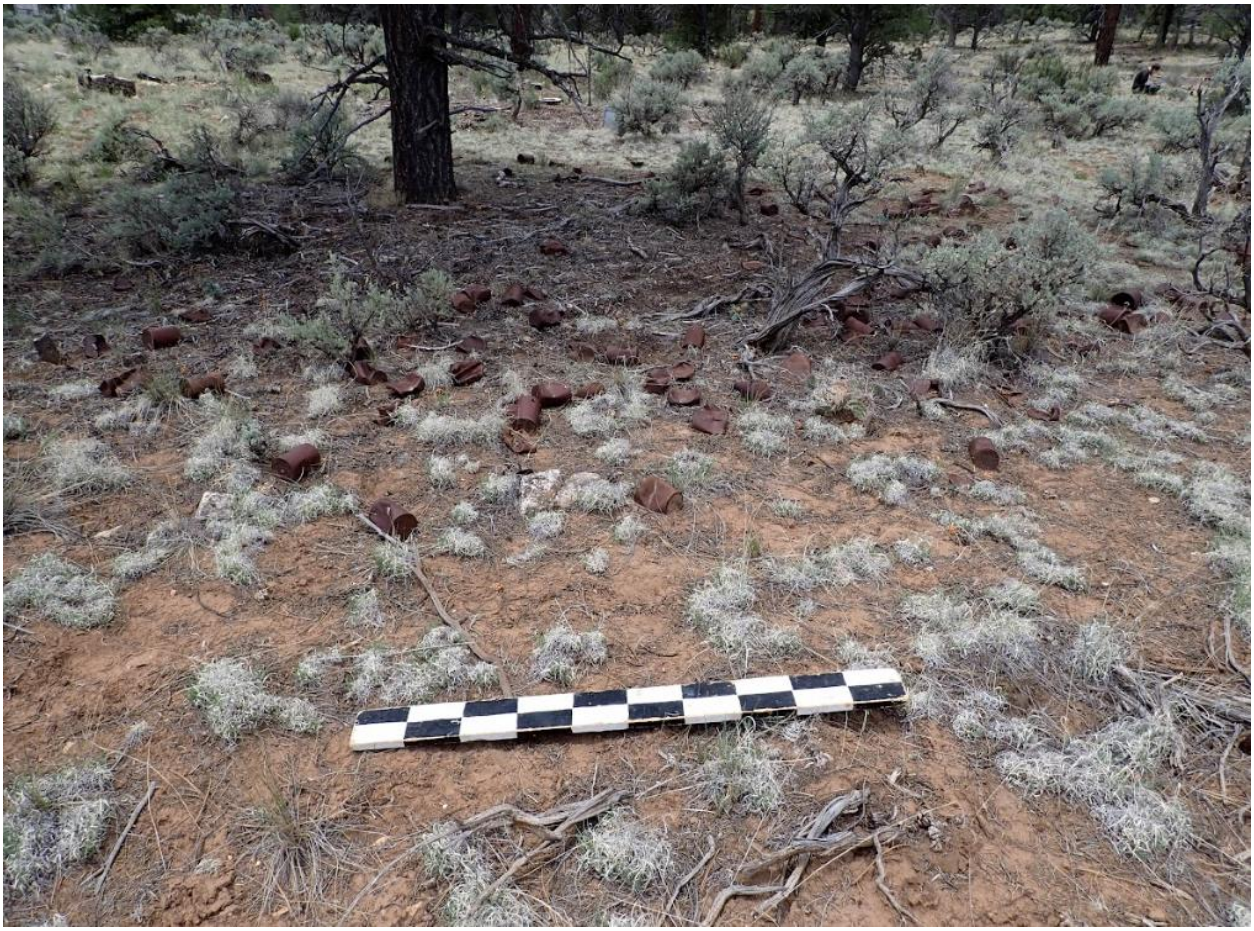

Figure 28: Locus N, Can Dump 2, facing southeast. Photo by Leann Capener.

Can Dump 2 (CD2), located north of Artifact Scatter 1 at Locus N, consists of over 150 cans and can lids, mostly hole-in-top, meat, and tobacco (Figure 28). Colorless and aqua glass, ceramic shards, and bottle caps are also present. Diagnostic artifacts include two shards of an A.S. Hinds Honey and Almond Cream bottle, a Lash's Root Beer mug, and a watermelon uranium glass stemware.

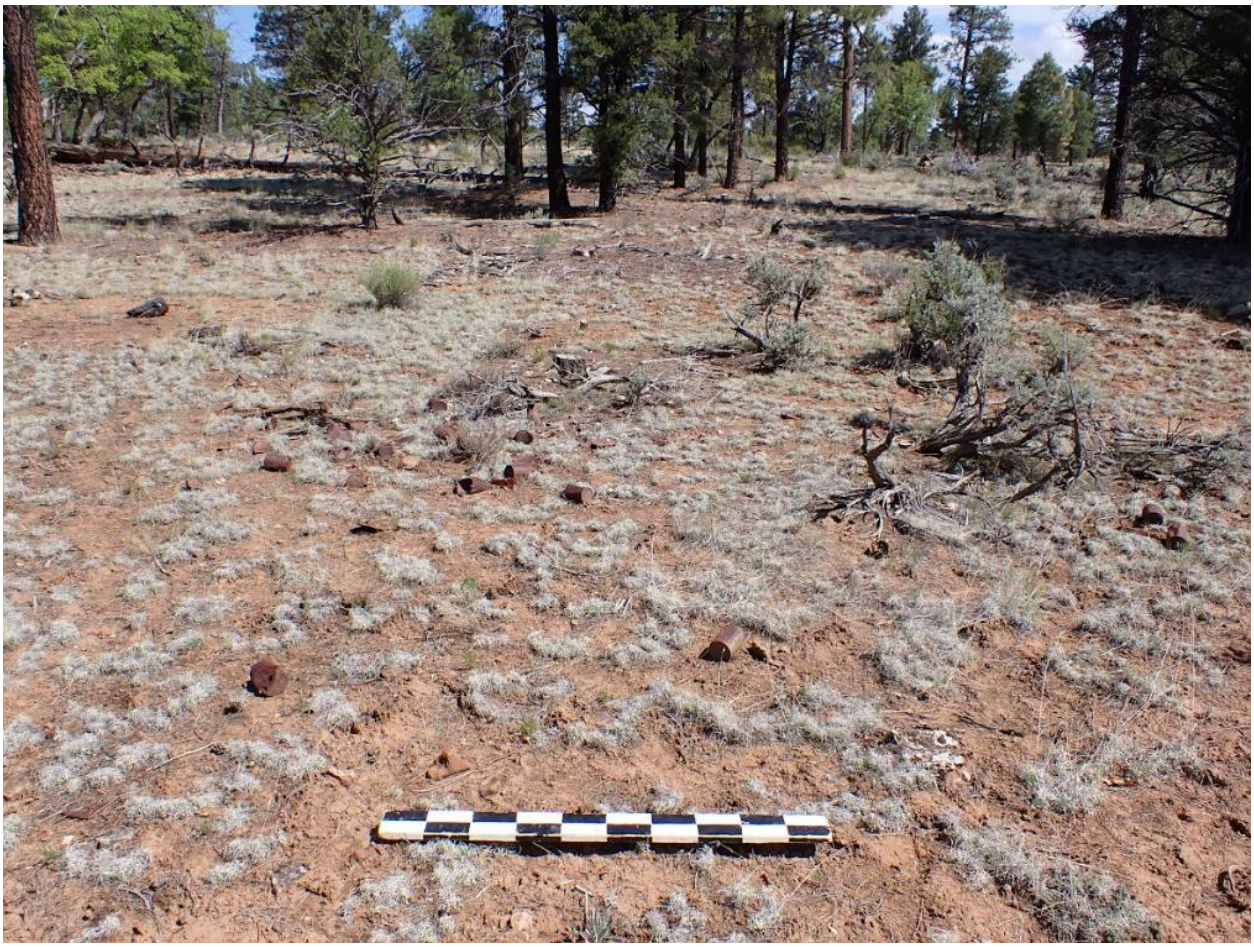

Figure 29: Locus N, Can Dump 3, facing north. Photo by Rachael O'Hara.

Can Dump 3 (CD3), located at the northwest corner of Locus N inside the fence line, is a small scatter of tobacco and food cans, bottle caps, undecorated ceramics, colorless, amber, amethyst, and green glass, a bobby pin, and a mason jar lid (Figure 29).

Figure 30: Locus N, Can Dump 4, facing south. Photo by Hunter Newman.

Can Dump 4 (CD4), located at the southwest corner of Locus N outside the fence line, contains over 150 cans, mostly food, but some tobacco cans, lids, and a bucket, bottle caps, a large drum, and minimal glass (all but one amber) (Figure 30). Notable cans include a Budweiser malt syrup can, a “MADE IN FRANCE” lid, and a KC baking powder lid from 1930-1932.

Figure 31: Locus N, Can Dump 5, facing west. Photo by Leann Capener.

Can Dump 5 (CD5), located at the western edge of the site, and across the fence, is a diffuse scatter of nearly 50 hole-in-top and sanitary cans, wood planks, colorless glass, WIE ceramics, and other ferrous materials (Figure 31). One Budweiser malt syrup can was recorded.

Figure 32: Locus N, Bottle Dump 1, facing north. Photo by Leann Capener.

Bottle Dump 1 (BD1), at the northwest corner of Locus N, is a glass concentration of over 400 glass fragments that appears to represent someone breaking numerous bottles all at the same time (Figure 32). Green glass is the most common, and seems to come from at least 28 individual soda bottles, all from the American Bottle Company, with date codes ranging from 1925 to 1930. At least 6 Mission Dry soda bottles account for the numerous black glass shards. Numerous colorless and amber bottle finishes and bases are also present, mostly from Owens-Illinois, but also Southern Glass Company. Two cans, a Budweiser malt syrup, and a “IMPORTE d’ESPAGNE”, are present.

Figure 33: Locus N, Stone Pile 1, facing southeast. Photo by Alex Liu.

Stone Pile 1 (SP1), is an artifact concentration centered on a pile of stones, likely removed during construction of the site. Located at the at the south edge of Locus N and on the other side of the fence, hole-in-top, buckets, and tobacco cans, amber and colorless glass, and undecorated porcelain sherds are most common (Figure 33). Diagnostic items include Owens-Illinois, Obear-Nestor, and Illinois-Pacific Glass Company bottle bases, a Mentholatum jar, a Latchford Glass Company "R-19" base, a Harry E. Wilkens whiskey bottle, Quaker State motor oil cans, a railroad part, and a lead bar with "CLEMENT" punched into the front, likely with a nail.

Finally, numerous artifacts were found isolated in between AS1 and WS1/WS2. Diagnostic artifacts include Clorox bottle, a small cylindrical can labelled "DES ETATS UNIS D'AMERIQUE / IMPORTE", an Orange Crush bottle, a Flagstaff bottle, a lighter, and what appears to be a car battery part embossed "WILLARD."

Locus N Excavations

The semi-buried ‘box frame’ at Locus N was chosen for excavation to explore the possible functions of the unique feature that is not found elsewhere at the site (Figure 34). As we have previously explored three possible privies, we wanted to excavate a different type of feature to address other possible subterranean constructions by the Apex residents.

The feature consists of four planks, partially inset into the ground, around 30cm deep to the surface, and oriented at a 45°. It is longer running north-south than east-west. The bottom of the northeastern-most corner is visible, meaning the box frame does not extend down to bedrock.

Figure 34: Box Frame, facing north. Photo by Damon Marcinko.

Due to the size of the box, we placed a .5m x .5m excavation unit, also oriented at 45°, and closer to the southern end of the box, with the goal of obtaining a good cross-section of the feature. The surface was fairly flat, so we used the Southwest corner as our datum. Overall, the soil remained the same throughout our excavation and no stratum or level definitely revealed the

function of the box. An ash layer, discussed below, offered some clues. The unit extended to about 65cmbd, when bedrock was reached across the unit.

Bruce Phillips, an archaeobotanist and geoarchaeologist who runs BGP Consulting, Inc, volunteered his services. He assisted in the collection of soil samples from Box Frame 1 (Figure 35), with the goal of discovering botanical remains that could point to the construction and purpose of the box frame. Allyanna Marshall, an undergraduate student at NAU, worked with him and Kaitlyn Davis in NAU's Environmental Anthropology Lab to process the samples Bruce collected. She previously contributed to the 2024 botanical report. Her 2025 report is included in Appendix A.

Paperwork maps and photos were taken at the bottom of each level. In all photos, the whiteboard is along the northeast wall. Unit drawings have not yet been digitized.

Figure 35: Bruce Phillips demonstrates proper soil sampling as Adrienne Dale, Damon Marcinko, LeAnn Capener, Alex Liu, Rachael O'Hara, and Chelsea Tenney observe, Locus N. Photo by Emily Dale.

The surface soil of Box Frame 1, Unit 1 was fairly clear of organic materials (Figure 36; Figure 37; Figure 38). A sagebrush removed from the box frame prior to excavation did leave some remnants. The north end of box frame was full of pine nuts, likely from the tree growing just north of the box, but none were present on the surface of the unit. The soil was recorded as 10YR 4/6: Dark Yellowish-Brown. Soil depths for the unit surface ranged from 7.4cmbd (southwest corner/datum) to 10.3cmbd (northeast corner). Artifacts collected were a large board with nails still embedded, a smaller wood scrap, and a transfer-print stoneware ceramic lid sherd.

Figure 36: Locus N, Unit 1, Surface, plan view. Photo by Alex Liu.

Figure 37: Locus N, Unit 1, Surface, cleared, plan view. Photo by Alex Liu.

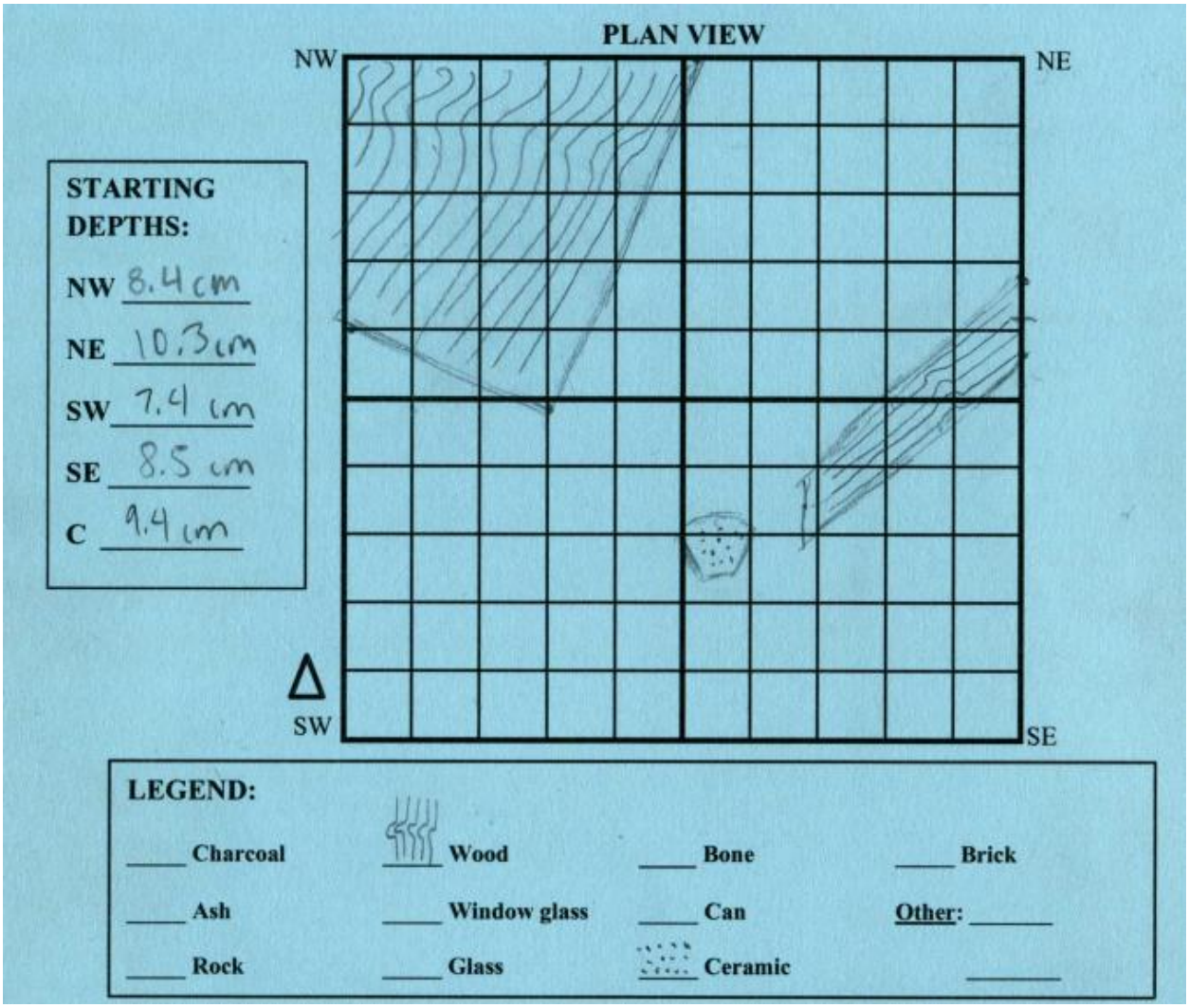

Figure 38: Plan view sketch of Locus N, Privy 1, Surface. Drawn by Damon Marcinko and Alex Liu.

Stratum 1, Level 1 (10YR 4/6: Dark Yellowish-Brown) ranged in depth from 17cmbd (northwest and southwest corner) to 18.75cmbd (northeast corner) (Figure 39; Figure 40). The soil again lacked organic materials, like pine nuts and pine needles, but the soil became wetter and more compacted as we excavated, particularly under the location of the now-removed board. Small rocks also started to appear, getting bigger as we went deeper. Artifacts found in S1 L1 were charcoal fragments, wood scraps, likely from the boards on the surface, and two nails.

Figure 39: Locus N, Unit 1, Stratum 1, Level 1, plan view. Photo by Damon Marcinko.

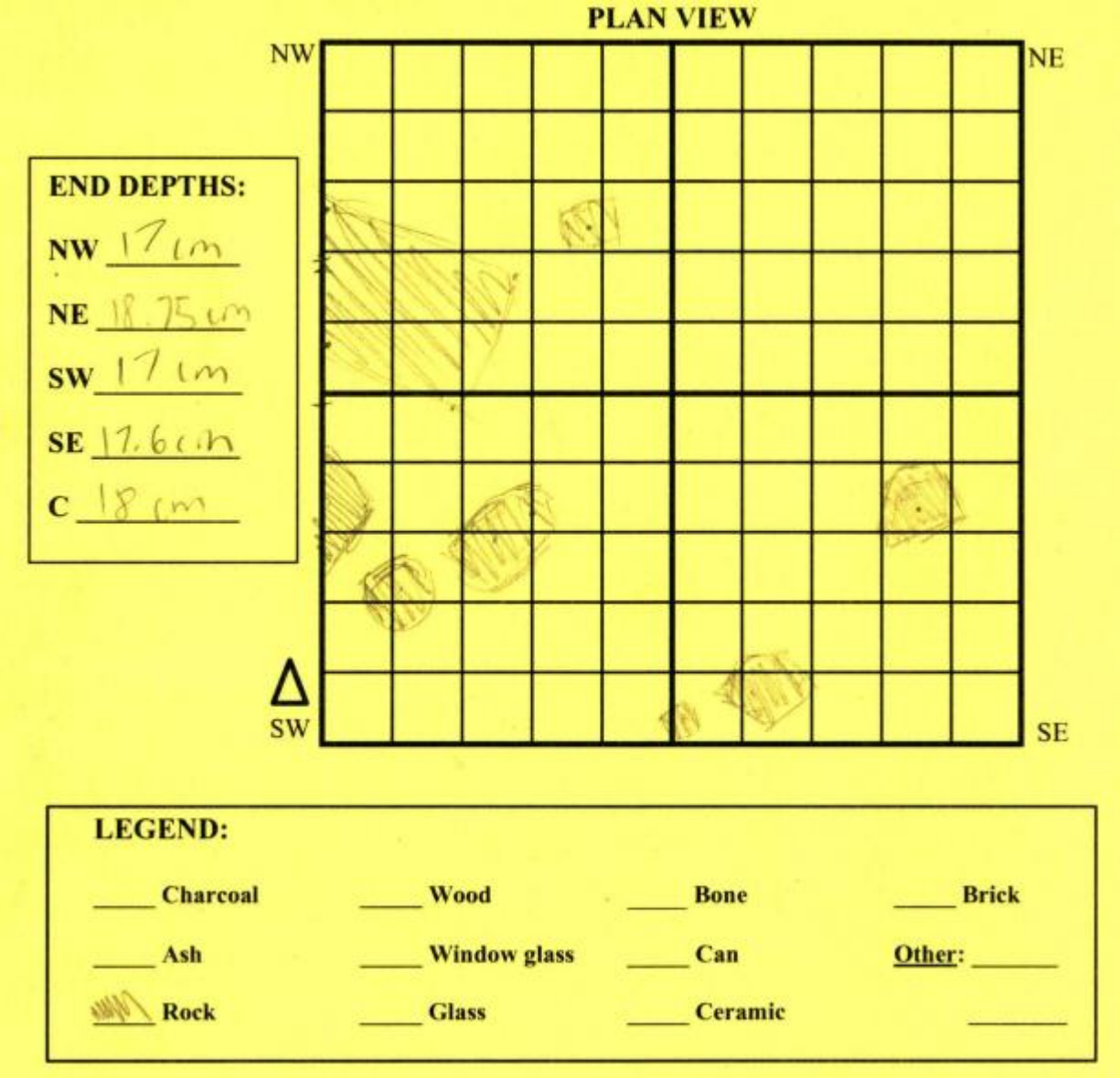

Figure 40: Plan view sketch of Locus N, Unit 1, Stratum 1, Level 1, plan view. Drawn by Damon Marcinko and Alex Liu.

