

**Apex, Arizona Archaeology Project
2022 Season (Year 1)**

Prepared for the United States Forest Service, Kaibab National Forest
May 2023



Prepared by Emily Dale

With contributions by Logan Hick, Eva Parra, Nathan Crennan, Madeleine Gulbransen, Andrew Naranjo, Ian Villamil, Joey McCauley, and Melissa Baskin

TABLE OF CONTENTS

1. Administrative Summary	6
2. Project Description.....	6
2.1. Personnel.....	7
2.2. Funding	7
3. historical context and Research Goals	7
3.1. History of Apex.....	8
3.1.1. The Grand Canyon Railway.....	8
3.1.2. Apex	9
3.2. Research Goals.....	12
3.2.1. Function and Landscape	12
3.2.2. 1900s Industry.....	12
3.2.3 Consumer Behavior	12
4. Fieldwork	13
4.1. Catch and Release	13
4.2. Survey and Mapping.....	13
4.3. Excavation.....	14
5. Locus Summaries.....	16
5.2 Locus E	25
5.3. Locus G.....	27
5.4. Locus I	29
5.5. Locus J	61
5.6. Locus R	64
5.7. Locus S.....	67
5.8. Locus T	72
6. Artifact Analysis	75
6.1. Food and Drink	75
6.1.1. Alcohol.....	77
6.1.2. Non-Alcoholic Beverages.....	78
6.1.3. Food Preparation and Service	82
6.2. Personal.....	84
6.2.1. Music.....	84

6.2.2. Clothing.....	85
6.2.3. Health and Hygiene.....	86
6.3. Other	88
6.3.1. Toys.....	88
6.3.2. Tobacco.....	89
6.3.3 Household Products	90
6.4. General Conclusions	92
7. Public Tours	93
8. Conclusions and Future Directions.....	95
8.1. Publications.....	95
8.2. Future Directions	97
9. Bibliography	98
Appendix A: Logan Hick 2023 SHA Paper.....	103
Appendix B: Flotation Analysis.....	120
Appendix C: Eva Parra 2023 SHA Paper	124

TABLE OF FIGURES

Figure 1: 2006 GPS map of Apex.....	6
Figure 2: Logan Hick pushing the Ground Penetrating Radar at Locus I.	15
Figure 3: 2022 Apex map of Loci A through T, as well as the excavation unit at Locus I.	17
Figure 4: Locus A, Concentration 1, looking east.	19
Figure 5: Locus A, Concentration 2, looking southeast.....	20
Figure 6: Structure 1 at Locus A, Concentration 3 looking north.	21
Figure 7: Structure 2 at Locus A, Concentration 1, looking northwest. Structure 1 is visible in the top..	22
Figure 8: Can Dump 1 at Locus A, Concentration 3, looking north.....	23
Figure 9: Can Dump 2 at Locus A, Concentration 3, looking north.....	24
Figure 10: Can Dump north of Locus A, Concentration 3	25
Figure 11: GPR read-out of possible privy at Locus E. The blank space in the upper right corner is a tree growing on the edge of the depression..	26
Figure 12: 2006 map of Locus G by Neil Weintraub.	27
Figure 13: 2022 Field map of Locus G.....	28

Figure 14: Locus G overview, looking east.....	29
Figure 15: GPR readout of possible privies at Locus I.....	31
Figure 16: Madeleine Gulbransen, Eva Parra, Ian Villamil, and Logan Hick set up a 1m x 1m unit in the Locus I, Privy 1, while Emily Dale supervises, looking south.....	32
Figure 17: Locus I, Privy 1, Unit 1, Surface.....	33
Figure 18: Locus I, Privy 1, Unit 1, Surface.....	34
Figure 19: Locus I, Privy 1, Unit 1, Level 1.....	35
Figure 20: Locus I, Privy 1, Unit 1, Level 1.....	36
Figure 21: Locus I, Privy 1, Unit 1, Level 2.....	37
Figure 22: Locus I, Privy 1, Unit 1, Level 2.....	38
Figure 23: Locus I, Privy 1, Unit 1, Level 3.....	39
Figure 24: Locus I, Privy 1, Unit 1, Level 3.....	40
Figure 25: Locus I, Privy 1, Unit 1, Level 4.....	41
Figure 26: Locus I, Privy 1, Unit 1, Level 4.....	42
Figure 27: Locus I, Privy 1, Unit 1, Level 5.....	43
Figure 28: Locus I, Privy 1, Unit 1, Level 5.....	44
Figure 29: Locus I, Privy 1, Unit 1, Level 6.....	45
Figure 30: Locus I, Privy 1, Unit 1, Level 6.....	46
Figure 31: Locus I, Privy 1, Unit 1, Level 7, before beam removal.....	47
Figure 32: Locus I, Privy 1, Unit 1, Level 7.....	48
Figure 33: Locus I, Privy 1, Unit 1, bottom of Level 7 and top of level 8.....	49
Figure 34: Locus I, Privy 1, Unit 1, bottom of Level 8.....	50
Figure 35: Locus I, Privy 1, Unit 1, bottom of Level 8 and top of level 9.....	51
Figure 36: Locus I, Privy 1, Unit 1, bottom of Level 9.....	52
Figure 37: Locus I, Privy 1, Unit 1, bottom of Level 9 and top of level 10.....	53
Figure 38: Locus I, Privy 1, Unit 1, bottom of Level 10 and end of unit.....	54
Figure 39: Locus I, Privy 1, Unit 1, bottom of Level 10 and end of unit.....	55
Figure 40: Locus I, Privy 1, Unit 1 artifacts removed during excavation placed in the bottom of the unit for reburial.....	56
Figure 41: Unit 1, Privy 1, West Wall Profile.....	57
Figure 42: Unit 1, Privy 1, East Wall Profile.....	58
Figure 43: Unit 1, Privy 1, North Wall Profile.....	59
Figure 44: Unit 1, Privy 1, South Wall Profile.....	60

Figure 45: 2006 Map of Locus I (top left), Locus J (bottom center), and Locus J camp dump (bottom left, labelled as “Can Dump 5000+ cans).....	62
Figure 46: Locus J Can Dump, looking east.....	64
Figure 47: Can Dump surrounding possible privy at Locus R, looking southeast.	65
Figure 48: GPR readout of possible privy at Locus R. The results were inconclusive	66
Figure 49: Locus S, Can Dump 1 overview, looking southeast.....	68
Figure 50: Locus S, Can Dump 2 overview, looking northwest.....	69
Figure 51: Locus S, Can Dump 3, looking southwest	70
Figure 52: Locus S, Can Dump 4, looking east	71
Figure 53: Locus S, Can Dump 5 overview, looking west	72
Figure 54: 2022 Field Map of Locus T.....	73
Figure 55: Locus T, looking north	74
Figure 56: Lithic flakes at Locus T.....	74
Figure 57: Kippered Herring can, Locus S, Can Dump 2.....	76
Figure 58: Calumet Baking Powder artifacts.....	77
Figure 59: Alcohol-related artifacts	78
Figure 60: Common canned beverage brands.....	79
Figure 61: Orange Crush bottle fragments.....	81
Figure 62: Food preparation artifacts.....	82
Figure 63: Decorated terracotta pottery from Locus A, Concentration 2	83
Figure 64: Music-related artifacts	84
Figure 66: Personal hygiene artifacts.....	87
Figure 67: Toys.	89
Figure 68: Tobacco tins	90
Figure 69: Cleaning artifacts.....	91
Figure 70: Domestic decoration and maintenance.....	92
Figure 71: Automobile-related artifacts.....	93
Figure 72: Jerry Johnson (center), whose grandfather and mother lived at Apex in the 1930s, talks about his family history while attending a tour.....	94
Figure 73: Visitors fill out their surveys at the Welcome Center	95

1. ADMINISTRATIVE SUMMARY

This report details the methods, data, theories, and findings of the 2022 Apex, Arizona Archaeology Project's field school. The field school operated between May 30 and June 24, 2022. 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.

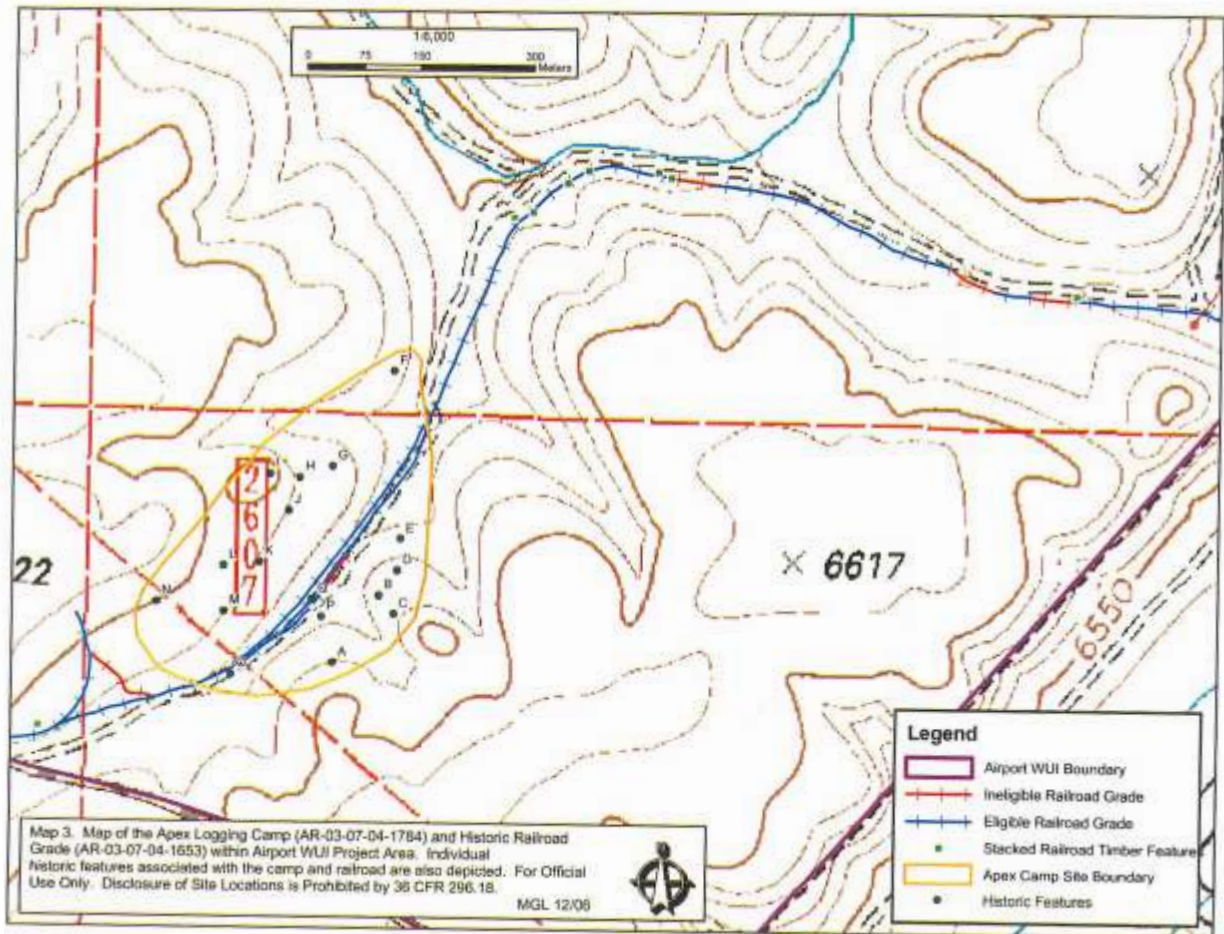


Figure 1: 2006 GPS map of Apex (United States Forest Service 2006:15)

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 2022's field work was directed by Dr. Emily Dale, an Associate Teaching Professor at NAU and a historical archaeologist. A Teaching Assistant, Ashley Mlazgar, a May 2022 BA graduate in Anthropology at NAU, was paid with a grant awarded by Arizona Humanities. Ashley 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: Nathan Crennan, Madeleine Gulbransen, Logan Hick, Andrew Naranjo, Eva Parra, and Ian Villamil. This report is derived from their site forms, field notes, photographs, and other documentation. Logan and Eva presented papers on Apex in January 2023 at the annual Society for Historical Archaeology meetings in Lisbon, Portugal (see Appendix A and B).

A 2022 Grand Canyon Historical Society Grant provided the funding for me to hire two NAU undergraduate anthropology students, Logan Hick and Melissa Baskin, in Fall 2022 to scan, transcribe, digitize, and process the summer field notes, forms, and pictures.

Joey McCauley, an NAU undergraduate sociology student, was hired through NAU's Interns-to-Scholars program, operated through the Office of Undergraduate Research and Creative Activity. Joey scanned, transcribed, and analyzed the surveys we collected from our site visitors at the end of our tours.

2.2. Funding

Funding for 2022 field work was provided by numerous organizations. Northern Arizona University funding and student course fees paid for Dr. Emily Dale's summer course salary, transportation, and student supplies. The Kaibab National Forest purchased field supplies for our welcome table, and their Youth and Veteran's Engagement Grant provided funds to pay \$1500 student stipends to each of our eight field school students. A \$5000 grant from Arizona Humanities paid for the teaching assistant/tour guide salary, portable toilet rentals for the summer, and educational brochures. Finally, a \$2000 grant from the Grand Canyon Historical Society was partially used to purchase field supplies. The remainder was initially earmarked to pay Bruce Phillips for his geoarchaeological and ethnobotanical expertise, but as he volunteered his time for free, the budget was reallocated to pay two student workers to process field data over the Fall 2022 semester.

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.

3.1. History of Apex

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

3.1.1. The Grand Canyon Railway

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

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

In 1899, while roadbed construction began (Richmond 2017:9), legislative battles, competition with other railroad companies, and logistical troubles began to plague the Santa Fe and Grand Canyon Railway (Richmond 2017:10–11). Still, by 1900, the company completed construction between Williams and Anita Junction, a prominent section house and mining town about 45 miles to the north once a three-hour stagecoach trip from Williams. Passengers there alighted the train and then boarded stagecoaches to continue the remaining five-and-a-half hour journey to the Grand Canyon (Richmond 2017:12), which was undoubtedly a difficult if not grueling experience. Unfortunately, with the Grand Canyon so close, the Santa Fe and Grand Canyon Railway Company succumbed to the debts incurred from the cost of the construction and looming costs of completing the railroad. They were absorbed into the Santa Fe Pacific Railroad and their owner, the Atchison, Topeka, and Santa Fe (AT&SF) in 1901 (Richmond 2017:14).

After acquiring the railway, the AT&SF realized that the previous owner had cut several corners as they hurried to complete construction (Richmond 2017:29). The new owners began a series of improvements, including widening the railbed and adding sidings along the line. The AT&SF also turned their attention to completing construction of the last 10 miles to the Grand Canyon. They finished by September 1901, only one month after gaining control of the route (Richmond

2017:30), and the first train arrived at the Grand Canyon on September 17, 1901, marking the first all-train access of the canyon as a tourist destination (Griswold 2006:2; Richmond and Pearsall 2004:6).

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

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

3.1.2. Apex

Logging camps popped up around the American West to supply towns, mines, and railroads, and archaeologists have rigorously examined the lives of lumber workers (e.g., Chung 2015; Dale 2015, 2016, in review; Dixon and Smith 2017). Railroads especially need lumber. Fortunately, the Grand Canyon Railway sat in the middle of one of the largest stands of ponderosa pine in the state of Arizona (Richmond 2017:79). As the heart of this forest, Williams became a center for logging operations in 1893, when the Saginaw Lumber Company purchased the timber rights to what is now much of the Kaibab National Forest. The demand for wood by businesses, ranchers, residents, mines, and the Atlantic and Pacific Railroad led to immediate success. The company expanded their reach to providing lumber to areas to the south, like Phoenix, that lacked access to timber. The Saginaw Lumber Company also built a mill in Williams. Looking to expand, the Saginaw company partnered with the Manistee Lumber Company in 1899 and established the Saginaw and Manistee Lumber Company of Arizona (Richmond 1988:75, 2017:80). The new company was able to provide nearly five million ties a year for the railroad, timbers for the numerous mines in the Francis District, like those at Anita, and building materials for the construction boom at the Grand Canyon.

By the 1920s, the Saginaw and Manistee Lumber Company had finished their leases south of Williams on the Kaibab National Forest and near Bellemont on the Coconino National Forest (Richmond 2017:81). They needed new places to cut. In 1928, the Forest Service established the Tusayan Ranger District between Williams and the Grand Canyon, and the logging company contracted with the AT&SF to provide timber in exchange for a spur and sidings at Apex. The

1930 Coconino County census recorded 415 men and 18 women in the “lumber and furniture industries” and 382 men and 2 women working for the “steam and street railroads” out of the 4,477 men and 2,575 gainfully employed adults (Lamont and Steuart 1931:20).

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

Both based out of Michigan, the Saginaw Lumber Company and the Manistee Lumber Company brought with them many of the Swedish and Swedish-American residents who had made the Midwest their home. Over time, Norwegian and Finnish workers joined their ranks, making Apex a largely Scandinavian logging camp (Richmond 1988:80, 2017:86). In addition to the Scandinavian workers, several Mexican workers were also employed at Apex by the Santa Fe. The Saginaw and Manistee Lumber Company did employ Mexican workers, but solely at their mill and box plant. On July 3, 1909, the Williams News reported an accident from June 29, where three Mexican men, belonging to the same section crew, were injured while blasting rocks with dynamite along the grade near Apex (Richmond 2017:42–43). One stick did not explode, so the three men went to investigate when the explosion occurred. The Atchison, Topeka, and Santa Fe transported the men to Albuquerque, where one of the men died. The newspaper did not record their names.

Richmond notes that there were seven houses on the east side of the rail line and seven more houses and the school on the east (Richmond 1988:78, 84). Two oil tanks, a water tank, sheds, and maintenance buildings served the locomotives. Al Richmond and Don Bufkin conducted on-site interviews with former residents of the town to draw a map of building locations, and Kaibab National Forest archaeologists located remnants of several structures that coincide with Bufkin’s map. The locations of several buildings are still unmapped, however. As timber is a non-renewable resource, especially in the timeframe necessary for the Saginaw and Manistee Lumber Company to remain profitable, Apex was built to be movable (Crump 1993:61; Richmond 2017:83). The railroad bed and tracks on the Apex spur were deemed temporary as well (Richmond 2017:86). Little effort was spent making the main line, which was more of a dirt track road where ties sank into the ground, efficient. Housing for single male employees consisted of reused boxcars, which could be placed on flatcars and moved to the next location off the railroad (Richmond 2017:83). Family housing was slightly more permanent, with a kitchen, a

living room, and one bedroom. Arvid Anderson, the superintendent, had the largest house which boasted two bedrooms. Still, family housing was portable; they sat on temporary wood or stone foundations and, with their unique “L”- or “T”-shaped design, could come apart in the middle and placed on flatbeds as well. When the workers were in Apex, a commissary car, kitchen and dining car, and the supervisor’s car were parked in town (Richmond 1988:78). The Kaibab (Stein 2006:4–5) identified several domestic trash scatters, with glass shards, buckets, shoe soles, tin cans, and ceramic sherds, indicating the past locations of houses. Other features, such as brick piles with machine parts, suggest the sites of logging- or railroad-related maintenance buildings.

Beyond the basic necessities for camp workers, Apex also had some amenities for the town’s families. In 1929, Apex School District Number 3 opened its doors to the few children who lived at the camp (Crump 1993:61; Richmond 1988:80, 2017:84). Similarly built out of reused boxcars on a timber foundation, the one-room school operated until 1936. Three women, Margaret Longley, Katherine Sipp, and Rose Wilson, held the position of school teacher 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 planks, 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

Fieldwork for the 2022 season took place between May 30 and June 24. While at the site, we conducted survey, mapping, photography, excavation, artifact analysis, and ground penetrating radar at eight separate site loci. The weather was mild, with temperatures ranging between the low 50s to the high 80s during the day. We did encounter several windy days, which made mapping difficult as it disrupted the longer tape measures as we attempted to measure distances of several meters. The large number of ferrous cans at the site possibly contributed to struggles in making tape-and-compass maps, as there were times the compass did not want to cooperate. The wind also blew away smaller, lighter items from the excavation unit and screen, such as eggshell and charcoal, which may have reduced the count of those artifacts, though not substantially. The field school purchased two Sony DSC-W800, 20.1 megapixel cameras, referred to as the Black Camera and Silver Camera, based on the body color. Unfortunately, the soil at the site was particularly intrusive and small-grained, sticking to and staining field notes and getting into the inner gears of the cameras, causing them to struggle focusing by the end of the field school. As a result, some photos were taken with personal phones. Incoming monsoon storms meant we left the site early a few days, and the constant threat of a wildfire meant there were days we were unsure if we would be able to return to the Forest. 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 2022 coin with a layer of burlap at the bottom, before the unit was backfilled. For more on our philosophy on, reasons for, and methods of catch-and-release, please see Appendix B for Logan Hick’s 2023 SHA Conference paper, “Permit Required: Catch and Release Archaeology.”

4.2. Survey and Mapping

Each locus we surveyed during the 2022 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. In a few cases, such as Locus A, we had to establish a second, subdatum due to the large size of the Locus. 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 Charlie Webber 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 some cases, such as at Locus S, some parts of the feature were too far away to reasonably map on the same or connected piece of graph paper, and multiple pieces of paper were used, and their distance and direction from the datum were recorded on all map papers. After, or during, mapping, overview photos of the loci were taken as well as photos of key points on the map.

We next began recording artifacts in each locus, concentrations, and features, using artifact forms. For smaller features or less common artifacts, we conducted as near a 100% artifact count as possible. In larger features or with incredibly common artifacts, we conducted a 10% artifact count and extrapolated that number out to the whole feature. For example, in a can dump, we may have conducted a 100% of shoe soles, but a 10% count of hole-in-top cans. During this count, we collected diagnostic artifacts for separate recordation. Dubbed the “cool thing pile”, such artifacts included items with writing, decoration, or clear function. Each of these diagnostic items received a separate line on the artifact form and individual pictures. Once recordation of the site was completed, the collected artifacts were returned to as close to their original location and position as possible.

4.3. Excavation

Per the ARPA permit and Research Design, we only opened one unit in the 2022 field season. We identified possible locations of subsurface materials by searching for depressions that may represent the locations of former privies. We identified eight such depressions this season, at Loci E, F, H, I, K, P, and R. Phillip Mink, a remote sensing specialist from the University of Kentucky, volunteered his ground penetrating radar services and came out on June 8 to demonstrate his equipment. We decided to prioritize conducting GPR of the depressions at Loci E, I, and R. The Locus H and P depressions were too deep for easy remote sensing or excavation, the Locus K depression is under a large, canopied tree and hard to access, and Phillip ran out of time to GPR Locus F's depression. Based on the results, we elected to open up one of the Locus I depressions as a 1m x 1m unit in 2022. Per Phillip's instructions on reading the GPR results:

“the image in the upper left-hand corner is the nearest the surface and as you examine the images from left to right you get to the deepest image in the bottom right-hand corner). The red and yellows are high intensity reflections, which would be caused by something like, rock, metal, or a very hard soil contact. The blues and the greens are lower intensity reflections, so more subtle soil difference” (Phillip Mink, elec. comm., 10 June 2022).



Figure 2: Logan Hick pushing the Ground Penetrating Radar at Locus I. Photo by Nathan Crennan.

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.

In order 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 2022 quarter in a plastic bag on top, and then placed all the removed artifacts in the bottom of the unit, then backfilled it with the excavated soil.

5. LOCUS SUMMARIES

The archaeological field school conducted survey, excavation, ground penetrating radar, mapping, photography, artifact analysis, and historical research of several features at the site. In 2006, the USFS recorded Apex and identified 17 features, they designated as Loci A through Q. Our project will be re-recording these features, as well as identifying new ones. In Summer 2022, we resurveyed Loci A, G, and J, conducted GPR of a possible privy at Locus E, excavated a unit below Locus I, and identified three new Loci, designed Loci R, S, and T.

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. Concentrations are distinct, but more disperse, areas of cultural activity that often constituted remnants of buildings and multiple types of artifacts. Can dumps are locations of intentional and dense artifact disposal where the primary artifact type is historic can, but also contained other artifact types deposited at or around the same time period.

The photographs in this report are not inclusive of all of the photographs taken over the 2022 field season. All photographs and photo logs have been provided, separately, to the Kaibab National Forest. The included maps do not represent final maps of the site. The Apex, Arizona Archaeology Project is still working with NAU to access appropriate software, such as Adobe Illustrator and ArcMap to complete more professional and cohesive versions. The large size of some maps, especially the maps of Locus A and Locus S, created other challenges in terms of scaling them to fit appropriately in this report.

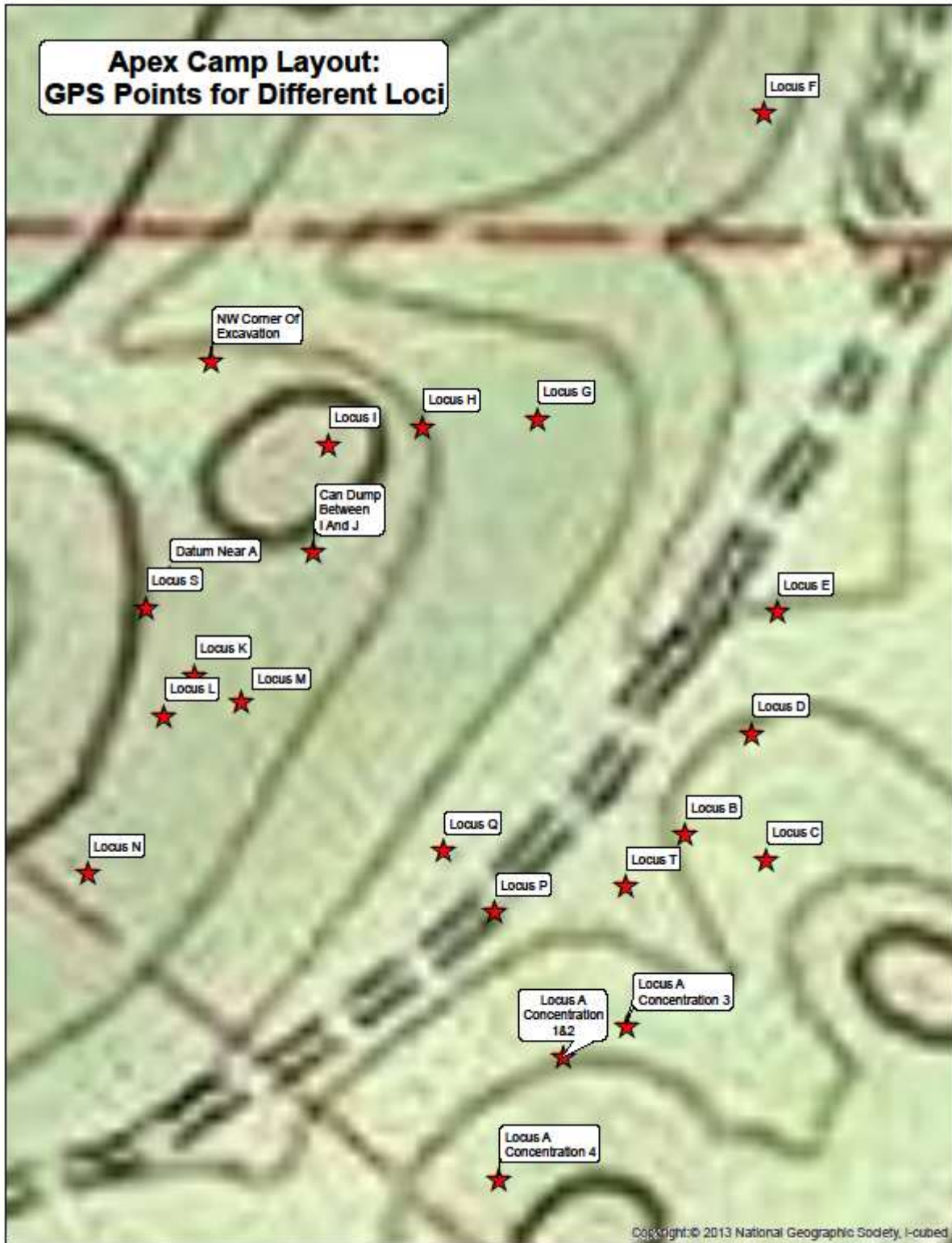


Figure 3: 2022 Apex map of Loci A through T, as well as the excavation unit at Locus I. Map by Charles Webber.

