

concentrations were identified. All of the soils below the fill were culturally sterile and no further work is recommended for this parcel.

PARCEL 17

Access denied by owner.

PARCEL 18

This small parcel at the elbow in present Kent 88 was tested with 12 shovel test pits at 25-foot intervals (Figure 55). Only one artifact was recovered, a fragment of whiteware from shovel test pits 18-10. Profiles consisted of a brown clayey plow zone over a gray clay subsoil. The entire parcel had been plowed. No further work is recommended for this parcel.

PARCEL 19

This is a plowed field which offered excellent visibility and was investigated by pedestrian survey (Figure 2). Only one artifact, a fragment of gray stoneware, was recovered within the proposed right-of-way and no further work is recommended for this parcel.

CONCLUSIONS AND RECOMMENDATIONS

IMPLICATIONS FOR REGIONAL PREHISTORY

Prehistoric components of two sites were identified. Both sites, the W. Eager site and the Bason Field site, are located along the Muddy Run drainage. Both sites are small procurement/processing loci. The prehistoric components of both sites were determined not to be National Register eligible, but it is still possible to place them in a larger regional context.

In general, the site locations noted in this study confirm the interpretations of interior procurement sites during Woodland I times noted in the Route 7 South Corridor (Catts et al. 1988:196-200), the Management Plan for Delaware's Prehistoric Cultural Resources (Custer 1986), and previous work in central Delaware (Custer et al. 1984, 1986, 1987). For the most part, Woodland I settlement focused on major drainages. From base camps, there were forays to specific resource settings for the focused procurement of specific resources and these forays produced discrete archaeological sites. Both of the prehistoric components, W. Eager and Bason Field sites, were discrete sites. At the same time, more generalized forays took place and these less well focused forays tended to produce more scattered, less discrete sites. The less discrete sites are the generalized lithic scatters which make up a large part of the sites reported from this survey. This two part definition for the generation of procurement sites in the project area is an expansion of that definition given in the management plan, which states only that procurement sites are the result of the exploitation of specific resource locations. Both types of interior sites were identified during the Route 13 Canal Section survey (Hodny et al. 1989), and the prehistoric sites located by this survey fit this model.

Further study of both types of interior sites is needed to better understand the organization of the resource procurement process. It may be possible that the discrete interior sites are small staging sites from which individualized forays to very transient procurement sites were made. An alternative scenario would explain the variation in interior sites as a function of

the length of time spent in the associated procurement activities. The discrete sites would represent focused, relatively long term procurement activities while the more scattered diffuse sites would have been produced by a large number of very short term individual procurement events. Similar variability in settlement patterns has been described for the initial Woodland I time period in the central Middle Atlantic (Custer 1988:45-46) and has been noted from the ethnographic record (Binford 1982). In any event, data quality is poor for both the Delaware River Shore and the Interior zones, the two Management Plan Woodland I study units in which the project area is contained, and further investigation of sites of this type should help to clarify the issue.

The prehistoric component of the W. Eager site (7K-C-383) can address questions regarding settlement and adaptation in the Woodland I and II periods. During both periods, the site appears to have been utilized as a small procurement/processing loci. The broad range of lithic raw materials present, specifically jasper, quartz, quartzite, chalcedony, argillite, and ironstone, indicates cobble reduction. The relatively high percentage of cortex present on the flakes supports this conclusion. The presence of a full range of tool types, including early stage biface rejects, cores, utilized flakes and flake tools, and heavily resharpened projectile points suggests a range of processing and procurement activities. The presence of diagnostic ceramics from the Woodland I Period (one sherd of Marcey Creek ceramics) and the Woodland II Period (five

Minguannan and one Townsend sherds) and fire-cracked rock indicates some level of domestic activity, specifically food preparation and storage.

The absence of house pit, storage, or hearth features indicates that the site was not a macro-band or even micro-band settlement. The W. Eager site (7K-C-383) and other sites along Muddy Branch, particularly the nearby prehistoric component of the Bason Field site (7K-C-385) were probably procurement sites for nearby base camps, including Dover Downs Hill A (7K-C-365A), 7K-D-22, and Carey Farm (7K-D-3). These sites are located along the same Muddy Branch and Dover River drainages and can be used to view a segment of a settlement pattern covering several miles of drainage. These sites cover a number of sizes and settings and have produced tools of varying classes and time periods. Site 7K-C-383 can be analyzed in that context and can be utilized to help explain the prehistoric adaptation of one or more temporal periods.