Stratum 1, Level 2 (7.5YR 2: Brown/Gray) ended at between 28 and 31cmbd across the unit (

Figure 41). The soil was dry and compact, but grubs were encountered as were numerous pine nut shells. Rocks became larger, and one required pedestalling along the eastern wall. The soft soil and removal of rocks made it difficult to keep the unit entirely flat. Architectural artifacts included roofing nails, wire nails, screws, and a small nut. More domestic artifacts included part of a skeleton key, a bottle cap, a safety pin, a shoe eyelet, a pencil ferrule, a green bottle finish, and a ceramic marble, the only one recovered from Apex thus far. Charcoal was found across the unit.

Figure 41: Locus N, Unit 1, Stratum 1, Level 2, plan view. Photo by Lucie St Clair.

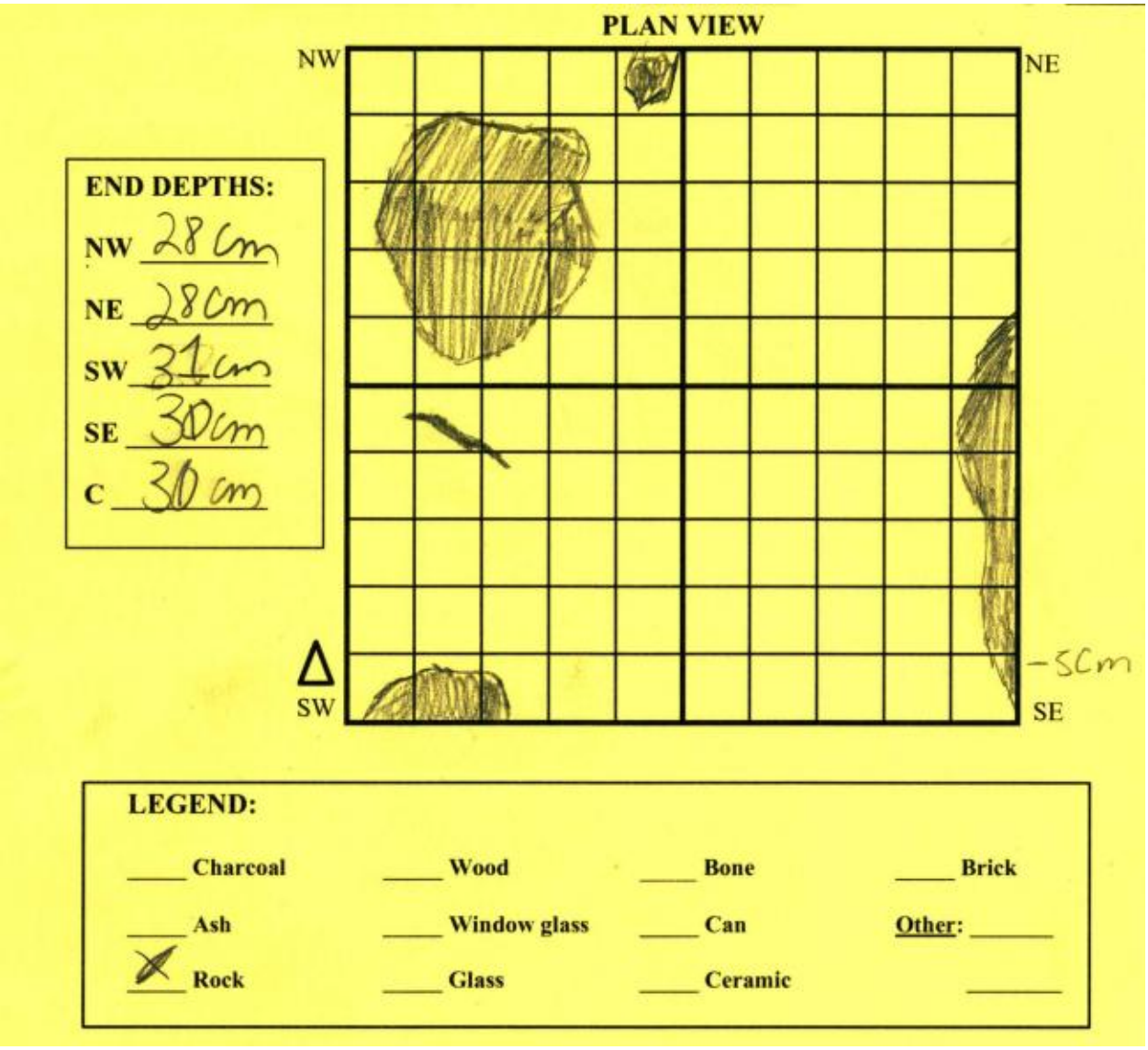

Figure 42: Plan view sketch of Locus N, Unit 1, Stratum 1, Level 2, plan view. Drawn by Lucie St Clair and LeAnn Capener.

Stratum 1, Level 3 7.5YR 2: Brown/Gray) ranged from 35.5 to 42cmbd as we brought the whole unit down an additional 10cm (Figure 43; Figure 44Figure 43). The soil became grayer in the eastern side, possibly due to the increase in the decomposing limestone we encountered in our other excavation units. Bone, mostly burnt, and charcoal increased noticeably compared to Level 2, and they both became larger as the unit went deeper. Melted glass points to fire exposure at some point. Yet, two intact scraps of paper, with visible writing, were also recovered. Additional artifacts included nails, tar paper, a safety pin, a buckle, fragments of a vinyl record (one of which reads “875”), a carbon battery rod, and shoe eyelets.

Figure 43: Locus N, Unit 1, Stratum 1, Level 3, plan view. Photo by Hunter Newman.

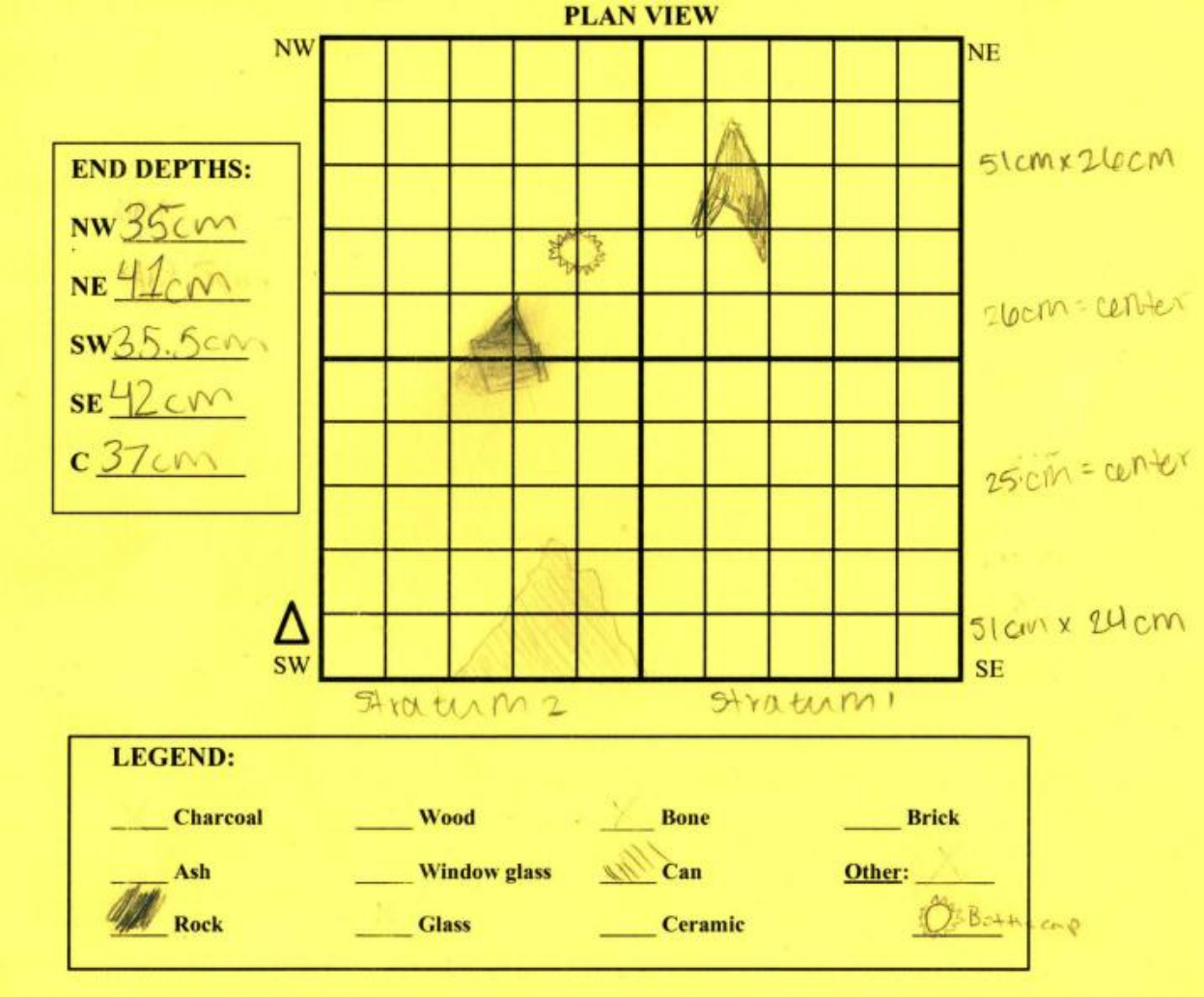

Figure 44: Plan view sketch of Locus N, Unit 1, Stratum 1, Level 3. Drawn by Hunter Newman and Chelsea Tenney.

Stratum 2, Level 1 (7.5YR 4/2: Brown) occurred only in the western half of the unit, ending between 43 and 46.5cmbd, when the Stratum 1 soil appeared across the unit again (Figure 45; Figure 46Figure 45). Despite the Munsell reading, this stratum appeared much grayer than Stratum 1 and was powdery and loose. The layer extended into the western wall, and Bruce took a sample from this wall for processing. The results suggest this was a discrete deposition of ash, possibly from a fire, mixed with other general trash (see Appendix A). Bone fragments, larger than in previous layers, and charcoal were common, and the number and diversity of artifacts overall was higher than in previous levels. Artifacts included bottle caps, a ferrous lid, tar paper, shell fragments, glass, ceramics, a possible car brake line, a furniture spring, mechanical elements, a utensil handle, nails, and a lightbulb base.

In examining the placement of the box, Bruce believes it shifted to the east at some point, so some of the original feature is now under the western board of the box frame, explaining the

location of the Stratum 2 ash layer in the western wall, rather than in the center of the impression.

The phytolith, macrobotanical, and pollen analysis, completed by Allyana Marshall, an NAU undergraduate student, found no evidence of anthropogenic cultigens. Phytoliths pointed to a woodland environment, unsurprising given the location in a ponderosa pine forest. Macrobotanicals included limestone fragments, from the surrounding soil, charcoal, metal fragments, and faunal fragments, all three of which were common artifacts throughout the unit. For more on the methods and findings, see the full report in Appendix A.

Figure 45: Locus N, Unit 1, Stratum 2, Level 1, plan view. Photo by Damon Marcinko.

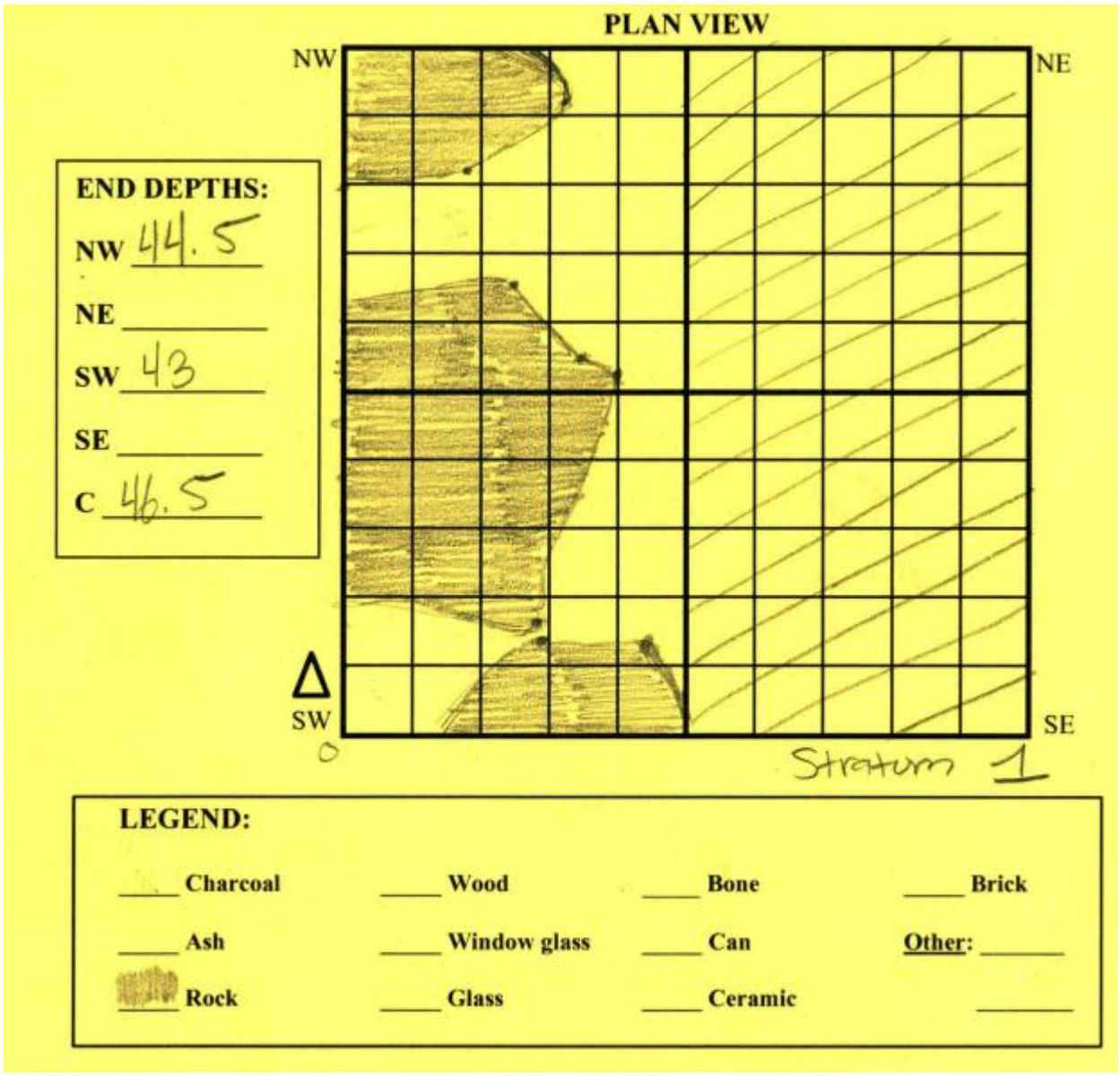

Figure 46: Plan view sketch of Locus N, Unit 1, Stratum 2, Level 1. Drawn by Adrienne Dale and Michelle Neathammer.

Stratum 1, Level 4 (7.5YR 4/3: Brown) consisted of taking the eastern half of the unit down ten centimeters and the western half down to match (Figure 47; Figure 48). We reached a depth between 43.5cmbd and 51.5cmbd, with the northern half lower than the southern half due to softer soil in this area. Limestone inclusions appeared more frequently as well. Metal fragments, likely from a can, bone, charcoal, nails, and tar paper were common. Unique artifacts include possible harmonica reed fragments, a scrap of paper with intact writing, vinyl record fragments, milk glass shards, and a foil seal. A large metal object appeared in the southeast corner of the unit, and cannot be removed.

Figure 47: Locus N, Unit 1, Stratum 1, Level 4, plan view. Photo by Damon Marcinko.

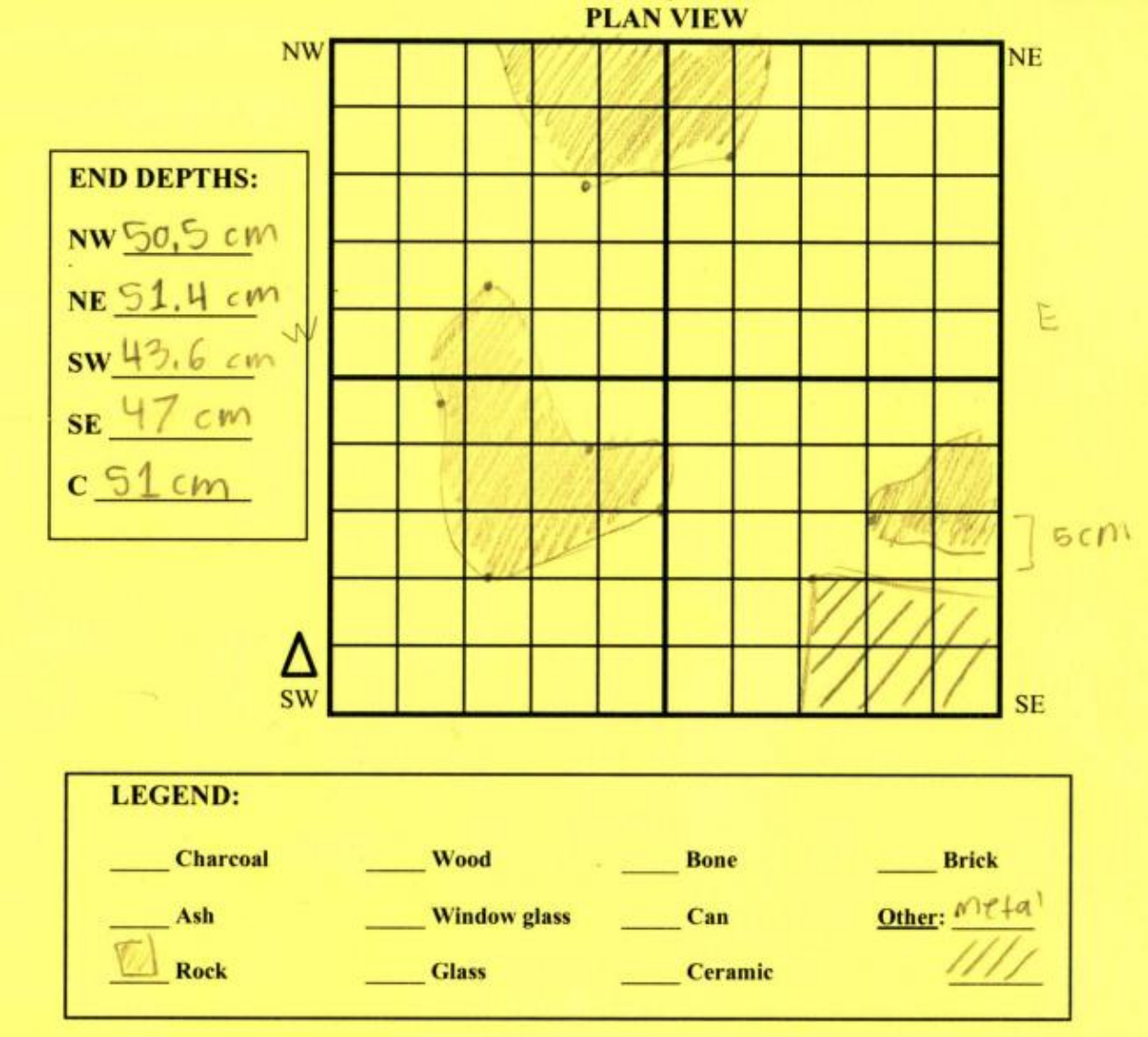

Figure 48: Plan view sketch of Locus N, Unit 1, Stratum 1, Level 4. Drawn by Rachael O'Hara and Damon Marcinko.