5.1. Locus A

Locus A, at the southeast corner of the site, was recorded by the KNF, and was tentatively designated as the kitchen and dining area, per oral histories and information gathered from Al Richmond. The 2006 report described Locus A thusly:

At least (4) Wooden structure outlines in area” “One burned area (structure?) w/ can dump, window glass. Area has several crown caps. Amethyst, aqua, cobalt, brown, selenium glass. “Calumet” external friction can lids (3+), lard buckets, tobacco tins, old stove exterior, lots of milled lumber, HiT and HiC (meat) cans, galvanized bucket, rubber shoe soles, stoneware crocks, “SECONDS WITHOUT ADDED SUGAR”—coffee can lid?, gas cans, gray enamel basin, whiteware (United States Forest Service 2006:4)

Despite its size and large number of artifacts, the KNF survey of Locus A was rudimentary and lacking a map, but the 2006 report did include the recommendation to “Map as one locus (to drainage)”.

We mapped the area and identified three separate activity areas we designated Concentrations 1, 2, and 3, each corresponding to a distinct building material scatter, suggesting at least four separate buildings. Additionally, we recorded 5 can dumps at Locus A. The map for Locus A is too large to include in this report for any meaningful detail to be visible. It has been provided to the Kaibab National Forest separately.

Concentration 1, at the center of Locus A consisted of a scatter of milled wood at three intact wooden beams, two of which still held screws, nails, and washers. The presence of two separate ovens, an oven hood, a faucet spigot, and various ferrous scraps of stove pipes and stove pipe holes corresponds to the KNF interpretation of Locus A as the kitchen. Artifacts were disperse, with one small but discrete can scatter at the south end of the concentration. Common artifacts included hole-in-top and sanitary cans, colorless, green, milk, and amber bottle and mason jar shards, and white improved earthenware, stoneware, and porcelain sherds (many decorated in hand-printed floral designs). Diagnostic artifacts included a Tree Tea can lid, two Calumet baking powder lid, part of a Vaseline jar, a Kerr mason jar lid, Budweiser and Schlitz malt extract lids, and a Monarch peanut butter jar lid.



Figure 4: Locus A, Concentration 1, looking east. Photo by Nathan Crennan

Concentration 2, at the west end of Locus A, covers a larger area than Concentration 1, but has a wider and more sparse distribution of artifacts across the area. There was a small area with darker, possibly burned soil that contained some small, burned bone fragments and nails, possibly representing a kitchen burn pile. It is unclear if this is the same “burned area” reported by the FS. The most common artifact at Concentration 2 was pieces of milled wood, with four larger, more intact beams present. Two trash dumps, one in the center of Concentration 2 and one at the east end, contain the highest concentration of artifacts in the area. Common artifacts include hole-in-top, sanitary, and sardine cans, crown caps, and white improved earthenware, stoneware, and ceramic sherds (including some hand-painted in floral designs, and one made in Japan). The feature also has a large amount of glass, including over 500 colorless shards, 50 amber, 65 green, 15 blue/cobalt, and 15 amethyst shards. Identifiable artifacts include pocket watch casing, a “Paris” razor blade, a spoon, two Calumet baking powder lids, a French imported can, a milk glass Pond’s jar shard and lid, a Denver Hi Fire Brick Company brick, carbon battery rods, Old Dutch Cleanser lid, a Campfire Marshmallow lid, a shaving cream tube, a Cracker Jack “Screamer Whistle”, a toy gun, an A.S. Hinds Honey and Almond Cream bottle, a harmonica reed plate, and a pitcher. We also recovered the body of a white chert projectile point.



Figure 5: Locus A, Concentration 2, looking southeast. Photo by Ashley Mlazgar.

Finally, Concentration 3, at the east end of Locus A, contains the remains of at least two structures, and two large can dumps. Structure 1, at the northwest end of the concentration, consists of five milled beams, still in a square, and over 400 other fragments of wooden debris, including one burnt beam. Other artifacts at Structure 1 included three stove pipe pieces, a McLaughlin Glass Company bottle base, three Orange Crush bottle fragments, including a base from the Southern Glass Company, a rubber shoe sole, a cast iron stove part, hole-in-top, tobacco, and bucket cans, colorless, flat, green, and amber glass, crown caps, and a rake head. Structure 2, at the southwest end of the Concentration consists of three wooden beams with nails and bolts in a rectangle, a possible window frame, and 10 hole-in-top cans and buckets.



Figure 6: Structure 1 at Locus A, Concentration 3 looking north. Photo by Eva Parra.



Figure 7: Structure 2 at Locus A, Concentration 1, looking northwest. Structure 1 is visible in the top. Photo by Madeleine Gulbransen.

In between Concentrations 1 and 2, we found the base of a “Babbitt Inc” bottle. It is unclear if this is related to the Flagstaff Babbitt family. We also found part of a pumpkin flask bottle with a molded spiderweb pattern, including a fly trapped in the web.

Concentration 3’s Can Dump 1 is the smaller and more northerly of the two, both located at the east end of the Locus at the edge of the drainage. It is a general donut shape, with an emptier space at the center. Common artifacts include nearly 500 hole-in-top, sanitary, sardine, and tobacco cans and buckets, nearly 100 pieces of amber, colorless, flat, olive, and aqua finishes, body, and bottle bases, 15 porcelain and white improved earthenware sherds, and 5 shoe soles. Identifiable objects include Puritan and Budweiser malt extract can lids, Brooks’ orange crush bottles, and a milk glass Mentholatum jar. Can Dump 2, to the south, is much larger and contains over 600 hole-in-top, sardine, and tobacco cans and buckets, nearly 100 pieces of colorless, amber, green, milk, amethyst, and flat glass, about 25 white improved earthenware sherds, 10 crown caps, two buttons, one metal and one shell, a long piece of wire running through the scatter, and one corrugated stove pipe fragment. Interestingly, Camp Dump 2 contains over 20 shoe fragments, mostly rubber and leather soles and one leather upper. One sole is embossed

‘M/9½/11-IRON’. There are also two rubber combs, one orange and one black. We also found two frequency variable capacitors for a Neutrowound Radio and a possible lightbulb or radio tube. Other diagnostic artifacts include a Calumet and an unknown baking powder can, a Norvege sardine can, and a Prince Albert tobacco tin.



Figure 8: Can Dump 1 at Locus A, Concentration 3, looking north. Photo by Andrew Naranjo.



Figure 9: Can Dump 2 at Locus A, Concentration 3, looking north. Photo by Andrew Naranjo.

To the east of Locus A, and on the other side of the drainage and slightly up the hill, we found another small can dump, of approximately 150 cans, mostly hole-in-top, but also tobacco and oil cans and buckets. No other artifact types were found in this scatter. There is also an intact 2½ pound Calumet baking powder can. To the east of that and even further up the hill was another artifact scatter. This area contained the remains of a couch frame and 6 stove parts, but no evidence of a former structure. Other items included 30 cans, 4 large pieces of cable, two white improved earthenware, 50 colorless, cobalt, and amber glass shards, and one promotional Chicago Mail Order Company shoehorn.



Figure 10: Can Dump north of Locus A, Concentration 3. Photo by Madeleine Gulbransen

5.2 Locus E

Locus E, recorded by the KNF in 2006, is the likely location of the laborer bunkhouse, located at the northern end of the camp on the east side of the tracks. Phillip Mink, a remote sensing specialist with the University of Kentucky, volunteered his services for the summer and performed ground penetrating radar of a large depression at Locus E with the assistance of Ian Villamil and Madeleine Gulbransen. The possible privy showed promising depth and will be a likely candidate for excavation in a future year.

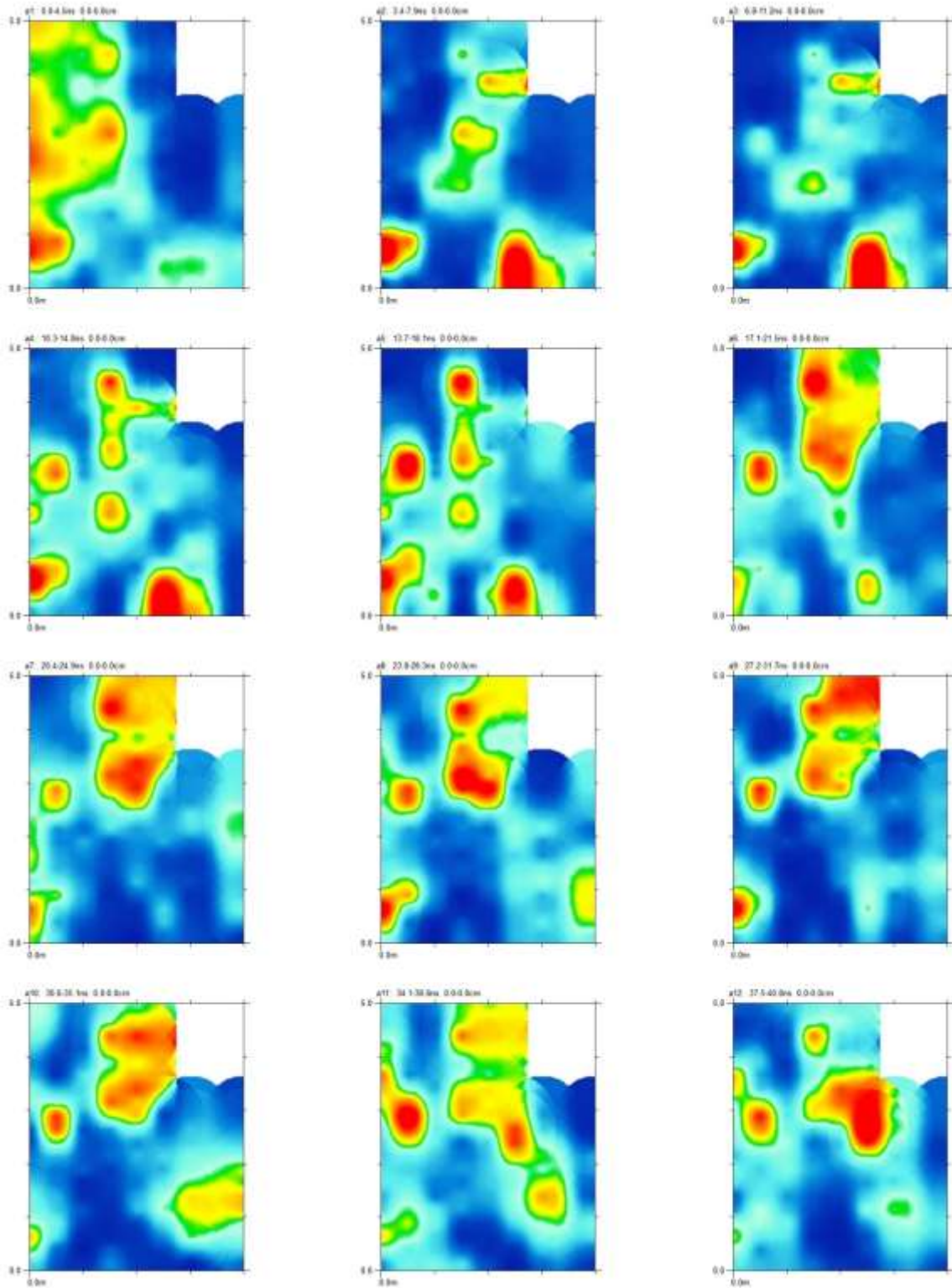


Figure 11: GPR read-out of possible privy at Locus E. The blank space in the upper right corner is a tree growing on the edge of the depression. Map by Phillip Mink.

5.3. Locus G

Locus G, a large can dump on the west side of the tracks, was recorded, but not mapped by the KNF. They described the site as:

≈10,000 cans in a large, dense can dump, some cone top beer cans, lots of HiT cans, some glass, ceramics—fair amount of selenium glass, Pennzoil can, some church-key openings, few beverage cans, large (lard) buckets, shoe soles (United States Forest Service 2006:5)

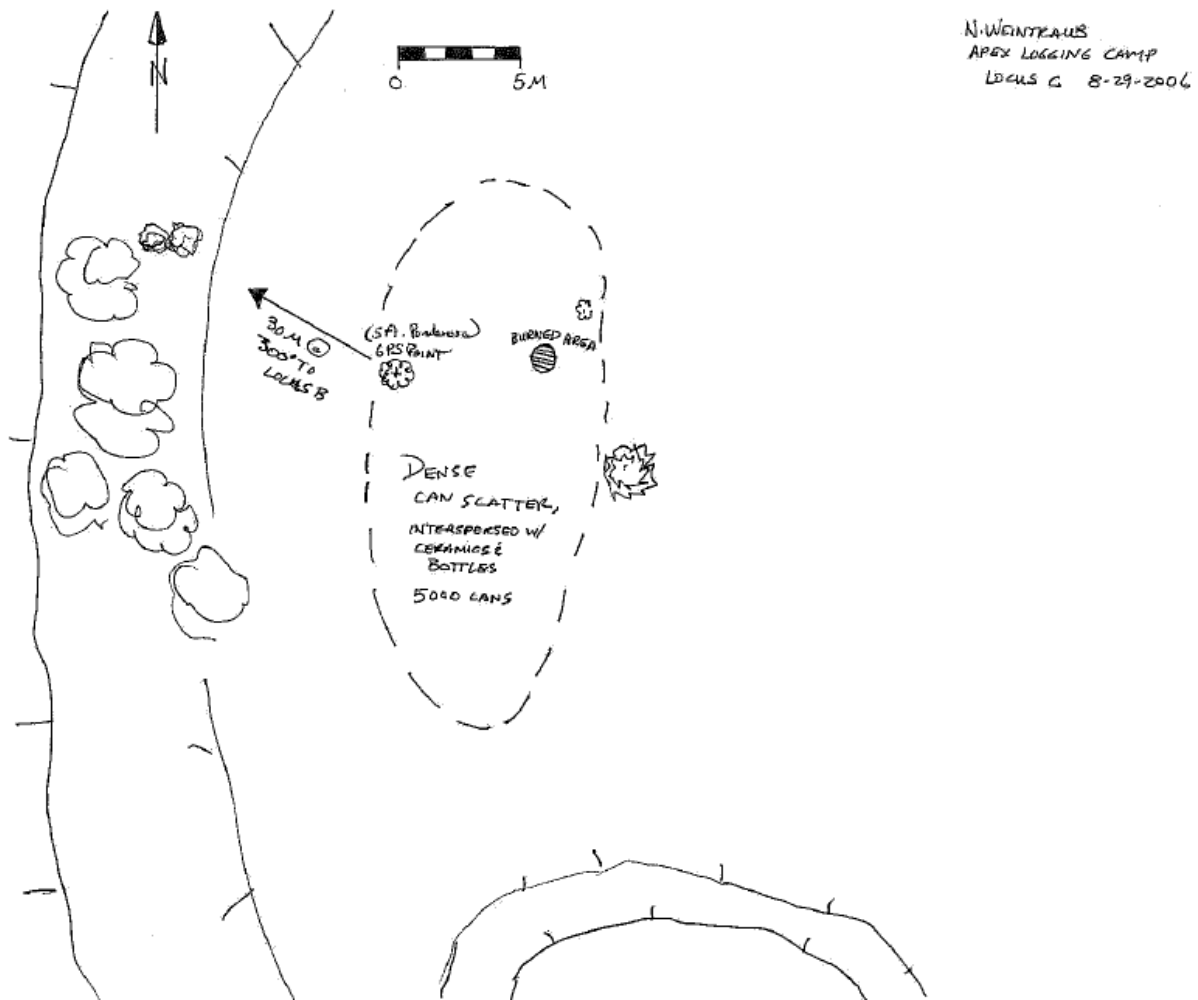


Figure 12: 2006 map of Locus G by Neil Weintraub (United States Forest Service 2006:10).

Our survey of Locus G determined it to be approximately 16m x 10m in a general “C” shape around a pine tree, meaning that the feature is heavily covered in pine needles, likely obscuring the true size and artifact density of the dump. Cans make up the majority of the artifacts in the site, including HiT, cone top and pull-tab beer cans (including Acme and Pabst Tapa brands), Hershey’s cocoa and Ovaltine lids, Prince Albert tobacco cans, a Pennzoil can and other oil cans,

and a Peter Pan peanut butter lid. We also found other metal objects, including a Jell-O brand mold, a kettle, a fork and spoon, a salt/pepper shaker, a saw blade, a griddle, and a large wash basin. The approximately 400 glass shards were colorless, amber, green, amethyst, and pink (we did not relocate any selenium glass shards), and included Clorox and Lysol bottles, post-Prohibition liquor bottles, a Mission Orange Dry bottle base, part of a glass Cordella coffee percolator, and hundreds of crown caps. Porcelain was also ubiquitous at Locus G, including porcelain, white improved earthenware, and stoneware sherds, many of which were decorated in floral patterns that we did not encounter elsewhere at the site. Other identifiable objects included a paintbrush, a wind-up toy tractor, a Pepsodent toothpaste tube, a Gem safety razor, a harmonica reed plate, vinyl record fragments, leather shoe parts, carbon battery rods, and a leather wristwatch band.

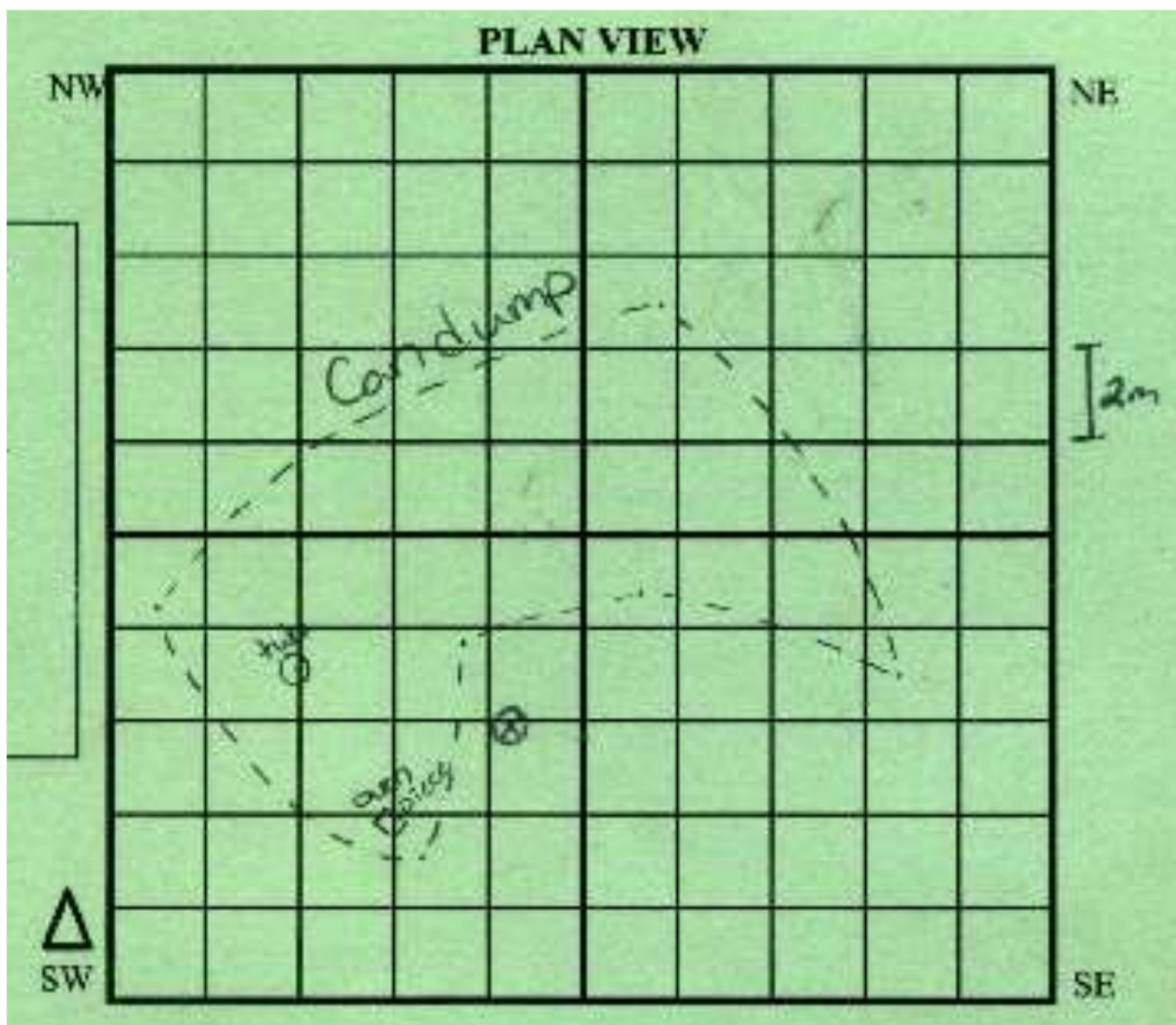


Figure 13: 2022 Field map of Locus G. Map by Ashley Mlazgar, Eva Parra, and Madeleine Gulbransen.



Figure 14: Locus G overview, looking east. Photo by Ashley Mlazgar.

The artifacts at Locus G point to an association with the domestic features in the area, possibly representing the discarded trash from one of the management houses. The large number of alcohol cans and bottles, all of which date to the post-Prohibition era, and the lack of malt extract cans present elsewhere on the site, perhaps date this specific Locus to post-1933.

5.4. Locus I

Locus I, the schoolhouse foundation, was mapped and surveyed by the KNF in great detail. Therefore, we did not remap the foundation or survey the area directly associated with the foundation. Artifacts at the foundations, themselves, were sparse, and our brief visit to Locus I confirmed the 2006 description:

Poss. School house remains? 10-15 m long, \approx 5m 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)

Instead, we focused our attention on two depressions below and to the west of Locus I. There was a scatter of artifacts surrounding the depressions, indicating cultural use of the area at the time of Apex. Two intact bottles, one Vaseline and one a measured medicine bottle, were found between Privy 1 and Locus S. Phillip Mink, with the assistance of Logan Hick and Nathan Crennan, performed ground penetrating radar on the two depressions. The northern depression had inconsistent and shallow subsurface disturbances, so we have no plans to excavate this feature. There are also six fragments of at least one decorative milk glass vessel, such as a vase or jar, that do not mend, west of this depression. The southern depression demonstrated a clear depth of soil disturbance, suggesting a possible privy location. There was also a can scatter on top of and directly north of the privy. Artifacts included approximately 40 hole-in-top and sanitary cans and can lids, 4 amber glass shards, a stove pipe, 12 sherds of a Wallace China porcelain bowl, and 7 shards of a Kerr Glass mason jar. We also found 29 calcined bone fragments and 5 eggshell pieces, both of which continued into the unit.

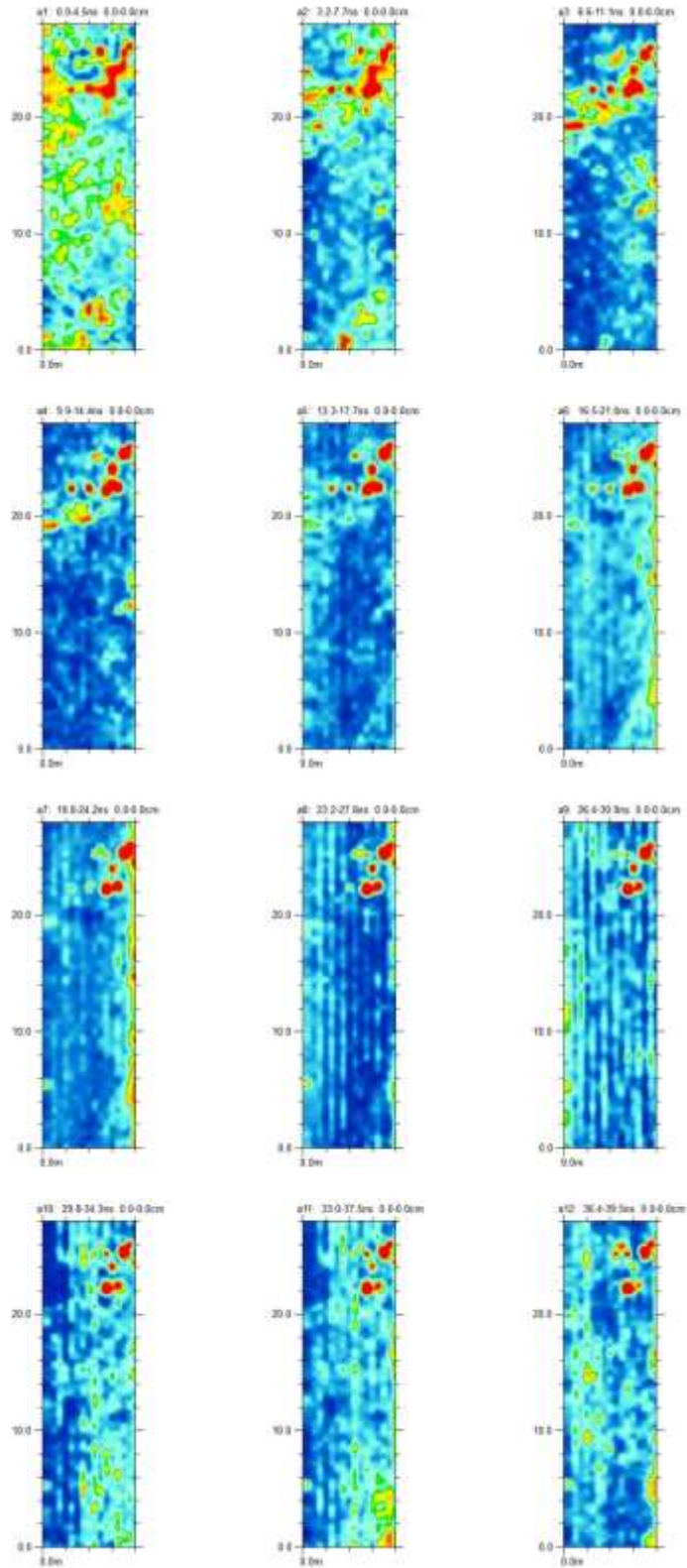


Figure 15: GPR readout of possible privies at Locus I. Privy 1, at the top of the map, showed consistent disturbances to a significant depth. Privy 2, at the bottom center, did not demonstrate any meaningful disturbance at depth. Map by Phillip Mink

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

We laid out a one meter by one meter unit inside the depression, designated Privy 1, through the center of the depression with the hopes of capturing the edge of the original hole as well as the inside. A large piece of milled wood ran through the unit from the SW to NE corners. A second, smaller piece of milled wood seemingly lay to the south at the east end of the first beam. A lot of gambel oak leaves, pine needles, pine cones, and grass, were caught in the center of the depression and under the beam, meaning the south end of the unit was full of more organic materials than the north. Two partially buried cans, two pieces of scrap metal, one calcined bone fragment, and one colorless glass shard were visible on the surface. A Munsell number of Level 1 was determined to be 10YR 5/3: Brown.



Figure 16: Madeleine Gulbransen, Eva Parra, Ian Villamil, and Logan Hick set up a 1m x 1m unit in the Locus I, Privy 1, while Emily Dale supervises, looking south. Photo by Nathan Crennan.