Although the original predictive survey of the Relief Route Corridor (Custer et al. 1984) did not include this study area, the results of the survey tend to confirm the patterns seen in other similar drainages (Custer et al. 1986). The predicted settings and located sites for nearby drainages show a pattern similar to that found along Muddy Branch and confirm the other pattern. Both 7K-C-383 and 7K-C-385 lie at the upper end of the drainage, an area of procurement sites and micro-band base camps which were created through resource procurement activities. Examples of this settlement pattern can be found on the Leipsic River, Fork Branch, Double Run, and tributaries to Duck Creek and

Mill Creek near Smyrna. These areas are generally low potential areas for prehistoric sites, although an occasional medium potential area may occur at the confluence of two low order streams near the headwaters. A high potential area may be found near a large interior swamp, but none of these are located in the project area.

The prehistoric component of the Bason Field site (7K-C-385) appears to be a procurement site based upon the initial surface collection. It appears to fit the pattern for upper drainage settlement discussed above, and may be related to the Muddy Branch site. Site 7K-C-385 seems to fit this pattern, but the very small artifact assemblage precludes any further conclusions. No artifacts were recovered during Phase II testing, but a chert Woodland I stemmed point, non-diagnostic quartz early stage biface reject, quartz and jasper flakes, fire-cracked rock, and a heavily damaged rhyolite broadspear were recovered. The variety of lithic materials and functional types is similar to that seen at 7K-C-383.

IMPLICATIONS FOR REGIONAL HISTORY

Phase I and II testing identified and determined the significance of three sites with historic components along present Kent 88. Two of the sites, the Bason Field site (7K-C-385) and the Spiro-Diamond site (7K-C-384), contained no evidence of domestic activity or cultural features and yielded artifacts in disturbed contexts. These two sites were thus determined to be ineligible for listing on the National Register of Historic Places and imply little of significance to our understanding of

regional history. All of the historic components were assessed according to the observed and predicted value of information applicable to the four primary research domains suggested for all historic archaeological sites in Delaware by De Cunzo and Catts (1990) and the Delaware Statewide Comprehensive Historic Preservation Plan (Ames et al. 1987). These research domains are outlined in the Research Design section of this report.

The remaining historic site, the W. Eager site (7K-C-383), however, has yielded data significant to current research questions in history and archaeology. More specifically, the W. Eager site can be used to study four primary research domains as identified by the Historic Archaeological Resource Management Plan for Delaware (De Cunzo and Catts, 1990) and the Delaware Statewide Comprehensive Historic Preservation Plan (Ames et al. 1989). Broadly interpreted, these research domains seek to reconstruct and analyze major changes over time and place in the social and economic landscape of central Delaware in the eighteenth, nineteenth, and twentieth centuries. As a small mid-to-late nineteenth century agricultural tenancy and owner-occupied farm, the W. Eager site can be used to trace the critical social and economic changes that occurred in central Delaware in the nineteenth and early twentieth centuries.

The W. Eager site was occupied during the periods of Industrialization and Capitalization (1830-1880 +/-) and Urbanization and Suburbanization (1880-1940 +/-) as identified by Ames et al. 1989 (Table 5). The period between 1830 and 1880

saw the development of a prosperous regional agricultural economy centered on the urban markets of Wilmington, Philadelphia,

TABLE 5

MAJOR TIME PERIODS IN DELAWARE HISTORY

1.	1630-1730 +/-	Exploration and Frontier Settlement
2.	1730-1770 +/-	Intensified and Durable Occupation
3.	1770-1830 +/-	Early Industrialization
4.	1830-1880 +/-	Industrialization and Capitalization
4.	1880-1940 +/-	Urbanization and Early Suburbanization

Baltimore, and New York. This new nineteenth century economy was prompted by the loss of a prosperous eighteenth century foreign grain based economy between 1790 and 1830 (Lindstrom 1973; Hancock 1947; Munroe 1984; Grettler 1990; and Hoffecker 1977).