Stratum 1, Level 5 (7.5YR 3/4: Dark Brown) reached a depth of 59 to 64cmdb (Figure 49; Figure 50). The soil was clumpy and more clay-like, with more roots than other layers Alongside small pebbles and fist-sized rocks, large limestone pieces appeared, suggesting we were getting close to bedrock. Artifacts significantly decreased in this level, and charcoal was noticeably reduced. Artifacts included colorless and milk glass shards, wood fragments, charcoal, bone, and metal fragments, including one from a Copenhagen can.

Figure 49: Locus N, Unit 1, Stratum 1, Level 5, plan view. Photo by Lucie St Clair.

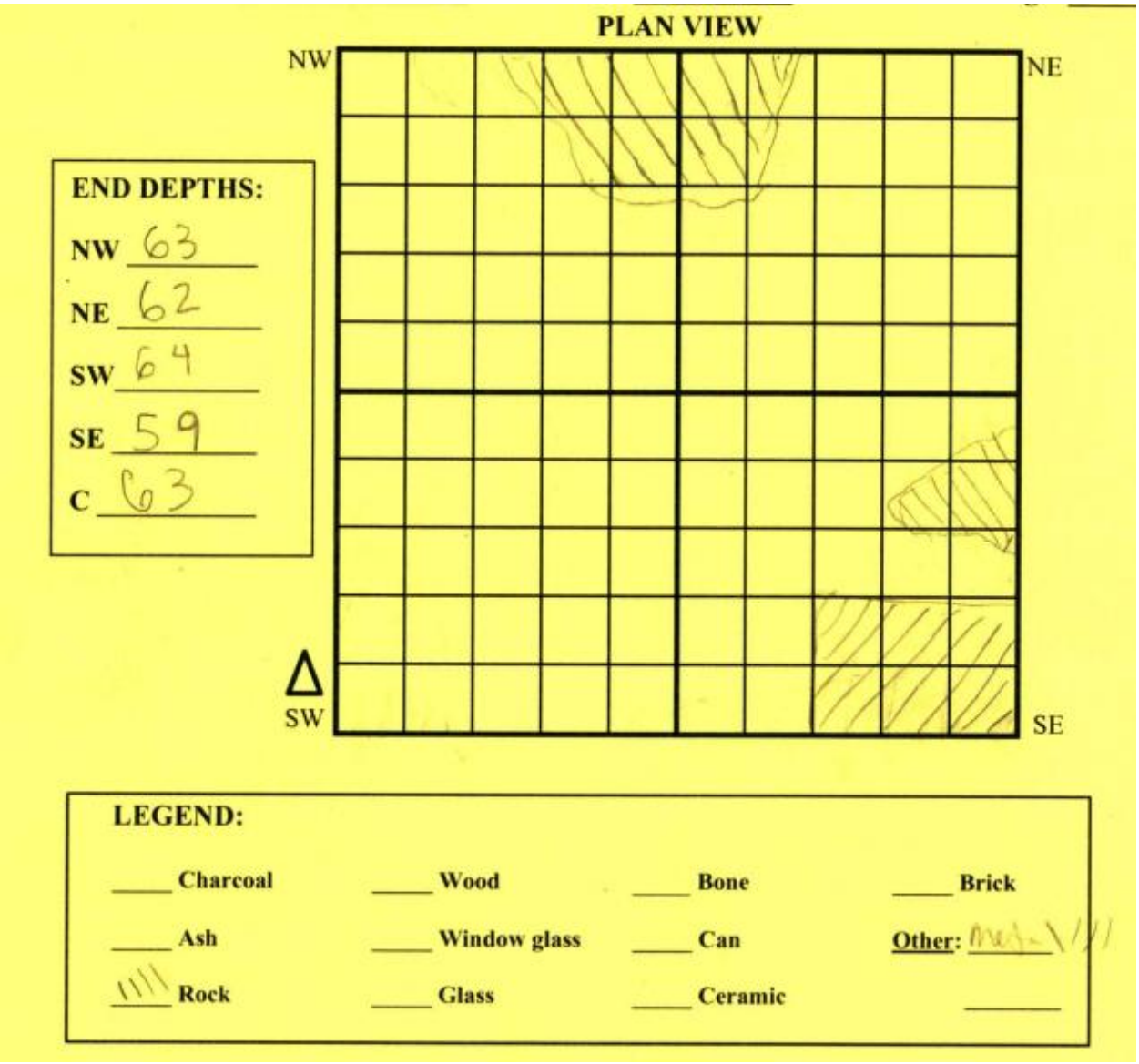

Figure 50: Plan view sketch of Locus N, Unit 1, Stratum 1, Level 5. Drawn by Chelsea Tenney, Alex Liu, and Lucie St Clair.

Stratum 1, Level 6 (2.5YR 6/4: Light Reddish Brown) was our final layer, as we hit bedrock or large, immovable rocks across the entirety of the unit between 64.5 and 71.5cmdb. (Figure 51; Figure 52). The soil was soft, but rocky, throughout Level 6, and lighter in color towards bedrock, as more limestone was mixed in. Artifacts included glass shards, metal fragments, tar paper, and a bone button.

Figure 51: Locus N, Unit 1, Stratum 1, Level 6, plan view. Photo by Hunter Newman.

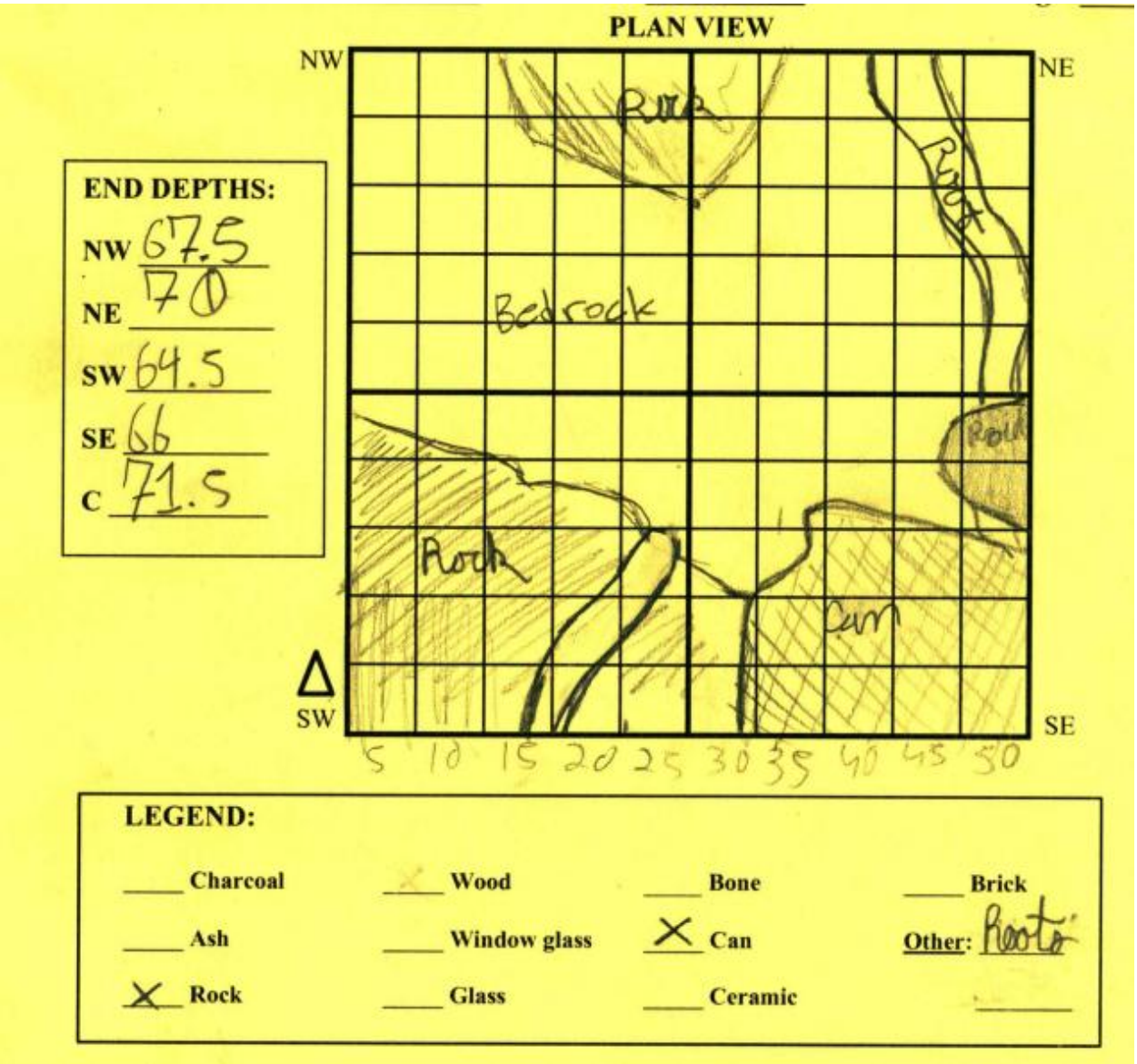

Figure 52: Plan view sketch of Locus N, Unit 1, Stratum 1, Level 6. Drawn by Lucie St Clair and Hunter Newman.

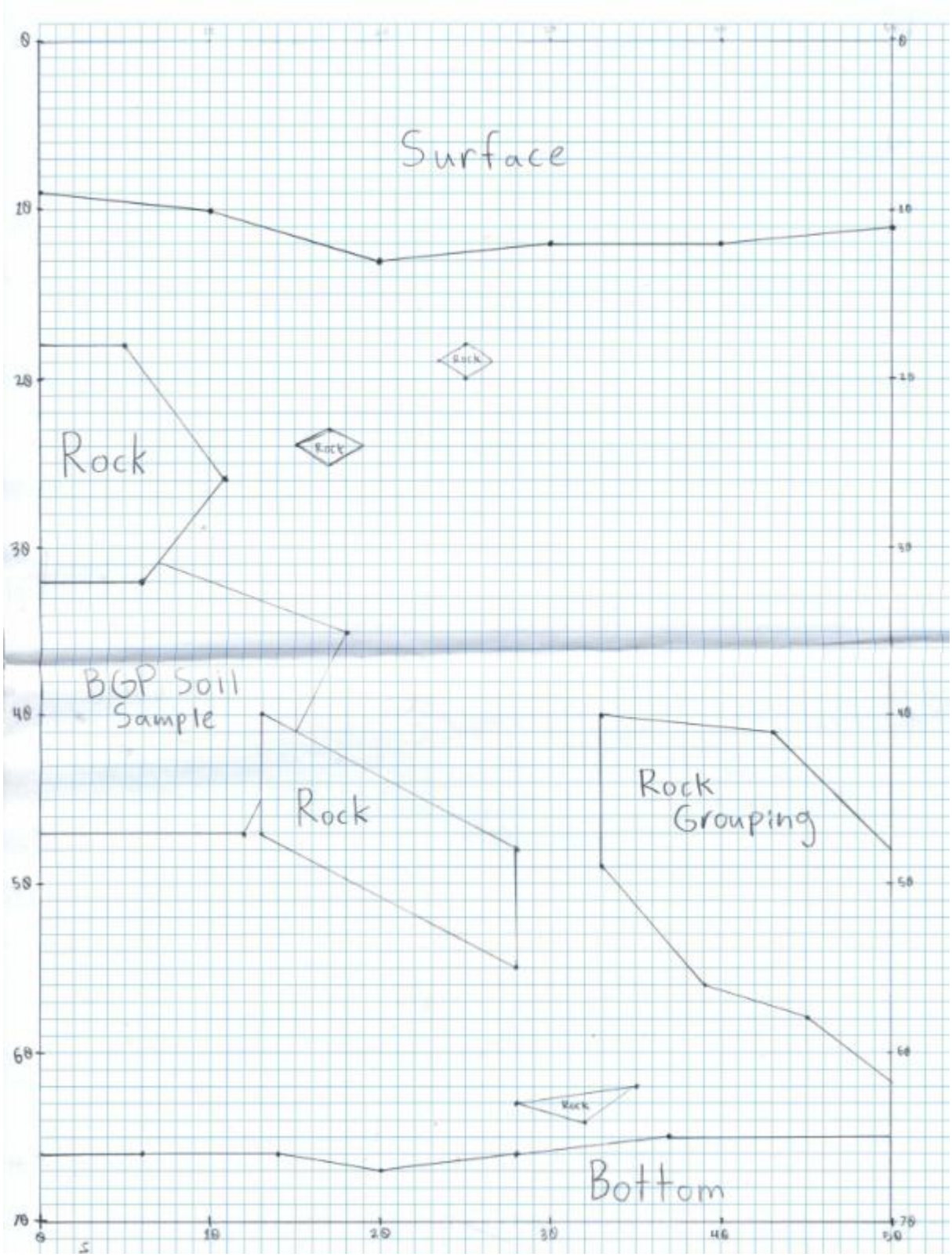

Figure 53: Locus N, Unit 1, North Wall Profile. Drawn by Chelsea Tenney, Alex Liu, and Damon Marcinko.

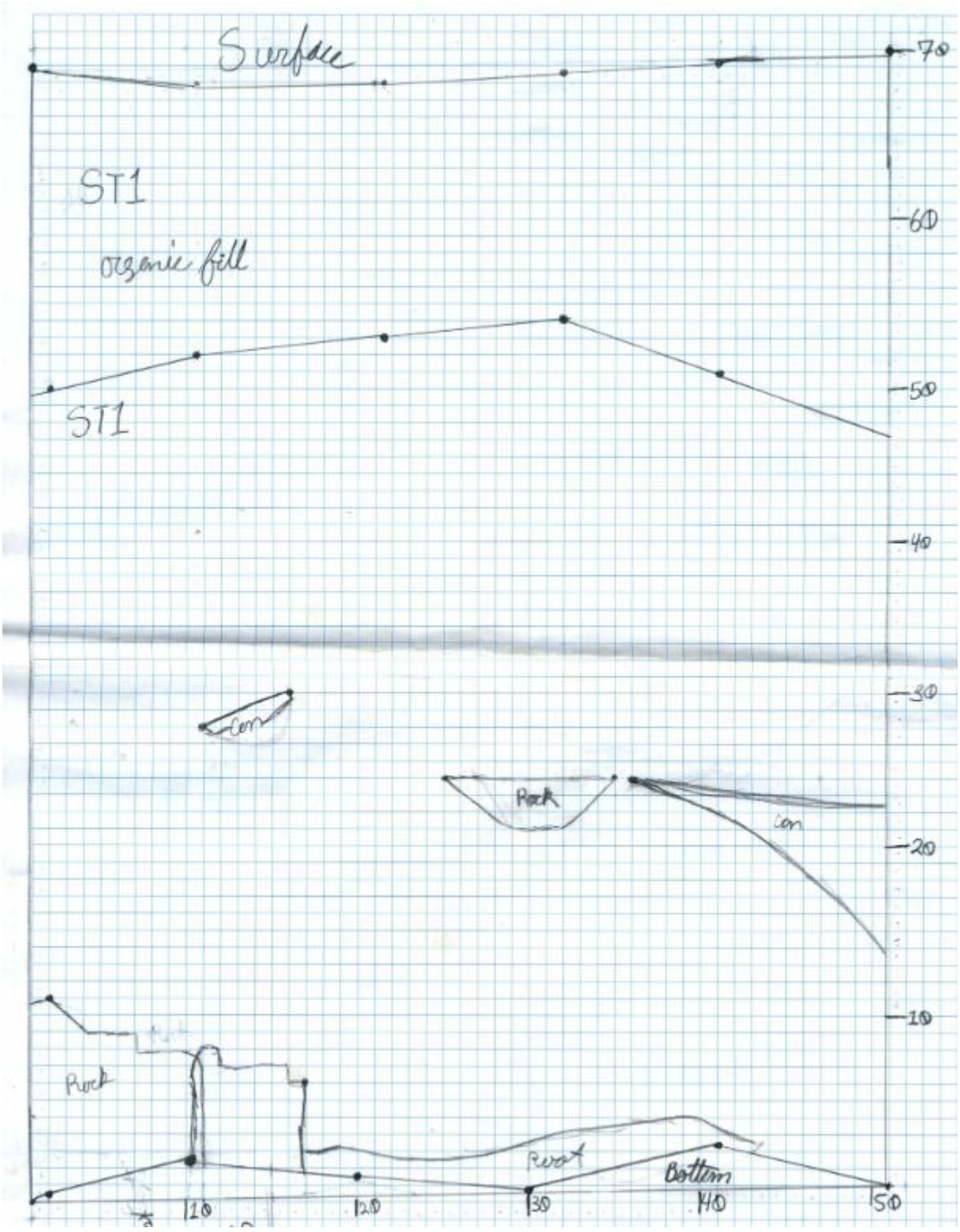

Figure 54: Locus N, Unit 1, East Wall Profile. Drawn by Lucie St Clair and Hunter Newman.

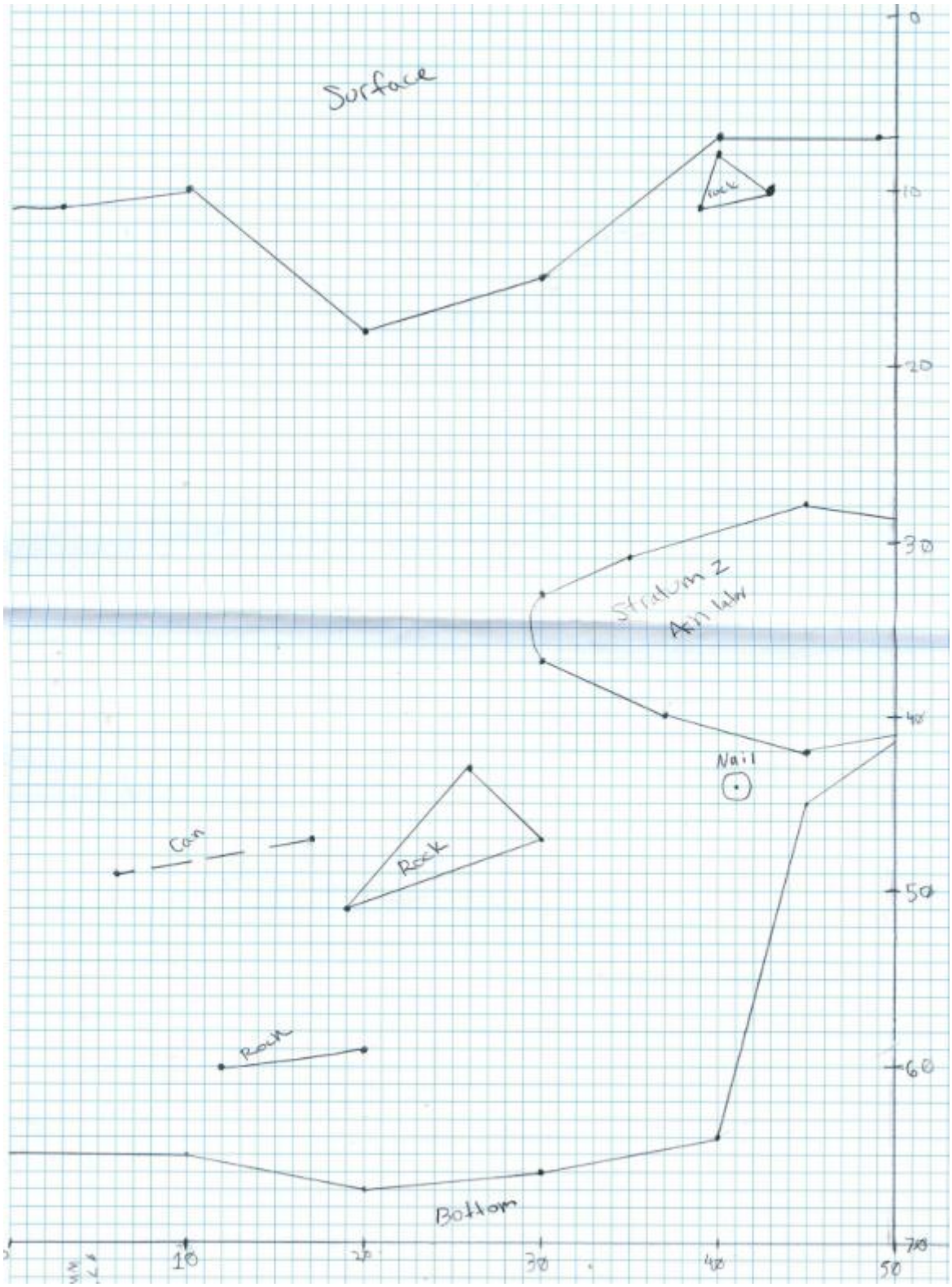

Figure 55: Locus N, Unit 1, South Wall Profile. Drawn by Chelsea Tenney and Damon Marcinko.