Figure 17: Locus I, Privy 1, Unit 1, Surface. Photo by Ian Villamil

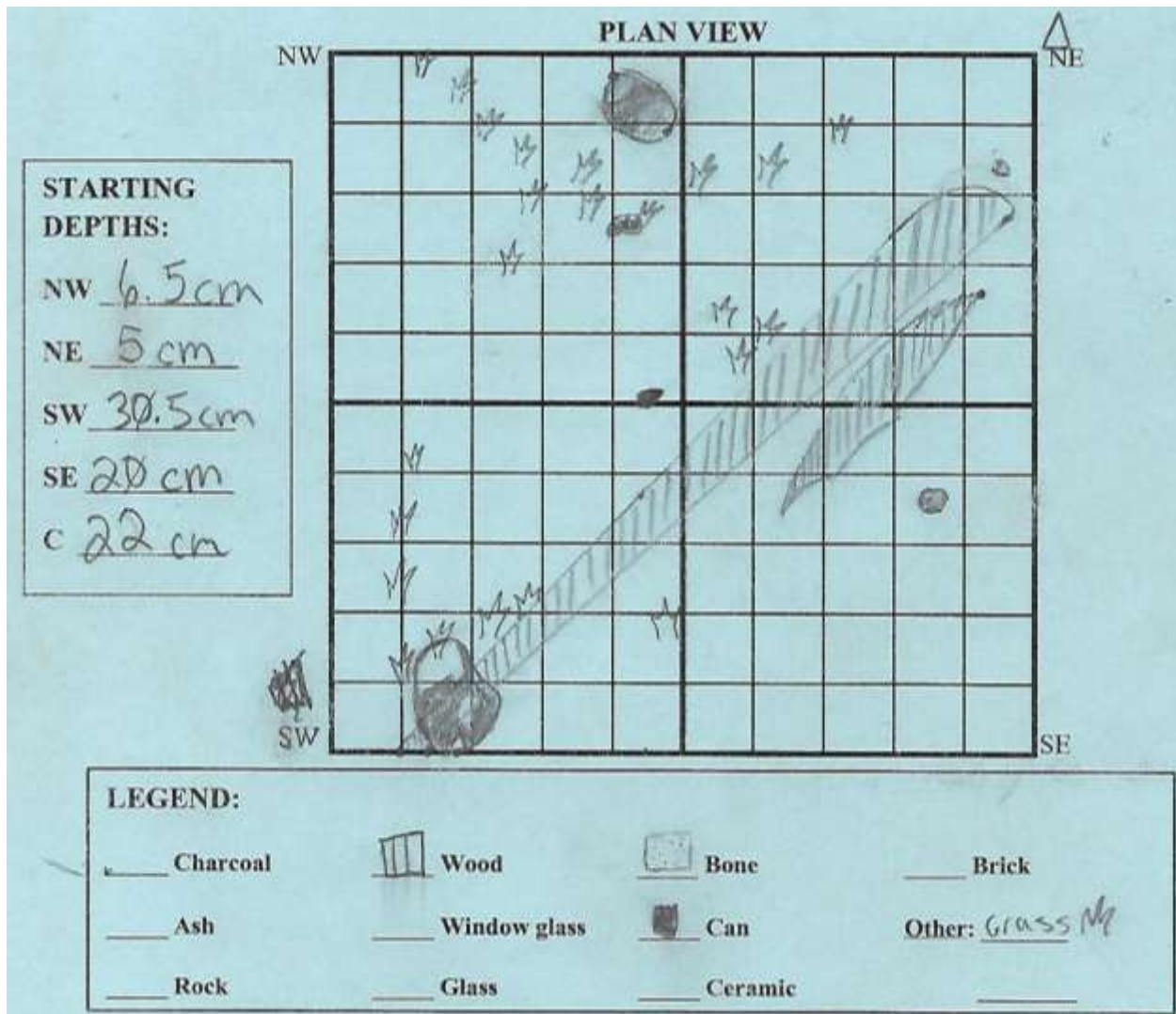


Figure 18: Locus I, Privy 1, Unit 1, Surface. Map by Ian Villamil, Eva Parra, Logan Hick, Nathan Crennan, Madeleine Gulbransen, and Emily Dale

As the northern end of the unit was much higher than the center and southern end, we brought the northern corners down while leaving the rest of the unit untouched to try to level out the soil. This was done with the assumption that the privy layers would be level and we wanted to bring the original surface down at the same time. We also wanted to possibly distinguish between materials “above” the beam and those “below” it in case it was part of the original outhouse structure and created a cultural division in the unit. The Munsell showed little distinction between the surface and subsurface soils—the number was 10YR 4/3: Brown—so we continued the designation of “Stratum 1”. Level 1 contained over 250 flat ferrous fragments (likely from decomposing cans), 4 porcelain sherds (one stamped “China”), 18 charcoal pieces, 14 eggshell fragments, 9 bone fragments, 1 nail, and 1 tack.



Figure 19: Locus I, Privy 1, Unit 1, Level 1. Photo by Eva Parra

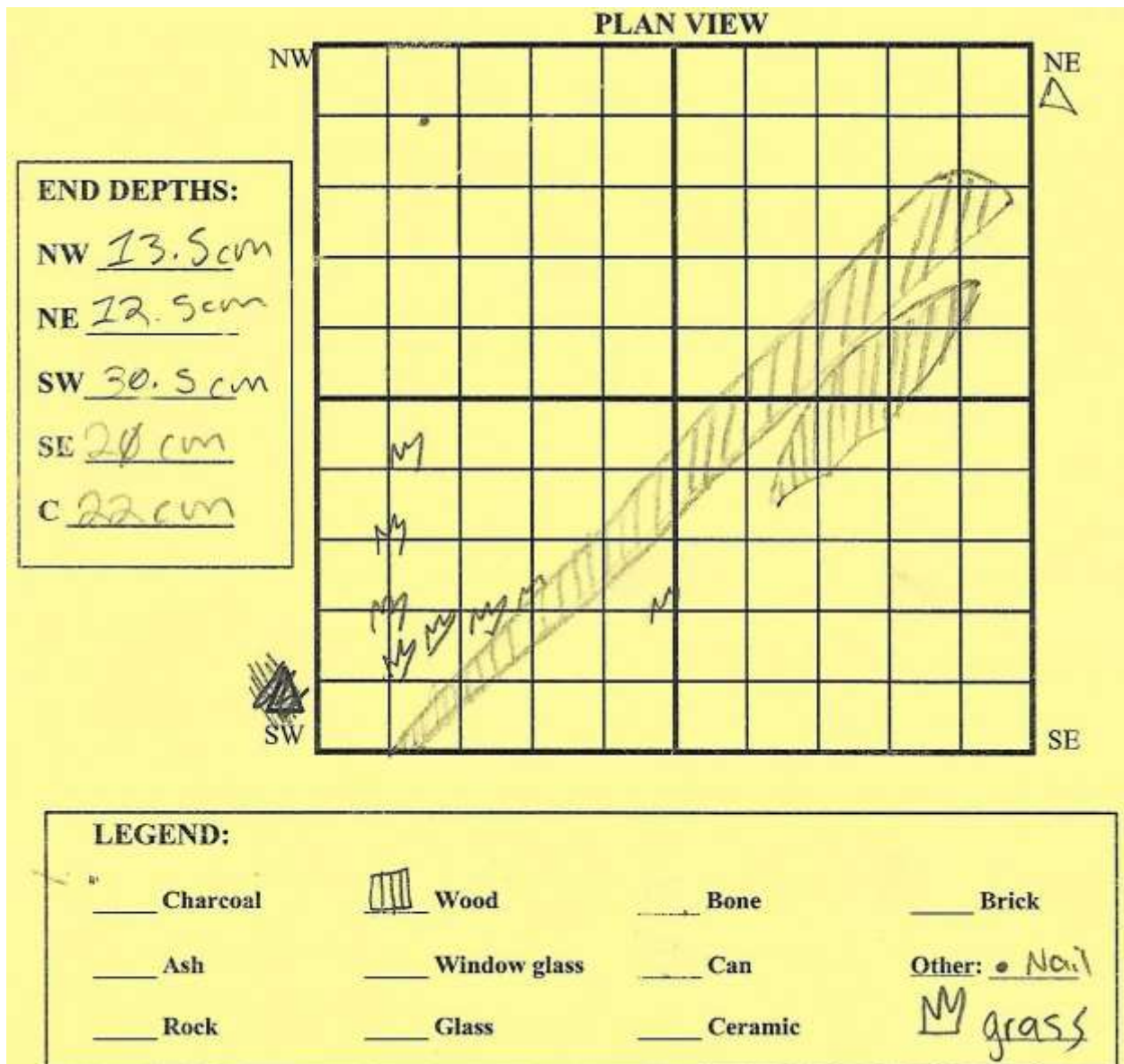


Figure 20: Locus I, Privy 1, Unit 1, Level 1. Map by Logan Hick, Ian Villamil, and Eva Parra

Stratum 1, Level 2 (7.5YR 4/4: Brown) continued the excavations solely in the northern half of the unit, “above” the beam. The soil was rockier and more compact as we descended. At approximately 15cm in the northwest corner, we encountered a new Stratum, so we traced it out across the surface and ended Level 2. Stratum 2 appears to be greyer, more compact, and rockier. Artifacts were largely the same as in Level 1: 274 flat ferrous fragments, 79 bone fragments, 1 colorless glass shard, 1 porcelain sherd, 8 charcoal pieces, 1 nail, and 60 eggshell.



Figure 21: Locus I, Privy 1, Unit 1, Level 2. Photo by Logan Hick

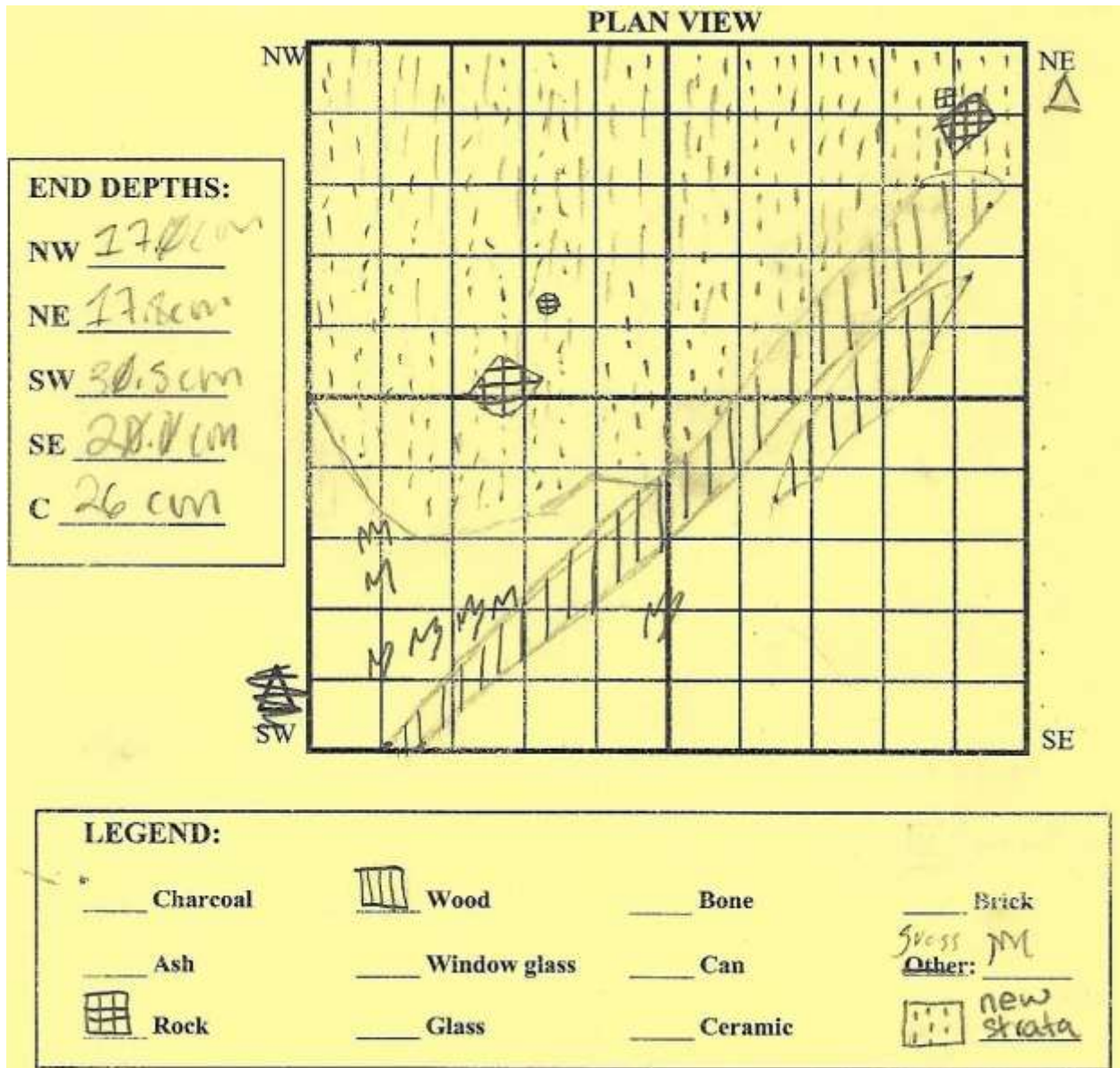


Figure 22: Locus I, Privy 1, Unit 1, Level 2. Map by Nathan Crennan, Ian Villamil, Madeleine Gulbransen, Eva Parra, and Logan Hick

Stratum 1, Level 3 (7.5YR 3/4: Dark Brown) was our continued efforts to trace out the extent of Stratum 2 across the unit. To that extent, we began taking down the soil in the center and southern end of Privy 1. The soil in the southern half is darker than the northern half, likely the result of the higher amount of decomposing leaves and the presence of more charcoal, from what we later discovered came from the burnt underside of the beam running across the unit. Artifacts were the same as earlier levels: 347 flat ferrous fragments, 64 eggshell fragments, 89 charcoal fragments, 1 tack, bone, and a colorless glass sherd.



Figure 23: Locus I, Privy 1, Unit 1, Level 3. Photo by Nathan Crennan

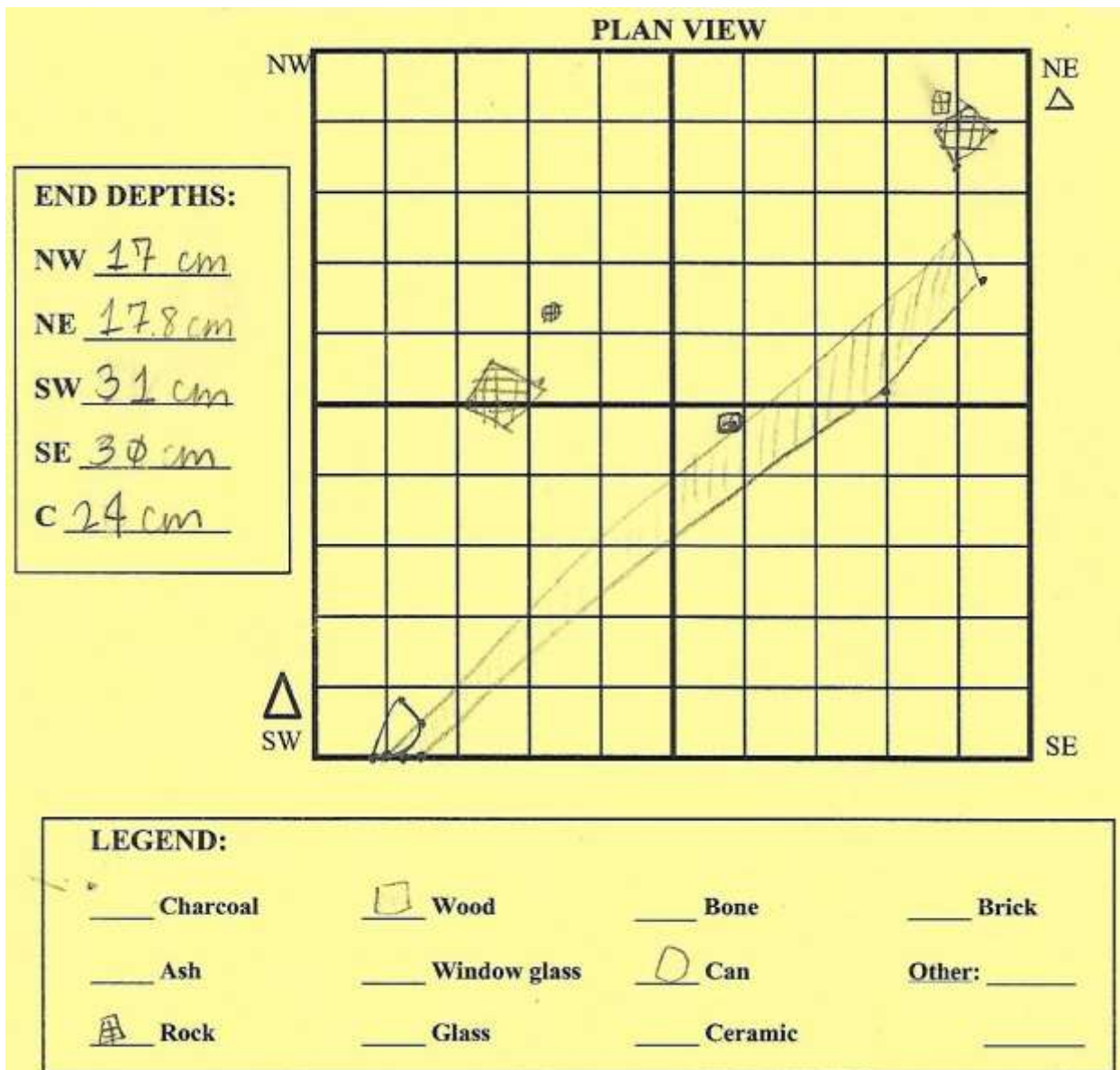


Figure 24: Locus I, Privy 1, Unit 1, Level 3. Map by Logan Hick, Madeleine Gulbransen, Nathan Crennan, and Emily Dale

Level 4 began our excavations into Stratum 2 (10YR 6/2: Light Brownish Gray). Bruce Phillips later informed us that the stratum was likely made up of decomposing limestone, and that it might be the backfill of when the “privy” was made, and may have been put back in the hole when it was capped. The soil is much more compact and rockier than Stratum 1. Artifacts included flat ferrous fragments, charcoal pieces, 21 eggshell pieces, 14 bone fragments, all in similar amounts to earlier levels, and 1 tack. We also took a soil sample from this level in the hope of comparing the upper non-privy levels to the lower privy soils. The sample contained wood fragments, animal pellets, pine needle fragments, pinon seeds, and Chen-A seeds, all of

which demonstrate a recent disturbance of the soil and the intrusion of surface materials into the level.



Figure 25: Locus I, Privy 1, Unit 1, Level 4. Photo by Ian Villamil

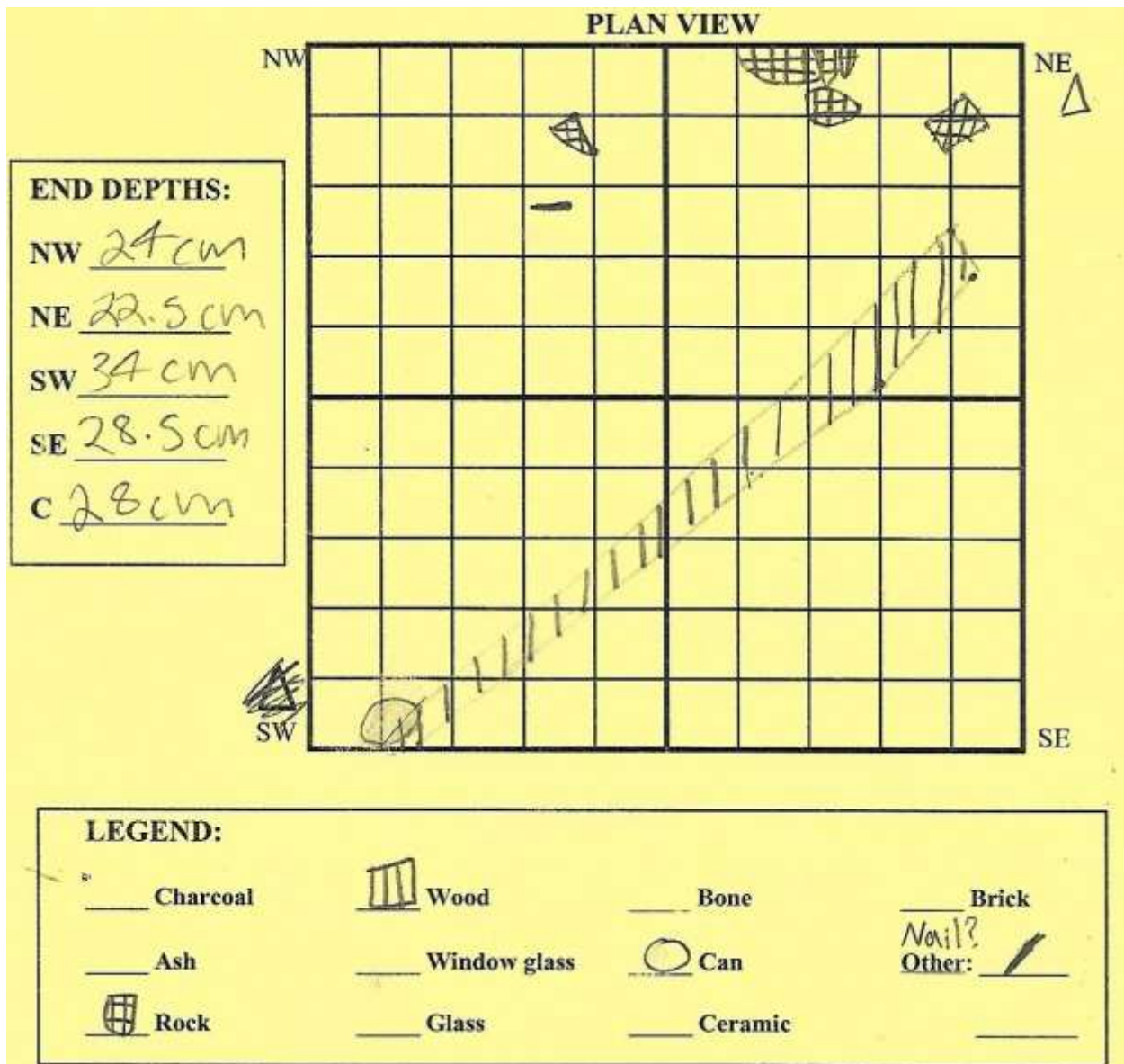


Figure 26: Locus I, Privy 1, Unit 1, Level 4. Map by Eva Parra, Madeleine Gulbransen, Ian Villamil, Logan Hick, and Nathan Crennan

At the end of Stratum 2, Level 5, the unit was fairly level at around 30-32 cmbd. The soil continued to grow rockier, and the rocks grew bigger, but the overall density and consistency of the soil and its' color (7.5YR 4/3: Brown) was largely the same as Level 4. Similarly, the artifact types and counts remain the same, but their size, especially of the flat ferrous fragments and eggshell grew slightly larger. Other artifacts included charred and calcined bone, charcoal, charred wood fragments, two colorless glass fragments, a sardine can key, and a small metal hook.



Figure 27: Locus I, Privy 1, Unit 1, Level 5. Photo by Eva Parra

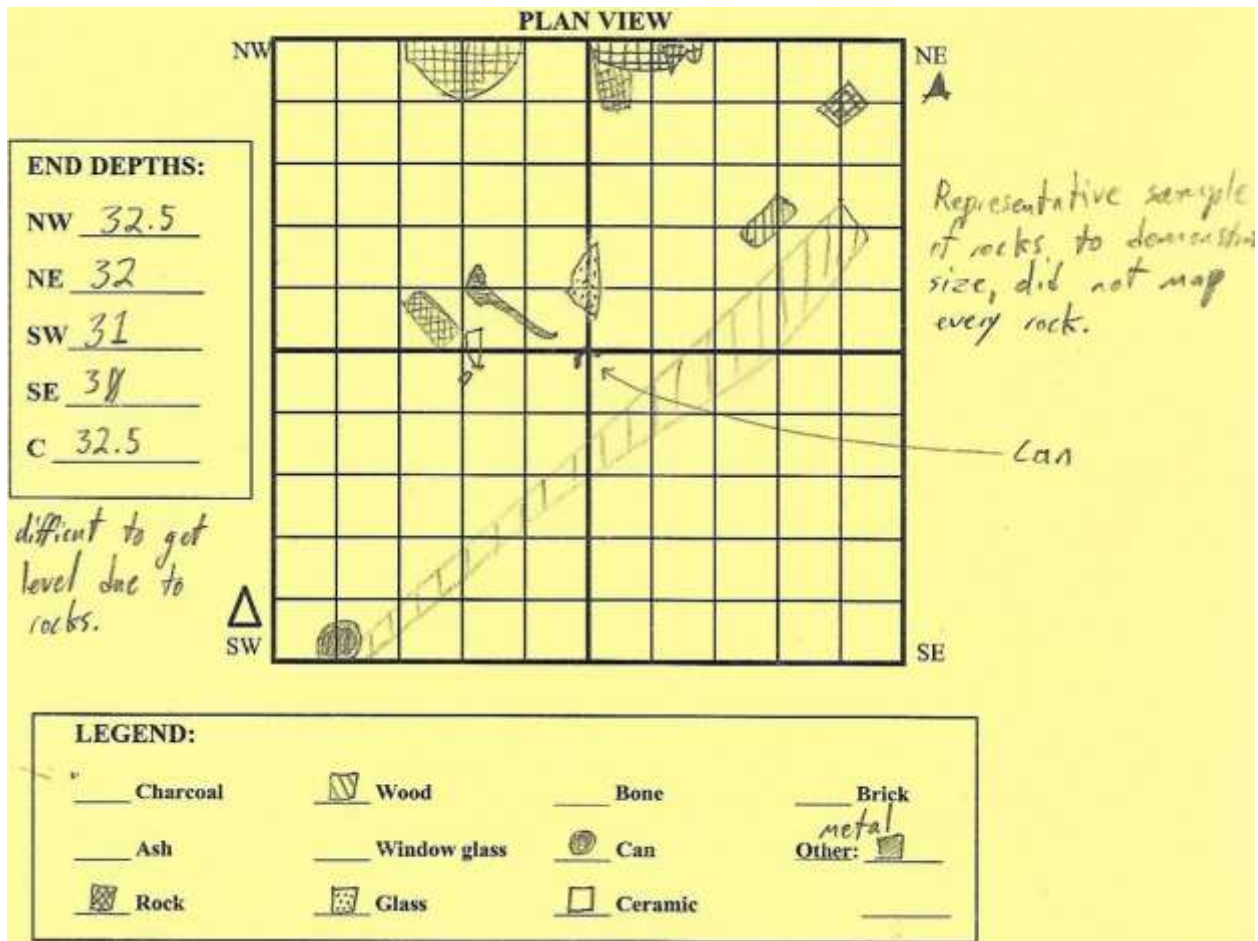


Figure 28: Locus I, Privy 1, Unit 1, Level 5. Map by Ian Villamil, Andrew Naranjo, Logan Hick, Eva Parra, Madeleine Gulbransen, and Nathan Crennan

Stratum 2, Level 6 went down to between 37 and 42cmbd, with the continued presence of the beam in the SW corner making it hard to take the center and corner down as far. The soil south of the beam is less rocky and compact than that on the northern half of the unit, and the soil is lighter in the north (10YR 5/3: Brown) than the south (10YR 5/4: Yellowish Brown). Again, as we learned later, this was likely due to the presence of more charcoal and burned wood in the soil from the underside of the beam. Artifacts included nearly 700 flat metal fragments, 3 can lids, 1 sardine can key, 4 porcelain sherds, 55 calcined and burned bone fragments, 77 eggshell, 70 burned and 12 unburned wood pieces, 4 colorless mason jar rim fragments, and 204 charcoal fragments, likely from the beam. The flat ferrous fragments, eggshell, and bone all continued to increase in size. A soil sample from this level, this time supervised and gathered by Bruce Phillips, hoped to capture any changes to the soil composition based on the can, mason jar, and porcelain deposition even. It contained wood fragments, animal pellets, pinecone scale fragments, pinon seeds, flat ferrous can fragments, and one larger calcined bone fragment. Bruce posited the higher amount of pinon seeds likely indicated the presence of an animal burrow or nest, which we discovered during our Level 8 excavations.



