An Archaeological Analysis of 
Structure T, Community I of the 
Longdale Mining Complex, Allegheny County Virginia 
Spring 2000 

By: Jerry Guilbert 

Presented to: 
Dr. John McDaniel, Professor of Anthropology 
And 
Katherine Stroh, Research Archaeologist 

"On my honor, I have neither given nor received any unacknowledged aid on this paper."

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In the spring of 2000 the Washington and Lee Department of Archaeology undertook the excavation of two structures, one domestic and one industrial, in the George Washington National Forest as part of an ongoing investigation into the Longdale Mining Complex of Allegheny County, Virginia. These efforts were concentrated in Community I of the complex, which lies between Virginia Route 850 and Interstate 64, about one mile south of Community IV in the Longdale Complex. The domestic structure excavated, Structure T, lies just across the creek from the Australia Furnace site, which was the industrial structure being excavated at the same time. The Washington and Lee Anthropology 377 class provided the labor force under the direction of Dr. John McDaniel, Professor of Anthropology, and Katherine Stroh, Washington and Lee Research Archaeologist.

The site of Structure T was rather small, contained, and flat, with several large trees and small saplings occupying what appeared to be the structure’s interior. Originally, it appeared to be a relatively small, four walled structure roughly situated north-south with a hearthmound dominating its northern portion. An ancillary structure, most likely a double stone-lined pit, lay just to the south east of the structure. Several larger domestic structures of a relatively high socio-economic class had been excavated in years past on a bluff overlooking the site of Structure T. This, combined with the small structure’s close proximity to the Australia Furnace led us to believe that the structure was a home owned by a relatively poor worker closely associated with the furnace itself. However, excavation of Structure T would eventually prove most of this early conjecture wrong.
Prior to the commencement of excavation, extensive preparation of the site was undertaken. The smaller saplings were removed, as were the lower branches of the large trees in the structure’s interior. The entire area was raked clear of leaves and other faunal debris obstructing access to the soil below. A 45x24 foot grid was placed over the structure, extending well beyond its walls to allow for units outside of the structure to be excavated as well. This grid was aligned north-south to coincide with the structure’s apparent foundation walls and was broken up into units measuring 3x3 feet. In the past, nails had been placed at the outside edges of the grid and string run from nail to nail to create the grid over the site. However, this year, in an effort to avoid the inevitable disturbance of the grid due to students tripping over it and pulling the string out, nails were placed at three foot north-south and east-west intervals, with string only used to cordon off units currently being excavated. Each nail was marked with both a north and east coordinate and the southwest corner was used to give each unit its provenience. (Please refer to the attached map.) All in all, one hundred and twenty units were marked off of which forty-seven were opened.

The method of excavation was relatively simple. Each unit was scraped using masonry trowels and all dirt collected was placed in five gallon buckets for sifting. Spoils piles were set up to structure’s south, just north and west of the double stone-lined pit. Here, soil from the buckets was sifted using ¼ inch screen to collect any artifacts missed during excavation. A rubble pile was established right next to the spoils piles for the collection of any unordered rock or brick recovered from the site. The student excavators worked in pairs, one pair being assigned to one unit at a time. Each pair filled out paperwork on their unit concerning soil stratigraphy, artifacts collected, anything of
special note concerning the unit, etc. They also mapped any stone features uncovered in their unit. Student supervisors provided aid in excavating units, answered questions, and kept notes on the site, which most of this paper is based on.

Early work at the site focussed mainly on uncovering the foundation walls and hearth of the structure, relatively simple sounding tasks that inevitably proved quite vexing and came to consume much of our time investigating Structure T. The southeast and southwest corners of the foundation were quickly and easily found, and the southern wall, consisting of relatively large blocks of stone, was soon unearthed and measured approximately 13.2 feet in length. The eastern wall was also easily found and uncovered (as fate would have it, the wall ran directly beneath the E821 line. This had proved quite exasperating during site preparation when we tried to put the nails into the ground!) and was 24 feet long. However, the presence of two large trees along the southern third of the wall not only disturbed the original foundation site but also made complete excavation of the wall quite impossible.