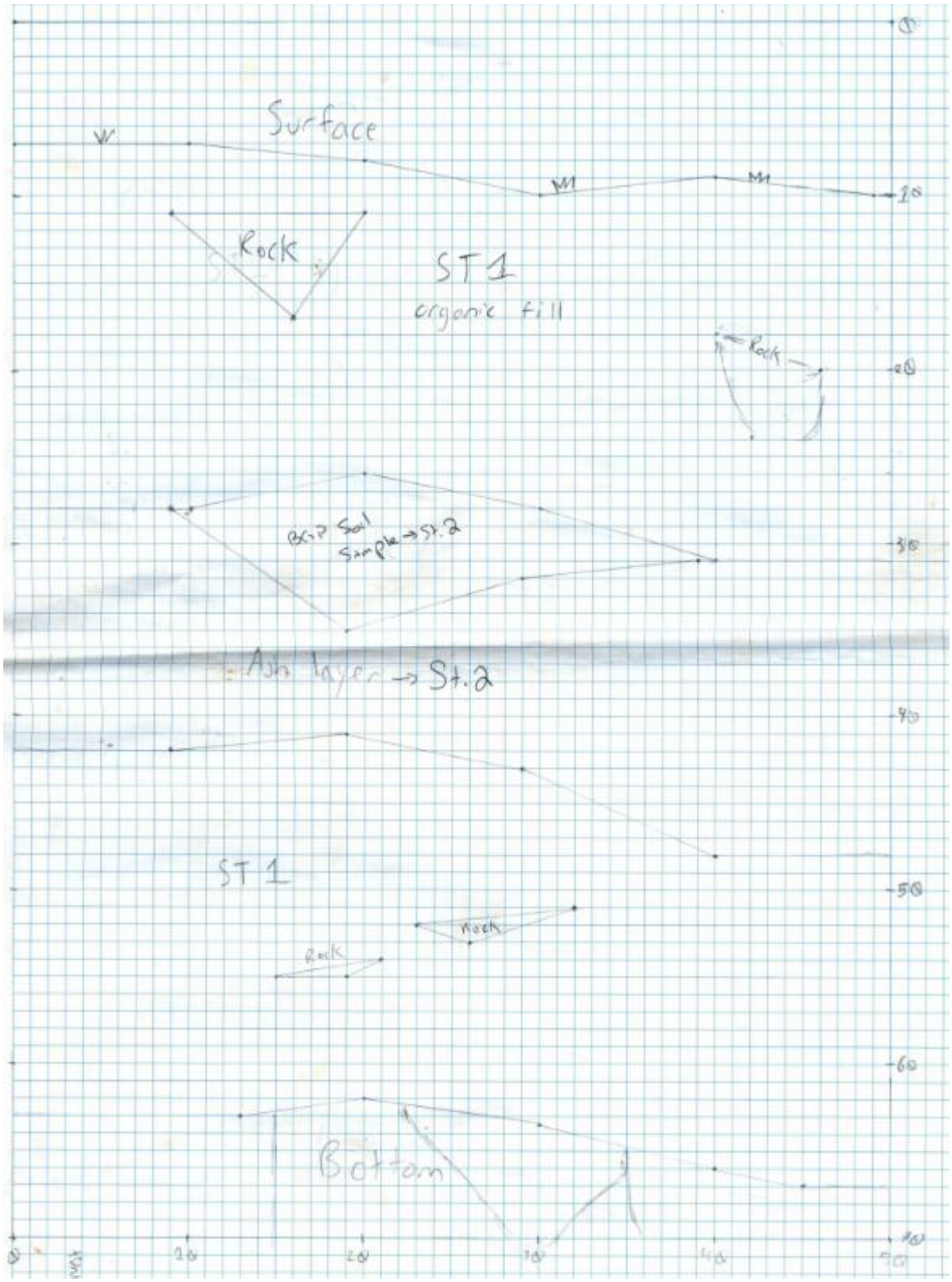

Figure 56: Locus N, Unit 1, West Wall Profile. Drawn by Chelsea Tenney and Alex Liu.

Overall, the soil in Locus N, Box Frame 1 was soft down to bedrock, indicating an intentional, anthropogenic pit, excavated to hold the wooden frame (Figure 57). The soil and artifacts do not paint a clear picture of the function of the Box Frame, but at least one instance of intentional garbage disposal took place, with most artifacts concentrated between 30cmdb and 50cmbd. Possibly the box was used for storage, then filled in with trash when the site was abandoned.

Figure 57: Locus N, Unit 1, end of unit, plan view. Artifacts and burlap were placed in the bottom to signal the depth reached in 2025. Photo by Emily Dale.

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.

Between tours, excursions to record alcohol-related objects for Rachael O'Hara's thesis research, and other visits that took us elsewhere at Apex, we found previously-unrecorded artifacts at Loci recorded in past years. For this reason, individual items found at locations other than Locus H, I, and N are included in this report.

6.1. Food and Drink

As we investigated non-residential areas, like the likely timber sales office and the schoolhouse, we have far fewer artifacts associated with food and drink, especially of cooking products, than in previous years. For example, we only recorded two baking powder tins, one Calumet and one KC. Still, many of the same brands of food and drink recorded in the 2022, 2023, and 2024 seasons were also found during the 2024 archaeological investigations, including Ovaltine, Budweiser Malt Syrup, Norwegian sardine cans, Mission Dry, Delaware Punch, Coca-Cola, and Orange Crush. Numerous new brands were also recorded, including Clicquot Club soda, Jolly Time popcorn, Tabasco sauce, and Horlick's malted milk that have not been found elsewhere at the site. Identified bottle manufacturers included Owens-Illinois, Obear-Nester, Hazel-Atlas, Maywood Glass Company, Illinois Glass Company, American Bottle Company, Illinois-Pacific Coast Company, Whitall-Tatum, Latchford Glass Company, Owens Bottle Company, Universal Glass Products, Pierce Glass Company, J.T.&A. Hamilton Company, Union Bottling Works, Southern Glass Company.

6.1.1. Foods

Meat tins were common across the 2025 Loci, many from outside the United States. Three sardine tins, labelled "NORVEGE" were found at Locus N and Locus I. Two Uruguayan beef tins were also found at Locus N, as were two "IMPORTE / d'ESPAGNE" (Imported / from Spain) cans, seemingly imported from Spain to a French-speaking country. One can embossed "DES ETATS UNIS D'AMERIQUE / IMPORTE" (From the United States / Imported), was apparently packaged in the United States for import to a French-speaking region, but ended up at Apex instead. Another two, possible food cans, were embossed "MADE IN FRANCE". All the French cans were found at Locus N. Another meat can is labelled "CORNED BEEF REKO", though it is unclear what REKO means.

Other cans and bottles with intact embossing or labels reveal other foods consumed at Apex. A Jolly Time Volumized Popcorn can lid at the schoolhouse originated from a 1933 patent for a "Method of Preparing Corn for Popping," which slow-dried kernels to allow them to pop to their full volume after sitting on a shelf, or "Volumized" (Cloid 1933; Figure 58). The most common

size can was 10 ounces, which cost 10¢ (Sioux City Public Museum n.d.). Two Heinz bottles at Locus N were for white distilled, apple cider, malt, or tarragon vinegar (bottle code 211) and ketchup or hot ketchup (bottle code 255) (Cartwright 2006:8; Lord 2022:4, 6). The "TABASCO / MCILHENNY / SAUCE" embossing on a tabasco bottle dates it until 1931 (Orser and Babson 1990:111). Another likely condiment jar from Locus N is embossed "DESIGN PATENTED / 15 / AUG 5TH 1919". Design Patent 53,639 for a bottle or jar was assigned to Leroy Taylor on behalf of Libby, McNeill, & Libby, a food company from Illinois (Taylor 1919). This 12-sided jar likely held mustard (Kowal 1991:191).

Locus V had a Hellman's Blue Ribbon jar. The company was founded in 1913 and created their Blue Ribbon mayonnaise recipe in 1925 (Hellmann's 2026). A candy wrapper was found at Locus G. A yellowish-gold background with black writing, it reads "Mad[..] by the ma[…] BAR // SUPER [C]ARAMEL // SUPER // 5¢ CARD[…] / CARA[MEL] / SU[…]" The writing is mirrored along the long axis, with one "SUPER" running horizontally. Neither the specific candy bar nor manufacturer could be determined.

As in previous years, faunal remains were largely unidentifiable. One hundred and eleven small bone fragments, many burnt and calcined, were recovered from the excavation unit. They ranged in size from likely rodents to larger mammals. One was identified as an ulna from a larger animal. No other faunal remains were found.

Figure 58: Food and beverage containers. Top left: Jolly Time Volumized popcorn can lid, Locus I, photo by Hunter Newman. Top right: Ford Multi-Malt shaker, Locus I, photo by Hunter Newman. Bottom left: Mission Dairy milk bottle, Locus N, photo by Rachael O'Hara. Bottom right: Milk Depot milk or cream bottle, Locus N, photo by Emily Dale.

6.1.2. Non-Alcoholic Beverages

Non-alcoholic beverage bottles and cans were common at the 2025 Loci. Three diagnostic milk bottles were recorded at Locus N. One most likely originated at the Mission Dairy in Phoenix, from which, in previous years, we found Cottage Cheese foils (Figure 58). The broken colorless glass shard reads "M[…] / P[…] / PHOENIX […] / 36[…] / DAIR[Y…]". Per the 1930 Phoenix City and Salt River Valley Directory (Arizona Directory Company 1930:956), the phone number for Mission Dairy was 36707, which may account for the "36." A second bottle, from Flagstaff's Milk Depot, reads "[MILK DE]POT / [P]HONE 255 / [FL]AGSTAFF, ARIZ." on the front, and

“M” on the base (Figure 58). The Flagstaff Milk Depot was owned by the Etter family, and sold milk, cream, ice cream, and fountain drinks at their lunch counter. The 1929 Flagstaff City Directory lists their address as 22 N. San Francisco, and their phone number as 255 (Coconino Daily Sun 1929:38). They advertised their “Grade “A” Milk” in a 1932 edition of the NAU student paper (The Pine 1932:4). The milk delivery route was sold in 1940 and renamed Cooper State Dairy (Carney 2020), while the restaurant rebranded as Etter’s by 1942 (The Pine 1930:1). A second bottle base near the Milk Depot shard reads “NON REDEEMABLE / M D / BOTTLE”. The maker’s mark MD is not listed in the SHA or Glass Bottle Marks databases, and may instead stand for Milk Depot or Mission Dairy. Another Locus N milk bottle possibly came from the Pinewood Dairy. The glass reads “P[…] / DA[…] / FLAGST[…]. Intact Pinewood Dairy bottles found on-line have a similar format, logo, and font. Owned by Andy Matson (it’s not clear if there’s a relationship with the Apex Matsons), the dairy was in operation by at least 1929 at the “n.w. corner of town” (Coconino Daily Sun 1929:54).

Malted milk was also consumed at Apex. Locus N had the finish and screw-on cap of a “HORLICK’S / [T]HE [ORIGI]NAL / MALTED MILK” bottle. Developed as a nutritional supplement in Wisconsin in 1853, it was prescribed by physicians and dentists (Brinks 2016). Our lid seems to date between the 1920s and 1950s (Lockhart, et al. 2020:32), though the font in our example is entirely upper-case, while Lockhart describes this lid as having “The Original” instead. At the schoolhouse, a malted milk shaker was recovered (Figure 58). It has a pebbled texture, with ounce measurements from 2 to 16 running up the center. The shoulder bears the logo “FORD / MULTI-MALT”, while the base has the 1924-1930 “PC in a Divided Rectangle” logo of the Pacific Coast Glass Company (Lockhart, et al. 2018:11). Locus N also had an Ovaltine can lid and a Hills Brothers coffee can.

Soda was very popular at Locus N. A base embossed “USA / UBW / OZ” likely came from the Union Bottling Works of Ohio. They invented Chero-Cola, NeHi, and Royal Crown Cola (Historic Columbus 2021). They had 700 franchise bottling plants by 1920.

At least 28 green American Bottle Company soda bottles from mostly the Streator, Illinois plant were found at Locus N. The date codes place them early in Apex’s history, with one bottle each from 1925, 1926, 1927, and 1930, and ten from 1929 (Lockhart et al. 2017:365-366). Their contents, however, are unknown. Two Orange Crush bottles were found; one from the Illinois Glass Company dates between 1920 (the Orange Crush patent date on the bottle) and 1929, the end of their Diamond I logo (Lockhart et al. 2016:368, 376-377). The other was manufactured by Frank E. Brooks’ Skylight City Bottle Works in Flagstaff. A green Coca-Cola bottle from “[FLAGST]AFF / BROOKS / ARIZ.” has a stepped, bulbous base and straight sides not included in Coca-Cola bottle chronologies, though other examples were found for sale on-line. Brooks “controlled the entire Coca-Cola market in far Northern Arizona” by the mid-1920s with additional branches in Holbrook (Lockhart and Miller 2007:22). His Flagstaff branch operated

until at least 1930 when it appears in the Arizona State Business Directory (Gazetteer Publishing Company 1930:181). A hobble-skirt Coca-Cola bottle, bearing the December 25, 1923 patent date for the new design, from Flagstaff was also found at Locus N. Called Christmas bottles due to the patent date, the design and bottle date was updated in 1937 when the patent was renewed (The Coca-Cola Company 2026).

Locus N also has four Mission Dry Sparkling orange soda bottles in their signature black glass bottles. The bases with logos were made by the Illinois Pacific Coast Company between 1931 and 1932, based on the IPC in a triangle mark (Lockhart et al. 2016b:466-467). Shards of a triangular/polygonal Delaware Punch bottle were recorded at Locus H. The green bottle was made by the Illinois Pacific Coast Company using their IPG logo between 1925 and 1930 (Lockhart et al. 2016a:450-451).

At least eight Clicquot Club soda bottles, comprising bases and bodies, were recorded at Locus N, and no other bottles of this brand have been found at Apex, suggesting they were a personal preference (Figure 59). Clicquot Club was founded in Massachusetts in 1881 to create a sparkling cider, named after the French champagne Veuve Clicquot (Mike 2019), though they switched to ginger ale after a few years. In 1901, they adopted "Kleek-O the Eskimo[1] Boy" as their logo, who appeared on bottles, in advertising, on an animated sign in Times Square, and in a musical variety radio program, mostly after 1913. They added several flavors in the 1920s, including Pale Dry; they were the first to put a metal cap on a bottle (1893), the first to sell quart bottles (1934), and the first to sell soda in a can, the cone-top can (1938). Competition forced them out of business in 1969 when they were purchased. Three of the Apex Clicquot Club bottles are green, one is pale green, and four are aqua. Five have some version of "REGISTERED" around the heel or shoulder, likely indicating a patent or trademark. All five bases bear the image of Kleek-O holding a bottle of soda. Four have "RO" on the left of Kleek-O and "OT" on his right. Another green soda bottle base reads "RO X OT", marking it as an American Bottle Company bottle (Lockhart et al. 2017:367). Lockhart et al do not explain what RO OT means, however. Another base is marked "A" on Kleek-O's left, and likely "B" on his right, with 27N below, the initials for the American Bottle Company with 27N a date code for 1927 and the N standing for the Newark, Ohio plant (Lockhart et al. 2017:364-365). Finally, one Kleek-O base has the R-in-a-triangle mark in use by F.E. Reed between 1923 and 1956 (Lockhart, et al. 2015:18-21).

[1] We acknowledge this as a racist term and only use it here once at it was the official name used by the company.

Figure 59: Locus N Clicquot Club bottles, all photos by Alex Liu. Top left: Green "A [...] / 27 N" base. Top right: Aqua "RO OT" base. Bottom left: Aqua "RO OT" base. Bottom right: Green body fragments.

6.1.4. Alcohol

While the 2025 survey focused on non-residential areas, like the timber sales office, schoolhouse, and a privy, we still found ample evidence of alcohol consumption. Eleven cans of Budweiser Hop-Flavored Barley Malt Syrup were found, nine at locus N, and one each at Locus I and Locus L.

Two intact bottles, one a canning jar and one a whiskey bottle, were found as isolates on the hilltop west of Locus N along the fence line. Possibly the result of clandestine alcohol consumption or even moonshine, no other artifacts were found in this area. The whiskey bottle post-dates Prohibition, as it bears the “Federal Law Forbids” warning on the shoulder (Figure 60). Moreover, the Owens-Illinois maker’s mark is from 1935 and has the factory code 90, for

their San Francisco plant's liquor code. It has R85 on the base as well, as a rectifier number, but this number is currently unknown. The canning jar, from the Hazel-Atlas Glass company, bears the code "3 / [logo] / 0-4463" and follows the pattern of logo dating of the 1930s and 1940s (Lockhart et al. 2016:85).

Figure 60: Alcohol bottles. Left: Whiskey bottle found north of Locus N, photo by Emily Dale. Top right: Harry Wilkens screw-on lid, Locus N, photo by Alex Liu. Bottom right: Four Roses whiskey bottle, Locus H, photo by Damon Marcinko.

Other whiskey brands were present. Locus H has another 1935 San Francisco Owens-Illinois bottle, this one with "R216", another unknown rectifier code. A Four Roses whiskey bottle, covered in an embossed pattern of leaves from Locus H reads "D 11 / [BUY TH]IS BOTTLE ONLY IN / [TIN] TOP SEALED CARTON" on the heel, and "TM / RE[G U.S. PAT. OFF] / 56 [Owens Illinois logo] 4 / PENDING" (Figure 60). This means it was produced at the Charleston, West Virginia factory in 1934. The distiller's mark belonged to Frankfort Distilleries who

produced Four Roses whiskey in the highly recognizable bottle (Burke n.d.). Finally, a partial 1935 base has the codes for the Fairmont, West Virginia Owens-Illinois liquor bottles and possibly "R 174", the rectifier code for Mr. Boston whiskey (Burke n.d.).

Whiskey was also popular at Locus N. Two 1935 Terre Haute, Indiana (code 62) Owens-Illinois Bottle was registered for D134, the distiller code for Schenley, commonly used for their Old Quaker brand of whiskey (Burke n.d.). Definitely two, and likely four, bottles of Harry Wilkens whiskey, a brand that has not been found elsewhere at the site, were recorded at Locus N. Identifiable from the distinctive bottle, that bears a skyline of the distillery, a pattern of wheat on the shoulders, and Harry Wilkens Sr.'s signature, one finish fragment (Figure 60) also still had the unique screw-on metal lid with an image of Wilkens in a suit and bowtie (Crystal 2012; Emery 2012). One bottle base was made by Whitall-Tatum, with their W/T in an inverted triangle logo used on both medicine and liquor bottles. It also reads "12-5", the liquor code (12) and date code for 1935 (Lockhart et al. 2020:160). Unknown codes on the base include 30 and 3245.

Even the schoolhouse wasn't devoid of alcohol. Most date to at least 1935, meaning it may have been consumed at the end of Apex's occupation as worker's completed the final tasks of dismantling the schoolhouse in 1936. A G-in-diamond logo, likely for the General Glass Company, was developed a separate logo from 1935-1937 specifically for alcohol bottles and fruit jars (Lockhart et al. 2015:507-508). It has a liquor code of 67, and a distiller code of D-126, which belonged to Seagram's. A partial patent number would have read "92901", which was awarded to William Guyer on July 31, 1934 on behalf of Seagram's. This design has been found previously across Apex, and was used for several brands of their whiskey, including Calvert and Seven Crown, as well as Vandermint Liqueur and Wolfschmidt's Vodka (Burke n.d.).

Two more mysterious "R-19" bottles from the Latchford Glass Company's Los Angeles 84-liquor code were recovered. One at Locus L dates to 1935, while one from Locus N dates to 1934. As in the previous three years we have found these bottles, its identity remains unknown.

At Locus A, a colorless bottle finish still has non-ferrous seal attached. It reads "U.S. U.S. PAT. - CAN. PAT. - MEX. Pat. 1926 / #148101481035-#244403 - #2557 / MADE IN U.S.A.". Patent 1,481,035, for "Safety Seal for Bottles and the Like" was assigned to Walter A. Stattmann on behalf of the Public Safety Cap Company on January 15, 1924 (Stattmann 1924). Also at Locus A, a colorless bottle base reads "11 / 7 O[in oval] on the base" and "[…]ILLERY […] / S.A.". This was produced by D.M. Distillery Company from Juarez, Mexico from their Straight American Whiskey brand (Fields 2023). The maker's mark is unknown.

6.1.5. Food Preparation and Service

Evidence for canning was far sparser this year. Besides the canning jar discovered with the liquor bottle uphill from Locus N, only a likely Ball Mason jar fragment, a Kerr caning jar fragment

from Sand Springs, Oklahoma, one fragment of a Boyd's Genuine Porcelain Lined Cap, and a milk glass "MASON" jar cap were found, all at Locus N. Two pieces of a broken cast iron pan, labelled "CAST IRON" around the base also came from Locus N. A broken watermelon (green stem and pink bowl) uranium glass stemware fragment (Locus N; Figure 61), a colorless drinking glass (Locus N), and a pink depression drinking glass with overlapping panels similar to a palm tree trunk (Locus I; Figure 62) point to beverage consumption separate from bottles and cans.