Figure 29: Locus I, Privy 1, Unit 1, Level 6. Photo by Ian Villamil

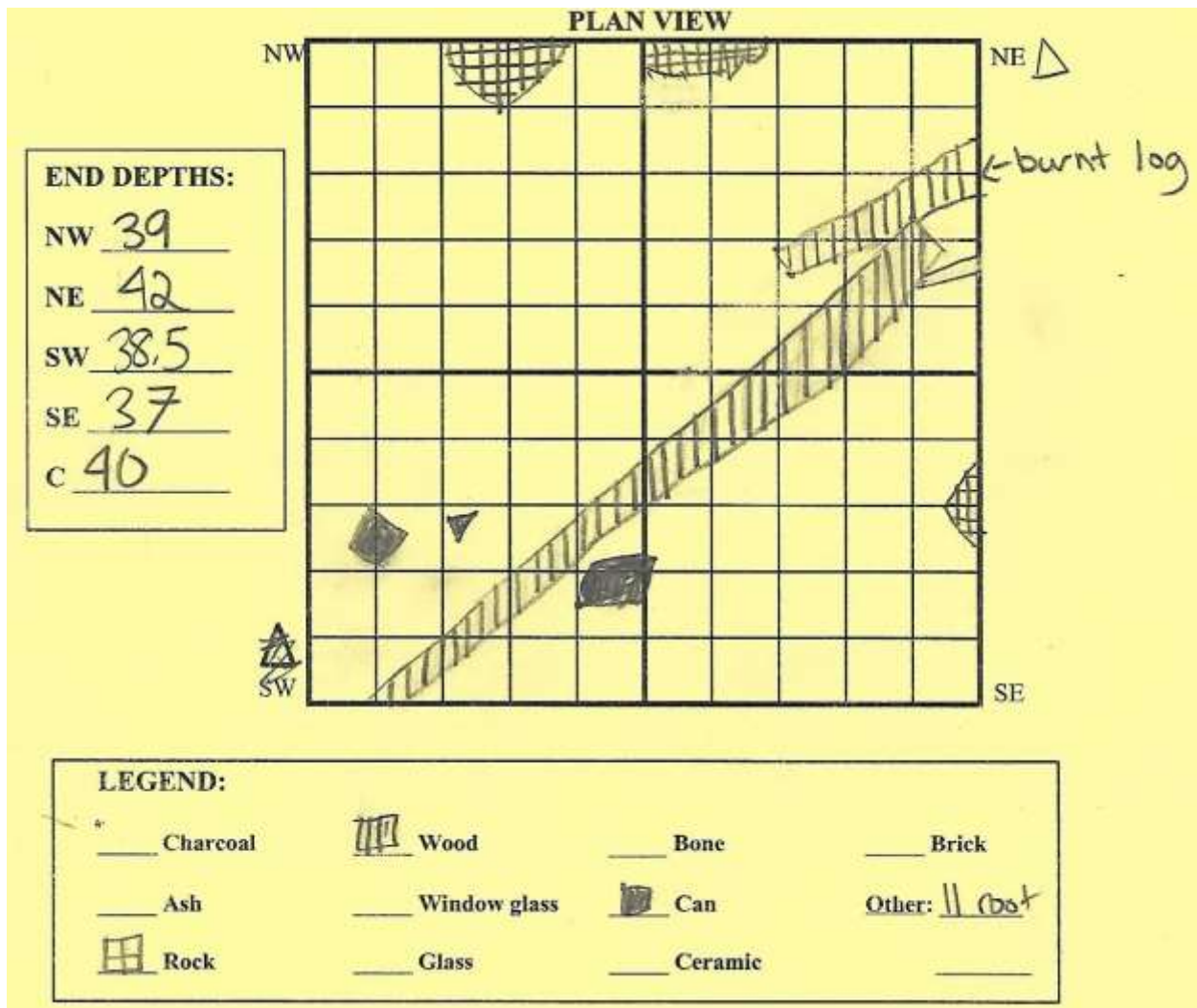


Figure 30: Locus I, Privy 1, Unit 1, Level 6. Map by Emily Dale, Madeleine Gulbransen, Ian Villamil, Eva Parra, Andrew Naranjo, Nathan Crennan, and Logan Hick

During the Stratum 2, Level 7 excavation, we reached the bottom of the entirety of the wooden beam, so we made the decision to remove it. As the beam dipped below the SW corner nail, we made the decision to keep part of the beam in place so as to not collapse the side wall. As before, the north (2.5YR 7/4: Pale Yellow) and south (10YR 5/4: Yellowish Brown) portions of the unit were slightly distinct, due to the presence of the burned beam. The NE corner, in particular, became increasingly chalky, compact, and difficult to excavate. Artifacts included flat ferrous fragments, charcoal, bone, burnt wood, a porcelain sherd, a colorless glass sherd, eggshell, and 1 nail. The number of artifacts decreased, but their size increased. We also encountered the tops of three cans as the level ended around 50cmdb. A final soil sample again revealed wood fragments, animal pellets, and pinon nutshells and seeds, which Bruce also interpreted as evidence of a animal burrow or nest in the unit.



Figure 31: Locus I, Privy 1, Unit 1, Level 7, before beam removal. Photo by Ashley Mlazgar

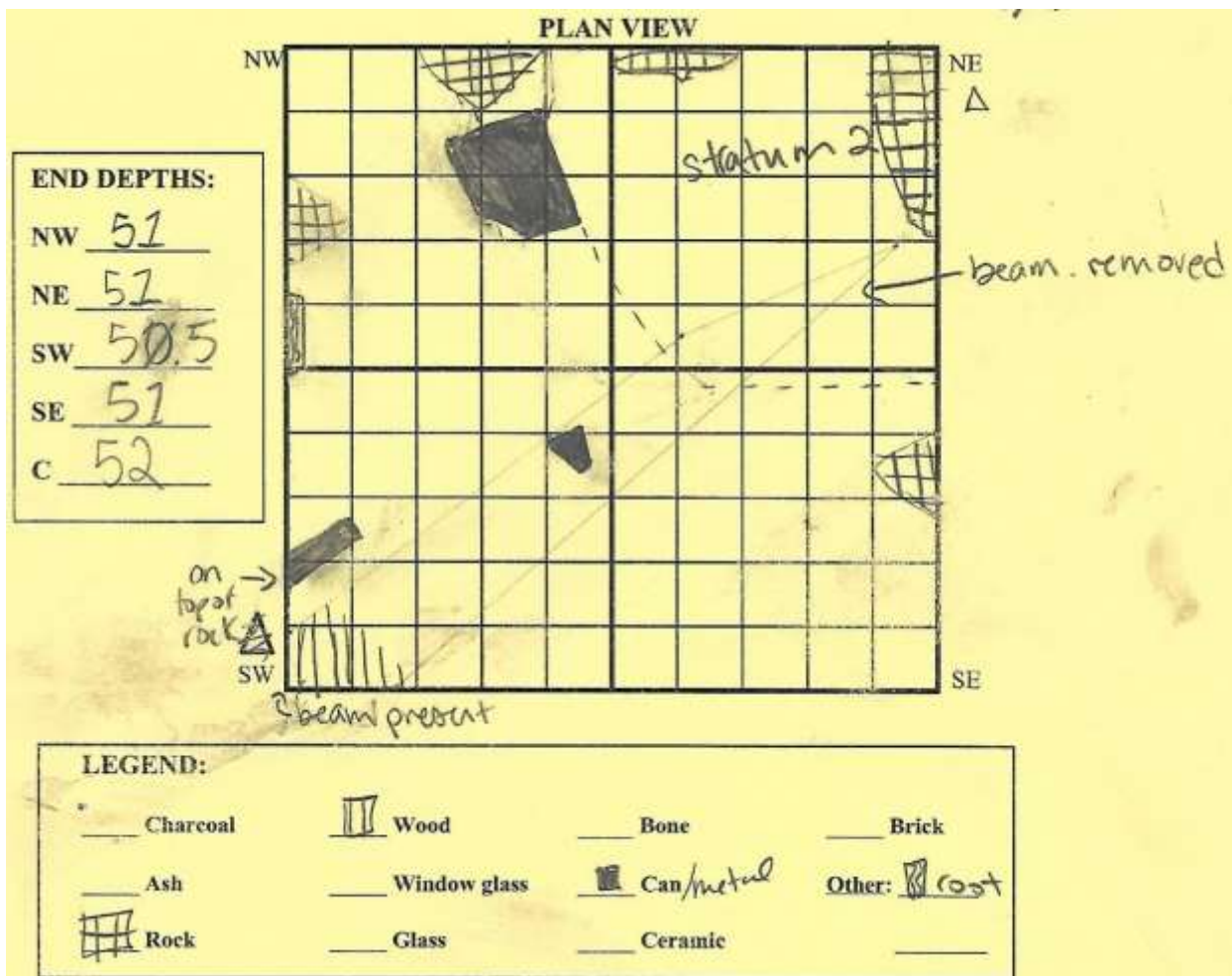


Figure 32: Locus I, Privy 1, Unit 1, Level 7. Map by Logan Hick, Ashley Mlazgar, Madeleine Gulbransen, and Nathan Crennan

Our Stratum 2, Level 8 excavations descended approximately 10cm, reaching a depth of around 60cmb. We also ceased excavations of the NE corner, as the soil there was much more compact, hard to excavate, and contained the least amount of artifacts. The soil across the site became more uniform and less distinguished between the northern and southern halves (7.5YR 4/2: Brown), as the soil became more clay-like, wetter, and less dusty than above layers. There were more large roots and possible evidence of a root fire. Artifacts included metal fragments, wood fragments, charcoal, eggshell, bone, one burned pinecone, and one wire nail. The can concentration that began in Level 7 continued in Level 8, with the cans located in the NW corner of the unit, on top of a likely animal burrow, due to the presence of a hole. We uncovered 4 intact cans and one can lid in this area. We also found one colorless wide-mouth external thread mason jar, broken into four pieces and held together by dirt and roots inside the jar. We did not remove, collect, or screen the dirt inside any removed vessels.



Figure 33: Locus I, Privy 1, Unit 1, bottom of Level 7 and top of level 8. Photo by Nathan Crennan

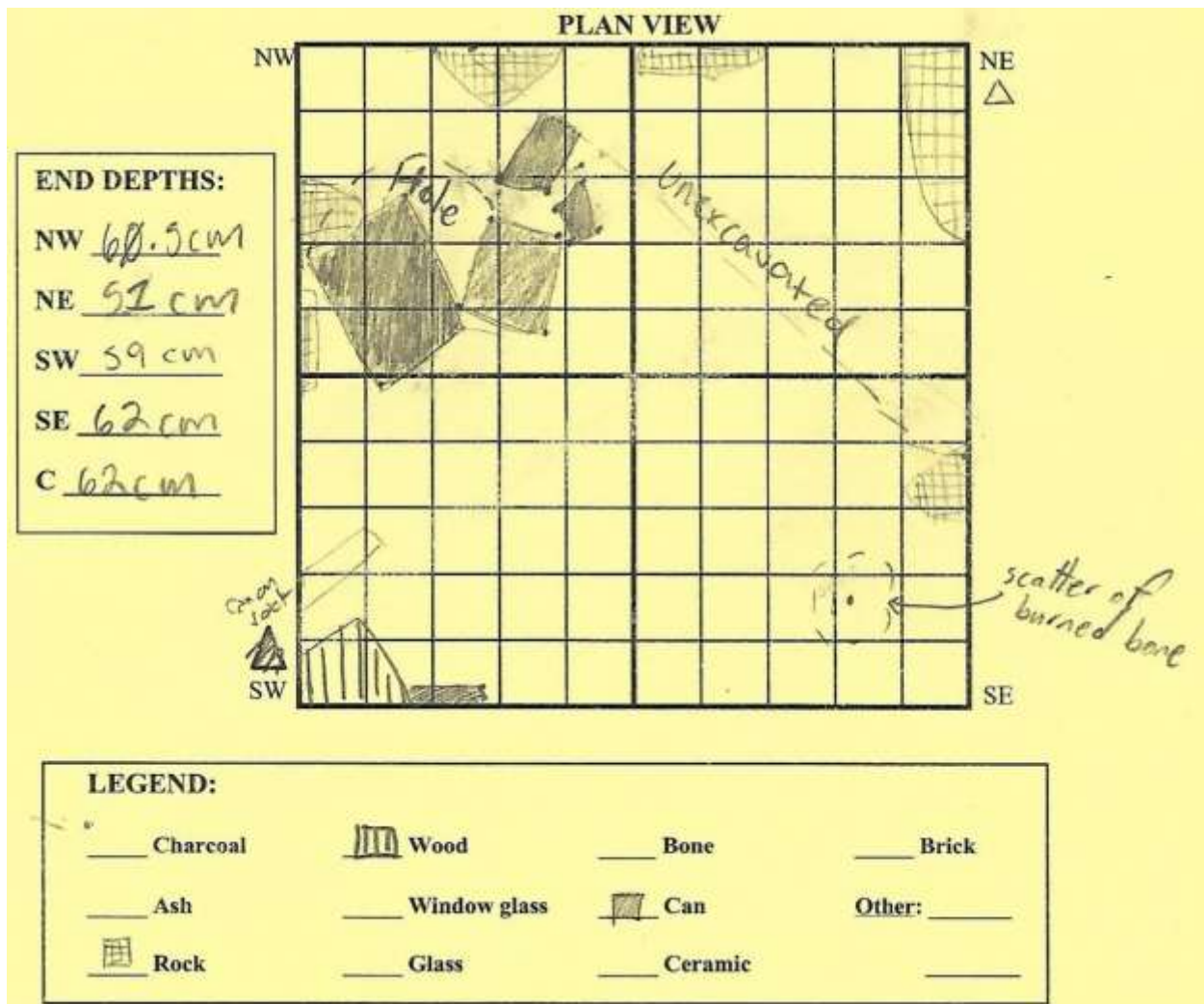


Figure 34: Locus I, Privy 1, Unit 1, bottom of Level 8. Map by Emily Dale, Eva Parra, Madeleine Gulbransen, Ian Villamil, Logan Hick, Nathan Crennan, Ashley Mlazgar, and Andrew Naranjo

Stratum 3, Level 9 (10YR 6/2: Light Brownish Grey) expanded the can concentrations to across the western half of the site. Three standard-sized hole-in-top cans (likely condensed milk based on opening method), and two larger cans, were removed by the time we reached 72cmdb, while five cans and one mason jar remained in the unit. The animal burrow continued in the NW corner. Ferrous can fragments, burnt and calcined bone, and eggshell continued to decrease in number and increase in size.



Figure 35: Locus I, Privy 1, Unit 1, bottom of Level 8 and top of level 9. Photo by Madeleine Gulbransen

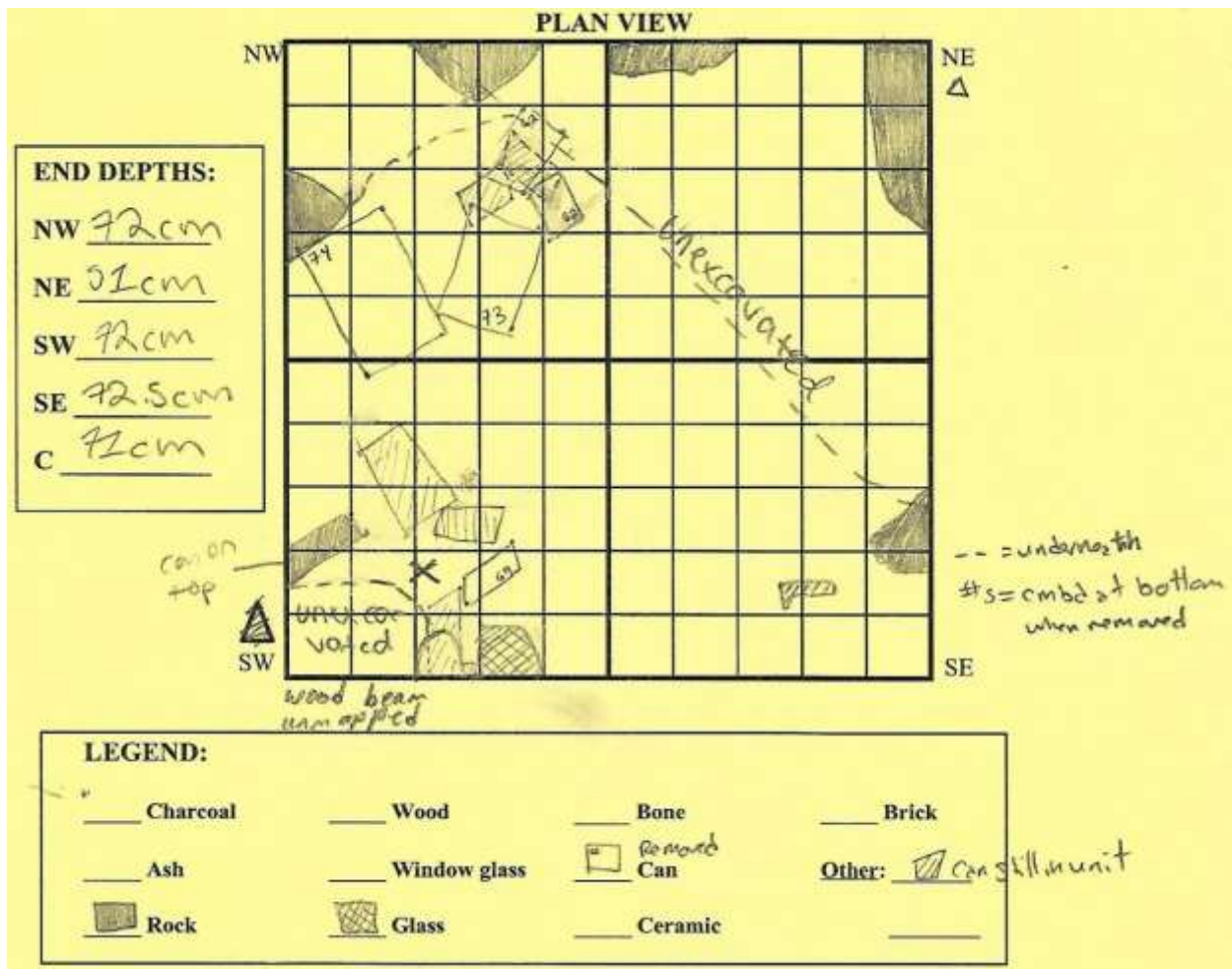


Figure 36: Locus I, Privy 1, Unit 1, bottom of Level 9. Map by Logan Hick, Emily Dale, Ian Villamil, Andrew Naranjo, and Nathan Crennan

As the number of intact artifacts increased across Levels 7, 8, and 9, we were hopeful that we would soon reach the cultural privy level, but the unit became increasingly hard to excavate due to its depth, the unstable side walls, and the dense, rocky soil. Combined with the fact that it was our last field day, we made the decision to excavate a truncated Level 10 (10YR 4/3: Brown), down 5 more centimeters hoping to encounter a much easier to excavate privy level, but we encountered no change. Artifacts included flat ferrous fragments, eggshell, charcoal, and burned wood. We found the bottom of two more hole-in-top cans and removed them. Three more cans remained in the bottom of the unit, including one in the SE quadrant of the unit, possibly expanding the cultural deposition event from the western half of the unit.



Figure 37: Locus I, Privy 1, Unit 1, bottom of Level 9 and top of level 10. Photo by Andrew Naranjo

At around 75cmbd, we closed the unit and photographed and mapped the sidewalls. We then laid a piece of burlap gardening fabric across the bottom of the unit to delineate the end of our excavations, in case we decided to return, put a 2022 Sally Ride quarter in a plastic bag so future archaeologists do not confuse the soil change for historic, and then placed all the removed cans,

bottles, ceramics, and wood fragments in the bottom of the unit, then backfilled it with the excavated soil.



Figure 38: Locus I, Privy 1, Unit 1, bottom of Level 10 and end of unit. Photo by Andrew Naranjo

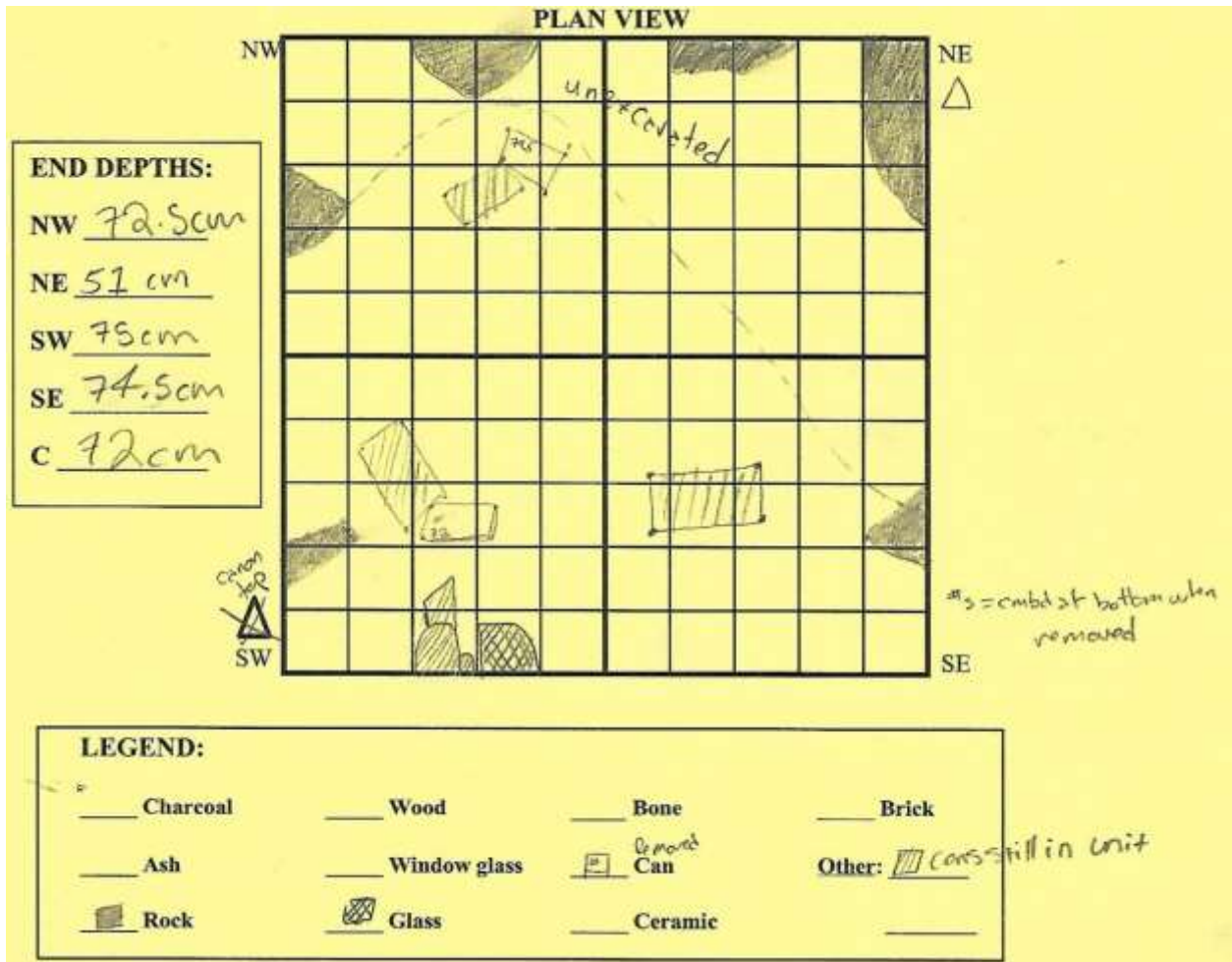


Figure 39: Locus I, Privy 1, Unit 1, bottom of Level 10 and end of unit. Map by Logan Hick, Emily Dale, Nathan Crennan, and Andrew Naranjo



Figure 40: Locus I, Privy 1, Unit 1 artifacts removed during excavation placed in the bottom of the unit for reburial. Photo by Emily Dale

