

INTRODUCTION

This summary report documents the results of limited archaeological testing undertaken at the Helfrish Springs Grist Mill located in Whitehall Township, Lehigh County, Pennsylvania (Figure 1). The testing was performed in conjunction with restoration/stabilization work performed at the Mill by Whitehall Township.

The field investigation for this report was undertaken on various days from July to September, 1997. The work was performed by Cultural Heritage Research Services, Inc. (CHRS) of North Wales, Pennsylvania. Kenneth J. Basalik, Ph.D. served as the project's Principal Investigator and Erika Bauroth was the Field Supervisor. Graphics for the report were prepared by Joanne Manduzio, and editorial work was performed by Kevin Quigg (Appendix A).

FIELD DATA

Field Data

Three test units were excavated at two locations adjacent to the mill (Figure 2). A test was also attempted within the mill race itself. Test Units 1 and 2 were excavated to expose the eastern wall of the Mill. This wall stands on a small parcel of land between Jordan Creek and the mill's race. The work sought to identify the stability of the foundations at this location and the need for pointing of the foundation stones below ground. Test Unit 1 was located along the east wall of the Grist Mill. Test Unit 2 was located immediately south of Test Unit 1. The excavations revealed what appears to be mid- to late-twentieth-century attempts to slow soil erosion from the mill's foundation. Archaeological excavation was halted as soon as the nature of the deposit had become evident so as to not create an erosion hazard which would undermine the Mill's foundation. The deposits revealed a series of large rocks which had been placed against the foundation (Figures 3, 4, 5, 6; Plates 1 and 2). The rocks were stepped away from the wall to the east and north and covered with dirt. The soil was primarily yellowish brown (10YR 5/4) sandy fill. A thin layer of mortar appears to have been poured over the stones. The mortar was overlain by dirt. The ground surface also contained mortar, however this later material appears to have been waste resulting from a recent repointing of the wall at this location. Artifacts recovered from the soil overlying the rock fill ranged in date from the late nineteenth century (cut nail spike) to the present (wire, aluminum and plastic bottle fragments). The artifacts encountered generally appear to be modern debris which is likely to have been washed in by the water of the race during recent flooding episodes.

Test Unit 3 was located along the north wall of the Grist Mill in order to expose the foundation of the structure. A cinder blocked door was evident at this location in the interior of the mill building. Test Unit 3 was located on a steep slope. The deposits in this area also appear to be a mid-twentieth-century attempt to reduce erosion of soil adjacent to the mill. The upper stratum of soil consisted of a brick and stone fill with yellowish brown (10YR 5/4) sandy loam (Figure 7). The brick are of modern manufacture. At the base of this stratum sheet plastic was encountered. As the excavation proceeded it was evident that the sheet plastic had been purposefully laid to cover the

entire slope area adjacent to Mill. Subsequent to the laying of the plastic, 0.90 meters (ca 2.7 feet) of modern brick and stone fill was deposited.

Beneath the sheet plastic was another layer of fill. This fill layer was comprise primarily of stone intermixed with a reddish brown (2.5YR 4/4) clay loam that extended below the base of the foundation. This fill stratum also appears to be a mid to late twentieth-century erosion control deposit. Artifacts in this stratum included modern glass, mortar, cardboard, shoe fragments, and other modern debris. Excavation was stopped at 1.8 meters (5.4 feet) as the stability of the fill and the depth of the hole became safety concerns. Given the age of the material encountered it is highly likely that both soil strata were deposited within the last 15 to 20 years.

Interestingly, although the interior of the Mill shows infilling for a doorway at this location, the excavation of this unit produced physical evidence of a window along the north wall in the area of the bricked up portal (Figure 8; Plate 3). If a doorway once existed at this location, it has been obscured by a careful reconstruction and repointing of this facade of the building during the mid to late-twentieth century.

An attempt was made to place a fourth test unit within the mill race. Although no historical research was to be conducted for this project, a casual examination of the 1880 US Manufacturing Census indicated that during the late nineteenth century the mill was powered by an eight foot over-shot wheel. Historical Society members indicate that in the early nineteenth century it was likely powered by a large undershot wheel. An examination of the building foundation, remnants of a coffer dam, and marks on the mill walls for wheel supports, etc. suggested that the eight foot drop associated with the late nineteenth century overshot wheel was accomplished without the excavation of a wheel pit. It was hoped that a test unit excavation could provide additional data for an interpretation of the construction aspects of the wheel. Water still flows through the mill race, but at the time of the investigations it had been diverted to allow for the "dry" excavation of the unit. Despite the dewatering attempts, the water commenced to fill the unit from the beginning of the excavation. The investigations had to be terminated almost immediately. Probing of this area suggested that bed-rock/or a dry-laid stone floor lay less than 10 centimeters below the silt.

Conclusions

The archaeological work performed adjacent to the Helfrish Springs Grist Mill has revealed substantial disturbances to the ground surrounding the Mill. Given the Mill's setting it has be subjected to flooding and erosion for most of its history. It appears that during the recent past (15 to 20 years ago) an attempt was made to keep the foundations of the mill from being undermined by water action. Massive amounts of stone and brick fill was poured into the steep slope between the existing road and the race. Additional packed stone fill was also placed along the mill wall which lies between the race and Jordan Creek.

Attempts to perform archaeological work within the mill race have shown that no wheel pit is present, although questions concerning the exact nature of the mill prism have not been addressed. There appears to be wooden remnants of a coffer dam, and fragments of the late nineteenth-century

wheel support system. In addition, traces of the power system are evident in the stone fabric of the Mill.

No additional archaeological work is recommended at this site. The expenditure of time and money in excavation are not likely to provide significant information concerning the mill. It is *highly recommended* that a detailed history of the mill be undertaken in order to provide a firm basis for any future stabilization, rehabilitation, or restoration work. The wooden members of the power system in the race under the mill have been preserved in part because of their submersion in the water of the race. As the level of the race has fallen to expose these members they will quickly deteriorate. It is *highly recommended* that these elements be photographed in detail, measured, and drawn before they deteriorate further.