Figure 61: Watermelon uranium glass stemware, Locus N, photo by Hunter Newman.

Figure 62: Food service vessels. Top right: Pink tumbler, Locus I, photo by Hunter Newman. Top right: Transfer-print floral lid, Locus N, photo by Damon Marcinko. Bottom left: Tashiro Shoten porcelain plate, Locus N, photo by Michelle Neathammer. Bottom right: Stoneware sherds of a Lash's Root Beer mug, Locus N, photo by Lucie St Clair.

Ceramics were far less common than in previous years and most were undecorated WIE and porcelain sherds found at Locus H and Locus N. Several WIE plate fragments at Locus N had a unique pattern of blue diamonds separated by black lines with white flowers in the center, and a yellow fleur-de-lis shape with yellow-and-green bands. A matching teacup shard was found, too, which also had gilding around the rim and handle. More shards of the white porcelain with blue

swirls found across the site were recovered at Locus N. A transfer-print and hand-painted lid, possibly for a sugar bowl or similar small vessel, was recovered from the surface of the excavation unit (Figure 62). It has a floral design with pink roses, small blue flowers, green leaves, yellow trim against a black background interspersed with black dots and circles. Other pieces with different floral designs and blue stripes were also found.

Two ceramics with maker's marks from Locus N were found. One WIE sherd reads "[…]ED[…]" in green and hasn't been identified. A Tashiro Shoten Limited porcelain originated in Japan (Figure 62). The red, stamped, maker's mark, a "TA" in a flower, is accompanied by "MADE IN / JAPAN" (Lacrosse 2024). The piece was possibly licensed by Noritake China who specialized in importing pottery from Japan and grew out of a trading company originally established in New York. While Tashiro Shoten closed in 1954, the use of "Japan" dates between 1921 and 1941 when exported ceramics were required to be marked with Japan or Made in Japan. *Shoten* refers to a business that sells products made in its own kilns (Nilsson 2026).

Most of the ceramic sherds were too small to identify shape, but were likely plates, bowls, and other serving vessels. A few teacup fragments and handles were also found at Locus N, as were a utensil handle, butter knife, a ferrous plate and bowl, an enamelware plate, a possible enamelware pan handle with a hole in the end for hanging, and a blue enamelware kettle. A metal mug was recorded at Locus I. Sixteen sherds of a Lash's Root Beer promotional mug were recorded at Locus N (Figure 62). The company originally made bitters, but likely switched to root beer in 1920 with the dawn of Prohibition, and they changed their name from Lash's Bitters to Lash's Product Company (Mike 2017). The logo on the side of the mug, "[L]ASH'S / [ROOT] BEE[R] has black text with blue and white lines above the logo and a black line underneath "Lash's". The Sherwood Brothers Pottery in New Brighton, Pennsylvania made the mugs (Yates 2003:39).

A WIE fragment with yellow and white transfer-print flowers and green transfer-printed leaves has the logo for the Edwin M. Knowles China Company was found at Locus V (Shelly n.d.). It is the sailing ship logo with "MADE IN U.S.A" printed on the bottom along with the date code of 34-7. The code provides a manufacture date of July 1934.

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

Vinyl record fragments were the most only music-related item found in 2025. Nine record fragments were found at Locus N in the excavation unit. One reads "875", possibly a partial catalog number.

6.2.2. Clothing

Far fewer clothing elements were recovered in 2025, likely because no distinctly domestic areas were recorded. Shoe fragments, represented by rubber and leather soles, non-ferrous eyelets, were found across Locus N. Six buttons, one fish-eye shell button from Locus H and two fish-eye shell buttons, two dished shell buttons, and one flat bone button from Locus N, were recorded. A small non-ferrous pin had a floral pattern of plant or flower stems etched on the front. Suspenders (or similar) buckles were also found at Lous N. A possible clothing buckle reads "BBVGE", "RBVCE", or some combination of Bs, Rs, and Cs embossed on front (Figure 63). Found between Locus N and Locus KLM, it remains unidentified.

Figure 63: Possible clothing hardware, between Locus N and Locus KLM, photo by Emily Dale.

Part of a pocket-watch case was recorded at Locus K. It's silver with worn edges and a scratched back, from wear.

6.2.3. Health and Hygiene

Personal hygiene and grooming objects included a Listerine bottle (Locus N), two A.S. Hinds Honey and Almond Cream bottles, one of which came from the Whitall Tatum company (Locus N), two Mentholatum jars (Locus N), and a likely Pond's jar (Locus N). A Harriet Hubbard Ayer milk glass bottle at Locus I likely contained some form of lotion or cold cream. Ayer founded her self-named cosmetics company in 1886. She made perfumes, "toilet preparations," cold cream, freckle lotion, wrinkle eradicator, soap, face powders, nail bleach, and face cream (International Perfume Bottle Association n.d.; Kelly 2026).

Medicines were also found during the 2025 season. A likely Dr. Caldwell's Syrup bottle (Locus H), Fletcher's Castoria bottle (Locus N), and Charles H. Phillips Milk of Magnesia (Locus L) were both laxatives. The cobalt Milk of Magnesia bottle dates between 1928, when the company added threaded caps, and the 1950s (Lockhart, et al. 2018:11-13). Two Chamberlain's bottles (Locus N) contained either their Colic, Cholera, and Diarrhea Remedy or Cough Remedy, popular during the 1920s before the company was sold in 1930 (Jessica 1930). One base reads "9 BOTTLE. / MADE IN U.S.A." Shards of an Illinois Glass Company Lyric bottle (Locus N) dates between 1915 and 1929 based on the Diamond I logo (Lockhart, et al. 2016:368). The company's lyric line consisted of prescription medicine bottles (379-381), and measuring lines up to at least 50CCs run up the sides. Likely medicine bottles include a panel-body aqua shard that reads "[…]NIC", possibly for "tonic" (Locus N), an intact, small 1929 Owens Bottle Company bottle with a prescription finish, and a partial colorless, panel-body Pierce Glass Company bottle (Locus I).

A non-ferrous, silver-colored cap with a stylized "P" or "d" on the top possibly came from a hygiene or medicine bottle or jar at Locus N (Figure 64). It remains unidentified, but does not match any Pond's lids found on-line.

A Co-Re-Ga can was found at Locus G. The flask-style can has a screw-on lid embossed "CO-RE-GA / CAP / PAT.APP.FOR". Now called Corega (though the date when the name change occurred is unclear), the company makes dental appliances (National Museum of American History). Our can likely contained a denture adhesive powder. A small, intact, likely medicine, bottle was also found at Locus V. From the Illinois Glass Company, it used the Diamond-I mark from 1915-1929.

Figure 64: Unidentified non-ferrous lid, embossed with "P", Locus N, photo by Hunter Newman.

6.2.4. Tools

Several tools point to the everyday, personal maintenance tasks at the logging camp, including a pencil ferrule (Locus N) a round file with a wooden handle (an isolate between Locus KLM and Locus N), a stirrup-shaped shovel handle (Locus N) and a shovel blade with illegible writing (Locus N), a metal knife handle with a clip to attach to a belt and a decorative, textured body (Locus N; Figure 65), and three saw blades (Locus N). A “WYOMING / RED EDGE / REG. U.S. PAT. OFF. / 6 28” shovel handle was manufactured by the Wyoming Shovel Works of Wyoming Valley, Pennsylvania. Little information is available on-line about the company, but they were in existence from at least 1910, when they placed an advertisement in *Track Standards*, a publication of the Railway List Company (Rehm 1910:183). A 1917 catalog declared their Red Edge Shovels as “guaranteed to be perfectly satisfactory in every respect” (Wyoming Shovel Works 1917:804). Their 1926 catalog was their eighth edition (Wyoming Shovel Works 1926). The company was acquired by the Ames Company in 1931, resulting in the new Ames, Baldwin, Wyoming Company in 1933 (Casper n.d.).

Figure 65: Locus N Tools. Top left: Knife handle with belt clip, photo by Alex Liu. Top right: REM-UMC shotshell, photo by Damon Marcinko. Bottom left: Eveready flashlight case, photo by Chelsea Tenney. Bottom right: Sears, Roebuck, and Co flashlight end cap, photo by Rachael O'Hara.

A bottle of Singer Manufacturing Company sewing machine lubricating oil suggests there was at least one sewing machine at Apex, possibly at Locus N. Our logo, an S made of numerous dots, dates between 1885 and 1951 (The Featherweight Shop 2024; Jessica 2014; Singer Sewing Info 2026), while the Illinois Glass Company Diamond I maker's mark dates between 1915 and 1929 (Lockhart et al. 2016:368, 376-377). The lubricating oil may also have been reused on other machinery. A safety pin was found in the Locus N excavations.

A broken flashlight at Locus N was seemingly repaired by adding a Sears, Roebuck, and Co Shurlite end cap to an Eveready case (Figure 65). The fit wasn't quite right, as the end isn't screwed on completely, and the cap is cracked, as though it was forced on. The end cap reads "SEARS ROEBUCK AND CO / SHU[RLITE] / CHICAGO / [dot] DALLAS [dot] PHILADELPHIA [dot] SEATTLE [dot]." Sears, Roebuck and Co sold their Shurlite flashlights by at least 1919 (Sears Roebuck and Co 1919:1095A). Interestingly, the catalog also contained Eveready Daylos on the previous page (1094A). The case is an "EVEREADY CASE NO 2604 2

UNIT CELLS NO 950 LAMP NO 1198 / MADE IN U.S.A.". A 1914 Eveready catalog describes case 2604 as "Tungsten Tubular", with a "vulcanized fibre case" (Eveready 1914:4). No price was listed, but other flashlights in the catalog sold for between $2 and $4 (6, 10). A 1916 catalog describes the model as "1½ x 6½ in., complete" with a price of $1.60 (Western-Electric Company 1916:133). Unit Cell 950 is likely a D battery. Both the case number and lamp number are different from the other intact flashlight found at Apex.

Other tools point to the logging operations themselves, like a 1-meter-long logging chain (Locus N). A Union Oil Company spray can came from the California company founded in 1890 (Wikipedia 2026). Promotional photos from the company dating to 1931 display a similar object used as a fly spray gun (Whittington n.d.), but other examples on-line were used for lubrication. A California Cap Company lid dates between 1910 and 1930 when the blasting cap company used the logo of a lion standing on four paws and facing left (Graeme 2013; Schroth 1992). They mainly marketed to the mining industry, but were also commonly used on railroads. Our lid likely came from a No. 6 or No. 8 blasting cap, which the company called "Lion detonators" and "Special Lion detonators", respectively, likely because these tins bore their lion logo (California Cap Company 1910:19-20).

One shotshell was found at Locus N. The centerfire cartridge headstamp reads "REM-UMC / No 12 / NITRO CLUB", while the side reads "REMINGTON-UMC". Remington Arms and the Union Metallic Cartridge Company merged in 1912, and began using the "REM-UMC" headstamp in 1915 (Aussie Metal Detecting & Fishing 2026; Steinhauer n.d.). It was advertised as a bulk and dense, smokeless powder paper shell. Catalog advertisements for the style continued until 1937. Brass shells were replaced by plastic in the 1960s. This particular shell, then, likely dates between 1915 and 1942.

Finally at KLM, a switchblade, rusted in the switched out position, has a non-ferrous casing and ferrous blade.

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

Toys were rare at the Loci recorded in 2026, unsurprising given that we surveyed what was possibly the timber sales office, schoolhouse, and a privy. One marble, the only one recovered so far at Apex, was found in the Locus N box frame excavations. Made of marble, it was brown and pitted. At the schoolhouse, a modified can had a hole punched through the center of the lid, which was partially removed with a can opener. A long non-ferrous wire was threaded through the lid hole, and attached to a tall rod. This may have been an improvised toy, designed to swing

around the head or jump over (like a Skip-It). Alternative uses include serving as an animal alarm, where the rod was secured in the ground and disturbances caused the can to rattle.

Figure 66: Toys, all photos by Emily Dale. Top left: National cap gun, Locus KLM. Top right: Ma-Ma box lid, interior, Locus N. Bottom: CLEMENT handle, Locus N.

The final toy was a Ma-Ma box (Figure 66). The ferrous lid, with crimped sides, would have been secured to a canister that, when tipped, produced a noise similar to “ma ma”. The top of the lid reads “GRUBMAN ENG [& MFG CO] / [illegible patent number] / 1,588,354 / 1,590,188 / 1,619,204 / 1,658,982 / NEW YORK CITY” (Table 1). Leo J. Grubman was an inventor. He held a patent for an Erie, Pennsylvania manufacturing company for a washing machine. By 1911, he had relocated to New York City, where he filed a patent for a speed measuring machine. By 1923, he had founded his own business, Grubman Engineering and Manufacturing Company and began patenting several “sound producing machines”. He also held numerous patents for phonographs and dolls with movable eyes, including some for Voices Incorporated. Grubman combined his interests in sound and dolls, with the Ma-Ma box, which were:

> installed in dolls for simulating the crying sound of a baby — its pronouncing of ma-ma — and comprises a flexible bellows, a short tubular casing in which the bellows is inclosed, and which serves both to operatively support the bellows and prevent foreign matters, such as the stuffing of the doll, from interfering with the proper function of the bellows. One end of the bellows is anchored, while its other end is free to move, and the anchored end of the bellows is closed by an anchoring disc, while the free end is closed by the weighted disc. Either disc, weighted or anchored, is provided with an opening, in which is placed a sounding reed. When in an upright position, the weight will act, upon the influence of gravity, to fully expand the bellows, and, when the device is inflated, the weight will collapse the bellows, forcing the entrapped air through the reed, producing the sound (VOICES v. Up-to-date MFG Co 1930).

Late-1920s Sears, Roebuck, and Co (1928:481, 1929a:476, 1929b:631) catalogs sold Ma-Ma dolls for between 59¢ and $2.45 ($11.50 to $46 today), with more elaborate models also able to close their eyes and flutter their eyelashes and move their arms and legs.

Table 1: Leo J. Grubman patents recorded on the Apex Ma-Ma Box

Number	**Title**	**Date**
1,588,354	Sound Producing Device	June 8, 1926
1,590,188	Sounding Reed	June 29, 1926
1,619,204	Sound Producing Device	March 1, 1927
1,658,982	Sounding Reed for Criers, Voices, and Other Sound Producing Devices	February 14, 1928

A final piece of evidence for children outside of their homes and the schoolhouse is a lead band or handle with “CLEMENT” punched into the surface, as though with a hammer and nail (Figure 66). Each letter is made up of several punches, and the writing is close to the left end, as though the writer was unsure how much space the name would take up. Clement Anderson, the son of Arvid and Margaret Anderson, was 7-years-old in the 1930 census.

At KLM, a broken ferrous toy gun had a molded handle to look like a grip. It reads “National” in cursive (Figure 66). While no specific information about the company’s history could be found, numerous ebay listings reveal they made a cap guns in a variety of arms styles. Ours matches one that seemingly dates to 1925.

6.3.2. Tobacco

Evidence for tobacco use was found across all 2025 Loci. Upright tobacco tins were most prominent at Loci H, where a large scatter of nearly 100 cans was recorded, though none had any identifying marks as to brand. Seven Copenhagen flat oval cans were recorded, six at Locus N

and one at H. The cans were embossed with both the earlier “COPENHAGEN / SNUFF” (1906-1935) logo and later “COPENHAGEN SATISFIES” slogan (1935-1990) (Rock and Davis 2015), indicating a popularity across the timeline of Apex’s occupation. A small ferrous lighter at Locus N may have been used for cigarettes (Figure 67).

Figure 67: Lighter, Locus N, photo by Rachael O'Hara.

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. Unsurprisingly, as the Loci we investigated in 2025 were not domestic areas, fewer domestic artifacts were found this year.

Bed or furniture springs, a small skeleton key, a cuprous light bulb base, stove parts, stovepipes, and flashing were recorded at Locus N. A ferrous trunk, suitcase, or luggage strap was found at Locus I, alongside a possible stove pipe, car part, or large whistle (Figure 68). The object is a hollow, ferrous tube with a ferrous cylinder attached at one end, and a ‘lid’ with a hinge on one side with a cap and bolt in the center of the top.

Figure 68: Domestic items. Top left: Mazda light bulb, between Locus N and Locus KLM, photo by Damon Marcinko. Top center: "GERMANY" Christmas tree clip, Locus N, photo by Lucie St Clair. Top right: Decorative green glass bowl, Locus N, photo by Rachael O'Hara. Bottom: Unidentified metal pipe item, Locus I, photo by Hunter Newman.

Eight fragments of paper, possibly from a newspaper or catalog, were recovered from the excavation unit at Locus N (Figure 69). There are at least three different fonts, indicating different items, different pages, different advertisements, etc…. The longest, legible piece reads "[…] te / […] Hawthorne […] / Only / […]au[…] A / […]ny nation[…] / Taking the […] / […]ted rims / ----headlig[hts] / For[…]". Hawthorne bicycles were produced by Montgomery Ward in the 1930s that had electric lights, so that is a possible source. A piece of foil from the excavation unit has a target design of two concentric circles with a cross running through it.

Figure 69: Paper fragments, Locus N, photos by Damon Marcinko.

Numerous artifacts were associated with the community and domestic sanitation of Apex's home and work spaces. Two Clorox bottles were recorded at Locus H, one dating from 1932-1937 based on the writing on the shoulder and heel. The second bottle came from the Owens-Illinois San Francisco plant (#21) in 1933. Locus N had two Clorox bottle bases, which are not dateable. An O-Cedar bottle base came from the 1906-founded mop and broom company that also made several polishes and waxes sold in bottles. They were named for the use of cedar leaves in the

original formulas for their oil products (Freudenberg Home and Cleaning Solutions GmbH 2019). An Old Dutch Cleanser can lid was found at Locus I.

A small, blue lightbulb was found, but not fully recorded or officially photographed as we were unable to relocate it, between Locus KLM and Locus N (Figure 68). Besides "MAZDA", the one photograph shows additional, but illegible text. General Electric and Westinghouse used the Mazda brand for their tungsten filament bulbs starting in 1909 (Wikipedia 2025). The bulbs were advertised for several domestic purposes, including for Christmas lights (Nelson 2008).

Definitely associated with Christmas decorations was a small clip with a hole in one end embossed with "GERMANY" (Figure 68). The Christmas tree clip would have attached to a tree branch via the clip, and a small ornament or candle would have been inserted into the hole (Dahlsad 2013). The clip itself is decorative, in a fish-like shape (though not resembling a fish), with a rounded end with scalloped grooves where the clip closes and the hole is, and a triangular end, where the clip is pressed open.

Decorative domestic elements include a scalloped milk glass jar (Locus H), a green glass bowl molded with a floral pattern on the base (Locus N; Figure 68), an amethyst bowl with etched stems, leaves, and starburst patterns on the sides (Locus N), and an amethyst vessel with Art Deco-style molded sides and a polygonal base (Locus N).

6.3.4. Transportation

Three motor oil cans were recorded at Locus N. One was Lubrite "Light Heavy / SAE 40". The company was based out of St. Louis, Missouri and was acquired by Mobil who continued to use the Lubrite name into the 1970s (Sheffer 2013). The use of "Light Heavy" as a descriptor of motor oil was only found in conjunction with Lubrite. SAE 40 was preferred for high-temperature operation, such as diesel engines and heavy equipment (Sanite Oil Company 2023). It may not, then, have been used by the standard cars at Apex, but rather in the logging equipment. Two Quaker State cans read "LIGHT COLD TEST /10 W". 10W is a light viscosity, good for winter driving and cold weather. Vintage signs for Quaker State found on ebay advised, "Use Quaker State cold test oil for winter driving." It was suitable for Model-Ts and points to winter activity at the camp.

A rubber and non-ferrous metal objects with a series of slots and a rubber dial on top, and held together with a ferrous rod is labeled "WILLARD". The Willard Storage Battery Company produced batteries for a variety of objects, including dentist and physician equipment, phonographs, and railroad cars, starting in 1902 (Case Western University 2026). They increasingly entered the automobile market, and began manufacturing car batteries in 1908.

Two possible brake lines parts were found at Locus I and Locus N. A non-ferrous rod with a twist in the middle and a ferrous threaded end resembles a small trumpet. A Flagstaff Festival of

Science tourist said it looked like part of an old brake line. We have not been able to match this to any known car models at Apex.

6.3.5. Architecture and Utilities

Locus N had several intact portions of architecture. An intact window frame of eight beams and possible wall were near the foundation at Wood Scatter 1. The sunken wooden box in Wood Scatter 2 still has an unknown function. One culturally modified tree at Locus N had five nails, one on the west side, and four clustered together on the south side. A large, L-shaped cast-iron piece at Locus N may be part of the railroad infrastructure. It is embossed […] O. EC. 40" on the inside, though the purpose of the text is unknown.