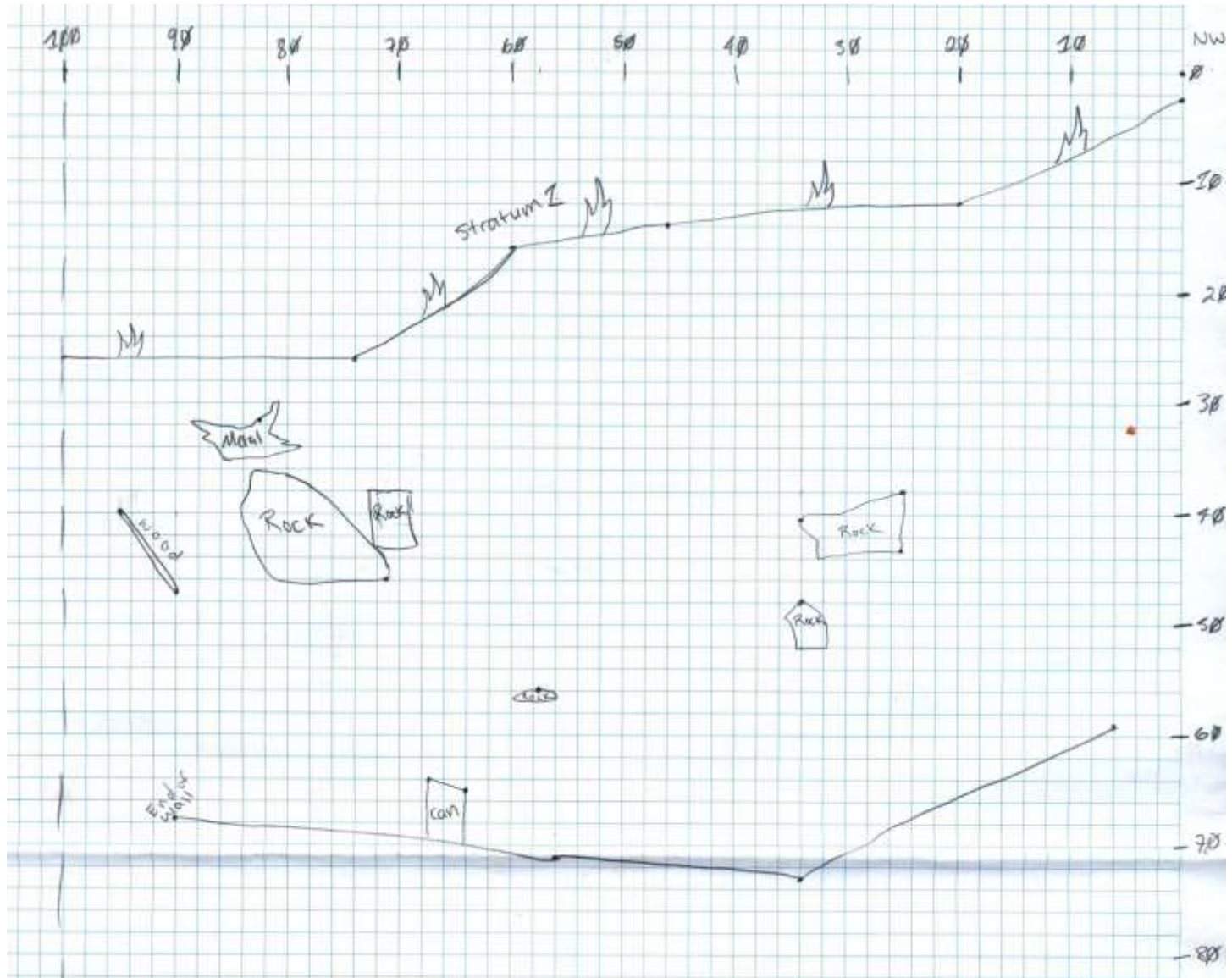


Figure 41: Unit 1, Privy 1, West Wall Profile. Map by Logan Hick

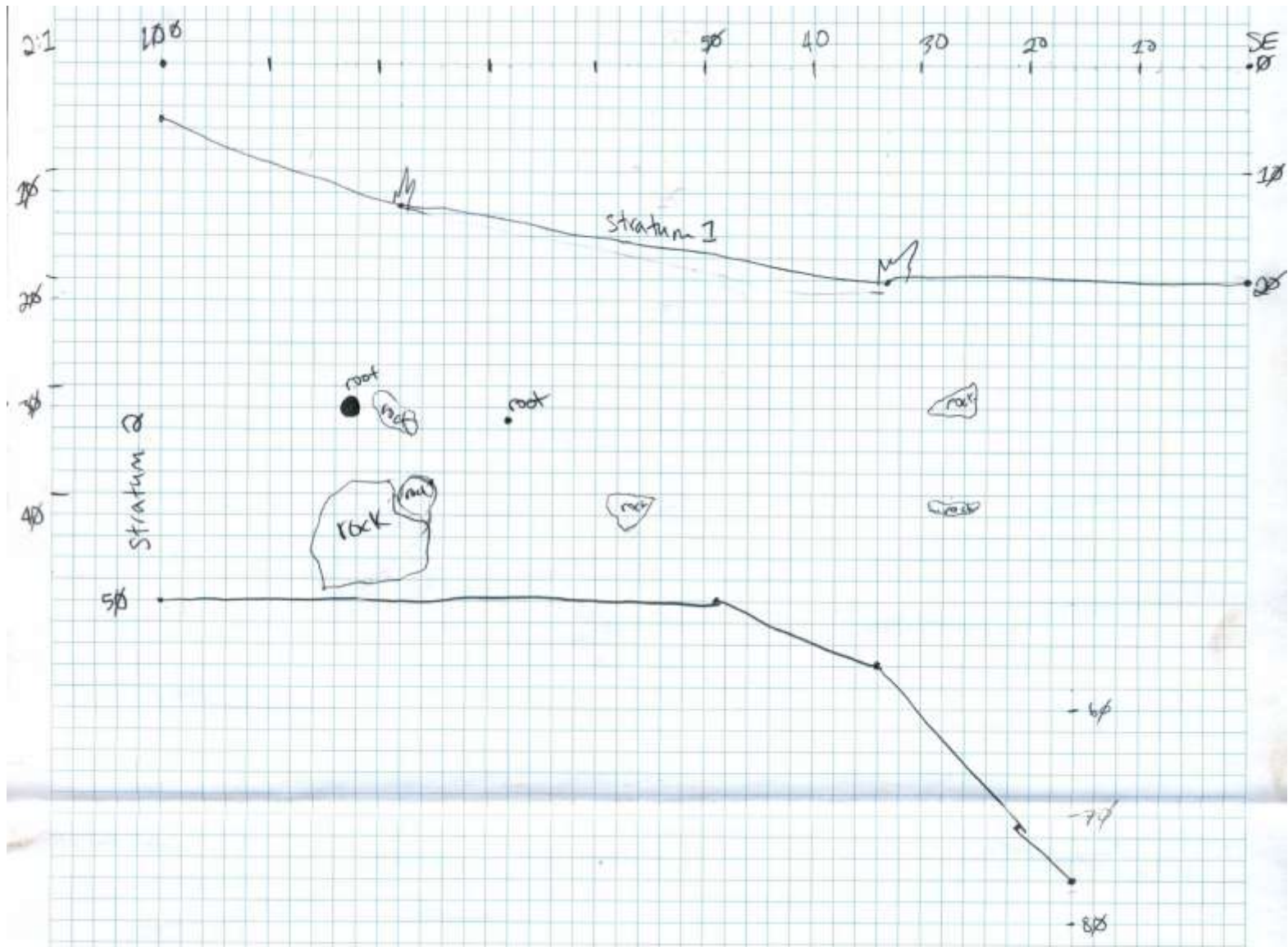


Figure 42: Unit 1, Privy 1, East Wall Profile. Map by Eva Parra

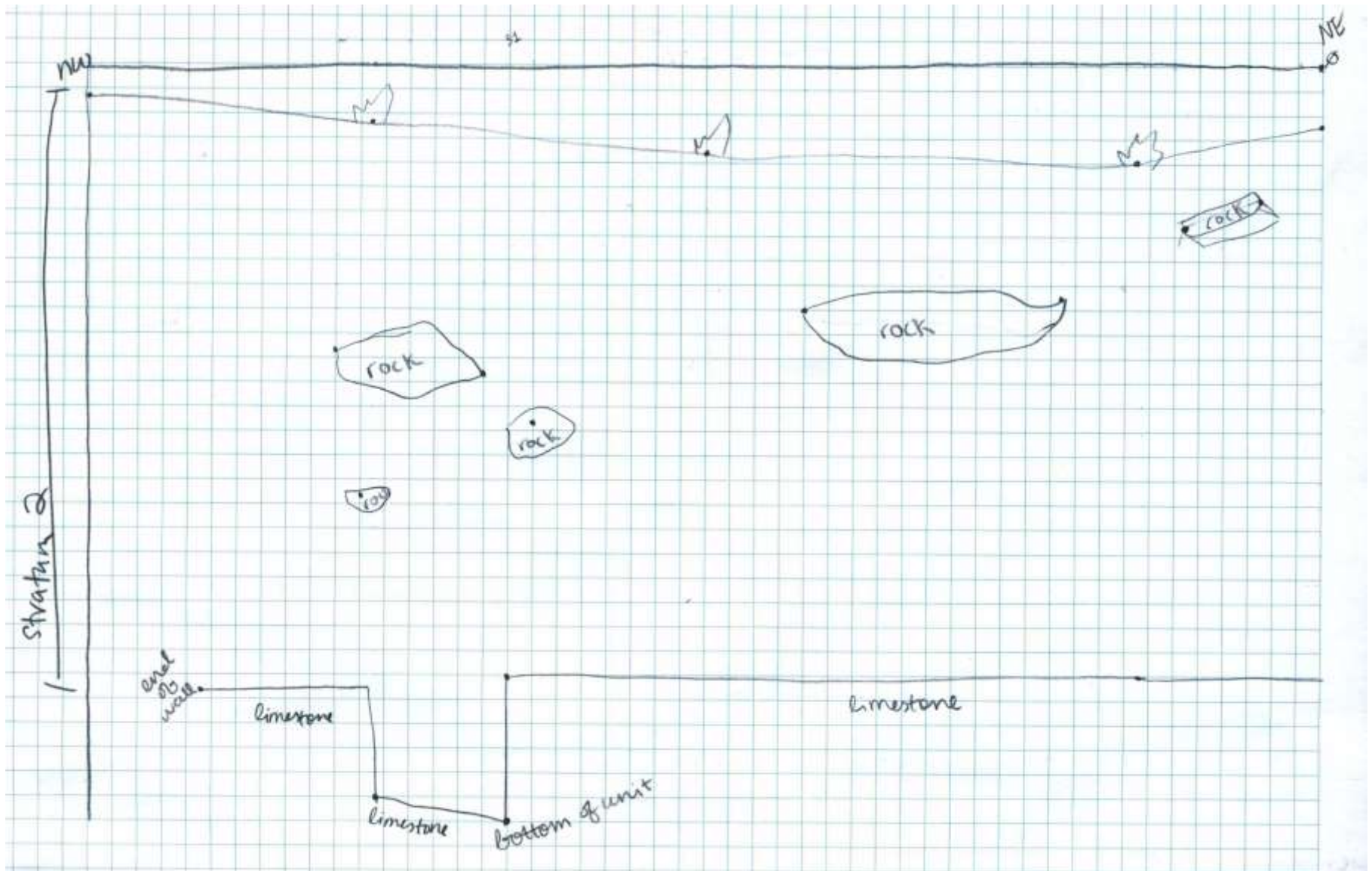


Figure 43: Unit 1, Privy 1, North Wall Profile. Map by Madeleine Gulbransen

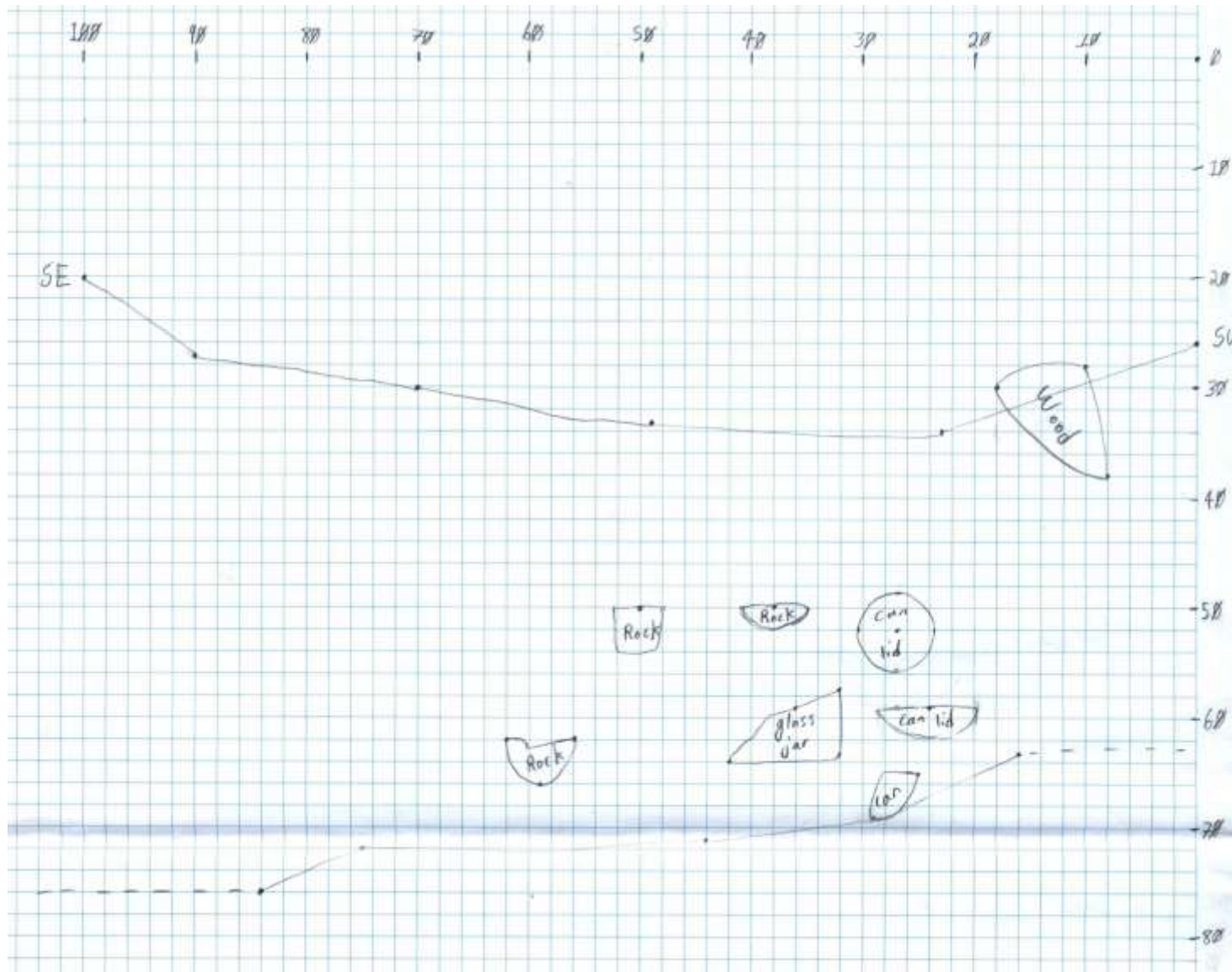


Figure 44: Unit 1, Privy 1, South Wall Profile. Map by Andrew Naranjo

5.5. Locus J

Locus J, a domestic scatter on the west side of the rail line, was mapped by the KNF and described as “large structural area—abundant milled lumber, domestic refuse (buttons, etc.), crown caps, machinery parts, graphite (?) rods, Clorox bottles, some green glass” (United States Forest Service 2006:5) As such, we did not remap the area, but we did conduct a more thorough survey of the artifacts. We also identified a can scatter to the north of the Locus and downslope of Locus I (but more closely associated with J), that was mapped, but not surveyed by the KNF. We recorded the artifacts in the Locus J can dump.

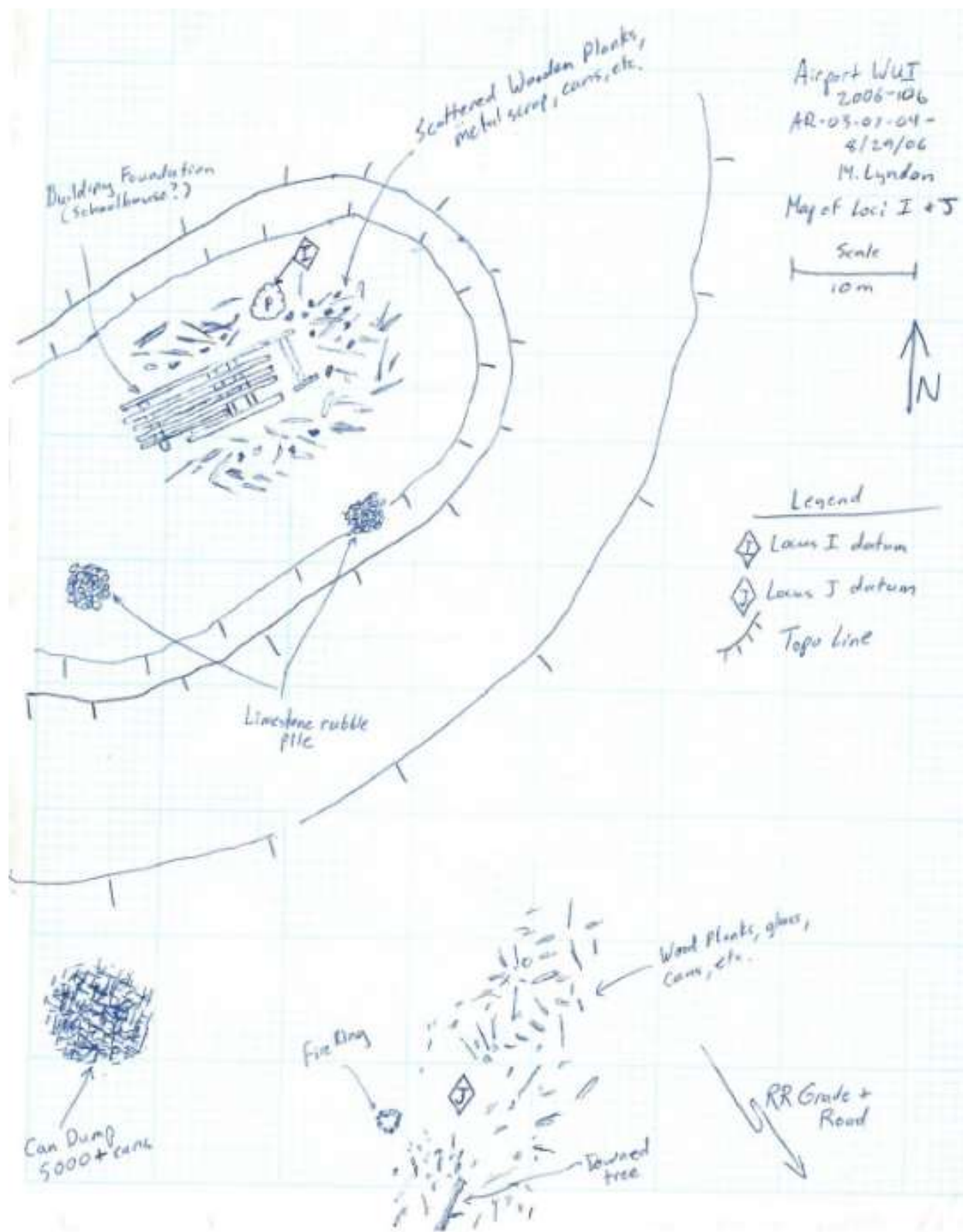


Figure 45: 2006 Map of Locus I (top left), Locus J (bottom center), and Locus J camp dump (bottom left, labelled as "Can Dump 5000+ cans") (United States Forest Service 2006:11).

The general artifact scatter directly associated with the wood scatter that most likely represents the remains of a residence was fairly disperse. A Princess Pat make-up can, a bakelite bead, shoe buckle, Walter Baker Co breakfast cocoa can lid, part of a colorless glass vase, a bird cage, a decorative cut-out metal fish, fiestaware, and porcelain insulator all point to the domestic nature of the feature. Similarly, several artifacts were related to children, including a rubber child's shoe sole, six sherds of a porcelain toy tea set, a "Leadall Playmate" button or toy wheel, a Pay Day button, and part of a Marx train car.

The Can Dump to the northeast of Locus J and southwest and at the bottom of the hill of Locus I was briefly described in 2006 as containing "5000+ cans". Our survey found a similar number, including 30 sardine, 110 meat, 1080 hole-in-top, 210 tobacco, 230 sanitary, and over 500 other various can types. Other metal objects included buckets, a stove pipe, chain link fence part, saw blade, a non-ferrous bracket, an oven grate, a toy car, a metal tub, a Corbin lock, a Lipton's Tea lid, a Calumet Baking Powder promotional baking tin, and the foil lid for a Mission Dairy creamed cottage cheese container. Glass included colorless, amber, green, blue, and milk shards. Diagnostic glass elements included an intact milk glass Mum's deodorant bottle, a Hiram Walker whisky bottle, a Little Boy Blue bluing bottle, a Brooks bottle base, Clorox bottle fragments, and over 100 canning jar fragments, including Boyd's porcelain lined canning jar lids, part of a Ball canning jar, and numerous shattered glass jar necks and finishes with the metal can lid still attached. Earthenware, stoneware, and porcelain ceramics are also represented, including fragments of Chinese and Japanese porcelains, a toy tea set sherd, and hand-painted floral designs. Other identifiable artifacts included leather shoe fragments, a spoon, a black glass button, and carbon battery rods. Nathan Crennan recovered catalog numbers off of three of the over 500 vinyl record pieces and identified them as Morton Downey's 1933 "Stormy Weather" (Cat # 21180A), Jimmie Rodgers' 1928 "Treasure's Untold" (Cat #41737), and a 1929 Roy Smeck's Hawaiian Trio (Cat #[...]2071).



Figure 46: Locus J Can Dump, looking east. Photo by Ashley Mlazar.

5.6. Locus R

Locus R was a feature not recorded by the KNF and was the first newly designated Locus of the 2022 year. Located to the south of Locus A, Locus R is possibly associated with kitchen and dining hall areas. Due to its distance from Locus A and a large amount of vegetation between the two areas, we recorded Locus R as a separate feature, rather than a Concentration of Locus A. Still, it may be related to Locus A and the general functions of the kitchen and dining hall. Given the lack of a privy at Locus A, Locus R may be the outhouse location for this part of the camp. As with the map of Locus A, the Locus R map is too large to include directly in this report. It has been provided to the Kaibab National Forest separately.

Locus R, approximately 26m (E/W) by 26m (N/S) consists of two can dumps, one surrounding the possible privy, and one at the top of the hill, at the northeast edge of the Locus. The can dump on the hill contained approximately 75 cans, 17 ceramic sherds, 1 shoe sole, and the remains of one oven riddled with bullet holes. The oven was possibly moved more recently in the past to the location, possibly away from Locus A, for the purpose of target shooting. The second can dump contained 825 cans, mostly hole-in-top (including two Old Dutch Cleanser can lids, one Calumet Baking Powder lid, one Hershey's Cocoa lid, one Budweiser Malt Extract can

lid, and one Devoe's Makings tobacco tin), 250 glass shards (including the base of a Lavioris bottle, and the remnants of Orange Crush bottles), 195 ceramic sherds (including fragments of a toy tea set, yellowware, and floral-design decorated porcelains), 60 crown caps, 20 ferrous fragments (including wire, stove pipes, and mesh screen), 5 shoe parts, and one chunk of asphalt. Despite the high number of glass and ceramic fragments, the actual MNI of bottles and dishware appears to be low. For example, there are only two green glass finishes, despite the dozens of shards.



Figure 47: Can Dump surrounding possible privy at Locus R, looking southeast. Photo by Logan Hick.

Phillip Mink, with the assistance of Eva Parra and Andrew Naranjo, performed ground penetrating radar of the depression at Locus R. Results were inconclusive, and so the possible privy at Locus R was not chosen as a viable excavation area.

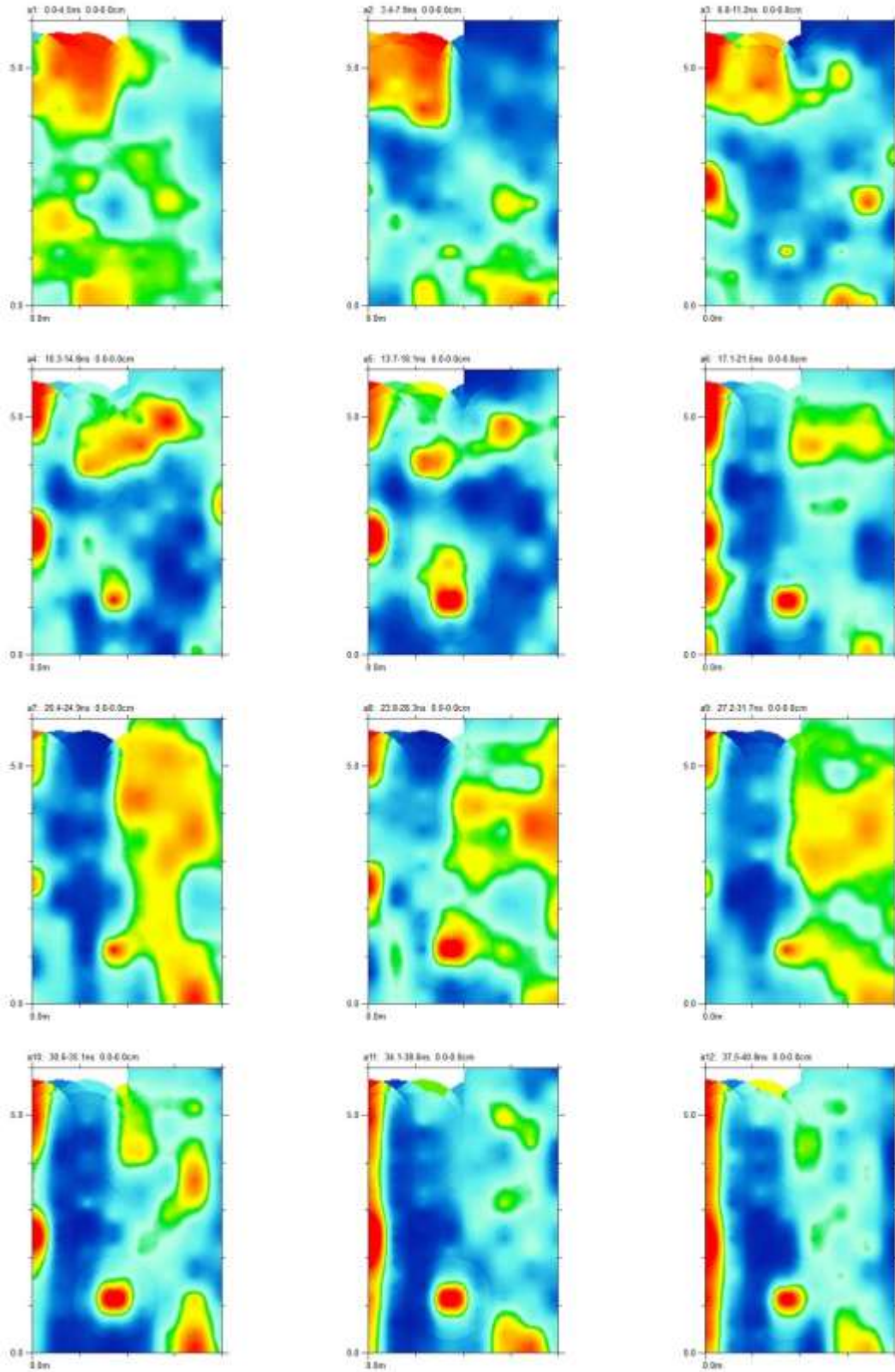


Figure 48: GPR readout of possible privy at Locus R. The results were inconclusive. Map by Phillip Mink

5.7. Locus S

Locus S, a series of trash scatters west of Locus I and north of the domestic scatters on the north side of the railroad line, was another newly identified feature. The area is comprised of 5 Concentrations, each a separate and distinct can dump or trash scatter. We mapped and recorded the scatters. As with the maps of Locus A and Locus R map, the Locus S is too large to include directly in this report. It has been provided to the Kaibab National Forest separately.

At the southeast end of Locus S, Can Dump 1, the largest and most full artifact scatter, was in the shape of a donut or bagel, with a ring of artifacts around the outside, and a clearing at the center. It contained approximately 2,800 metal cans, the majority of which were hole-in-top, but also a large number of sanitary cans. Diagnostic cans included Hershey's Cocoa and Ovaltine. There were approximately 200 glass sherds, including cobalt, green, amber, and colorless glass, alongside remnants of a Heinz bottle, a Bromo-Seltzer base, and the metal can lid for a Kerr wide-mouth mason jar. There were also approximately 170 ceramic sherds, including porcelain, stoneware, earthenware, and yellowware, including some decorated pieces and part of a toy tea cup. The clearing at the center of Concentration 1 contained only glass and ceramic fragments. There was also a variety of metal objects, including wire, screens, chains, and stove pipes. Other identifiable objects included 1 Fly Tox and 1 Union Oil Company pesticide and spray cans, a rubber ball toy, leather and rubber shoe fragments, numerous carbon battery rods, and several car parts, including a possible hood or roof part. There is also a wood scatter at the northwest corner of the can scatter made up of several pieces of milled wood.



Figure 49: Locus S, Can Dump 1 overview, looking southeast. Photo by Madeleine Gulbransen

Can Dump 2, located northeast of Can Dump 1, was similarly dense in artifacts. The 760 cans were mostly hole-in-top and sardine, included a Kippered Herring can and a Budweiser Malt Extract can lid. There were also approximately 60 glass shards, in colorless, green, amber, cobalt, and flat glass, comprising several bottles, jugs, and jars, including the base of a Best Foods jar and a Brooks bottle base, possibly for a Coca-Cola bottle. Other identifiable objects include 13 milled wood fragments, and a lantern. A metal basin, barrel, and car part (possibly part of the seat) are all located at the south end of the scatter.



Figure 50: Locus S, Can Dump 2 overview, looking northwest. Photo by Logan Hick

Can Dump 3 surrounds several pine trees and is fairly disperse across the area, though the denseness of the pine needles may be obscuring the site. Over 500 cans, about half of which were hole-in-top with the others being sanitary, sardine, tobacco, and other forms, 15 fragments of a thick stoneware vessel, possibly a jug, 3 milk glass fragments, 2 rubber shoe soles, 5 porcelain sherds, 1 white improved earthenware sherd, a large washtub. The concentration also contained one oven and a cast iron oven door. In between Can Dump 1 and 3, we found a Boyd's Porcelain Lined Cap for a canning jar, a Walter Baker & Co can lid, an oil filter for a car, and part of an Arizona license plate.



Figure 51: Locus S, Can Dump 3, looking southwest. Photo by Ian Villamil

Can Dump 4, at the west end of Locus S, is smaller than the other four can dumps at the Locus. The presence of five to ten more modern amber beer bottle fragments, represented by approximately 50 finish, base, and body fragments, suggests that it may have been visited more recently, or perhaps looted. Still, there are approximately 100 hole-in-top, tobacco, and meat cans, one child's-sized leather shoe sole, milled wood fragments, one fragment of an A.S. Hinds Honey and Almond Cream colorless bottle, and what appears to be the non-ferrous, screw-on lid from that bottle.



Figure 52: Locus S, Can Dump 4, looking east. Photo by Madeleine Gulbransen

Can Dump 5, at the far north-northwest end of the Locus, is also small, measuring only 6.2m x 6.3m. The 75 cans are all hole-in-top, one of which is a Walter Baker Co lid, and there is also an oil filter for a car. Unlike the other parts of Locus S, Concentration 4 contains a large amount of ceramics, including 100 sherds of stoneware, crockery (which is similar to the vessel found at Concentration 3), porcelain, white improved earthenware, toy tea cups, and one sherd “Made in Japan”. We found a base of an A.S. Hinds Honey and Almond Cream bottle, The area also contained one of the few faunal remains we found at the site, a Class 3 vertebrae cut with a cleaver.



Figure 53: Locus S, Can Dump 5 overview, looking west. Photo by Emily Dale

The area between Can Dumps 2, 3, and 5 contains a dispersed scatter of artifacts. We determined it wasn't concentrated enough to classify as a separate concentration, however. Still, the area contains numerous identifiable artifacts, including a Dietz brakeman's lantern, a Maxwell House coffee can lid, a Calumet Baking Powder promotional baking tin, 12 shards of a milk glass plate, 6 pieces of uranium glass, and a variety of buckets, hole-in-top cans, glass shards, and ceramic sherds.

5.8. Locus T

A prehistoric lithic scatter, Locus T is located on the south side of the rail line between Locus A and Locus B. The scatter, recorded by Mlazgar, Villamil, Crennan, Gulbransen, and Naranjo, measured approximately 30m by 30m, and contained two distinct concentrations of artifacts. Concentration 1 was more disperse, with most artifacts within about 14 meters. Concentration 2 was more concentrated. The recorders noted the presence of two primary flakes, two primary shatters, one secondary flake, various tertiary flakes (for a total of 41 lithics), and one bone. All flakes were made of CCS and/or chert. The presence of primary, secondary, and tertiary flakes, coupled with the lack of intact lithic tools, led us to conclude that Locus T is a lithic reduction site.

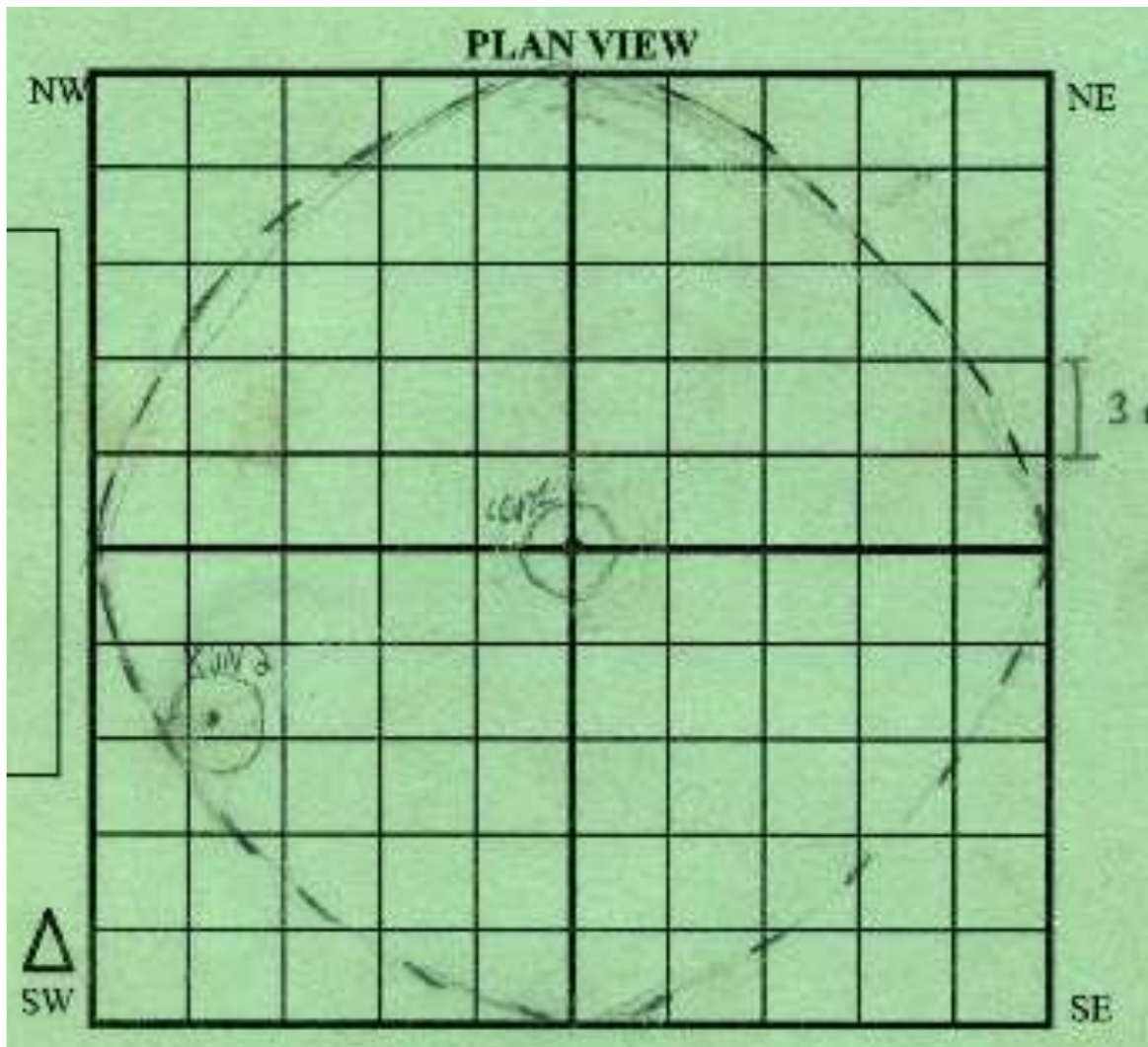


Figure 54: 2022 Field Map of Locus T. Map by Ashley Mlazgar, Ian Villamil, Nathan Crennan, Madeleine Gulbransen, and Andrew Naranjo.