The W. Eager site can also be placed in a local context of similar rural, agricultural sites in the State Route 1 Corridor (Grettler et al. 1991). Specifically, the W. Eager site can be compared to the nearby and very similar occupation of the H. Wilson-Lewis Tenant Farm site (7K-C-375). Five other agricultural sites in the corridor date to the same two periods between 1830 and 1940: the Buchanan-Savin Farm site (7NC-J-175), G. W. Cummins Outbuilding Component (7K-A-104), Moore-Taylor Farm site (7K-C-380), C. Kimmey Tenant Farm site (7K-D-114), and the Izat-Dyer House site (7K-D-3). Phase II excavations at each of these five additional sites is summarized in Grettler et al. 1991.

The two primary research domains applicable to the W. Eager site concern the domestic economy of the site and changes in the local and regional social and economic landscape. Two related themes, changes in agriculture and settlement patterns, predominate. The 1830-1880 and 1880-1940 periods in Delaware history saw three critical changes that could be studied through further archival and archaeological research: 1) transportation developments; 2) economic and agricultural change with the development of commercial fruit, truck produce, legume, and dairy industries that took advantage of changes in transportation and the expanding regional urban markets; and 3) changing agricultural labor and tenancy patterns.

The W. Eager site, along with the nearby H. Wilson Lewis Tenant Farm site, was settled in the early 1850s as transportation improvements and the presence of large, nearby urban markets in the nineteenth century stimulated the commercial production of perishable, but potentially very profitable agricultural goods in central Delaware. Both sites were settled along the outskirts of Dover on relatively marginal agricultural land. Cultivating this land was not feasible until rising local land prices with the growth of Dover made these marginal areas attractive. Renewed economic prosperity in central Delaware in the mid-nineteenth century was also a factor. Between 1850 and 1890, the number of cultivated acres in Kent County rose from 283,000 to 338,000 acres (Bausman 1940:10). Most of these new cultivated acres came in the form of small and medium size farms of less than 200 acres (De Cunzo and Catts 1990:68-70). The 146 acre W. Eager site and 180 acre W. Wilson-Lewis farms were part

of this increase.

Not only was more land being farmed, and more owner- and tenant-occupied farms such as the W. Eager site being settled, but what was being grown on them was also changing. Corn and wheat, the previous staples, were being replaced with orchard crops, truck produce and dairy products. The changing composition of crops produced in central Delaware continued to change into the twentieth century as peaches and corn were replaced with legumes, alfalfa, and a renewed emphasis on dairy products and truck produce.

These changes, however, were more typical of wealthier owner- and tenant-occupied sites such as the Buchanan-Savin (7NC-J-175) and C. Kimmey (7K-D-114) farms. The wealthier occupants of these sites had the capital needed to actively improve their farms. Evidence of truck farming for the local Dover market, however, can be seen in the 1870 agricultural census of the W. Eager farm. In that year, Eager produced 40 gallons of molasses and honey, quantities suggesting commercial activity.

The economic revival of central Delaware in the mid-nineteenth century was closely tied to improvements in transportation. The two most important transportation developments in mid-nineteenth century Delaware were the completion of the Delaware railroad trunkline through to Seaford in 1856 and the increasingly widespread use of steamboat transportation in the second and third quarters of the nineteenth century. Related to the use of steamboats was the earlier completion of the Delaware and Chesapeake Canal in 1829. As with

the W. Eager site, all of the historic sites tested by Phase II operations in the proposed State Route 1 Corridor were within one half of a mile of a major road, established railroad crossing, or known steamboat landing. Improved transportation encouraged the growth of new markets and of existing towns such as Dover which was probably the primary focus of the inhabitants of the W. Eager site.

Improved transportation and economic development, however, also brought the eventual abandonment of the W. Eager site near the turn of the twentieth century. Other sites in the State Route 1 Corridor were also affected, particularly the Moore-Taylor site (7K-C-380), Izat-Dyer site (7K-D-3), and the H. Wilson-Lewis Tenant site (7K-C-360). Industrialization and urbanization brought by transportation improvements and regional economic development encouraged many people in central Delaware to abandon farming and move to urban areas. As more people left for higher paying wage jobs in Smyrna, Dover, Wilmington, and Philadelphia, agricultural labor prices rose and forced even more marginal farms to be abandoned. Bausman notes that between 1900 and 1935 the amount of farmland cultivated in Kent County decreased by 13.2 percent as farming generally became less profitable and even more people moved to higher paying industrial jobs (Bausman 1940:10; 1933:169). The W. Eager and H. Wilson Lewis sites are two such abandoned farms.