6.4. Mystery Objects

Several objects recorded in 2025 feel like they should be identifiable, but no information on them has been found. They are grouped here as their functions are currently unknown.

A bottle base has a six-sided star, possibly a Star of David, as many Jewish bottle manufacturers used this mark, per the SHA Bottle Website, or a Brewer's Star, used on numerous beer bottles (Nachel 2025; Pratt 2021). Another bottle at Locus N has the backwards "No. 72" writing on the inside of the bottle base, similar to those found at Locus J and Locus KLM in 2024.

In and around the Box Frame at Locus N, several fragments of a wooden base with holes was recorded. The holes are filled with bristles of an unidentified material, bundled together with ferrous wire. The ends appear to be melted or caked with tar. It was possibly a broom with melted bristles, part of roofing, or some other undetermined function.

A cylindrical, ferrous can (9cm tall x 4.5cm diameter) at Locus N has one cut end, while the other has a hood welded on and a ferrous straw (about 2cm long) underneath the hood. There's a small hole in the center of the lid welded with lead solder.

6.5. General Conclusions

The 2025 field season provided confirmation of some of our previous conclusions, while also providing new perspectives at the site. Common brands continue to display likely reliance on the company store for key staples like Calumet Baking Powder, Maxwell House Coffee, Copenhagen chewing tobacco, Clorox bleach, and perhaps even Budweiser Malt Syrup Extract. More unique items, like the cosmetics and children's toys, point to origins outside of Apex.

The early dates of the soda bottles at Locus N points to an early occupation at this part of the site. Its proximity to the main branch of the rail line and placement at the southern-most end of Apex may have meant it was the launching point for construction elsewhere. The lack of domestic items also suggests a more practical function than a domestic one. Moreover, several brands found at Locus N have not been recorded elsewhere at the site, like Clicquot Club soda

and Harry Wilken whiskey. Conversely, the lack of artifacts at the Locus I schoolhouse suggests limited use of this area outside of school hours.

7. PUBLIC TOURS

Throughout the May to June field season, we conducted 11 tours, resulting in nearly 100 visitors to the site (Figure 70). 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 and Coconino National Forests, Grand Canyon National Park, and numerous friends and family of project staff. Two public tours were advertised as Arizona Humanities sponsored visit, a new strategy for 2025. NAU Marketing visited, as well, and took promotional photos of the students. We also provided a September 2025 tour through the Flagstaff Festival of Science and an October 2025 tour for the Coconino Center for the Arts FELLED exhibit artists.

Figure 70: Public tours. Top left: Michelle Neathammer shows off artifacts from the excavation unit to Rachael O'Hara (center), Alex Liu (right), and Kaibab National Forest employees, photo by Lucie St Clair. Top right: Rachael O'Hara (right) talks about an alcohol bottle to Coconino National Forest employees, photo by Joshua Biggs. Bottom left: Flagstaff Festival of Science visitors explore a can dump, photo by Emily Dale. Bottom right: Alex Liu (left) and Rachael O'Hara (second from left) answer questions while Kaibab National Forest employees sit at the Welcome Center, photo by Lucie St Clair.

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.

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, and likely conclude, field work in 2026. Our 2022, 2023, 2024, and 2025 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 2026 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. Locus Q, the railroad maintenance pit, will be cursorily surveyed. The site contains numerous fragments of asbestos on the surface, and the material likely suffuses the soil, making the area dangerous for focused work. The Forest Service mapped the area in some detail in 2026.

8.1. Publications

The lead-up to and results from the 2025 field season have already been published in a variety of venues. Northern Arizona University overhauled their website starting in January 2026, so we were unable to access the blog website to upload new research. As a result, we paused the Apex, Arizona Archaeology Blog for the time being. We used up the remainder of our Youth and Veteran's Engagement Grant funds in August to October 2025, funding 12 students across 11 projects. Student posters are in Appendix B, blogs are located in Appendix C, and KNF grant projects not included elsewhere in this report are found in Appendix D. The following table lists the numerous paper and poster conference presentations, invited talks, newspaper coverage, and journal articles emerging from our 2025 field season so far:

Name	Title	Date	Venue	Mode
Rose Houk	Earth Notes: Apex Archaeology Project	May 2025	KNAU	News Radio Piece
Emily Dale	California Dreamin': Apex-Los Angeles Connections	July 2025	Apex, Arizona Archaeology Project Artifact Blog	On-Line Blog Post
Adrienne Dale	Passport in Time Projects at the Apex Site	August 2025	Apex, Arizona Archaeology Project Artifact Blog	On-Line Blog Post
Emily Dale	Apex, a Northern Arizona Logging Camp	August 2025	Riordan Mansion Lunchtime Lecture Series	Paper Presentation
Fran Maiuri	Stepping Through Time to Apex Footwear Artifacts	September 2025	Apex, Arizona Archaeology Project Artifact Blog	On-Line Blog Post
Rachael O'Hara	"A Tablespoon As Needed": Medicinal Alcohol at Apex in the Prohibition Era	October 2025	Apex, Arizona Archaeology Project Artifact Blog	On-Line Blog Post
Emily Dale	Historical Archaeology at an Arizona Lumber Camp	November 2025	Department of Anthropology Speaker Series	Paper Presentation
Rachael O'Hara	Exploring Prohibition Alcohol Consumption at Apex	November 2025	Department of Anthropology Speaker Series	Paper Presentation
Matt Harwood	Traveling Without a Train: Evidence of Cars at Apex	December 2025	Apex, Arizona Archaeology Project Artifact Blog	On-Line Blog Post
Callen Gagne	Saginaw Mill (Williams, Arizona).	December 2025	USFS Youth and Veteran's Engagement Grant Project	Unpublished Research Paper
Matt Harwood	Apex Arizona Car Parts Map	December 2025	USFS Youth and Veteran's Engagement Grant Project	Unpublished Research Poster
Alex Liu	Ceramic Maker's Marks at Apex	December 2025	USFS Youth and Veteran's Engagement Grant Project	Unpublished Research Paper
Allyanna Marshall	Apex Phytolith, Macrobotanical, Pollen report	December 2025	USFS Youth and Veteran's Engagement Grant Project	Technical Report

Sarah O'Donnell	Geospatial Mapping of Loci within the Apex, Arizona Archaeology Project Site	December 2025	USFS Youth and Veteran's Engagement Grant Project	Unpublished Mapping and Digitizing Project
Madeleine Levesque	Evolving Notions of Health and Hygiene at the Saginaw-Manistee Logging Camp of Apex, Arizona	January 2026	Julian D. Hayden Paper Competition	Paper Competition Submission
Emily Dale and Rachael O'Hara	Training Historical Archaeologists for the Southwest	February 2026	*Journal of Arizona Archaeology*	Journal Article
Rachael O'Hara	Northern Arizona's History of Skirting Prohibition	March 2026	History Happy Hour, Treasure Flagstaff and Townsite Community Land Trust	Paper Presentation
Abigail McAlister	Ceramic Patterns and Similarities at Apex	April 2026	USFS Youth and Veteran's Engagement Grant Project	Unpublished Research Poster
Lucie St. Clair and Chelsea Tenney	Cold Cream: The Cosmetic Cure of Apex	April 2026	NAU Undergraduate Research Symposium *and* USFS Youth and Veteran's Engagement Grant Project	Poster Presentation
Lucian Hester	The Making of Jack-O'-Canterns and Other Modified Cans at 1900s Logging Town in Apex, Arizona	April 2026	NAU Undergraduate Research Symposium	Poster Presentation
Emily Dale and Rachael O'Hara	"A pile of old cans can have a much deeper story": Lessons from Public Tours of a 1930s Northern Arizona Logging Camp	April 2026	Society for American Archaeology	Paper Presentation

Rachael O'Hara	"Federal Law Prohibits": Prohibition-Era Alcohol Consumption at the Apex Logging Camp, Arizona	April 2026	Society for American Archaeology	Paper Presentation
Rachael O'Hara	Science in the Community Leadership Education Day	May 2026	Flagstaff Festival of Science	Panel Discussion
Rachael O'Hara	Sköl! Alcohol Consumption and Swedish Immigrant Identity in the Prohibition Era at Apex Logging Camp	May 2026	Northern Arizona University *and* USFS Youth and Veteran's Engagement Grant Project	Master's Thesis
Emily Dale, Timothy Maddock, and Rachael O'Hara	"A Dash of the Viking:" Ethnic Identity in an Immigrant and Migrant 20th-Century Logging Community in Northern Arizona	In Progress	*Material Culture of the Ethnic Diversity in the Industrial West*, SHA Material Culture Series	Book Chapter
Zulia DeWire	Just Add Water: How Early Advertising Shaped Cocoa Powder Diversity at Apex, Arizona	In Progress?	USFS Youth and Veteran's Engagement Grant Project	Article Submission

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APPENDIX A

NAU 2025 Apex Field School Phytolith, Macrobotanical, and Pollen Analyses

Allyana A. Marshall
Northern Arizona University

APPENDIX B

Student Posters, 2025 to 2026

The Making of Jack-O'-Canterns and Other Modified Cans at 1900s Logging Town in Apex, Arizona
Lucian Hester
NAU Undergraduate Research Symposium
April 2026

THE MAKING OF JACK-O'-CANTERNS AND OTHER MODIFIED CANS AT 1900S LOGGING TOWN IN APEX, ARIZONA

NAU Northern Arizona University — Department of Anthropology

NAU Northern Arizona University — College of Social and Behavioral Sciences

LUCIAN HESTER

DR. EMILY DALE, I2S ADVISOR

ABSTRACT

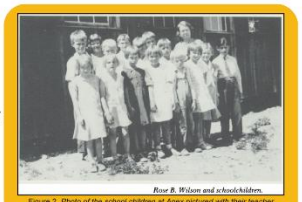
Modified cans can be any can modified from its original form; it can be as simple as repeated holes punched in with no pattern or purpose or a purposeful modification that changes the purpose of the can. There are many modified cans found at this 1900s logging town in Apex, Arizona. Some are styled to look like Jack-O'-Lanterns, nicknamed Jack-O'-Canterns. This is an experiment in how these cans and others like them may have been made using the materials available in the time period. For this experiment, I punctured and cut an unlined paint can with a variety of tools to replicate the marks on cans made at Apex.

INTRODUCTION TO APEX

Established by the Saginaw and Manistee Logging Company in 1928, the Apex logging camp operated until 1936. It's located 52 miles north of Williams, Arizona along the Grand Canyon Railway in the middle of the ponderosa pine forest. The town had a large population of first- and second- generation Swedish immigrants and their families. The camp demographics also included Mexicans, Europeans, Norwegians, and Finns. The men worked in various positions to harvest timber for the building of railroads, homes, produce crates, and other wood goods. The town was made up of dorms for the workers, family homes, and a school house. Their kids attended what would be one of the only unsegregated schools in Arizona in the 20th century (Foley 2024).

JACK-O'-CANTERN?

Jack-O'-Canterns are a type of modified can found at Apex that resemble a Jack-O'-Lantern (*Fig.1*). They were made from old-styled food storage cans after they had been emptied. These were likely made by young children at the camp (*Fig. 2*), most likely between the ages of 7 and 14 (Dale n.d.), at the Apex school during the Halloween season. They used cans rather than foods like pumpkins (the most popular one used for making Jack-O'-Lanterns), radishes, potatoes, and others (HISTORY.com Editors 2019) possibly to reduce food waste in a camp that was further from access to quick food supply.



Rose B. Wilson and schoolchildren.

Figure 2. *Photo of the school children at Apex pictured with their teacher (Richmond, 2017:86)*

OBJECTIVE

The goal of the experiment was to test different tools that were available at Apex to replicate the making of the the Jack-O'-Canterns on cans that are similar to those at Apex. These items include:

- Flat-sided cans (Unlined paint cans)
- Knives
  - Several varieties (K1-6)
- Hammer and nails
  - Three sizes of nails (Nail 1-3)
  - 4oz metal hammer (H)
- Screwdriver
  - Phillips Head (PS)
  - Flat Head (FS)
- Can Opener (CO)
- Boxcutter (BC)
- Scissors (SC)

Figure 3. *The type of can that was used for experimentation, unlined paint cans. Photo by Lucian Hester*

Each of these items, pictured in the leftmost image in *Fig.4*, was tested using the same type of can that most closely resemble those found at Apex (*Fig.3*). The closest modern, available can resembling those found at Apex are unlined paint cans. This means no epoxy, plastic, or other type of liner was applied to the inside to affect the durability and thickness of the can. Modern food cans were not used for this experiment due to the differences in construction of the cans, mainly corrugations along the sides that would change the way tools would puncture the material. The tops and sides of the paint cans were used for all experimentation to limit difference in thickness, material, etc. during experimentation. By the end of this experiment, I identified the most likely tools used used at Apex for making many of the Jack-O'-Canterns.

METHODOLOGY

In this experiment, I tested each tool on a can that had not previously been marked, cut, or punctured (*Fig 4.*). I then compared each mark against the pictures of modified cans at Apex and the to determine the likelihood of each tool making the known marks. I accounted for both if the tool was found at the site or in the early 1900s, and if the tool made marks similar to what was made to the modified cans at Apex. Each tool was a modern version of what could have be found at Apex for safety. I tested sharp objects, such as the knives, using cuts that made triangular shapes that resemble marking found at Apex. Tools that were more blunt or unable to slice well, such as the nails and the can opener, made puncture marks that went straight down either by itself or will the assistance of a hammer. I tested the can opener and the scissors in two different ways that were special to the specific tool. The can opener was used both in a stabbing motion to puncture straight down and used as intended using the side of the can as leverage to puncture. The scissors were used both closed, with both blades used to attempt to puncture the cans, and opened, using only one blade to puncture. Tools such as the nails and the two types of screwdrivers were both used by themselves and with the assistance of a hammer to exert more force to better pierce the can.

Figure 4. *Images of Lucian Hester performing the experiment, using a hammer and nail on one of the paint cans to make marks. Photos by Emily Dale and Makai Jaimes*

Figure 1. *A collection of Jack-O'-Canterns found at Apex, posed inside of a car hood. Photo by Makenzie Long.*

RESULTS & KEY FINDINGS

Based on the results of the experiment, I determined that multiple tools markings are similar to those seen on the modified cans at Apex. These tools are (*Fig.4*):

- Nail 1-3
- K3 and K5
- Box cutter (BC)
- Scissors (SC)
- Can opener (CO)

When compared to the pictures of cans found at Apex, the markings made by these tools seem the most similar. Out of all items, the nails, the box cutter, and K3 and K5 were the ones most likely used at Apex. The three knives (K3, K5, and K6) were all able to puncture the can, but K6 was particularly difficult to use in cutting the cans and puncturing all the way through without getting stuck when trying to pull it out. This makes it doubtful that it would have been used by the children who would have been making these Jack-O'-Canterns. K3 and K5 both made clean cuts and were easier to use for puncturing and slicing relative to the other tools used. A few of the Jack-O'-Canterns found have square holes, and these were likely made by nails and a hammer. The long slices seen on some of the cans were likely made using a box cutter or knife depending on what was available. The large Jack-O'-Cantern made in the experiment (Comparison in *Fig.6*) was made using only K5 as it was the easiest to use when puncturing and making markings on the cans. The Jack-O'-Cantern was made to replicate the large one found at Apex seen in the center of *Fig.1*. The one directly to the left of the large can was also replicated in this experiment, a comparison is seen in *Fig.8*.

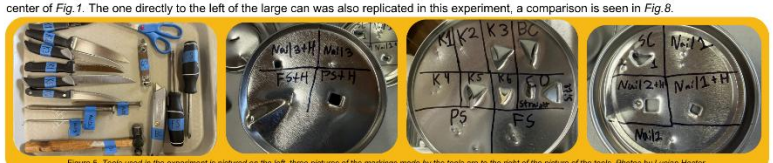


Figure 5. *Tools used in the experiment is pictured on the left, three pictures of the markings made by the tools are to the right of the picture of the tools. Photos by Lucian Hester.*

ANALYSIS & DISCUSSION

The data shows that the most likely tool used at Apex was a combination of a sharp, possibly serrated, knife, nails and a hammer, and possibly scissors or a workman's knife of some kind. Other tools made similar marking to those seen on the other modified cans (*Fig. 4*), but they were not included as a possible item used due to not being found at the Apex site, not being widely available, or difficult for a child to use. Other modified cans seen at the site (*Fig.7*) may have been made using other piercing instruments instead of what was used for the Jack-O'-Canterns. Looking at the three images in *Fig. 4*, the edges of the cuts and the rough size of the marking show a much closer resemblance to those seen at Apex than the marking made by any other tools. In *Fig.6* and *Fig.8* we can see the recreated cans and the cans from Apex pictured next to each other, when the markings are compared we can see they are extremely similar, especially with the larger can in *Fig.6*. In *Fig.9* and *Fig.10* the Jack-O'-Canterns are shown light up with candles, similar to how they might have been used at the camp during Halloween.

Figure 8. *On the left the reproduced can (photo by Lucian Hester) and on the right the can found at Apex being reproduced (photo by Makenzie Long)*

Figure 9. *The replicated Jack-O'-Canterns, on the left with candles and on the right with no internal lighting. Photos by Lucian Hester*

Figure 10. *The large replicated Jack-O'-Cantern with a candle inside. Photo by Lucian Hester*

The data shows that the tool likely used to make the majority of markings on these modified cans was a type of knife similar to K5, and a mixture of some of the other items that were able to pierce the cans and matched the markings found on the cans at Apex. This is because of the similarity in marks that K5 makes and the ease of use compared to other tools used in the experiment. Similar tools were also commonly found at Apex so it is likely many were available to be used for the possible school project of making the Jack-O'-Canterns for Halloween. Other tools, such as the hammer and nails, were also likely used to make some of the more distinct shapes seen on the cans. Nails 1-3 all made markings and were able to pierce with the assistance of a hammer, but Nail 2, the largest of the three nails, seems to make holes much larger than ones seen on the cans at Apex. A few of the other objects used in the experiment may have been used as well, but the marking they made were similar enough to each other that further analysis and testing would be needed to check for specifics of which tool was used.

Figure 6. *On the left the reproduced can (photo by Lucian Hester) and on the right the can from at Apex being reproduced (photo by Emily Dale)*

Figure 7. *Another modified can found at Apex with a stadurus pattern around the cans top edge. Photo by Fran Mauer.*

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WANT TO LEARN MORE ABOUT APEX?

Curious about Apex? Scan the QR code to look at the Apex, Arizona Archaeology Project page on NAU's website.

Cold Cream: The Cosmetic Cure of Apex

Lucie St Clair and Chelsea Tenney

NAU Undergraduate Research Symposium
April 2026

Cold Cream: The Cosmetic Cure of Apex

Lucie St Clair and Chelsea Tenney

NAU Northern Arizona University, Department of Anthropology

Abstract From 1928 to 1936, the logging town of Apex outside Tusayan, Arizona was situated almost directly next to what is now the Grand Canyon Airport. Numerous cold cream brands, including Ponds, Elmo, Jaciel, and Daggett and Ramsell, have been found across the site. Some of these brands were sold only in outside stores, while others may have been available through the company store. The cold cream jars and lids still present at Apex reveal preference for specific brand due to the dry winter climate and the intense need for skin care at Apex.

History of Apex

The company town of Apex is located on the Kaibab National Forest outside of Tusayan, Arizona. Apex was established by the Saginaw and Manistee Lumber Company in 1928, and was dismantled in 1936 (Maddock 2024: 1). The buildings at Apex consisted of boxcar-sized housing that prioritized mobility and efficiency; they could also be assembled and disassembled smoothly (Maddock 2024: 3). The residents of Apex were very diverse according to the 1930 United States Census. Swedish workers made up a large percentage of the non-American workers who lived at Apex throughout its active years and made up most of the overall workforce when Apex was first established. (Maddock 2024: 62). According to the same census, there were also 45 women who lived at Apex. The only paying job for a woman at Apex was a schoolteacher, so all other women living at Apex was a wife and/or mother.

Cold cream brands found at Apex, largely used by and advertised to women during the 1920s and 1930s, point to Depression-era women in rural America keeping up with beauty and hygiene trends (O'Donnell 2024).

History of Cold Cream

Cold Cream is an emulsion mixture of fat and water. The first cold creams were created during Roman times, attributed to Roman Physician Galen (Bennett 2018a). The ingredients used in the first cold creams were molten beeswax, water, and olive oil. The process of making the first cold creams was laborious and required a lot of attention because the mixture would separate while sitting. This meant many of the first cold creams were made either at home or in small quantities. Its primary use over time has been for protecting and moisturizing the skin (Gulliver 2024) Rose water or oil would also be added to the cold cream to give it a scent during the mixing process and cause a cooling effect on the wearer's face, giving cold cream its name (Bennett 2025).