Figure 55: Locus T, looking north. Photo by Ian Villamil



Figure 56: Lithic flakes at Locus T. Photos by Ian Villamil

Locus T did contain a few non-diagnostic historic artifacts, including some hole-in-top cans and glass shards, but these appear to have originated in the Locus A Concentration 3 can dumps, which are uphill of the site.

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 Hershey's Cocoa, Calumet baking powder, and Prince Albert tobacco. 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. Still, while other artifacts appear to be more localized, such as the numerous Orange Crush bottles at Locus A or the higher number of canning jars and paraphernalia at Loci G, I, and J, these patterns merit discussion and will also be addressed below. Eva Parra researched some of the artifacts for their 2023 Society for Historical Archaeology conference paper, "Progress in Preservation: Products in Motion at Apex, Arizona." Their contributions are included below and their full paper is available in Appendix C.

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 (Buttons, Bottles, Cans, Ceramics, Faunal, Non-Diagnostics, and Other Diagnostics) and then by Locus.

6.1. Food and Drink

Common food brands across the site included sardines, Calumet Baking Powder, Hershey's, Ovaltine, and Walter Baker & Co baking chocolate. We also found several peanut butter and tea cans, but with no pattern to the brands. Both Monarch and Peter Pan peanut butters and Tree Tea and Lipton tea brands were present.

Sardine cans and sardine can keys were incredibly common at the site and found at every Locus. Several sardine cans at both Locus A and Locus S were embossed with "NORVEGE" and one can labelled "KIPPERED HERRING / PACKED IN NORWAY / NORVEGE". The language on these cans can be explained due to the outcomes of international sardine disputes. Starting in the 1890s, concerns that Maine canneries were passing off different fish as French-originating sardines led to international conflicts (McDermott 2011:211). In 1929, the British Board of Trade declared that only *Sardinops* genus fish were sardines, excluding American and Canadian products from that designation. Later, the United States Department of Agriculture allowed any canned fish to be labelled as sardines, as long as their country of origin was named (211, 213). While such cans are common at sites across the American West and Southwest throughout the 1800s and 1900s, it is notable that the Saginaw and Manistee Lumber Company explicitly employed Scandinavian workers, with Norwegians making up a large percentage of their labor force. It is possible that the company stocked Norwegian sardines specifically to cater to the cultural tastes of their workers.



Figure 57: Kipperd Herring can, Locus S, Can Dump 2, Photo by Logan Hick.

Virtually the only brand of baking powder found at Apex during the 2022 field season was Calumet, suggesting it had a monopoly at the company store or at least at the kitchen, as nearly all these cans were found at Locus A and R in various sizes, including 1-pound, 2½-pound, and 5-pound cans. One “Royal Baking Powder Can” from Locus S might indicate a personal preference by one of the management families. Tellingly, though, two Calumet baking tins for pies and cakes with a quick-release slider at Locus J and S indicate that these families possibly purchased enough Calumet baking powder to earn these promotional items.



Figure 58: Calumet Baking Powder artifacts. Left: 2½ pound Calumet Baking Powder can, East of Locus A Concentration 3, photo by Madeleine Gulbransen; Right: Calumet Baking Powder baking tin, Locus J Can Dump, photo by Nathan Crennan.

Faunal remains were scarce. While the privy did contain large numbers of small calcined and burnt bone fragments, only three intact bones were recovered from the site. The two bones from inside the privy and from Locus S did display some evidence of butchering. We have not yet had these analyzed by a zooarchaeologist, but plan to consult NAU's Dr. Chrissina Burke when more specimens are available.

6.1.1. Alcohol

The large amounts of alcohol-related cans and bottles that date to the entirety of the camp's occupation demonstrate that not even Prohibition could keep Apex from beer. Aside from the excavation unit at Locus I, alcohol consumption was present at every Locus surveyed for 2022. The most common alcohol artifact related to the Prohibition era (1920-1933) were malt extract cans. While advertised to make baked goods, such as bread, cakes, and cookies, they were easily used to brew beer at home (Klein 2019; The Mob Museum 2021). One Budweiser advertisement displayed a winking baker, as though he knew the true intentions of the purchaser (see Klein 2019). At least three "'HOP FLAVORED / BUDWEISER / MALT EXTRACT SYRUP" can lids were found, at Loci A and R and one at Locus S. Locus A also held a Schlitz and a "PURITAN MALT EXTRACT CO. / CHICAGO, ILL.". The cans' presence at both the company-run dining hall and kitchen area and in trash scatters associated with management housing indicates that neither the company nor its employees much cared about following the rules of Prohibition.

Following Prohibition's end in 1933, the residents of Apex transitioned to a wide variety of once-again legal alcohol. Beer was still popular, as especially revealed by Locus G, which contained numerous cone-top and pull-tab beer cans. An Acme beer can announced itself as

“Non-Fattening Refreshment”, and their marketing materials show that they advertised towards women. There were also three Pabst Tapa cans. Whiskey bottles and pumpkin flasks were found at Loci A, G, and J. Fragments of Hiram Walker and Sons whiskey bottle, with the rubber cap still attached to the finish, was found in the Locus J can dump. While their original contents are unknown, other bottles embossed “Full Pint” or “One Quart” suggest alcoholic contents, and several glass fragments held the warning “FEDERAL LAW / FORBIDS / SALE OR REUSE / OF THIS BOTTLE”, as required on all alcohol bottles between 1935 and 1964 (Lindsey 2022; Whitten 2004).



Figure 59: Alcohol-related artifacts. Left: Pabst Tapa can, Locus G, photo by Eva Parra; Center: Budweiser Barley Malt Syrup can, Locus A, photo by Emily Dale; Right: Hiram Walker whiskey bottle, Locus J can dump, photo by Ashley Mlazgar

6.1.2. Non-Alcoholic Beverages

Evidence for non-alcoholic beverage consumption beyond was also discovered during the 2022 field season. Numerous cans containing Hershey’s Cocoa (Loci A, G, R, and S), Ovaltine (Loci G and S), and Walter Baker & Co Breakfast Cocoa (Loci J and S), Tree Tea (Locus A) and Lipton’s Tea (Locus J), and Maxwell House Coffee (Locus S) were found across the site. The broken colorless, green, and aqua bottle glass found at the site indicate that Apex’s residents consumed numerous types of beverages. The high number of crown caps, however, suggests that any intact bottles that were discarded have long been collected by looters, so the exact composition of their beverage choices remains unknown. Soda bottles, though, were common among the identifiable sherds.



Figure 60: Common canned beverage brands. Top Left: Ovaltine lid, Locus G, photo by Eva Parra; Bottom Left: Lipton's Tea can lid, Locus J Can Dump, photo by Ashley Mlazgar; Top Right: Maxwell House Coffee can lid, Locus S, photo by Madeleine Gulbransen; Bottom Right: Hershey's Cocoa can, Locus R, photo by Emily Dale

One of the most common soda manufacturers was Frank Brooks' Skylight City Bottling Works, as at least six "BROOKS / FLAGSTAFF / ARIZ" bottles were found at Loci A, J, R, and S. Brooks originally owned a saloon, but following Prohibition transitioned to a combination grocery store and bottling company on what was called the Brooks block at 505 W. Santa Fe, at

the corner of Santa Fe and Park Street. He eventually added a camping ground, service station, market, and 19 cabins to the property cabins (The *Coconino Sun* 1927b, 1929; Johnson 2021:46-48; McElroy 1976). His bottling works shipped Coca-Cola, Delaware Punch, Hire's Root Beer, and Orange, Lemon, and Lime Crushes, Top-o-Peak brand soda water as well as his own brand of drinks throughout Yavapai and Coconino Counties (Coconino Sun 1922, 1927a; 1929; *The Winslow Mail* 1926). A 1920 report in *The American Bottler* (The American Bottlers Publishing Company 1920:60) stated that "The Skylight City Bottling Works of Flagstaff has installed new machinery, tripling its capacity, and has made extensive additions to its building to house the new equipment", and a May 13, 1927 issue of the Coconino Sun remarked that Skylight City Bottling Works turned out "1,600 cases of drinks with 48 bottles to the case" (Johnson 2021:47).

The most common Brooks bottle at Locus A and R was for Orange Crush Soda, with at least four bottles present, the design for which, per the bottle text, was patented on July 20, 1920. Originally created in 1906 by J.M. Thompson, Neil C. Ward perfected the blending process by 1915, leading to an increase in Orange Crush's popularity (Grace 2006a). Orange Crush referred to the crushing of orange peels which created the oil that served as a main ingredient in the soft drink (Crush Soda 2011). Advertisements throughout 1920 declared that Ward's Orange Crush "Contains no Orange Juice", and, in response to government concerns over products named "orange" that contained no actual oranges, orange pulp was added to the recipe by the end of 1920 (Grace 2006b), but ultimately removed by 1930 (Sedelmaier 2019). A 1924 lawsuit brought by Orange Crush against California Crushed Fruit Company's new "Suncrush Orange" led a judge to proclaim that "A person of average intelligence would not understand, when buying an orange crush drink, that he was getting a crushed orange" (Grace 2006b).



Figure 61: Orange Crush bottle fragments from Locus A, Concentration 3 (top) and Locus R (bottom). Note the Southern Glass Company maker's mark on the top left base and the Brooks' maker's marks on top right and bottom right. Photos by Andrew Naranjo (top left), Madeleine Gulbransen (top right), and Emily Dale (bottom).

The high number of Orange Crush bottles at Locus A and R perhaps suggests that an employee or frequent visitor to the kitchen and dining hall had a preference for Orange Crush soda, as that flavor was not found elsewhere during the 2022 field season. Its unique, ribbed bottle design makes it easy to identify. Interestingly, one of Locus A's Orange Crush bottles came not from Flagstaff, but from Vernon, California's Southern Glass Company (Lockhart et al 2023:362). It seems that the brand and flavor was more important than the easy access of Flagstaff's sodas, at least for one individual.

Other sodas include a Mission Orange Dry bottle (Locus G). Originally created by the same California Crushed Fruit Company sued by Orange Crush, the dark, almost black, amber color of the glass dates it to post 1933 (TidiousTed 2016), another indication that the Locus G can dump post-dates Prohibition. A likely Brooks Coca-Cola bottle (Locus S) and an unidentified, but non-Orange Crush bottle (Locus J) might mean that perhaps the kitchen worker's preference for Orange Crush inspired the store to stock other products from Brooks' bottling works.

6.1.3. Food Preparation and Service

A non-ferrous Jell-O mold and glass lid for a Cordella Manufacturing Co coffee maker, both from Locus G, reveal some of the ways families prepared food outside of the main company kitchen. Artifacts associated with canning were similarly relegated to the West side of the railroad tracks at Loci G, I, and J. Such artifacts included mason jars, mason jar lids, and porcelain liners. Several brands were present, including Kerr (Locus I) and Ball (Locus J) mason jars and Boyd's Genuine Porcelain Lined Caps (Loci J and S). As we would expect to find such artifacts most commonly at locations of food preparation, it is interesting to note that Locus A lacks such items. Seemingly, canning was considered a domestic task, rather than a company one, and it may have fallen, then, to households with women's labor.



Figure 62: Food preparation artifacts. Jell-O mold and Cordella Manufacturing Co. coffee pot, Locus G. Photo by Eva Parra.

All types of ceramic wares are present across the site, including White Improved Earthenwares, stonewares, and porcelains. Many fragments are decorated with hand-painted and transfer-printed floral patterns, and such decorative patterns are not limited to the management's housing or their trash scatters. Decorated porcelains, even those made in China and Japan, were found at Locus A. Numerous forms, including small and large plates, bowls, and mugs. As most of the ceramics are broken sherds, rather than intact wares, we are still determining if there are matching patterns from throughout the site, suggesting that they were sold at the company store. Similarly, most pieces lacked maker's marks, and those that did were from a wide array of companies and locations. Some identifiable companies included two Knowles, Taylor & Knowles porcelain sherds (Loci G and R), Buffalo China (Locus G), Harker Pottery Company (Locus G), and Wallace China (Locus I). Another piece may be from the Vernon Kilns of Vernon, California, the same location of the Southern Glass Company who manufactured one of

the Orange Crush Bottles, Wallace China originated in nearby Huntington Beach (Great American Pottery nd), and a sherd of amber glass was embossed “LOS AN[GELES].” The company or one of its workers perhaps had a connection to this part of Southern California. Two sherds of a terracotta jar with black-painted exterior and white hand swirls and dots around the shoulder found at Locus A, appears to be unique, with no other similar fragments found elsewhere.



Figure 63: Decorated terracotta pottery from Locus A, Concentration 2. Photo by Logan Hick

The sites also contain other elements of food preparation and service. Forks and spoons were found at Loci A, G, and J. Numerous pieces of blue enamelware with white spots, known as mottled ware or granite ware (Gretton 2012), came in a variety of forms, such as a basin (Loci J and S), kettle (Locus G), and pitcher (Locus A). The ubiquity of these matching metal-wares perhaps indicates that the company store sold them.

6.2. Personal

Many of the items found during the 2022 field work at Apex reveal the personal lives of its laborers and inhabitants.

6.2.1. Music

While Apex would have been noisy from the lumber and railroad industries that created the camp, its residents found ways to create more pleasant sounds to fill their time. Harmonica reed plates were found at Loci A and G. Locus G also had 11 fragments of vinyl record, while the Locus J can scatter had an additional 81 fragments of red/orange record fragments and 450 black fragments, all in the same area, suggesting that they had been broken and deposited at the same time. Perhaps a box broke while the owners were moving, and they had to discard them all at once. Nathan Crennan found catalog numbers on three pieces, which he matched to songs (Discogs 2023). Catalog number 21180A corresponds to Morton Downey's 1933 "Stormy Weather", number 41737 belongs to Jimmie Rodger's 1928 "Treasure's Untold", and the partial number ...2071 comes from a 1929 Roy Smeck's Hawaiian Trio album of either "Jeannine (I Dream of Lilac Time)" or "Carolina Moon."

Two frequency variable capacitors from a Neutrowound radio were found at Locus A. Neutrowound made several models between 1925 and 1928, most of which contained three capacitors (RadioMuseum 2002). The possible lightbulb from the same can dump may be one of the radio's tubes.



Figure 64: Music-related artifacts. Left: Vinyl record fragments, Locus J Can Dump, photo by Nathan Crennan; Top Right: Harmonica reed plate, Locus G, Photo by Eva Parra; Bottom right: Neutrowound radio variable frequency capacitor, Locus A, Concentration 3, Can Dump 2. Photos by Andrew Naranjo (left) and Ian Villamil (right).

6.2.2. Clothing

Leather, and less frequently rubber, shoe fragments were by far the most common clothing-related artifact found at Apex, with nearly 100 shoe soles and uppers found throughout the site at all Loci, besides I. A small lilac or gray shoe sole with a red leather heel from Locus S possibly came from a child's shoe. A man's size 9½ marked as "11-Iron", a unit of leather thickness, came from Locus A. And a possible decorative shoe buckle came from Locus J. Locus A's Can Dump 2 contained the largest number and highest concentration of shoe fragments of the 2022, suggesting some special function of the Concentration 3 structures related to clothing, such as shoe repair or laundering.

At the domestic scatter northeast of Locus A, Concentration 3, a shoe horn from the Chicago Mail Order Company reminds its owner "Don't break your shoes at heel / always use your shoe horn / Chicago Mail Order Co / Outfitters / to all the family". Like the Calumet baking tins, the shoe horn was a promotional item, given away by the company in the 1930s as a form of self-promotion (Clayman 2020).

Buttons are present at the site, but, possibly due to their small size, were not frequently found in the 2022 field season. Two sew-through buttons, one shell and one metal, were found in Locus A, Can Dump 2, possibly related to the large number of shoe soles. A black glass button with an "S" inside of a star logo was found at Locus J. One bakelite bead, reminiscent of a pearl, was also found at Locus J. Finally, a leather watch band for a wrist watch was found at Locus G. Based on its small size, it possibly belonged to a woman's or child's watch.



Figure 65: Personal apparel artifacts. Top Left: Men's size 9½ leather shoe sole, Locus A, Concentration 3, Can Dump 3, Photo by Ian Villamil; Top Center: Pay Day button, Locus J, Photo by Eva Parra; Top Right: Bakelite bead, Locus J, photo by Logan Hick; Bottom: Decorative leather shoe uppers, Locus G, Photo by Eva Parra

6.2.3. Health and Hygiene

Numerous artifacts associated with the personal health and hygiene of Apex's residents were found across the site. A Gem razor (Locus G), Paris-style razor blade (Locus A), and

unidentified shaving cream tube (Locus A) reveal men's shaving habits. Several black and orange rubber combs from Locus A and G reveal efforts to maintain ones' hair.



Figure 66: Personal hygiene artifacts. Top Left: Princess Pat make-up lid, Locus J, photo by Emily Dale; Center Left: A.S. Hinds Honey and Almond Cream bottle, Locus A, photo by Madeleine Gulbransen, Bottom Left: Lavoris mouthwash bottle, Locus R, photo by Emily Dale; Top Right: Pepsodent toothpaste tube, Locus G, photo by Eva Parra; Bottom Right: GEM razor, Locus G, photo by Eva Parra.

The most common lotion brand found at the site was A.S. Hinds' Honey and Almond Cream, accounting for at least three bottles at Loci A and S. The lotion was advertised for a wide array of skin irritations, including "rough, hard or irritated skin, chapped hands, face and lips, pimples, scaly eruptions, wrinkles, sunburn, chilblains, burns, scalds, wounds, chafing, ivy poison, stings

and bites of insects, inflamed and irritated piles, salt rheum, eczema, and all conditions of the Skin of like character” (Bennett 2018; Museum of Health Care at Kingston 2023). Part of a milk glass Pond’s Cold Cream bottle was also recovered from Locus A.

Several artifacts indicated the residents’ concern for bodily odors. A Lavioris mouthwash bottle base (Locus A) and a Pepsodent toothpaste tube (Locus G) indicate the camp had access to recent innovations in dental hygiene. Mum’s Manufacturing Company (Locus J) was the first to create a deodorant aimed at armpit and foot odor. In addition to its more commonly known function as a household disinfectant, Lysol (Locus G) was also heavily marketed in the 1920s and 1930s as a feminine hygiene product for douching to guard against “odors” and as a spermicide (Pasulka 2012).

Other artifacts indicate other bodily aches, pains, and injuries suffered at Apex. A cobalt Emerson Drug Company Bromo-Seltzer bottle (Locus S) would have been used to treat headaches, heartburn, upset stomach, and acid indigestion. Vaseline (Locus A and I) was used to heal scrapes, burns, and dryness of the skin. Mentholatum (Locus A) was used to treat sore muscles and aching joints, a likely issue for laborers.

6.3. Other

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

6.3.1. Toys

The distribution of toys and other child-related artifacts reveal that Apex’s children were not confined solely to the schoolhouse or their homes on the West side of the tracks. We found evidence of children (or of adults playing with toys) at all parts of the site. For example, a Cracker Jack “Screamer Whistle” prize and a toy gun were both found at Locus A, while a red rubber bouncy ball came from Locus J.

Fragments of porcelain toy tea sets were found at nearly every Locus. Small tea cups and saucers, decorated with in various floral patterns and with gilded rims, were found at Locus R, J, and S.

The other common theme of toys at Apex was ‘transportation’ with numerous cars, tractors, and trains represented. A Louis Marx and Company train car piece was dated to after 1929, when the popular toy-manufacturer partnered with Girard Model Works to produce tinplate cars (Wikipedia 2023). A toy car body, similar to the shape of a Model T, came from Locus J. And a wind-up toy tractor was found at Locus G.



Figure 67: Toys. Top left: Marx train car, Locus J, photo by Ashley Mlazgar; Bottom left: Toy gun, Locus A, photo by Andrew Naranjo; Center: Porcelain toy tea cups and saucers, Locus S, photo by Emily Dale; Top right: Wind-up toy tractor, Locus G, photo by Eva Parra; Bottom right: Cracker Jack Screamer Whistle prize, Locus A, Photo by Emily Dale.

6.3.2. Tobacco

Upright pocket tobacco tins were present in nearly all of the can dumps surveyed for the 2022 season. The majority, however, were identifiable only by their shape, with any remnant of label or writing worn away by exposure. Locus A and Locus G had tobacco tins still labelled as “PRINCE ALBERT / Crimp Cut // CIGARETTE”. A curved Devoe’s Makings (Locus R) likely contained the “Sweet Smoke” brand of leaf tobacco used to roll one’s own cigarettes.

Copenhagen and other chewing tobacco cans have been seen around the site, but none were noted during the 2022 survey. No other smoking paraphernalia, such as pipes, were found, indicating that cigarettes and chewing tobacco were the preferred form of tobacco consumption.



Figure 68: Tobacco tins. Left: Devoe's Making's can, Locus R. Photo by Emily Dale. Right: Prince Albert cans, Locus G. Photo by Eva Parra.

6.3.3 Household Products

Numerous items reveal the ways Apex attempted to maintain sanitary living conditions. Lysol (Locus G), Clorox bleach (Locus G, J), and Sani-Clor (Locus I) could all have been used as household disinfectants. Old Dutch Cleanser (Locus A and R) was commonly marketed in the 1920s and 1930s as a way to keep cooking utensils, kitchen counters, sinks, floors, ovens, and even refrigerators healthful and clean (Old Dutch 2023), potentially its explanation at the Apex company kitchen and dining hall. A Fly-Tox hand-sprayer from Locus S points to concerns over common household pests, such as the flies, bedbugs, moths, ants, mosquitoes, roaches, and fleas the Toledo Rex Spray Company claimed their DDT-based solution could kill (The Henry Ford 2023).



Figure 69: Cleaning artifacts. Left: Old Dutch Cleanser can lid, Locus R. Photo by Emily Dale.
 Right: Clorox bottle base, Locus G. Photo by Eva Parra

Finally, Locus J presented a few ways to explore how families made their house a home. A birdcage and a metal cut-out in the shape of a fish with nail holes around the edges point to decorations on the ceiling and walls. Possible parts of an amethyst glass candy dish and a colorless glass lamp or vessel fragment demonstrate other ways the residents livened up their space through material culture. A Little Boy Blue Bluing bottle once held bluing, a product used to neutralize yellow stains, by making them appear white. The Condensed Bluing Company's Little Boy Blue Bluing and Little Bo Peep Ammonia were advertised with cheerful cartoons, evoking the whiteness and fluffiness of sheep (Isa 2017). And a Corbin brand left-handed vertical rim entry lock suggested a way to keep the premises safe and secure.



Figure 70: Domestic decoration and maintenance. Birdcage (left) and decorative metal fish (center) found at the Locus J domestic scatter. Photo by Eva Parra. Little Boy Bluing bottle (right) from the Locus J Can Dump. Photo by Ashley Mlazgar.

6.4. General Conclusions

While the 2022 season only surveyed a snapshot of the artifacts and features at Apex, some clear patterns are emerging about the consumption habits and access to goods of its residents. First, it seems as though the status of Apex as a company town and the presence of a company store likely influenced and limited the choices of the Saginaw and Manistee workers, of all ranks. Consistent brands, common ceramic decorations and enamelware patterns, and widespread alcohol consumption all point to items stocked and sold by the store to laborer and management alike. Still, elements of personal taste can be seen: a kitchen staffer's love of Orange Crush soda, another laborer's preference for Devoe's Makings, and the broken remains of someone's record collection.

Second, the presence of women may have provided some different opportunities and choices for management and families. Canning, domestic sanitation, and home décor may reflect women's labor. Still, children do not seem to be confined to domestic or school spaces, meaning that while individual homes and families made different choices, they were still part of the larger community that spanned both sides of the railroad.

Finally, access to a car may have been one of the main differentiators of goods procurement. Al Richmond (1988:79) explains that it wasn't uncommon to drive into Williams for shopping. Numerous car parts were found at Apex, especially at Locus S, where a car hood, car bench, oil filter and license plate were found. Per Thomas Jones (pers. comm., 17 June 2022-20 June 2022), the Arizona "16-[...]322" license plate is a passenger car plate from 1930. The county code would be located in the upper left corner but is obscured by the folded metal. A second Arizona license plate, a 1928 passenger car plate, was not photographed or recorded beyond mention in a student notebook, so its location is unknown. We will attempt to relocate it in future Locus

surveys. Finally, part of a New Mexico plate, likely from 1929, is from either a passenger car or motor truck plate, but its location was also not recorded. We also found numerous oil cans around the site, including a Pennzoil can and a spouted oil can from Locus G and a Union Oil can from Locus S. The numerous elements of cars indicates that access to other locations, beyond the company store, would have been possible for at least some of Apex's employees.



Figure 71: Automobile-related artifacts. Top left: 1930 Arizona license plate, Locus S, photo by Madeleine Gulbransen; Bottom left: 1929 New Mexico license plate, location unknown, photo by Nathan Crennan; Top right: Car part, Locus S, photo by Madeleine Gulbransen; Bottom right: Pennzoil can, Locus G, photo by Eva Parra.

7. PUBLIC TOURS

Throughout the May to June field season, we conducted 15 tours, resulting in nearly 100 visitors to the site. Funding from the Arizona Humanities paid for Ashley Mlazgar to serve as tour guide,

port-a-potties for the influx of visitors to the site, and for educational brochures we handed out to all visitors. Tours were organized through the Kaibab National Forest, Arizona Preservation Fund, Grand Canyon Historical Society, Arizona Site Stewards, and several private groups. We also provided a September 2022 tour through Northern Arizona University's Grand Canyon Semester. Additionally, the *Williams Grand-Canyon News* and *NAU Review* sent media personnel to the site for a tour and published their experiences at the site.



Figure 72: Jerry Johnson (center), whose grandfather and mother lived at Apex in the 1930s, talks about his family history while attending a tour. Photo by Eva Parra.

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. Joey McCauley was hired through NAU's Interns-to-Scholars Program during the Fall 2022 semester to analyze the surveys. Joey presented her findings as a poster at NAU's Undergraduate Research Symposium in April 2023, and was a co-author of the Arizona Humanities Grant Report submitted in October 2022.



Figure 73: Visitors fill out their surveys at the Welcome Center. The Kaibab National Forest provided the canopies and tables. Photo by Logan Hick

8. CONCLUSIONS AND FUTURE DIRECTIONS

The 2022 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.