Uncovering the northern wall and the hearth became a very difficult task. This region of the site was dominated by four rather large trees as well as a few small saplings. The root structures of these trees had succeeded over the years in thoroughly disturbing and destroying the western half of both the north wall and the hearth. Consequently, the exact dimensions of both the hearth and the northern wall could not be determined. The relatively undisturbed eastern half of the northern wall ran west for 2.4 feet at which point it intersected the hearth. The southern boundary of the hearth was relatively obvious following excavation, as was the eastern boundary. However, due to the four large trees protruding from the hearthmound, the northern and western boundaries were
more vague. Initially, excavation of unit N536 E812 turned up mostly mortar and unordered rock which we believed to be fall from either the hearth or the chimney. To the great surprise of everyone, the bottom of this unit contained perfectly level blocks of stone held together with mortar, giving the appearance of a stone floor. This stone feature ran in line with the eastern boundary of the hearth, uncovered immediately to the south, running 2.4 feet north of Structure T’s northern wall. The northern edge of this feature ran parallel to the southern boundary of the hearth and disappeared beneath the yet to be excavated unit N536 E809 immediately to the feature’s west. Originally, it was hypothesized that this feature may have been a stone floor in front of the hearth, providing access to the fire from both inside and outside the structure. However, a large sandstone block sat along the feature’s eastern edge and was held in place with mortar. Subsequent excavation of unit N536 E809 yielded the badly damaged remains of ordered masonry work and appeared to be a continuation of the hearth itself rather than just rock fall. Therefore, we came to the conclusion that the “stone floor” was actually the remains of the base of the northeast corner of the hearth itself; the masonry work above it having been destroyed. Judging from the overall poor condition of the hearth, such a conclusion is not only plausible but probable. The western boundary of the hearth had been virtually destroyed by tree roots and the exact dimensions of the hearth can only be estimated at 8x8 feet, extending 5.6 feet into the structure’s interior and protruding 2.4 feet from the northern wall. The sparse amounts of brick recovered indicate that an oven was not part of the hearth. Exactly where the northern wall emerges from the hearthmound and to what extent could no be determined due to excessive disturbance by the tree roots.
The western wall of Structure T proved to be the biggest mystery of all. Excavation of unit N509 E803 uncovered the southwestern cornerstone and a portion of the western wall. Excavation of unit N533 E803 was carried out in an effort to find the structure’s northwestern cornerstone and portions of the western wall. However, due to the same trees that destroyed the hearth, these efforts were thwarted. Units N521 E803 and N524 E803 showed no trace of the western wall whatsoever, despite the fact that previously uncovered portions of the wall lay directly in line with these units. In fact, the western wall extended north from the southwest cornerstone for 8.4 feet, after which it simply vanished. Some light was shed on the matter when an interior wall to the structure was discovered. The wall formed a corner with the western wall 8.4 feet from the southwest cornerstone and ran east-west, parallel to the southern wall. It was assumed that the interior wall terminated at its junction with the eastern wall, but this could not be verified due to a large tree situated directly on this intersection point. The wall divides the structure in two. A four walled room comprising the lower third of Structure T lies south of the interior wall while a room with only three walls (the western wall missing) lies to north of the interior wall and contains the hearth. Structure T is 13.2’x24’, having a total area of 316.8 square feet. The southern room is 13.2’x8.4’ and has an area of 110.9 square feet. The northern room, comprising two-thirds of the structure, is 13.2’x15.6’ and has an area of 205.9 square feet. While stones in the southern foundation are large enough to have supported a stone or brick wall, the other foundation walls are constructed of much lighter stones. When combined with the fact that little stone or brick was recovered while a large numbers of nails were found, it is certain that Structure T had simple wooden walls.
Just what kind of structure was Structure T then? Seeing as how the larger, northern room did not have a western wall, it soon became quite obvious that we were not dealing with a dwelling. Large concentrations of ceramic, mainly stoneware and undecorated whiteware were recovered, especially from inside the southern room. Silverware, canning inserts, metal bottle caps, bottles, large amounts of bone, cup handles, promotional tokens from the Union Coffee Co., tin can pieces, and a cast iron spout to a tea kettle were all found within the structure. Surprisingly, the vast majority of these kitchen related items were found in the southern room, not near the hearth at all. The unusually high concentration of kitchen related artifacts led us to hypothesize that Structure T was in fact a kitchen used to prepare meals for Longdale’s workforce. Dormitory-style housing had been previously uncovered in Community I Cluster 2, so such a kitchen structure would have been necessary. The proximity of the double stone-lined pit to the structure also points to its being a kitchen. It has been hypothesized that these pits are in fact cold storage units. Such a refrigeration feature would be highly desirable for a kitchen structure. A brief survey of a clearing just to the east of the excavation grid and just north of the double stone-lined pit turned up significant amounts of ceramic and bottle fragments as well. When some of the mysteries of Structure T are looked at in the context of its being a kitchen, all the pieces of the puzzle fall nicely together.

First of all, with Structure T being a kitchen, the missing western wall in the northern room containing the hearth makes perfect sense. Industrial kitchens were no doubt a very warm place to work with a fire burning all day. By erecting a room with only three sides in which the hearth is placed, ventilation would occur much more easily
than in a four sided room, keeping the kitchen cool. Secondly, the logistics of feeding large numbers of workers dictates large scale access to the kitchen area. If men were to be served in a timely fashion, moving them through a standard-sized door into a rather small room to receive their food would have been a disaster. This would have taken far too long. Likewise, carrying the large amounts of food, silverware, and china needed to feed to workers outside through a standard sized door would not have been terribly practical. Allowing the workers large scale access to the preparation area would therefore be ideal. This way, workers could be served in a timely fashion, and food and flatware would only have to be transported a minimal distance. The absence of the western wall provided the Longdale workers the large scale access demanded by an industrial kitchen. The western side of the northern room may have featured a barn door-like contraption to fully enclose the kitchen when such circumstances were desirable. However, no evidence of such was uncovered. A large metal stake and a couple of grommets point to a different possibility, however. These items were uncovered from the structure’s interior and indicate the likely presence of some type of awning projecting from the structure’s western side, providing the open northern room with protection from the elements.