Eventually, almond oil replaced olive oil, which in turn was replaced by mineral oil and petroleum. In 1869, Robert Chesebrough, the creator of Vaseline, extracted petroleum from petroleum crude oil, and borax was added to the cold cream ingredients list for better emulsion (Bennett 2018a). Mineral oil and petroleum held a long shelf life, giving the manufacturer the ability to ship products across countries, states, and seas. In the late 1920s to early 1930s, the ingredients used in cold creams were beeswax, almond oil or mineral oil, rosewater, and spermaceti. Some companies, such as Ponds (Figure 1) and Daggett and Ramsell have used petroleum and mineral oil since the late 19th century. Some of these companies' products appear at 1920s and 30s logging sites such as the company town Apex.

Figure 2
Left: 1923 Elmo product packaging. Note the price of $4.80 per dozen (Bennett 2023).
Right: Fragment of an Elmo cold cream jar. Photo by Lorna Baker.

Pond's

Pond's was founded in Utica, New York in 1846 by Theron T. Pond (Bennett 2022; Pond's 2026; Figure 1). Their first product, "Golden Treasure," was witch hazel extract, which strengthens the skin barrier from below the surface and heals minor cuts on the skin barrier. In 1904, the company updated Golden Treasure as rebranded as Pond's Cold Cream (Figure 2). They ran marketing campaigns for their vanishing cream and cold cream, stating that "Every normal skin needs [these] two creams" (Bennett 2022). This campaign was highly successful between 1916 and 1925, with profits increasing by 27% for the cold cream and 60% for the vanishing cream (Bennett 2022). As a result, Pond's became a leading product on shelves. By 1924, women started valuing cold creams imported from Europe, so Pond's launched a testimonial marketing campaign with endorsements from three European Queens, titled ladies, six princesses, and leaders of American society (Gartrell 2010). Advertisements ran in multiple magazines, including Vogue. This marketing campaign solidified Pond's as a leading brand, allowing them expand and continue to make products.

At least four Pond's milk glass cold cream jars and one lid have been found at Apex at several areas of family housing. Both round and oval-shaped bottles were recorded, possibly pointing to different dates or products. This shows the wide distribution of Ponds, as the market reached rural America during the Great Depression. During the time of Apex, Pond's was also adjusting its prices to be more affordable for women during the Great Depression. The cold cream jar shards attest to the popularity and affordability of Pond's.

Figure 1
Top Left: Oval-shaped Pond's jar fragments from Apex. Photo by Matthew Harwood.
Top Right: 1941 Advertisement for Pond's with oval-shaped jar and prices (Mike 2024).
Bottom Left: 1900s Pond's advertisement featuring British actress Lillian Hall-Davis (Garcia 2016)
Bottom Right: Pond's Extract Company (PE Co) jar lid. Photo by Rachel Matheson.

Elmo's and Jaciel

Elmo Cosmetics was founded and trademarked in 1908 by two sisters (Bennett 2023; Figure 2). The brand had a variety of different products on the market, including cold creams, face powders, lipstick, rouge, and eye makeup. In its earlier years, Elmo sold four cold creams: a cleansing cream, tonic astringent, tissue builder, and cucumber cream.

The milk glass Elmo jar at Apex was likely a cleansing cream, tissue cream, or cucumber cream, based on the size of the threaded glass shard and its milky white color (Figure 6). Cleaning cream removed dust and dirt from pores, tissue builder prevented the skin from getting dry and wrinkled, and cucumber cream could bleach the skin from a tan and freckles (Bennett 2023).

Elmo limited the sales of their products before 1930, preferring to sell only in big department stores, and during the Great Depression, expanding to drug stores. It was unlikely, then, that the Elmo jar found at Apex came from the company store. Similarly, Jaciel, another cold cream brand found at Apex, was sold exclusively at J.C. Penney between 1927 and 1934 (Figure 3). Apex's women may have travelled to the Flagstaff J.C. Penney, which opened in 1917, to purchase these two brands (Figure 5). The store stayed open late on the 6th and 21st of every month because those were pay days for the lumber mill workers (Adams-Ockrassa 2020).

Figure 3
Right: Jaciel jar base. Photo by Emily Dale.
Left: Flagstaff's J.C. Penney in 1953 (Adams-Ockrassa 2020).

Daggett and Ramsdell

Daggett and Ramsdell introduced their version of cold cream in 1893 (Bennett 2018b; Figure 4). The ingredients included beeswax, petroleum, rose water, and borax. They branded their cold cream as "The Perfect Cold Cream" and were the first company in America to manufacture this recipe on a wide scale. Daggett and Ramsdell were known for a metal screw-top lid on their containers, because Standard Oil acquired Daggett and Ramsdell.

Even though the only visible writing is "COLD CREAM", the unique shape of the logo identifies it as the unique lid of a Daggett and Ramsdell cold cream jar.

Figure 4
Left: Daggett and Ramsdell "Perfect Cold Cream" lid. Photo from Etsy.
Left: Daggett and Ramsdell lid with knife cut. Photo by Emily Dale.

Conclusions

Northern Arizona is known for its cool and dry weather, which is historically unforgivable to the skin, no matter who you were. Other cosmetics brands found at Apex that sold cold creams include Princess Pat, Marinello's, and Harriett Hubbard Ayer, and bottles of A.S. Hinds Honey and Almond Cream lotion point to other products used to protect against the weather.

All these products have been found across the site, meaning they were used by women across the company's economic spectrum. The wives of both management and laborers chose cold creams that best fit their budgets and needs. Marketing campaigns also influenced what the people living at Apex were buying as a whole, since certain companies, like Pond's ran advertisements in popular magazines. This could explain why Pond's is the most common cold cream brand found at Apex. It was likely the most accessible cold cream and the most affordable compared to Elmo's or Jaciel that were only available in department stores.

ACKNOWLEDGEMENTS

Thank you to the Kaibab National Forest Youth and Veterans Engagement Grant, Dr. Emily Dale, and Rachael O'Hara.

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Learn more about the Apex, Arizona Archaeology Project at our website by clicking the QR code.

APPENDIX C

Apex, Arizona Archaeology Project Blogs, July 2025 to December 2025

APPENDIX D
Kaibab National Forest Youth and Veteran's Engagement Grant Student Projects

DeWire, Zulia
n.d. "Just Add Water: How Early Advertising Shaped Cocoa Powder Diversity at Apex, Arizona." Article Submission.

Zulia chose to adapt her 2025 Interns-to-Scholars project and poster into a paper that could be submitted to a local journal such as Kiva *or the* Journal of Arizona Archaeology. *I reached out to Zulia several times between December 2026 and April 2026 to check on progress, but never received a response. The status of her project is unknown and therefore not included in this report.*

Gagne, Callen
2025 Saginaw Mill (Williams, Arizona). Unpublished Research Paper.

I reached out to Callen several times between October 2025 and April 2026 to request a version of this with report with in-text citations, photo captions, and a full bibliography that included newspaper sources, but did not receive a response.

Harwood, Matthew
2025 Apex Arizona Car Parts Map. Unpublished Poster.

Matthew also turned his research into a blog post, Traveling Without a Train: Evidence of Cars at Apex, *which is included in Appendix C.*

Levesque, Madeleine
2026 Evolving Notions of Health and Hygiene at the Saginaw-Manistee Logging Camp of Apex, Arizona. Paper Competition Submission.

Madeleine adapted her 2024 Interns-to-Scholars project and poster into a paper for the Arizona Archaeological and Historical Society's 2026 Julian D. Hayden Paper Competition and submission to Kiva. *As of June 2026, she has not yet heard back, so her paper is not included in this report.*

Liu, Alex
2025 Ceramic Maker's Marks at Apex. Unpublished Research Paper.

I reached out to Alex several times between October 2025 and April 2026 to request some basic edits, but did not receive a response.

Marshall, Allyanna
2025 Apex Phytolith, Macrobotanical, Pollen report. Technical Report

Allyanna's report is included in Appendix A.

McAlister, Abigail
2026 Ceramic Patterns and Similarities at Apex. Unpublished Research Presentation.

O'Donnell Sarah

2025 Geospatial Mapping of Loci within the Apex, Arizona Archaeology Project Site. Unpublished Mapping and Digitizing Project.

Sarah's completed maps are included throughout this report.

O'Hara, Rachael

2026 Mapping Apex Alcohol Consumption. Mapping and GIS Project.

Rachael's completed maps are included in her 2026 M.A. thesis, Sköl! Alcohol Consumption and Swedish Immigrant Identity in the Prohibition Era at Apex Logging Camp.

St Clair, Lucie and Chelsea Tenney

2026 Cold Cream: The Cosmetic Cure of Apex. Poster Presentation, NAU Undergraduate Research Symposium, Flagstaff, Arizona.

Lucie's and Chelsea's poster is included in Appendix B.

Saginaw Mill (Williams, Arizona).
By Callen Gagne

The Saginaw and Manistee Lumber Company founded a sizable sawmill in Williams, Arizona territory, in 1893, setting the groundwork for the growth and economic identity of the community. By providing lumber, electricity, and water to the growing settlement, the firm not only developed the mill but also successfully created a large portion of Williams' early infrastructure. Together with an integrated logging railroad system, this lumber company made it possible for wood from nearby forests to be delivered to the Williams mill for processing. According to the Saginaw and Manistee collection archives, the company's impact went beyond milling throughout the first half of the 20th century, influencing northern Arizona's economic and physical terrain.

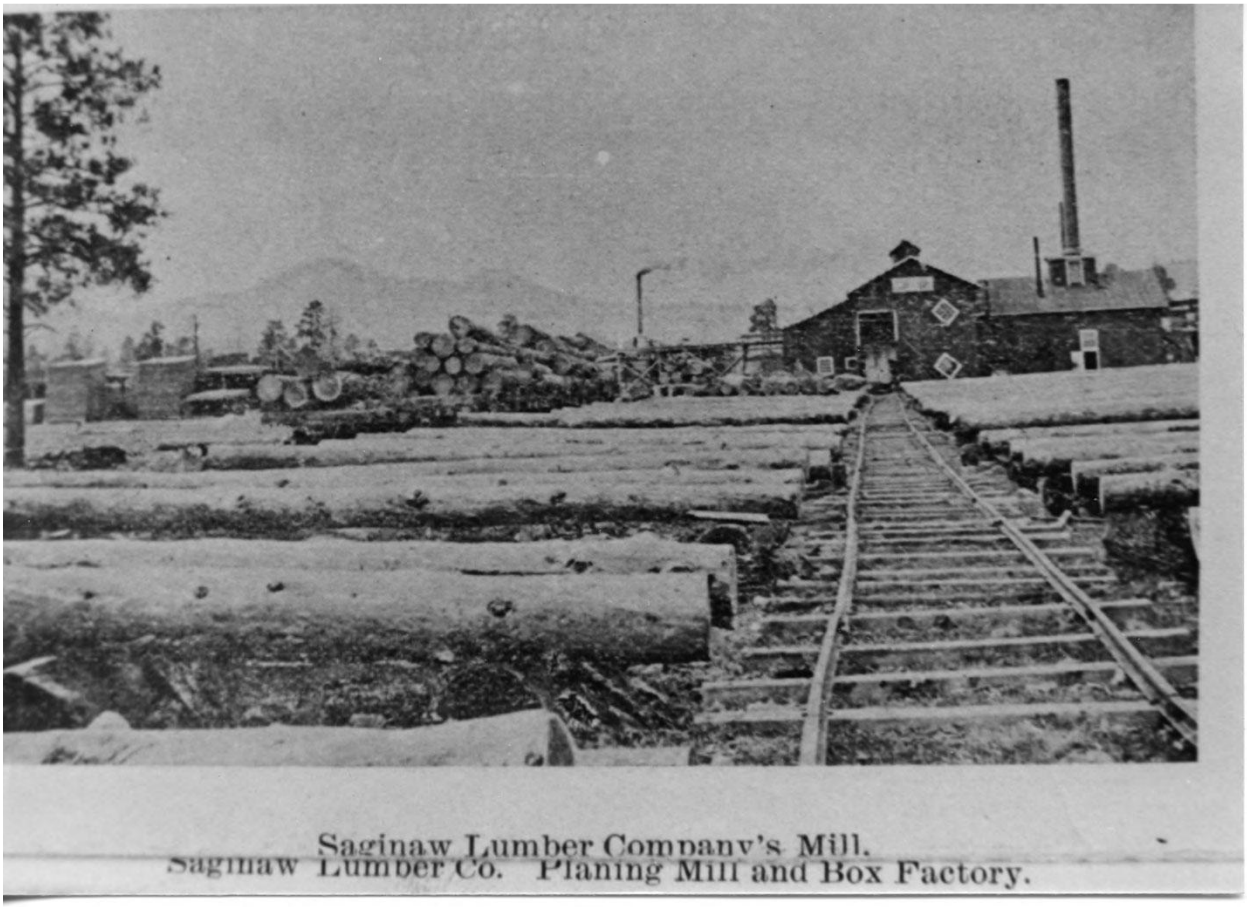

Figure 71: Williams, Arizona Historic Photo Collection 1898

Inner Workings of the Mill

Photographs of the Saginaw Mill depict a sizable sawmill building with strong construction, timber stacks, and a chute or conveyor that leads inside. This indicates that the input, processing, and output of raw logs into finished lumber was the mill's main function. Harvested logs from neighboring woods would be transported to the mill yard, where they would be processed and trimmed before being placed into chutes or conveyors that would feed them into the mill's cutting equipment. The sawing activities, which break down logs into usable boards, beams, planks, and other lumber products are housed in the big structure.

Figure 72: Williams, Arizona Historic Photo Collection 1930

Logs would be cut lengthwise by mechanical saws inside the mill, most likely circular saws, band saws, or big gang saws. The boards would be dressed, planed, and trimmed to standard dimensions by secondary milling machines. The mill was likely built for heavy timber handling, product movement, and ventilation, based on the structural structure depicted in the photographs, which includes several levels, light-filled windows, and spacious gateways. Stacks of sawn lumber surrounding the mill suggest that the wood was transported into storage or drying yards prior to shipment after cutting.

Figure 73: Williams, Arizona Historic Photo Collection 1930s

Significant foundations, timber framing, and auxiliary buildings (such as boiler houses or engine rooms) are also visible in the mill photos. These characteristics suggest the existence of steam boilers, belts, shafts, and power transmission systems, as well as equipment to support internal operations and power generation (either water-driven or steam). The mill probably had grading sheds, log handling equipment, repair workshops, and administrative offices. By transforming raw logs into marketable lumber, managing logistics, and providing resources for building, railroad use, and regional development, the Saginaw Mill essentially served as a center.

Figure 74: Williams, Arizona Historic Photo Collection 1925

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Apex Arizona Car Parts Map
Matt Harwood

Apex Arizona Car Parts Map

Locus V:

Figure 1: Post-1913 Pennzoil Oil Can. Photo by Lorna Baker.

Figure 2: Ford Model T Ignition Switch Plate. Part in use between 1919-1925. Photo by Lorna Baker.

Figure 3: Rear Curtain WIndow Frame produced Haines Manufacturing Company under the Crysta Lites product line. Likely from a Ford Model T. Photo by Ricky L Raffaele.

Figure 4: AC Delco Spark Plug dating Post-1922. Compatible with Ford Model T's among other Cars. Photo by Ricky L Raffaele.

Locus J:

Figure 5: Ford Model T Gas Tank. Photo By Matthew G Harwood.

Figure 6: Canco Brand S.A.E. 30 Oil Can Produced Post 1923. Photo By Sarah D O'Donnell.

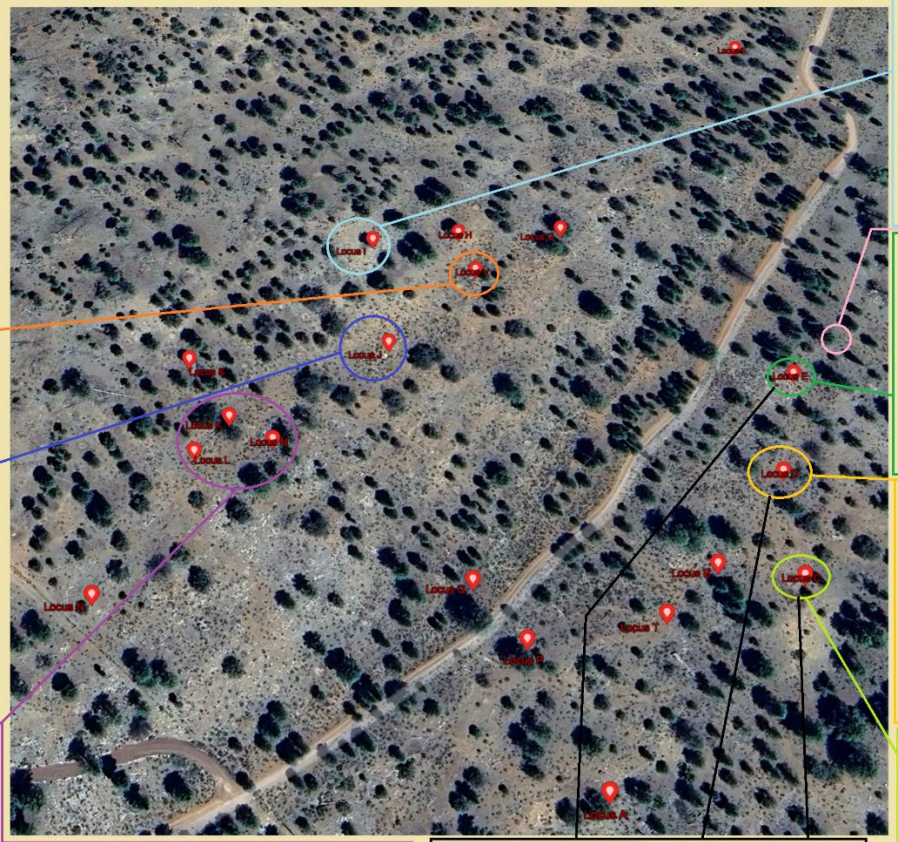
Loci K, L, & M:

Figure 7: Ford Model T Gas Tank. Photo By Emily S Dale.

Figure 8: Left Half of a New Mexico License Plate from 1929. Photo by Ricky L Raffaele.

Figure 9: Oil Filter, likely from a Ford Model T. Photo By Lorna Baker

Figure 10: Tire Fragments such as this were found across Loci C,D, and E. Photo By Emily S Dale



Locus I:

Figure 16: Brake Line, possibly from a Ford Model T. Photo by Hunter Newman.

Figure 15: An isolated, intact Arizona license Plate from Coconino County was found northeast of Locus E and southwest of the parking area during metal detecting. Photo By Rachel E O'Hara.

Locus E:

Figure 17: Arizona License Plate from either Coconino County or Maricopa County between 1925-1927. Photo By Garrett Hoskinson.

Figure 18: Spark Plug. Photo By Emily S Dale.

Locus D:

Figure 13: Broken Arizona License Plate from 1933. Photo By Rachel E Matheson.

Figure 14: Spark Plug, likely belonging to a Ford Model T. Possibly Painted Red Originally. Photo By Emily S Dale.

Locus C:

Figure 11: Arizona License Plate From Coconino County between 1925-1927. Photo By Rachel E Matheson.

Figure 12: Cast iron Car Body Part with Handle and Turning Knob. Photo By Travis M. Cumming.

Apex Ceramic Counts and Maker's Marks
Alex Liu

There are many ceramic shards at Apex. Generally, these were used for eating and cooking, as plates and bowls and the like. Some shards were part of toys, as miniature tea sets or porcelain dolls, though these make up a minority of the ceramics found at Apex. Although most of the shards found are plain and do not offer any unique information, some of the ceramic shards have patterns, colors, or backstamps. Obviously, any decorated ceramic would be more valuable to own than an undecorated one, as well as more expensive, and the backstamps can give us some information about what ceramic brands the people at Apex were buying.

Ceramic shards do not necessarily give us the complete picture of ceramics at Apex. For starters, ceramics could break into any number of shards, so the number of shards we find is probably not equivalent to the number of ceramics they came from. Stoneware, for example, tends to break into larger and fewer shards. There may also be many shards that we have not found. Ceramics are also easily moved around, so it's possible some ceramics and shards are in different loci than they were originally. Still, the amount of shards in each locus can probably be compared to each other to understand which loci have relatively more or less ceramics.

Data

The number of ceramic shards found in each locus was taken from the non-diagnostic and diagnostic artifact counts from each year of the Apex project. Undecorated shards are generally blank, white ceramic shards that don't provide unique information. Miscellaneous here refers to a combination of undecorated shards, often some amount of earthenware and porcelain shards, which were not worth sorting apart in the field. Decorated shards refer to ceramic shards with any particular colors, design, or marking, including maker's marks. These often end up being

diagnostic in some way. Overall, we would probably expect to see more ceramic shards in dining and residential areas.