8.1. Publications

The lead-up to and results from the 2022 field season have already been published in a variety of venues. The following table lists the numerous paper and poster conference presentations, invited talks, newspaper coverage, and journal articles emerging from our 2022 field season so far:

Name	Title	Date	Venue	Mode
Tim Maddock	Apex, Arizona: Life and Work in the Great Depression Era Company Town	May 2023	Williams, Arizona History Talk Series	Invited Talk

Emily Dale	Apex, Arizona Archaeology Project	May 2023	Eastern New Mexico University	Invited Talk
Joey McCauley	Visitor's Experience at the Apex Archaeology Field School	April 2023	NAU Undergraduate Symposium, Arizona	Poster Presentation
Emily Dale	An Introduction to the Apex, Arizona Archaeology Project	April 2023	Arizona History Convention, on-line	Paper Presentation
Charlie Webber	The Historic Apex Logging Camp	April 2023	Arizona History Convention, on-line	Paper Presentation
Tim Maddock	Labor and Identity-Making at Apex, Arizona	April 2023	Arizona History Convention, on-line	Paper Presentation
Logan Hick	Permit Required: Catch and Release Archaeology	January 2023	Society for Historical Archaeology, Lisbon, Portugal	Paper Presentation
Eva Parra	Progress in Preservation: Products in Motion at Apex, Arizona	January 2023	Society for Historical Archaeology, Lisbon, Portugal	Paper Presentation
Emily Dale	Future PIT Program at Apex, Arizona	December 2022	Region 3 Heritage Virtual Series—PIT, Volunteers and Partnerships, United States Forest Service	Invited Talk
Emily Dale and Joey McCauley	Public Archaeology at Apex, Arizona	October 2022	Grant Report for Arizona Humanities	Report
Emily Dale	Apex: 2022 Field Season	July 2022	Arizona Site Stewards Meeting	Invited Talk
Joseph Giddens	Apex archeological field school completes inaugural year	July 2022	Williams-Grand Canyon News	News Article
Carly Banks	One man's trash is an archaeologist's treasure	June 2022	The NAU Review	News Article
Joseph Giddens	Public invited to observe Apex logging camp excavation	May 2022	Williams-Grand Canyon News	News Article

Sean White, Emily Dale, Ashley Mlazgar, and Charlie Webber	Historical Archaeology in Arizona	Spring 2022	n/a	Educational brochure
Sean White, Emily Dale, and Ashley Mlazgar	Archaeology on the Grand Canyon Railway	Spring 2022	n/a	Educational brochure
Emily Dale	Public Engagement and Collaborative Archaeology at Apex, Arizona	Spring 2022	<i>Ol' Pioneer: The Magazine of the Grand Canyon Historical Society</i>	Journal Article
Emily Dale and Margaret Hangan	Collaborative Archaeology of Apex, Arizona and the Grand Canyon Railroad	September 2021	Grand Canyon Historical Society Virtual Outings Series	Invited Talk
Joseph Giddens	NAU and Kaibab National Forest partner to open archaeological field school at historic logging camp near Grand Canyon	September 2021	Williams-Grand Canyon News	News Article

8.2. Future Directions

The 2022 field season largely focused on the management and school side of the town. While we recorded Locus A, the workers' kitchen and dining hall, and Locus R, the potential kitchen privy, Loci G, I, J, and S are all located on the west side of the railroad tracks. In order to broaden our perspective and knowledge of Apex's laborers, and in line with NAU graduate student Tim Maddock's thesis research into the camp workers, we plan to focus on the east side of the railroad for the 2023 season. The privy at Locus E, the likely location of the single men's bunkhouse, is a promising feature for excavation per our 2022 GPR, and the 2006 survey of Locus E did not produce a map. There are also several can dumps associated with laborer features, such as Loci B and C. This could challenge some of our 2022 interpretations, such as the ubiquity of certain brands or items due to the monopoly of the company store, or that canning activities are restricted to households with women.

The 2023 field season will also host several public tours, with the support of a second Arizona Humanities grant. Finally, we will be running a Passport in Time project in the 2023 season, which will further involve public engagement with the site.

9. BIBLIOGRAPHY

The American Bottlers Publishing Company

1920 Notes from the Bottling Trade: Arizona. *The American Bottler* 40(1):60.

Banks, Carly

2022 One man's trash is an archaeologist's treasure. *The NAU Review* 22 June. Flagstaff, Arizona. <https://news.nau.edu/one-mans-trash/>

Bennett, James

2018 A.S. Hinds. *Cosmetics and Skin*. 28 November 2018.

<<https://www.cosmeticsandskin.com/companies/hinds.php>>. Accessed 19 May 2023.

Clayman, Andrew

2020 Chicago Mail Order Co., est. 1889. *Made in Chicago Museum*.

<<https://www.madeinchicagomuseum.com/single-post/chicago-mail-order-co/>>. Accessed 19 May 2023.

The Coconino Sun

1922 Skylight City Bottling Works: Advertisement. *The Coconino Sun* 30 June, Flagstaff, Arizona.

1927a Frank Brooks Operates Three-in-One Business. *The Coconino Sun* 25 November, Flagstaff, Arizona.

1927b Flagstaff's Water is Basis for Local Bottling Industry. *The Coconino Sun* 6 May, Flagstaff, Arizona.

1929 *Flagstaff City Directory, 1929*. The Coconino Sun, Flagstaff, Arizona.

Crush Soda

2011 History. *Crush Soda* <

<https://web.archive.org/web/20111007234307/http://www.crushsoda.com/#panel08>>. Accessed 22 May 2023.

Dale, Emily and Margaret Hangan

2020 Historic Apex Lumber Camp (AR-03-07-04-1784) Research Design. Prepared for the United States Forest Service Kaibab National Forest Supervisor's Office.

Discogs

2023 Discogs. <<https://www.discogs.com/>>. Accessed 19 May 2023.

Giddens, Joe

2022 Apex archeological field school completes inaugural year. *Williams-Grand Canyon News*. 5 July. Williams, Arizona. <https://www.williamsnews.com/news/2022/jul/05/apex-archeological-field-school-completes-inaugura/>

Giddens, Joe

2022 Public invited to observe Apex logging camp excavation. *Williams-Grand Canyon News*. 24 May. Williams, Arizona. <https://www.williamsnews.com/news/2022/may/24/public-invited-observe-apex-logging-camp-excavatio/>

Giddens, Joe

2021 NAU and Kaibab National Forest partner to open archaeological field school at historic logging camp near Grand Canyon. *Williams-Grand Canyon News*. 28 September. Williams, Arizona. <https://www.williamsnews.com/news/2021/sep/28/nau-and-kaibab-national-forest-partner-open-archae/>

Grace, Roger M.

2006a Orange Crush—A Soda Pop Developed in Los Angeles. *Metropolitan News-Enterprise* 25 May, Los Angeles, California

2006b Orange Crush Becomes Oft-Cited Example of ‘Suggestive Mark’. *Metropolitan News-Enterprise* 1 June, Los Angeles, California

Great American Pottery

n.d. Wallace China of Los Angeles, California. *Great American Pottery*.

<https://www.gr8ampottery.com/store/c59/Wallace_China.html#:~:text=Wallace%20China%20started%20in%20Huntington,when%20Shenango%20acquired%20Wallace%20China%20and%20https://www.worthpoint.com/dictionary/p/ceramics/na--united-states/wallace-china>. Accessed 19 May 2023.

Gretton, Lel

2012 History of Enamelware—Kitchen & Household. *Old & Interesting*. 5 March 2012. <<http://www.oldandinteresting.com/enamelware-history.aspx>>. Accessed 19 May 2023.

The Henry Ford

2023 Fly-Tox Hand Sprayer, 1940-1950. *The Henry Ford*.

<<https://www.thehenryford.org/collections-and-research/digital-collections/artifact/456113/#slide=gs-438233>>. Accessed 19 May 2023.

Isa, Mary

2017 Out in the Wash: Laundry Products from the East Lansing Dump. *Michigan State University Campus Archaeology Program*. 7 November 2017.
<<http://campusarch.msu.edu/?p=5638>>. Accessed 19 May 2023.

Johnson, Susan

2021 *Flagstaff's Walkup Family Murders: A Shocking 1937 Tragedy*. History Press, Charleston, South Carolina.

Klein, Christopher

2019 How America's Iconic Brewers Survived Prohibition. *History*. 30 January 2019
<<https://www.history.com/news/brewers-under-prohibition-miller-coors-busch-yuengling-pabst>>. Accessed 19 May 2023.

Lindsey, Bill

2022 Liquor/Spirits. *Society for Historical Archaeology Historic Glass Bottle Identification & Information Website*. <<https://sha.org/bottle/liquor.htm>>. Accessed 19 May 2023.

Lockhart, Bill, Bill Lindsey, Carol Serr, Pete Schulz, and Beau Schriever

2023 Manufacturer's Marks and Other Logos on Glass Containers: S. *Society for Historical Archaeology Historic Glass Bottle Identification & Information Website*.
<<https://sha.org/bottle/pdf/SLogoTable.pdf>>. Accessed 19 May 2023.

McDermott, Dave

2011 Sardines, Place, and Taste. *Historical Geography* 39:208-222.

McElroy, Ford

1976 Interview by Kristine Prenance, August 24-25. Transcript and audio tape, Flagstaff Public Library Oral History Project.
<<https://archive.library.nau.edu/digital/collection/cpa/id/24610/rec/1>>. Accessed 22 May, 2023.

The Mob Museum

2021 Ten Alternative Products Made by Breweries During Prohibition. *The Mob Museum: The National Museum of Organized Crime and Law Enforcement*. 17 January 2021. <<https://themobmuseum.org/blog/ten-alternative-products-made-by-breweries-during-prohibition/>>. Accessed 19 May 2023.

Museum of Health Care at Kingston

2023 Research Collection Catalogue: Hinds Honey and Almond Cream. *Museum of Health Care at Kingston*. <<https://mhc.andornot.com/en/permalink/artifact14667>>. Accessed 19 May 2023.

Radiomuseum

2002 History of the manufacturer: Neutrowound Radio Mfg. Co.; Homewood. *Radiomuseum*. <https://www.radiomuseum.org/dsp_hersteller_detail.cfm?company_id=2962>. Accessed 19 May 2023.

Richmond, Al

2017 The Story of the Grand Canyon Railway: Cowboys, Miners, Presidents, and Kings. Grand Canyon Association, Grand Canyon, Arizona

1990 Rails to the Rim: Milepost Guide to the Grand Canyon Railway. Grand Canyon Railway, Williams, Arizona.

1988 Apex: A Vanished Arizona Logging Community. *The Journal of Arizona History* 29(1):75–88.

Richmond, Al and Marc Pearsall

2004 The Grand Canyon Railway: Sixty Years in Color. Grand Canyon Railway, Williams, Arizona.

Stein, Pat

1995 Logging Railroad Resources of the Coconino and Kaibab National Forests, Arizona. National Register of Historic Places Multiple Property Documentation Form. Submitted to the National Park Service and the United States Department of the Interior. Copy available at <https://npgallery.nps.gov/NRHP/GetAsset/NRHP/64500041_text>. Accessed 29 December 2019.

Old Dutch

2023 History. *Old Dutch*. <<https://www.olddutch.ca/en/>>. Accessed 19 May 2023.

Pasulka, Nicole

2012 When Women Used Lysol as Birth Control. *Mother Jones*. 8 March 2012. <<https://www.motherjones.com/media/2012/03/when-women-used-lysol-birth-control/>>. Accessed 19 May 2023.

Sedelmaier, J. J.

2019 *Vintage Orange Crush Soda Bottles Take a Ribbing*. PRINT Magazine. 14 May 2019. <<https://www.printmag.com/branding-identity-design/vintage-orange-crush-soda-bottles-take-a-ribbing/>>. Accessed 22 May 2023.

TidiousTed

2016 Soda & Soft Drink Saturday – Mission Orange Soda. *Recipe Reminiscing: Food History, Historic, Traditional & Contemporary Recipes*. 3 September 2016. <<https://recipereminiscing.wordpress.com/2016/09/03/soda-soft-drink-saturday-mission-orange->

soda/#:~:text=Initially%2C%20California%20Crushed%20Fruit%20in,become%20Mission%20of%20California%2C%20Inc.> Accessed 19 May 2023.

United States Forest Service

2017 Apex Logging Camp. Cultural Resource Record. Submitted to the United States Department of Agriculture—Forest Service. Copy available at the Williams Ranger District, Kaibab National Forest.

2006 Apex Logging Camp. Heritage Site Summary Report. Submitted to the United States Department of Agriculture—Forest Service. Copy available at the Williams Ranger District, Kaibab National Forest.

Wikipedia

2023 Louis Marx and Company. *Wikipedia*. 9 April 2023.

<https://en.wikipedia.org/wiki/Louis_Marx_and_Company>. Accessed 19 May 2023.

Whitten, David

2004 “Federal Law Forbids Sale or Reuse of this Bottle” Marking. *Glass Bottle Marks*.

<<https://glassbottlemarks.com/federal-law-forbids-sale-or-reuse-of-this-bottle-marking/>>. Accessed 19 May 2023.

The Winslow Mail

1926 Skylight City Bottling Works: Advertisement. *The Winslow Mail* 18 June, Winslow, Arizona.

APPENDIX A: LOGAN HICK 2023 SHA PAPER

No Permit Required: Catch and Release Archaeology

Logan Hick
Anthropology Department
Northern Arizona University



NO PERMIT REQUIRED: CATCH AND RELEASE ARCHAEOLOGY

Logan Hick



Abstract: Archaeology consists of the accumulation of notes, maps, paperwork, and artifacts. Whether it's a can with an embossed logo or hundreds of undecorated ceramic sherds, labs and museums are constantly inundated with new artifacts, even though a majority of the ones deemed uninteresting are never displayed or studied. As a result, there is an increasing divide between the number of artifacts collected and the storage space available. Catch and release archaeology is a practice of collecting the data necessary while leaving the artifact in its original location. In this presentation, we discuss how practicing catch and release archaeology affected our field school experience in Apex, Arizona, and taught us methods to help address the curation crisis. We aim to contribute our voices as students, not just to Apex, but to a greater conversation in archaeology, in the hope of future sustainability.

APEX 2022 FIELD SCHOOL

- Apex, Arizona
 - Logging Settlement housing residents from 1928 to 1936
 - The Headquarters for the Saginaw and Manistee Lumber Company
 - Temporary settlement
 - Everything was moved in and off on the railroad
 - Structures South-West of Railroad
 - Commissary, Kitchen/ dining car, Single Laborer's Housing
-



Hi, my name is Logan Hick. First of all, I just wanted to thank you all for coming to listen to undergraduate students, or at least one undergraduate student discussing work they have completed at a field school. It means a lot to me that you are all interested in what we have to say. I would also like to thank Dr. Emily Dale for creating this symposium. Not a lot of undergraduate students or even recently graduated students believe that they can present at normal conference symposiums so its amazing that an entire symposium was created for us to present our contributions to the field. Today I will be talking about Catch and Release Archaeology and how I believe it can be implemented (in at least historical archaeological sites) to reduce the effects of the curation crisis, and also be used as a low impact method for indigenous sites as well.

Earlier this summer I was a part of Northern Arizona University's 2022 field school. The site is called Apex and is located South-west of Tusayan near the South rim of the Grand Canyon. Apex is a historic logging town that housed residents between 1928 and 1936. During this period of time, it also acted as a headquarters for the Saginaw and Manistee Lumber Company. It was a temporary settlement meaning that most of the buildings and town was brought into Apex on box cars, and then was brought back out again once the contract for logging was up.

Picture Slide



The railroad split the town in half, so the structures that were on the southwest side were the kitchen car, the dining car, the single men's housing, and possibly the commissary. On this side we found ovens, pots, pans, and many buckets of lard, that are most likely associated with the kitchen car.

Apex Cont.

APEX CONT.

- Structures North-East of Railroad
 - School house, Family housing



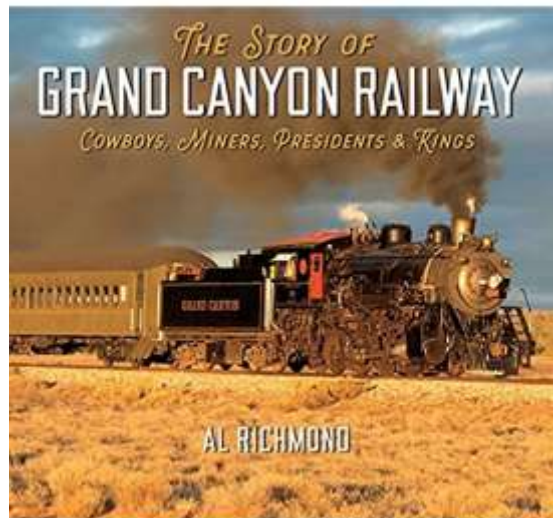
15 schoolchildren standing with their teacher, Rose B. Wilson, in front of the schoolhouse

The structures NE of the railroad were the Schoolhouse, and family housing, and where the superintendent Arvid Anderson lived with his family. The desegregated schoolhouse was one of the first in the state of Arizona. There were not that many schoolhouses in the area, and because many of the laborers for Saginaw and Manistee were of mixed cultural descent, all the children ended up in the same school. Vera Black, a former teacher (not the one in the picture) said that on average 5 to 8 children were being taught at the school at any given time.

Earlier Research

EARLIER RESEARCH

- Al Richmond
 - Researched the Grand Canyon Railway
 - Interviewed inhabitants of Apex



A lot of research was done on Apex by Al Richmond during the 1980s. His initial work was on the Grand Canyon Railway, and because of this he heard about Apex. He was able to conduct interviews with several former residents, and because of this we know a lot more about the site.

A HISTORY OF THE CURATION CRISIS

- During the mid-1970s and early 1980s
 - First acknowledged that there were too many artifacts, and not enough resources
 - Legislation
 - National Historic Preservation Act of 1966
 - National Environmental Policy Act of 1969
 - Executive Order 11593 of 1971
 - Archeological and Historic Preservation Act of 1974
 - “Until collections and their associated documentation are curated adequately this research potential cannot be realized” (Marquardt 1982:410).
-

Now we are going to change topics a little bit and discuss the history of the curation crisis. During the mid-1970s and the early 1980s it was first acknowledged that there were too many artifacts and not enough resources. By resources I mean storage space, and research capacity out of the field. Even large institutions and museums may hold millions of artifacts and only be able to display a very small percentage of that to the general public. And a lot of governmental legislation that has good intents to preserve cultural heritage has only exacerbated this issue. Laws such as the National Historic Preservation Act of 1966, the National Environmental Policy Act of 1969, and the Archeological and Historic Preservation Act of 1974 have approved the use of federal funds for archaeological research, such as locating cultural sites and minimizing the effects that federally funded land alteration projects will have on them. As William Marquardt states in his article titled Resolving the Crisis in Archaeological Collections Curation, “Until collections and their associated documentation are curated adequately this research potential cannot be realized” (Marquardt 1982:410).

HISTORY CONT.

- Causes of the Curation Crisis
 - The long-term care for artifacts is expensive and has been a historically underfunded aspect of archaeology
 - Creates inadequate facilities
 - Poor storage practices leading to collection deterioration
 - Loss of whole artifacts and records
 - Inaccessibility of collections due to insufficient catalogs or inventories
- Documentation and logs back up
 - Research slows

One of the causes of the curation crisis is that the long-term care for artifacts is expensive and has been a historically underfunded aspect of archaeology. S. Terry Childs a retired Supervisory Curator in the Department of the Interior Museum Program believes that while the excavation process is the most 'exciting' aspect of the job, the cleaning, analysis, boxing, and inventory are just as important but are seen as grunt work, going to those less practiced in the field. And this underfunding creates inadequate facilities, which in turn leads to poor storage practices and collection deterioration, loss of whole collections, specimens, and records, and an inaccessibility of collections due to insufficient catalogs or inventories. All while documentation and logging back up, and research slows as a result.

CONTEMPORARY ISSUES

- Archaeological digs from the 19th and 20th Centuries
 - Massive amounts of artifacts found
 - Countless unpublished finds due to scarcity of resources
- Modern day infrastructure bills
 - CRM work is time-sensitive
 - Causes rapid discoveries which have significantly increased the volume of unprocessed archaeological material.

These issues were not just in the past. A lot of institutions are still facing this crisis. One of the reasons for this is that many of the historic digs from the 19th and 20th centuries produce massive amounts of artifacts. Not all of these artifacts, such as the case from Apex, are diagnostic or quote-on-quote cool. It's a lot of archaeology of garbage. That doesn't mean that these projects are any ways less important. It just means that some of the artifacts do not need to be taken off site for research to adequately continue. And because these large sites contain so many artifacts, there are countless unpublished finds due to the scarcity of resources. The data is there, it just needs to be processed. Another aspect to consider is that there is modern day legislation, such as Biden's infrastructure bill that promotes even more archaeological work to be completed. And a lot of the work will fall on to CRM firms. CRM work is time sensitive so not a lot of time can be given towards every artifact, site, or collection. And these new rapidly discovered finds have and will continue to increase the volume of unprocessed archaeological material.

What is Catch and Release Archaeology? (Pictures)

WHAT IS CATCH AND RELEASE ARCHAEOLOGY?



And now, Ladies, Gentlemen, and those in between. I bring you all to the crux of this paper. Catch and release archaeology. On the screen right now is a picture of a man holding a fish. And now next to him is a picture of me holding a can lid. And what do these two dare I say dashing people have in common? They will both place what they have in their hands down after they are done taking pictures for their Instagram.

What is Catch and Release Archaeology?

WHAT IS CATCH AND RELEASE ARCHAEOLOGY?

- The lab work is done primarily in the field
 - Artifacts are collected, recorded, analyzed, photographed, measured, and drawn on site
- Then once all the data has been collected the artifacts are returned to their original location
- If any artifact cannot be researched at the site, then it is taken back to the lab
 - Its location is recorded so when the analysis has been completed it is taken back to the site and placed in its point of origin

But all joking aside, catch and release archaeology is a low impact methodology of archaeology where the lab work is primarily completed in the field. Artifacts are collected, recorded, analyzed, photographed, measured, and drawn on site. This is usually done in a meticulous process to avoid the need to relocate an artifact, or not have the records necessary to continue research out of the field. Then once the data has been collected, the artifacts are returned to their original location, or at least as close as the researchers can manage. Sometimes artifacts that catch the eye or need further research that cannot be done in the field are bagged and taken back to the lab. But if this occurs then the location of the artifact is recorded so when the analysis has been completed it is taken back to the site and placed in its point of origin. Much of the paperwork is completed in the field so that all that needs to be taken out of the field is documents and not actual artifacts.

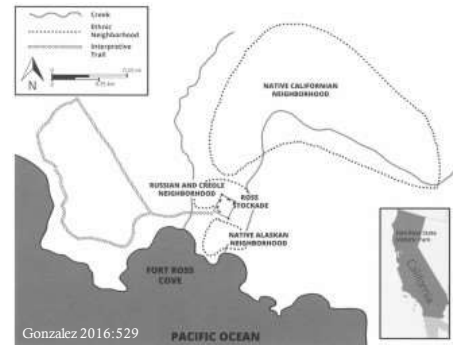
CATCH AND RELEASE ARCHAEOLOGY: A POTENTIAL SOLUTION TO THE CURATION CRISIS

- Goal of Archaeology is not primarily to dig
 - But to increase knowledge of the past and ethically protect archaeological discoveries as an invaluable, extraordinary resource for all of society
 - While excavation or surveying proceeds, less material is produced, necessitating less storage usage
 - Minimizes ground disturbance
 - While retaining the ability to gather data
-

But is catch and release archaeology a potential solution to the curation crisis? In essence, yeah... for the most part. The goal of archaeology is not primarily to dig in the ground. Instead, it is to increase knowledge of the past and ethically protect archaeological discoveries as an invaluable, extraordinary resource for all of society. And when Catch and Release Archaeology is used less materials are produced during excavation and surveying, which results in less storage being necessary. Catch and Release Archaeology also minimizes the ground disturbance even when the ability to gain pertinent information from the site can still occur. And while some data might be lost from this methodology, data is lost from every site. Even when every artifact is saved, there are still holes that data can slip through.

USES IN INDIGENOUS ARCHAEOLOGY

- Kashaya Pomo Interpretive Trail Project
 - Low impact Archaeology strategies
 - Use of Catch and Release Archaeology helped to instill the values of conservation and collaboration in undergraduate field school students
 - Important to have the data, but also important to collect in such a way that doesn't harm any cultural practices (Gonzalez, 2016)



While catch and release archaeology can be effective for decreasing the effects of the curation crisis, it; alongside other low impact strategies, can also be effective to mitigate the cultural harm that comes from indigenous archaeology. An example of this comes from the Kashaya Pomo Interpretive Trail Project. They used catch and release archaeology in conjunction with non-invasive methods of research like ariel photography, and geophysical survey to be as culturally un-impactful as possible. This research method also helped to instill the values of conservation and collaboration in undergraduate field school students. As undergraduate students are the future of the field, it is important to teach them culturally sound methods as early as possible so that the field can move forward collaboratively. And as Sara Gonzalez, the leader of the project stated, it is “Important to have the data, but also important to collect in such a way that doesn't harm any cultural practices”.

APEX: A CASE STUDY

- Catch and Release Archaeology was used as the methodology for the Apex 2022 Field School
- Can and Wood scatters
 - 20 identified loci (A-T)
 - Surveying was conducted at 8 of the loci
 - ~10,650 Hole-in-top cans were identified

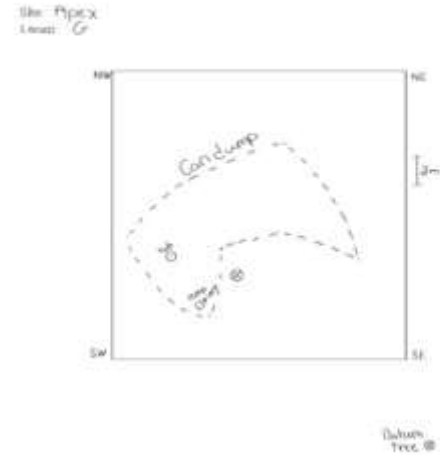


Like I mentioned earlier, catch and release archaeology was used as the methodology in the Apex 2022 field school. The forest service identified 17 loci (A-Q), and the field school participants identified another 3 loci as well. Survey work was conducted at 8 of the 20 loci, and a majority of them contained large can or wood scatters. Over the course of the field school roughly 10,650 hole-in-top cans were recorded. And that number is only for hole-in-top cans. There were thousands more ceramic sherds, glass shards, and miscellaneous ferrous metal objects. And thousands more have yet to be recorded. The fact is that the site is incredibly large, and storage or care of the artifacts would be astronomically expensive.

How Work at Apex was Conducted

HOW WORK AT APEX WAS CONDUCTED

- Students started work by surveying the identified Locus
- Tape and Compass maps were then created
 - Contained any features, large artifacts, or outline of can/ wood scatters
- Photographs were taken
 - Features, can and wood scatters, and notable artifacts
- Students counted all non-diagnostic artifacts
- Students made note of any diagnostic artifacts and then recorded any diagnostic information available
- Artifacts were placed back in their original locations



Work at Apex was conducted firstly by surveying of the identified locus. After initial survey tape and compass maps were created containing features, large or notable artifacts, and outlines of any can or wood scatters. During this time photographs were also taken of the same features, can and wood scatters, and notable artifacts. These pictures were taken from multiple directions if the locus or concentration were too large for the cameras. Then students counted all non-diagnostic artifacts. This includes any hole-in-top can or any other ferrous object that had no embossing or engraving. After the non-diagnostics, students identified any diagnostic artifacts. These included can lids with company names, toys, or any object that could be researched into further. These artifacts were then noted, and all of the diagnostic information recorded, drawn and then photographed in the field. Once all the data had been pulled the artifact was placed back into its original location.

Diagnostic Artifacts

DIAGNOSTIC ARTIFACTS



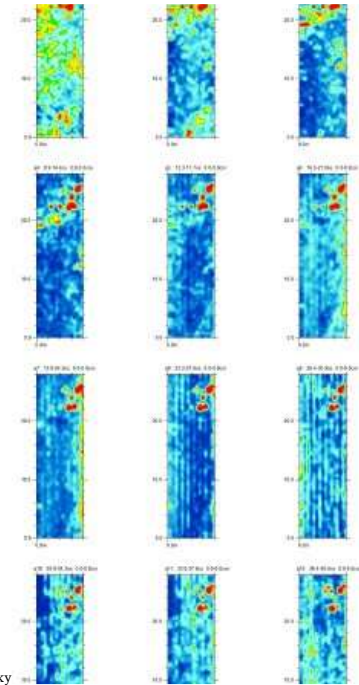
- If any of the artifacts required deeper research, they were taken back to the lab
 - Such artifacts were then researched, documented, and sometimes drawn



If there were any artifacts that required deeper research, then the artifact was bagged, labeled, and taken to the lab where further documentation and research could happen. The pictures on screen were from a lock pad that was found and because of the dirt and rust damage it had to be cleaned before research could be completed.

GPR AS A LOW IMPACT PRE - EXCAVATION PROCESS

- GPR was conducted at 3 privies in Apex to determine which would be the best for excavation
 - Locus E and Locus R had the least promising results while the 2 privies at Locus I (The Schoolhouse) were determined to have the most potential for archaeological evidence
 - Excavation proceeded



Courtesy of Bruce Phillips, University of Kentucky

The field school also utilized GPR as a pre-excavation process so that excavation could be done on the locations with the highest probability of containing artifacts. Three loci (E, R, and I) were surveyed using Ground Penetrating Radar, and Locus I, which contained two privies that were used by the schoolhouse was deemed the most promising. Using GPR, we were able to skip excavation on the privies that might have contained less artifacts, saving us time and resources.