Within this northern room, a thick layer of pumice-like slag was discovered beneath artifact-bearing level 1. Such a layer of slag, however, was conspicuously absent from the southern room. In context of what has just been discussed above, this makes perfect sense. Being enclosed on all four sides, the southern room would not have been readily accessible to large amounts of people. On the other hand, in the northern room, where food was prepared and served, pedestrian traffic was quite heavy. Therefore, a
more durable floor not susceptible to easy wear would be needed there. Slag was not only durable but readily accessible (Australia Furnace lying just across the stream). By laying down a thick layer of slag and then covering it with a layer of dirt, the Preparation/Serving room would have the durable floor it needed. Conversely, the southern room, subjected to little pedestrian traffic needed nothing more than a simple dirt floor.

A mysterious stone feature was uncovered in the northwest corner of the southern room. Originally, this was believed to be an interior wall until the true wall was discovered one unit north. Several explanations are possible for the feature. If there was indeed a barn door to the western wall, this may have provided the needed extra support in the foundation to hold up the extra weight of the massive door. It could have been some type of support or base for a large, heavy storage unit or some type of heavy kitchen machinery. A washbasin could have been placed atop this feature to prevent its feet from sinking into the dirt floor and to keep it level. This may have been the location of the door providing access between the southern and northern rooms. Finally, it is entirely possible that this may have been a much smaller second hearth to the structure. Charcoal was uncovered from what would have been the hearth's interior, and certainly such a feature would have been most desirable in a kitchen structure. While the feature may be quite shallow, the large hearth along the north wall is also quite shallow, measuring only 1.4 feet from top to base. Therefore, a much smaller hearth would not have to be very deep. However, the lack of mortar recovered from the feature would seem to point away from the second hearth theory. The true purpose of this stone feature remains largely a mystery.
The high concentration and diversity of artifacts recovered from the southern room indicated it was a storage room. While a fair amount was unearthed from the Preparation/Serving room, artifacts were much sparser and tended to be homogeneous from unit to unit in this room while single units in the southern room contained large amounts of diverse artifacts. The vast majority of bone, ceramics, bottle fragments, and other kitchen related goods were recovered from this room. China and silverware would have been kept in this storage room while food would have been stored in the double stone-lined pits just a short distance to the southeast. A padlock uncovered from the northern room may indicate that the Storage room was kept locked and inaccessible to non-kitchen workers.

Several artifact types were recovered from Structure T ranging from mundane glass and nails to more interesting axe heads and pocketknives. One of the more unusual finds for an industrial kitchen structure were several doll parts, including feet, legs, arms, heads, a body, and a doll-sized porcelain vase or cup. Such artifacts indicate the unmistakable presence of children at the site. This can be explained most logically in two ways. First of all, it is possible that the kitchen was not just used to serve workers but their families as well, meaning men, women, boys, and girls alike all dined at the Structure T kitchen. Another distinct possibility is that workers wives were employed to do the cooking at the kitchen while their husbands tended to the business of the mining complex. It would have been the duty of these women to care for the children of their family. Therefore, when they went off to work at the kitchen, they brought the kids along with them. This would have undoubtedly been boring for the children who therefore
brought their dolls and toys along with them to keep themselves entertained while their mothers worked to feed Longdale’s men.

One of the major objectives of the Structure T excavation was to determine if it was contemporaneous to the Australia Furnace just across the creek. A mean date of occupation for the structure was obtained by a group of students whose job it was to analyze all artifacts recovered from the Longdale site. By comparing the ratios of ceramic types found, such a date can be obtained. Unfortunately, as of the writing of this paper, the artifact analysis group had not compiled their report or determined a mean date of occupation. Therefore, to determine if Structure T existed at the same time as the furnace, as well as for much more detailed information on all artifacts recovered from Structure T, I refer you to their report.

Special thanks must be extended to Katherine Stroh and John McDaniel whose constant guidance and input made coherent interpretation of Structure T possible. Also, a great deal of gratitude must be extended to fellow supervisor Chris Zarek whose past experiences and notes contributed greatly to this paper. Finally, thanks must also be extended to the Washington and Lee Anthropology 377 students. Without their efforts, this report would not have been possible.

[Handwritten note:]

Jerry,

You made some good hypotheses about the structure, but it would have been better if you had used artifact data to confirm or disprove your ideas. You did a great job this term and thanks for all your help.

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