Table 1: Table of undecorated and decorated shard frequencies by locus

		Locus													
		A	C	D	E	G	H	I	J	KLM	N	R	S	U	V
Undecorated	Earthenware	19	159	26	127		32		1	44	74			19	
	Stoneware	2	24	23	34				15	44	2		15		
	Porcelain		40	62	32	1		9	107	53	23		10		1
	Miscellaneous	17		50	30	40		3	40	285	2	149	254		15
	TOTAL	38	223	161	223	41	32	12	163	426	101	149	280	19	16
Decorated	Earthenware	11	2		1	2			15	42	7	4	2	12	
	Stoneware	1	13		5				13	9	13				3
	Porcelain	2	7		1	13		13	62	12	1	7	29		
	TOTAL	14	22	0	7	15	0	13	90	63	21	11	31	12	3
TOTAL ALL		52	245	161	230	56	32	25	253	489	122	160	311	31	19
% Decorated		27	9	0	3.1	26.8	0	52	35.6	12.9	17.3	6.9	10	38.8	15.8

Data Visualization

In no particular order, Loci G, H, and U are garbage dumps and privies, and fewer ceramic shards are found there. Locus I is the schoolhouse and also has few ceramic shards, although about half of the shards found here are decorated. Loci C, D, and E are all associated with laborer housing, and generally have higher amounts of ceramic shards, and fewer decorated shards. Loci A and R are associated with the kitchen and dining area. R has a moderate amount of ceramic shards and a lower proportion of decorated shards, while A is the opposite, with a low amount of ceramic shards and a higher proportion of decorated shards. N is potentially the lumber sales office, and contains 122 shards, 21 of which are decorated. J is a structural area that

is believed to be the home of the Ericksons, with a moderate amount of ceramic shards, and has the most amount of decorated ceramic shards at 90. Locus V is possibly the location of the Matson household, but it has very few ceramic shards, and some decorated shards. KLM together make up the home and garage of Arvid Anderson, the camp superintendent, and have the most ceramic shards total at 489, including 63 decorated shards. Locus S is a series of can dumps near KLM that has many domestic items and a large number of ceramic shards.

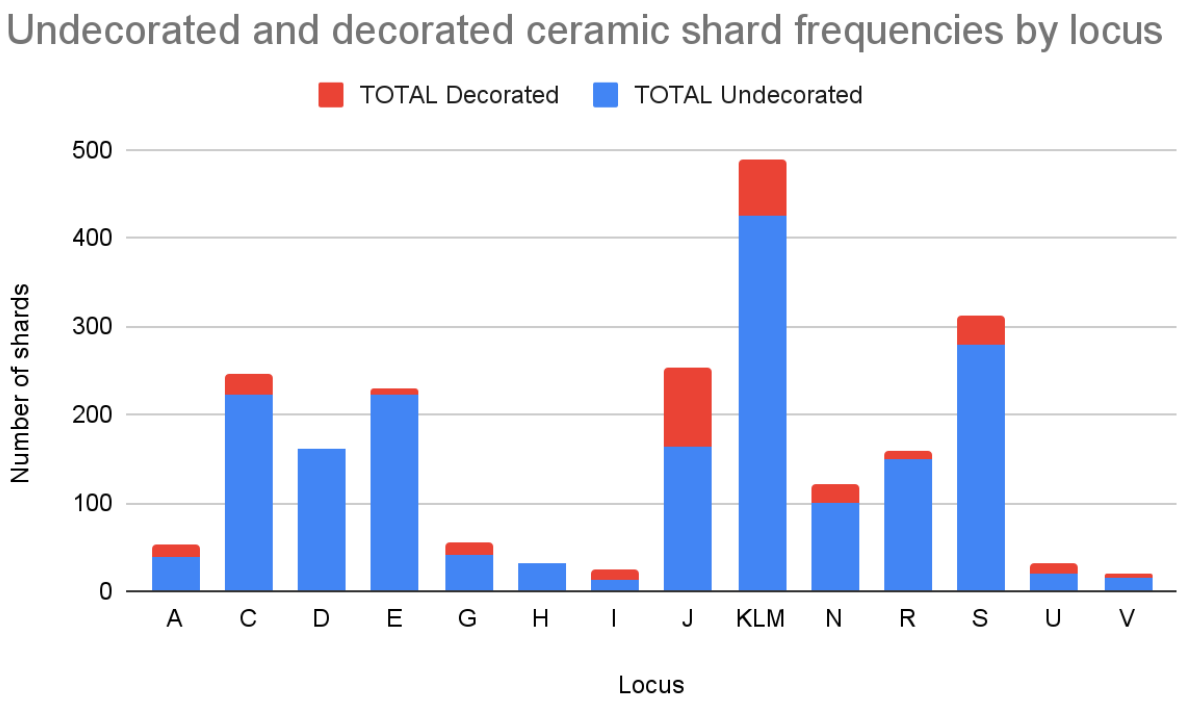


Figure 2: Stacked column chart of ceramic shards by locus

Overall, residential and dining areas tend to have higher amounts of ceramic shards, which makes sense. This is where we would expect people to eat and make food. Generally, Loci A-I are more associated with laborers, and Loci G and J-V are more associated with management, and Loci J, KLM, and S in particular tend to contain higher amounts and relative proportions of decorated ceramics. It would make sense for management to have more decorated

ceramics, which were probably more expensive, and potentially ordered from catalogs. The only laborer areas with a notable proportion of decorated shards, which is still low, are Locus C, a garbage dump associated with laborer housing, and Locus I, the schoolhouse. It is unclear why Locus I would be 52% decorated shards, since the shards found there do not seem to come from toys, and so few ceramic shards are found there anyways. Locus C shows that some laborers had some decorated ceramics. I had expected D, the married laborer housing, to have notably more decorated ceramics than E, the laborer bunkhouse, but if anything, neither have many, with E having slightly more than D. E even contains some shards with backstamps, as I'll describe more below. Perhaps most of those decorated shards ended up in Locus C instead. Overall, most decorated ceramics found at Apex seem to have belonged to management.

Ceramic Maker's Marks

Most of the maker's marks on the pottery sherds found at Apex come from American pottery companies, many of which were based in East Liverpool, Ohio. One of these is Knowles, Taylor, and Knowles (KT&K). Two ceramic shards, one in Locus G and one in Locus R have the KT&K backstamp, one from a plate with "KT&K/IVORY", and one from a bowl with "KT&K/S-V/CHINA/8 IC", S-V likely standing for semi-vitreous.[2]

[2]"Knowles, Taylor, & Knowles. East Liverpool, Ohio." Laurel Hollow Park, http://www.laurelhollowpark.net/elo/ktk/ktk.html

Figure 3: KT&K backstamps. Left: Locus R, photo by LBH. Right: Locus G, photo by EJP.

Harker Pottery is also based in East Liverpool, and one ceramic plate shard with the bow and arrow backstamp was also found in Locus G.[3] The backstamp says "SEMIPORCELAIN".

Figure 4: Harker Pottery backstamp, Locus G. Photo by EJP.

West End Pottery Company was also from East Liverpool. One ceramic shard has the West End Pottery Co. backstamp, marked with "WESTEND" and pre-Nazi swastikas.[4] This shard was found before the Apex project began, somewhere on the management side.

[3] "Harker", Museum of Ceramics. https://www.themuseumofceramics.com/harker

[4] The Museum of Ceramics, "West End Pottery Company pitcher", Facebook, August 14, 2015. https://www.facebook.com/TheMuseumOfCeramics/photos/west-end-pottery-company-pitcherthe-owner-of-this-semi-vitreous-pitcher-made-by-/957151074347045/?_rdr

Figure 5: West End Pottery Co. backstamp, location unknown. Photo by ESD.

The W.S. George Pottery Company, formed by William Shaw George, was located in Sebring, Ohio.[5] One ceramic shard has a shield backstamp marked with "ARGOSY/W.S George/IVORY/297". This shard was also found before the Apex project began, likely also somewhere on the management side.

Figure 6: W.S. George Pottery Co. backstamp, location unknown. Photo by ESD.

[5] "W.S. George Pottery", WorthPoint, https://www.worthpoint.com/dictionary/p/ceramics/na--united-states/wsgeorge-pottery

The Owens China Company was based in Minerva, Ohio. Two shards with a backstamp with "OLD MEDAL/[...]OUIS/[...]VA" were found in Locus E, and refer to the gold medal that the Owens China Company won in the St. Louis 1904 Louisiana Purchase Exposition.[6]

Figure 7: Owens China Co. backstamp. Left: Locus E. Photos by REM. Right: Clearer example of backstamp from Worth Point.

The Edwin Knowles Company, not to be confused with Knowles, Taylor, & Knowles, had its offices in East Liverpool, although it produced pottery in Newell, West Virginia. One shard with a sailboat backstamp says "THE… CO./MADE IN U.S.A./34-7" and was found in Locus V.

Figure 8: Edwin Knowles Co. backstamp, Locus V.

[6] "Owens China Company - Guide to Value, Marks, and History", WorthPoint. https://www.worthpoint.com/dictionary/p/ceramics/na--united-states/owens-china-company

The Homer Laughlin China Company was very similar, originating in East Liverpool, and eventually moving production to Newell.[7] One plate shard with the backstamp "Trellis/L" was found in Locus J, which refers to the Trellis line with its specific shape, and was used in Quaker Oats promotional material.[8]

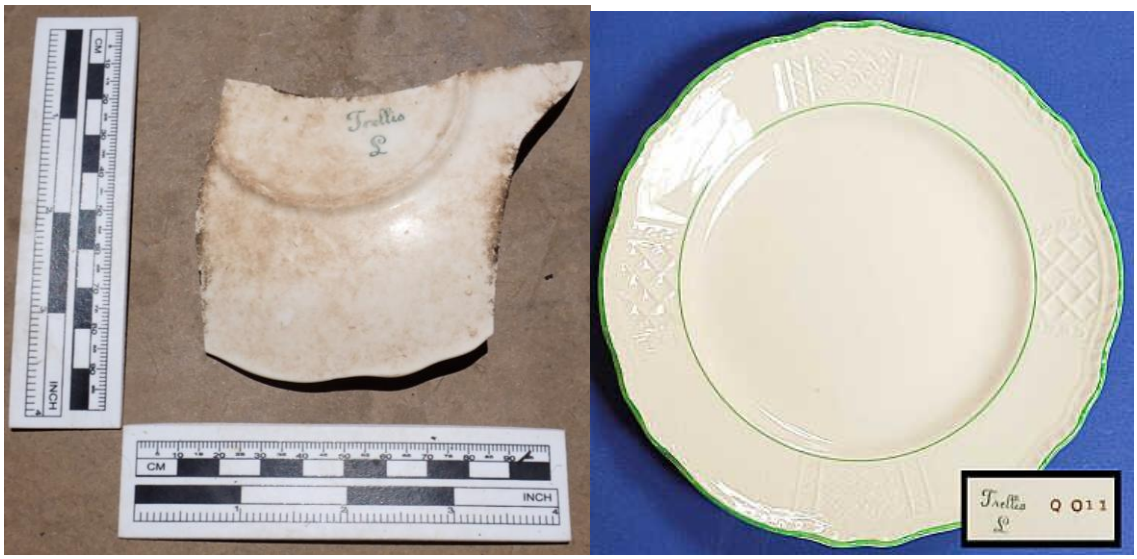


Figure 9: Homer Laughlin China Co. Trellis backstamps. Left: Locus J. Photo by FM. Right: Example of Trellis line and backstamp from Laurel Hollow Park.

Another Homer Laughlin shard was found in Locus J, with the backstamp "[...]nnA". The font is fairly specific, from the Ravenna design developed in 1931.[9]

[7] "Homer Laughlin China Company, 1877 - Present", Carnegie Public Library. https://www.carnegie.lib.oh.us/homer

[8] "*Trellis* by Homer Laughlin", LaurelHollowPark. http://www.laurelhollowpark.net/hlc/trellis.html

[9] "*Ravenna* by Homer Laughlin", LaurelHollowPark. http://www.laurelhollowpark.net/hlc/ravenna.html

Figure 10: Homer Laughlin China Co. Ravenna backstamps. Left: Locus J, taken by MCL. Right: Example of the Ravenna line and backstamp from Laurel Hollow Park.

Other companies outside of Ohio found at Apex include Vernon Kilns, from California. One bowl base marked with "Vernon/CALIFORNIA" was found in Locus G, and this specific maker's mark appears to be from the 1930s.[10]

Figure 11: Vernon Kilns backstamps. Left: Locus G, Photo by EJP. Right: Clearer image of backstamp from The Maximalist.[11]

Buffalo China comes from Buffalo, New York. Two ceramic shards have a Buffalo China maker's mark, using a logo from 1915-1940.[12] The backstamps read

[10] Maxine Fleek Nelson, *Collectible Vernon Kilns, Identification and Value Guide* (2003), p. 7.

[11] "Vernon Kilns - Colorware History & Design", The Maximalist, https://www.maximalist.org/colorware/vernon-kilns/

[12] "Buffalo China", Restaurant Ware Collectors Network, https://rwcn-idwiki-2.restaurantwarecollectors.com/wp-content/uploads/2020/05/Buffalo-China-Backstamps.pdf

"BUFFALO/CHINA/EAA", and EAA does appear to be separate from a date code, although it is unclear exactly what it means. One shard is found in Locus G, and the other is found in KLM.

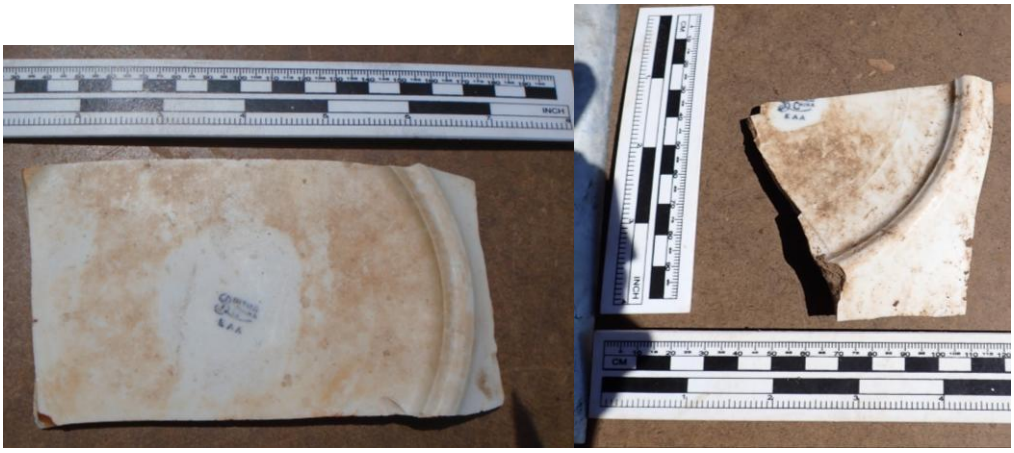


Figure 12: Buffalo China backstamps. Left: Locus G, Photo by EJP. Right: Loci KLM, Photo by DRM.

Tashiro Shoten Limited was a Japanese pottery company. Six shards of a plate with the backstamp of a red cherry blossom marked with "TA/MADE IN/JAPAN" were found in Locus N. This specific mark appears to be licensed by Noritake China, which manufactured and imported pottery from Japan, and grew out of a trading company originally established in New York.[13]

Figure 13: Tashiro Shoten Ltd. backstamp. Locus N. Photo by MSN.

[13] "Japanese pottery maker's marks on juicers", Juicer Collector. http://www.juicercollector.com/Juicers/Juicers_Japanese_Marks.htm

One plate shard from Locus S is marked with “U…/ROS…”, and is, of now, unidentified. It is unclear what this backstamp refers to.

Figure 14: Unknown backstamp, Locus S, taken by IAV.

One ceramic is marked with “CHINA/P” from Locus I, and another from KLM is marked “CHINA” in red. Several American ceramic companies and brands are named after China to refer to a kind of pottery, like a few listed already, so it seems more likely that any ceramics marked with “China” were probably manufactured in the US, rather than imported.

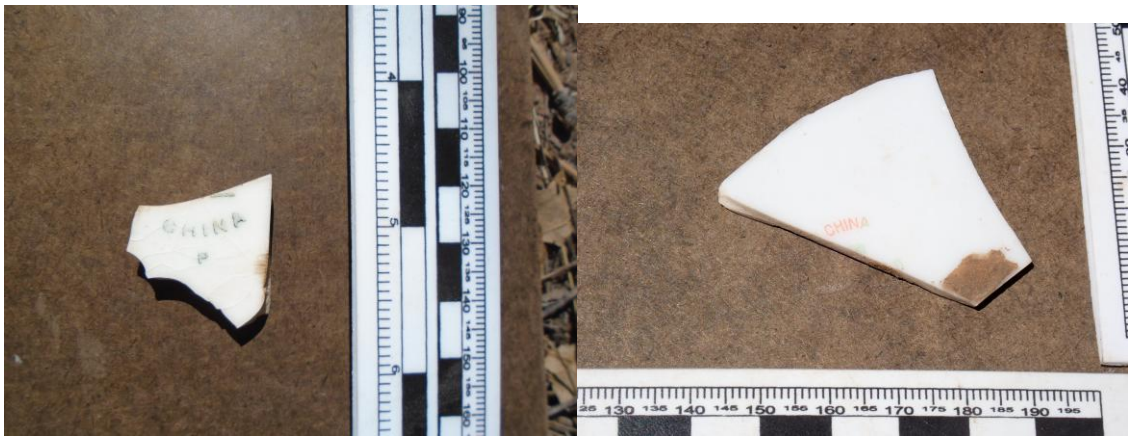


Figure 14: “China” backstamps. Left: Locus I. Photo by LBH. Right: Loci KLM, Photo by SAS.

The ceramics that say “Made in Japan” are in red like the Tashiro Shoten Ltd. mark, so they could be related, and also imported through Noritake China. Ceramics marked with “Japan”

or “Made in Japan” would have been made between 1921 and 1941.[14] I believe these Japanese ceramics probably constitute the only ceramics at Apex imported from outside the US.

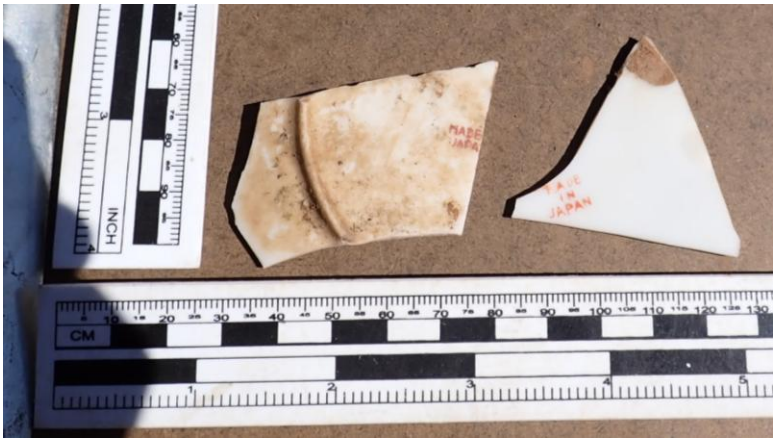


Figure 15: “Made in Japan” backstamps. Loci KLM. Photo by DRM.

Only about three of these maker’s marks are found in areas associated with laborers. One KT&K mark in Locus R, the dining area, and two Owens China marks in Locus E, the laborer bunkhouse. There’s also the “CHINA/P” mark from Locus I, the schoolhouse. The other 13 are found in Locus G, a large can dump probably associated with management, Locus V, the Matson household, Locus N, the lumber sales office, Locus J, the home of the Ericksons, KLM, the home of Arvid Anderson, and Locus S, a can dump near KLM.

This is a rather small sample size, but it could potentially indicate another material difference between laborers and management. In Figure 2, it appears that the number of undecorated ceramic shards tends to be similar between laborer and management areas, excluding KLM, but that management areas tend to have higher amounts and proportions of decorated and backstamped ceramics, which would probably be more expensive.

Conclusion

[14] “Antique oriental ceramics - what’s valuable and what’s not,” Hemswell Antiques, March 28, 2022. https://www.hemswell-antiques.com/blog/antique-oriental-ceramics-what-s-valuable-and-what-s-not

Overall, this does not seem to indicate anything particularly new about Apex. I believe it was already known that the management and laborer sides of the logging camp contained different brands, reflecting a difference in money and resources. The loci associated with management have more overall decorated ceramic shards and backstamps, which once again indicates a difference in money. The fact that some decorated ceramics exist in laborer dining and housing areas probably indicates that the loggers and their families also valued decorated ceramics, and would have bought more if it were feasible. And that significantly more decorated ceramics were found in the houses of the Ericksons and Arvid Anderson is just another indicator of a differential access to resources and brands.

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