CONCLUSION

- The Catch and Release Method is not unique to the Apex 2022 Field School
 - It has been successfully implemented for years by both archaeological research teams and indigenous based archaeologies
 - Catch and Release Archaeology is a low impact methodology
 - Preserves resources
 - Cost effective, and time efficient
 - Non-destructive/ minimally invasive
 - Can be implemented to promote collaborative thinking
 - From the perspective of a current student of archaeology
 - Catch and Release Archaeology could be beneficial in making the field more sustainable
-

To sum up some of my thoughts on catch and release archaeology, it is not unique to our field school. It has been used for years by different archaeological teams, field schools, and indigenous archaeologies as a method of low-impact and sustainable archaeology. Using catch and release archaeology can preserve resources, it is cost effective, and time efficient, can be minimally invasive or even non-destructive, and can promote collaborative thinking in the future generation of archaeologists. And while there are many sites that using catch and release archaeology on wouldn't be feasible, for many historic 19th and 20th century sites with thousands of artifacts it could be a powerful tool for continued sustainability in the field. Speaking as a current student, and not as an expert in any way shape or form, I'd like to advocate for the possibility of using this method, or other low-impact methods in the future to keep this field that I love so much continuous.

ACKNOWLEDGEMENTS

Al Richmond, 2018*The Story of Grand Canyon Railway: Cowboys, Miners, Presidents and Kings*

William H. Marquardt, 1982*Resolving the Crisis in Archaeological Collections Curation*

S. Terry Childs, 1995*The Curation Crisis*

Kashaya Pomo Interpretive Trail Project

Bruce Phillips, University of Kentucky

APPENDIX B: FLOTATION ANALYSIS

Apex 2022 Field School Flotation Analysis
Bruce G. Phillips
BGP Consulting LLC

In the late spring/early summer of 2022, Northern Arizona University conducted field-school excavations at the site of Apex, a historic logging camp east of the town of Tusayan in northern Arizona. Subsequently, three sediment samples from a privy (Privy 1) were submitted to BGP Consulting for flotation analysis. The goal was to identify potential food resources associated with the feature.

Located on the Colorado Plateau, the project area is approximately 6,600 feet above mean sea level. Vegetation in the area is characterized as Rocky Mountain (Petran) Montane Conifer Forest (Pase and Brown 1994), dominated by Ponderosa pine (*Pinus ponderosa*). Great Basin Conifer Woodlands (Brown 1994), however, are found a short distance to the south and elements of this lower-elevation biome are common in and around the project area, including piñon pine (e.g., *Pinus edulis*), juniper (*Juniperus* sp.), sage (*Artemisia* sp.), and saltbush (*Atriplex* sp.).

Methods

At BGP Consulting facilities, sediment samples were processed using a Flote-Tech flotation machine. The gravel portion of the sample was examined for artifacts and then discarded. During analysis, each dried light fraction was first passed through a series of geologic sieves with mesh sizes of 2, 1, and 0.5 mm. Such presorting produces subsamples with similar size particles, which are more effectively scanned. Each fraction was then sorted at 7 to 40X under a binocular dissecting microscope. Seeds were identified with the aid of modern comparative material and standard references (e.g., Martin and Barkley 1961).

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

The relative degree of disturbance was calculated. Originally inspired by Kwiatkowski (1986) and augmented by Miksicek (1995), the disturbance index qualifies the integrity of a sample according to the number of animal pellets, insect parts, and uncarbonized remains. Disturbance indices tend to be higher in young, near-surface samples; disturbance indicators decay with time.

Results

Unburned plant remains deposited at open-air site typically decay within 200-300 years, depending on edaphic conditions, particularly effective precipitation (cf. Miksicek 1987). When charred, plant remains become inert (no longer subject to decay). Hence, charcoal recovered from prehistoric sites typically is subjected to archaeobotanical analysis, whereas unburned plant parts are considered intrusive, introduced to features through bioturbation. As flotation samples

from historic contexts are young enough to contain uncharred specimens related to cultural activities, uncharred seeds and other plant material must be considered as part of the cultural macrobotanical assemblage (Miksicek 1987; Minnis 1981), along with the processes of bioturbation. As only a few small, charred pieces of unidentifiable wood were recovered, uncharred plant remains constituted the Apex flotation assemblage.

Common plant names are used throughout this chapter. Nomenclature and seasonal availability follows Kearney and Peebles (1960), Brown (1994), and Pase (1994). Five categories of specimens representing a minimum of three taxa make up the macrobotanical assemblage (Tables 1 through 3). Nearly all identifiable specimens are pine. No non-local types are present in the assemblage. Unidentifiable non-wood fragments include possible seed fragments, seed coats and shells, stems, leaf parts, etc. Site disturbance indices are all high (66.7-73.3), indicating severe bioturbation. It is likely that some, if not most, of the uncharred plant remains resulted from animal burrowing.

Table 1: Flotation Transformed Data, Privy 1, Apex 2022 Field School

FS#	Parts/liter	Taxa/liter	Disturbance index	Specimens (parts/liter)					
				Unidentifiable non-wood fragment	Cheno-Am seed	Pine cone scale fragment	Pine needle fragment	Piñon nutshell fragment	Piñon seed
10	>58	0.9	73.3	>28.5	0.3	0.3	>28.5		0.3
15	29.3	2.7	73.3	13.3		1.3			14.7
17	>30	0.3	66.7	1.3				3.8	>25

At the top of the sample sequence, FS#10 has the greatest concentration of parts/liter, influenced by excessive numbers of unknown specimen fragments and pine needle fragments, suggesting recent disturbance and/or leaf litter typically covering the forest floor. A single Cheno-Am seed is the only identifiable specimen other than pine in the assemblage. The term Cheno-Am refers to members of the family Chenopodiaceae and genus *Amaranthus*; the seeds of many species are indistinguishable. Cheno-Ams are common elements on the landscape, often found inhabiting disturbed soils.

In the lower sequence (FS#s 15 and 17), specimen density and disturbance indices decrease, as does the concentration of unidentifiable specimens, all suggesting lesser bioturbation and/or decomposition of unburned material. Conversely, piñon seed density increases substantially; although it is likely that the seeds were deposited in an animal burrow or nest, dumping by Apex residents cannot be ruled out. (The high number of taxa/liter in FS#15 is a result of small sample volume).

Summary and Conclusions

Three flotation samples from Privy 1 were analyzed. The only charred plant remains are a few unidentifiable wood fragments. Five non-wood categories are recognized, all unburned. Disturbance indices are high, especially animal pellets, indicating considerable bioturbation in privy fill. Although it is likely the high densities of piñon seeds in FS#s 15 and 17 were introduced by rodents, the seeds may have been deposited as trash by site residents. It is possible that the pine nuts became spoiled or otherwise unpalatable (e.g., stale) before being prepared for meals. No evidence of imported foods was found.

References

Brown, David E.

1994 Great Basin Conifer Woodland. In *Biotic Communities: Southwestern United States and Northwestern Mexico*, edited by David E. Brown, pp. 52-57. University of Utah Press, Salt Lake City.

Kearney, Thomas H. and Robert H. Peebles

1960 *Arizona Flora*. University of California Press, Berkeley, California.

Kwiatkowski, Scott

1986 A Method for Estimating Disturbance in Flotation Samples and its Implications for Archaeological Pollen Analysis. Paper presented at the 9th annual Ethnobiology Conference, Albuquerque.

Martin, A.C. and W.D. Barkley

1961 *Seed Identification Manual*. University of California Press, Berkeley.

Miksicek, Charles H.

1987 Formation Processes of the Archaeobotanical Record. In *Advances in Archaeological Method and Theory*, edited by Michael B. Schiffer, pp.211-247. Academic Press, New York.

1995 Interaction Within the MTS Community: An Archaeobotanical Perspective. In *Archaeology at the Head of the Scottsdale Canal System, Vol. 2: Studies of Artifacts and Biological Remains*, edited by T. Kathleen Henderson and David R. Abbott, pp.185-200. Anthropological Papers No. 95-1, Northland Research, Flagstaff.

Minnis, Paul E.

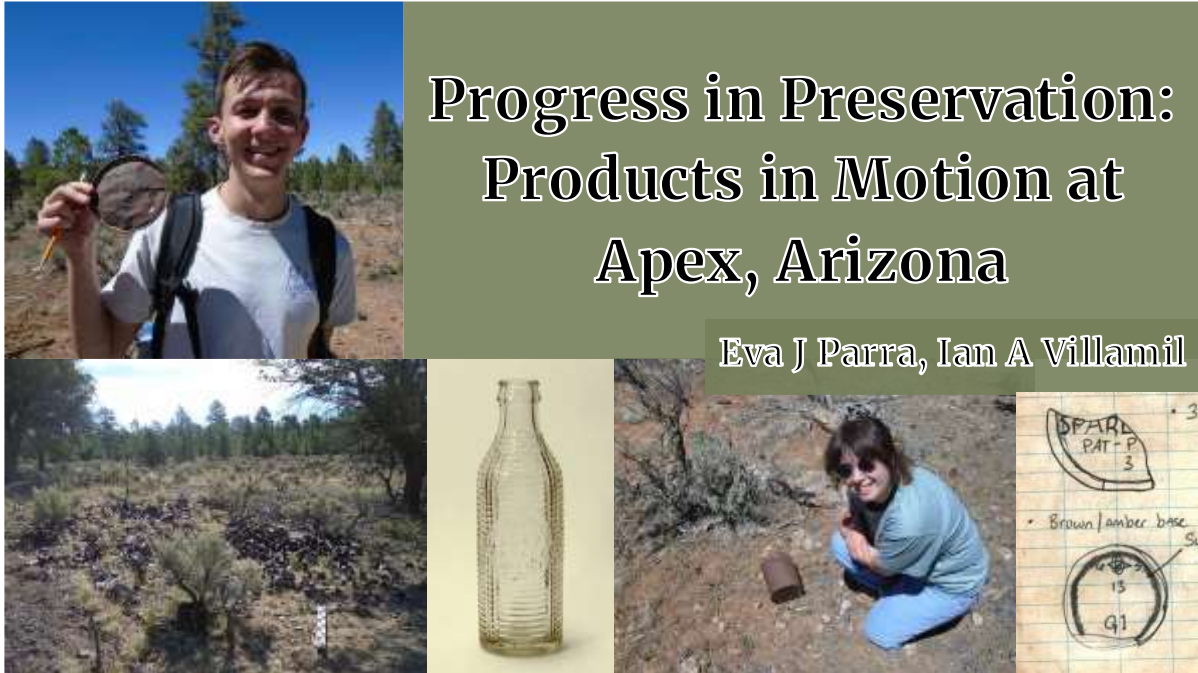
1981 Seeds in archaeological sites: sources and some interpretive problems. *American Antiquity* 46(1): 143-152.

Pase, Charles P. and David E. Brown

1994 Rocky Mountain (Petran) Subalpine Conifer Forest. In *Biotic Communities: Southwestern United States and Northwestern Mexico*, edited by David E. Brown, pp. 32-39. University of Utah Press, Salt Lake City.

APPENDIX C: EVA PARRA 2023 SHA PAPER

Progress in Preservation:
Products in Motion at Apex, Arizona
Eva J Parra



Abstract:

Stepping into the world of a migrant worker in the American Southwest during the early 1900s is to find evidence of a young industrialized world. The archaeological work performed at the site of Apex, Arizona yielded evidence regarding how market expansion and the movement of commodities and foodstuffs, manufactured across the country, to the Southwest have impacted those who once lived there. This paper discusses the production, preservation, and transportation of bottled goods and other similar containers in the early 1900s through our findings as field students with the Apex archaeological project. Our careful lab work and research explores and contributes a greater understanding of how migrant workers and their families at this site experienced an increasingly interconnected North American manufacturing reality.

Introduction to Apex, Arizona

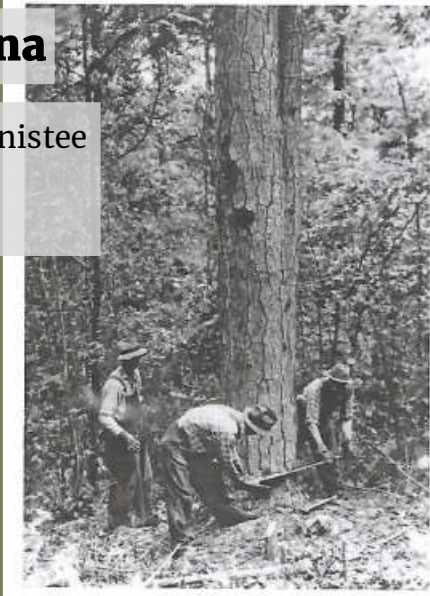


Hello, today I will be presenting on the foodstuffs found in Apex, Arizona as well as connecting the site both physically to the rest of the country's foodstuffs through the trains moving through the site, as well as culturally through the history and significance of foodstuffs found in Apex.

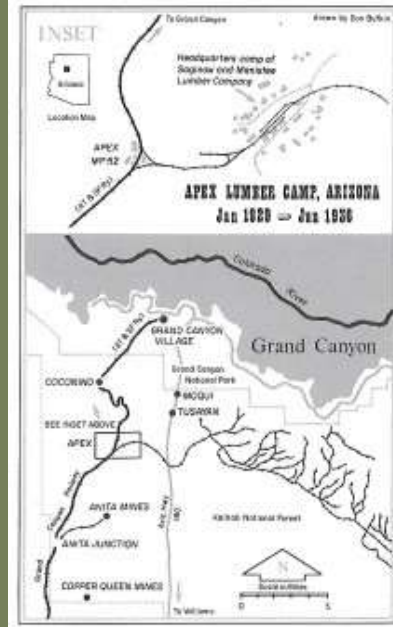
Northern Arizona University's first field school in Apex, Arizona was attended by 6 students, one teacher's assistant, and Principal Investigator Dr. Emily Dale. Over the course of the field school we surveyed, mapped, and documented 8 loci of 20 identified within the site. The site is largely made up of wood scatters, glass shatters, and can piles.

Apex, Arizona

- Saginaw-Manistee headquarters
- 1928-1936



Lumberjacks using a two-man saw to fell a ponderosa pine tree in 1929.



The town of Apex was occupied between 1928 and 1936 and is located in the Kaibab National Forest near the Grand Canyon. It was created after the Saginaw-Manistee lumber company (a merger of two companies originally from Michigan) began a new logging operation in what is now the Tusayan District of the Kaibab after their initial contract to log further south in the forest ended (Richmond 1988). Apex served as the Saginaw-Manistee headquarters and a camp for the loggers who worked for the company.

Kitchen Car and Commissary



Kitchen Car: Locus A



?

Commissary: ?

The camp was split by the railroad running through it. On the west side, single men lived in one room boxes while on the east side families lived in one bedroom structures that had a living room and kitchen. Because of this difference, it makes sense that the kitchen car was located on the west side of the camp, and during the 2022 field school we documented Locus A where we believe the kitchen car was based on the ovens we found there. However all residents of Apex bought from the company commissary store based on common ceramic patterns found throughout the site, although we don't currently know where the building sat on the site. In an interview with former resident Harry E Matson, he claims the commissary was moved further out of the camp at some point so that may be why it hasn't been located yet (Richmond 1984a). The commissary and kitchen car weren't the only place residents of Apex could get their food from; they would drive to Williams or the Grand Canyon, which according to Matson was cheaper than buying from the commissary (Richmond 1984a; Richmond 1988).

Through Apex

By Truck and Train through and to Apex

- Water delivered by train car to Apex
- Residents could travel to Williams or the Babbitt store at the Grand Canyon for groceries
- Cattle, milk, fish, all reported to have been transported on the railway to the Grand Canyon

Before I get to the products found in Apex, I want to talk about some of the products that traveled through Apex. Passenger trains going north to the Grand Canyon would also carry food with them, surprisingly perishable food as well (Richmond 1984a). Milk from Phoenix, ice cream from Kansas, and fish from California all made its way through Apex to the Grand Canyon. There were no freezer cars, products would just be covered in ice. Local farmers also shipped cattle through the railroad (Richmond 1984 b).

Skylight City Bottling Company

- Orange Crush bottles found near Loci A and R and Coca Cola Bottle found at Locus J



Skylight City Bottling Company



September 1923 issue Winslow Mail

- Frank Brooks originally owned a saloon in Flagstaff, but after Prohibition opened a combination grocery store and bottling company, later adding a camping ground and 19 cabins
- Shipped throughout Yavapai and Coconino Counties
- Contracts to bottle: Coca-Cola, Delaware Punch, Hire's Root Beer, and Orange, Lemon and Lime Crushes as well as his own brand of drinks.

We found bottles reading FLAGSTAFF/BROOKS/ARIZ on their bases on both sides of Apex, specifically near loci A, R and J. They were from Skylight City Bottling Company, which as the base would indicate, was located in Flagstaff, Arizona and was owned by Frank Brooks. Frank Brooks originally owned a saloon, but after Prohibition opened a combination grocery store and bottling company, later even adding a camping ground and 19 cabins (Coconino Sun 1927b;

Prennace 1976). He shipped products including Coca-Cola, Delaware Punch, Hire's Root Beer, and Orange, Lemon and Lime Crushes as well as his own brand of drinks throughout Yavapai and Coconino Counties (Coconino Sun 1927a). So far at Apex we have only found Orange Crush and Coca-Cola bottles. Because he both shipped his products and sold them from his store, it's unclear whether the bottles present at the site are the result of a deal between Brooks and Saginaw-Manistee or if residents of Apex went to Flagstaff and brought them back with them.

Orange Crush and Mission Orange

Orange Crush and Mission Orange

- Orange Crush created in 1906
 - "Crush" refers to crushing peels
 - Formula changes
- Mission Orange
 - Originally Suncrush



Throughout the site, we found these beautiful ribbed colorless glass bottles of Orange Crush, and from more than one bottler too. Orange Crush was originally created in 1906 by JM Thompson but didn't gain popularity until Neil C Ward perfected the blending process (Sedelmaier 2019; Wayback Machine 2011). The "crush" part of the name referred to the crushing of orange peels, the oil from which seems to be the most verifiable ingredient in the original formula. Various sources claim the formula originally contained no orange juice, only pulp and the oils of the skins (Grace 2006a; Grace 2006b). However, based on a lawsuit with California Crushed Fruit Corporation (which I'll speak on next), there was orange juice in the 1924 formula (Orange Crush Co. v. California Crushed Fruit Co. 1924). Real orange was eventually removed from the product, one source suggests in 1930, which would have made sense with the onset of the Great Depression that a more shelf stable product would be more successful.

Another orange soda bottle we found throughout the site was Mission Orange, identifiable by its deep amber, basically black glass. Mission Orange began as Sun Crush, and although it won a lawsuit from Orange Crush based on the similarities of the product names, by 1930 photographs show the drink's name changed to Mission Orange (Connell 1930; Orange Crush Co. v.

California Crushed Fruit Co. 1924). The name change may have been to accommodate the creation of new flavors, such as lemon and grapefruit.

Malt Syrup

Malt Syrup

- Puritan Malt, Budweiser
- Originally used in baking but with Prohibition breweries needed to find something non-alcoholic to drink



All over Apex we would find malt syrup can lids, including Puritan Malt and Budweiser (and probably more brands in the future). Malt syrup is a “is a thick, unrefined sweetener produced from malted barley” that can be used in baking, beer making, or other processes, but during Prohibition it’s clear with advertising such as the winking man pictured on the slide, the syrup was intended for at home brewers (Apoyan 2021). In 1929 Ohio news sources claimed that 8,000 cans of malt syrup were being sold just in the city of Lima in a week (Grace 2005).

Pabst



Pabst

In 1848 Jacob Best Sr and Charles Best came from Germany and began a vinegar company that would become Pabst (Christie; Mob Museum). During Prohibition they, like many other breweries, would turn to malt syrup, as well as developing soft drinks and opening a surprisingly successful cheese factory. After Prohibition in 1935 they developed the TapaCan, pictured here.

ACME



**ACME
Non-Fattening Beer**

The ACME company was created in 1907, and during Prohibition was not one of the companies that turned to malt syrup, instead focusing on bottling (Flynn). However afterwards, they would create the “keglet” cans we found at Apex. They decided to tap into a different audience as well: women, with their beer they claimed was “Dietetically Non-Fattening.”

Kippered Herring (Sardines)



Kippered Herring (Sardines)

- In the 1890s the US government began requiring that all sardines name their place of origin on the can
- 1905-1915 legal battle over the word “sardine”
- Norwegian sardines used a French style of can that was soldered on, and used a key
- WWI saw a massive increase in sardine factories in Norway
- The industry crashed after the end of the war, leading to only 50 of the original 180 sardine businesses in Norway survived

These two sardine cans were both found in Locus A, the first reading “KIPPERED HERRING/PACKED IN NORWAY/NORWEGE” and the second simply reading “NORWEGE.” Cans like the one on the right with the key on are found throughout the site. This is likely because many of the workers were Scandinavian, so Saginaw-Manistee may have supplied them to remind the workers of home. In the 1890s the US government began requiring that all sardines name their place of origin on the can, because many Maine counterfeits were claiming to be French (McDermott). This is why the word “NORWEGE” can be found on the cans. You may be confused by me calling the first can a sardine can when it’s labeled kippered herring, but the reason for that is because from 1905-15 there were a series of legal battles between the French and the Norwegians, and it was determined that the word “sardine” could only be used to describe French sardines.

Peanut Butter

Peanut Butter

- Invented in 1894
- In 1921 Joseph L. Rosefield invents hydrogenated peanut butter
- Peter Pan
 - One of the first hydrogenated peanut butters
 - Never licensed Peter Pan character
- Monarch
 - Licensed Teenie Weenies comic characters



Throughout the site, we find large cans that look like paint cans, but actually were likely filled with peanut butter like the Monarch can I have pictured on the slide. We also find the peanut butter can lids, the coolest of which I think is the Monarch lid with the lion. Peanut butter had been around for a while by the occupation of Apex; George Bayle began to first sell it as a snack food in the U.S. in 1894 and in 1895 John Harvey Kellogg filed a patent for a nut paste (Michaud 2012; Wheeling 2021). Joseph Rosenfield would then solidify (pun intended) the success of peanut butter by hydrogenating peanut butter, which raised its melting temperature (Krampner 2014). By doing so, the oil would no longer separate out of the peanut butter, which is why peanut butter would go rancid. This meant peanut butter could sit on shelves instead of in new, expensive refrigerators. Peter Pan was one of the first hydrogenated peanut butter brands. Rosenfield filed his patent for hydrogenated peanut butter while working for Swift & Company, which would first try to sell Rosenfield's creation in bar form under the brand name Dainty or Delicia in 1924 to little success. They then sold it in a tin under the name Peter Pan in 1928 to much greater success, hence why it's probably one of the brands we find at Apex.

Rosenfield would eventually leave Swift & Company and create his own brand of hydrogenated peanut butter, Skippy. Swift & Company was not the most ethical company: they'd already been exposed in 1906 for the horrendous working conditions in their meat packing facilities. But on top of this, they never licensed Peter Pan Peanut Butter with the estate of the author of Peter Pan, the money from which would have gone to a children's hospital (Krampner 2014). Monarch, however, did properly license their cartoon characters, the Teenie Weenies (Wisconsin Historical Society 2013).

H.J. Heinz

H.J. Heinz

- Henry John Heinz
- Advocated for Pure Food and Drug Act of 1906
- 1892-1946 company bottled their own products



Henry John Heinz and his company developed many different kinds of food, starting with horseradish in 1869 (Heinz History Center 2022). The bottle pictured here could be a ketchup bottle because the company began selling the product in 1876. The company owned their own glass factory from 1892 to 1946, so this bottle would have been made in Pennsylvania (Lockhart et al 2016). Heinz was a strong supporter of cleanliness in his factories. He campaigned for the Pure Food and Drug Act of 1906, and his son, who took over the company in 1919 continued that trend.

References

Apoyan, J. (2021, January 17). *Ten Alternative Products Made by Breweries During Prohibition*. The Mob Museum. <https://themobmuseum.org/blog/ten-alternative-products-made-by-breweries-during-prohibition/>

Christie, J. (n.d.). *Pabst*. Retrieved January 3, 2023, from <https://ecampusontario.pressbooks.pub/gned1478/chapter/pabst/>

Connell, W. (1930). *Mission Dry Sparkling carbonated fruit beverage bottles in a tub of ice, Los Angeles, circa 1930*. Photograph, Los Angeles, CA. Retrieved January 3, 2023, from <https://digital.library.ucla.edu/catalog/ark:/21198/zz002j92vn>.

Flagstaff's water is basis for local bottling industry. (1927, May 6). *Coconino Sun*, p. 8.

Flynn, G. (1907-1954). *History of the Acme Brewing Co.* Retrieved January 3, 2023, from https://www.brewerygems.com/acme.htm?_ga=2.230646044.102463113.1684748702-1742659476.1684748702

Frank Brooks Operates Three-in-One Business. (1927, Nov 25). Coconino Sun, p. 3.

Grace, R. M. (2005, July 7). *Breweries Survive Prohibition by Selling Malt Extract.* Metropolitan News-Enterprise. <http://www.metnews.com/articles/2005/reminiscing070705.htm>

Grace, R. M. (2006a, May 25). *Orange Crush—a Soda Pop Developed in Los Angeles.* Metropolitan News-Enterprise. Retrieved Jan 3, 2023 from <http://www.metnews.com/articles/2006/reminiscing052506.htm>.

Grace, R. M. (2006b, June 1). *Orange crush becomes oft-cited example of ‘suggestive mark.’* Metropolitan News-Enterprise. Retrieved January 3, 2023, from <http://www.metnews.com/articles/2006/reminiscing060106.htm>.

H.J. Heinz Company. Heinz History Center. (2022, August 29). <https://www.heinzhistorycenter.org/research/collection-highlights/h-j-heinz-company/>

Krampner, J. (2014). *Creamy and Crunchy: An Informal History of Peanut Butter, the All-American Food.* United States: Columbia University Press.

Lockhart B.; Schriever B.; Lindsey B; Serr C. (2016, February 16) *The H.J. Heinz Co. and the H.J. Heinz Glass Co.* Society for Historical Archaeology.

McDermott, D. (n.d.). *Sardines, Place, and Taste.*

Michaud, J. (2012, November 28). *A Chunky History of Peanut Butter.* The New Yorker. <https://www.newyorker.com/books/page-turner/a-chunky-history-of-peanut-butter>

Miller, G. L., & Sullivan, C. (1984). *Machine-Made Glass Containers and the End of Production for Mouth-Blown Bottles.* Historical Archaeology, 18(2), 83–96.

The Mob Museum. (n.d.). *Brewers and Distillers Found Creative Ways to Survive.* Prohibition an Interactive History. <https://prohibition.themobmuseum.org/the-history/prohibition-potpourri/prohibition-products/>

Orange Crush Co. v. California Crushed Fruit Co. (1924, April 7) (United States Courts of Appeals. United States Court of Appeals (District of Columbia)).

Prennace, Kristine. (1976, August). *Oral history interview with Ford McElroy* [with transcript], August 24-25, 1976. Flagstaff Public Library Oral History Project. Retrieved January 3, 2023, from <https://archive.library.nau.edu/digital/collection/cpa/id/24610/rec/1>

Richmond, A. (1988). *APEX: A Vanished Arizona Logging Community*. *The Journal of Arizona History*, 29(1), 75–88. <http://www.jstor.org/stable/41859818>

Richmond, A. (1984a). *Oral history interview with Harry E Matson*.

Richmond, A. (1984b, April 25). *Oral history interview with Leland E. 'Bill' Thurston*.

Richmond, A. (1986). *The Grand Canyon Railway: A History*. *The Journal of Arizona History*, 27(4), 425–438.

“Saginaw and Manistee Lumber Company Camp Plans.” Correspondence, notes, and plans for new Saginaw and Manistee Lumber Company camp. - Colorado Plateau Archives—Colorado Plateau Digital Collections. (n.d.). Retrieved January 3, 2023, from <https://cdm16748.contentdm.oclc.org/digital/collection/cpa/id/84542/rec/64>

Sedelmaier, J. J. (2019, May 14). *Vintage orange crush soda bottles take a ribbing*. PRINT Magazine. <https://www.printmag.com/branding-identity-design/vintage-orange-crush-soda-bottles-take-a-ribbing/>

Walkup to Open New Soft Drink Factory. (1927, May 20). *The Coconino Sun*, p. 1.

Wayback Machine. (2011, October 7). *All About Crush*. Crush Soda Official Site. <https://web.archive.org/web/20111007234307/http://www.crushsoda.com/#panel08>

Wheeling, K. (2021, January). *A brief history of peanut butter*. Smithsonian.com. <https://www.smithsonianmag.com/innovation/brief-history-peanut-butter-180976525/>

William Donahey's Teenie Weenies. Wisconsin Historical Society. (2013, August 22). <https://www.wisconsinhistory.org/Records/Article/CS3881>