Once abandoned, both of these sites were plowed after the advent of large-scale, mechanized grain and legume agriculture in the twentieth century. The growth of Dover and central Delaware with the completion of the DuPont Highway (present Route 13) in

the 1920s was an important factor. Plowing destroyed most of the structural evidence of both sites, as no intact structural features were identified at either the W. Eager or the H. Wilson-Lewis sites. Both sites contained frame dwellings, probably on brick piers, and agricultural outbuildings that left little direct evidence after plowing. This poor preservation is typical of other lower socioeconomic status sites.

The primary evidence of structure location and spatial utilization at the W. Eager site comes from artifact distributions and soil chemical analyses. These analyses are not as precise as structural features, but the close correlation between fencelines, artifact distributions, and soil chemistry seen at the W. Eager site indicates a fairly high degree of accuracy. Overall artifact densities, however, tend to be low and differences of only two or three artifacts are significant. These small, but significant differences underscore the need for sensitive interpretations of artifact density and soil chemistry. Excavations yielding such data, such as shovel test pits and small measured units at standardized intervals, have proven particularly useful.

The poor preservation of features make artifact interpretations difficult as the majority (89%) of all the artifacts recovered from the W. Eager site came from the plow zone. An even greater percentage of artifacts came from plow zone contexts during Phase II excavations at the H. Wilson-Lewis site where only 14 of 2,250 artifacts (less than 1%) came from intact contexts. Data from the W. Eager site, however, is

difficult to compare with this site and other sites in the proposed State Route 1 Corridor as final archaeological investigations have yet to be completed on these sites. It is possible, however, to outline a number of research interests to which data from the W. Eager site may be applied.

The first research interest is in the role of ethnicity and socioeconomic status in the domestic economy and settlement patterns of historic sites in central Delaware and the Mid-Atlantic region. Specifically, the W. Eager site represents a lower socioeconomic status white occupation. Data from the W. Eager site could be used to reconstruct the social and economic landscapes of an important social group. Data from this site, and the H. Wilson Lewis site, could be compared to black-occupied tenant sites of similar wealth such as the Williams site (Catts et al. 1990). Such data may help to identify ethnicity-related patterns while controlling for variations in socioeconomic status. Similarly, the W. Eager site could be compared to mid-level wealthy white occupations of the Moore-Taylor site and the even wealthier tenant occupation of the C. Kimmey site. Such comparisons may help to identify wealth-related archaeological patterns in domestic economy, consumer behavior, and trash disposal patterns while controlling for ethnic variables.

Similar social and economic changes have been seen in other middle and late nineteenth century historic sites in central and northern Delaware (Grettler et al. 1988, 1991; Hoseth et al. 1990; Catts et al. 1988, 1989a, 1989b; Catts and Custer 1990; Coleman et al. 1983, 1984, 1985; Heite and Heite 1985, 1986, 1989; Heite 1984; Guerrant, 1987; Lothrop et al. 1987) and

further work on sites in the present alignment of Proposed Delaware 1 could provide comparable data. Specifically data from the Temple site (Hoseth et al. 1990), Patterson Lane site (Catts et al. 1989b), Hawthorn site (Coleman et al. 1984), Ferguson site (Coleman et al. 1983), Mudstone Branch site (Heite 1984) and the Durham site (Heite and Heite 1985) could be compared to the W. Eager site and other historic sites within the State Route 1 project areas. On a regional and national scale, a number of historians have dealt with site-specific interpretations of nineteenth century agricultural and economic change (Jensen 1986, Bogue 1963, Barron 1984, Gates 1960, and Faragher 1986).

In conclusion, the goal of all further research on the historical archaeological sites within the Proposed Kent 88 Realignment and the Proposed State Route 1 Corridor is to collect comparable data and to ask comparable questions over time in order to better understand diachronic cultural processes. Data from the W. Eager site and the two ineligible historic components of the Bason Field and Spiro-Diamond sites, can be used to yield data significant to current research questions in historical archaeology and the history of Delaware and the surrounding Mid-Atlantic region.

CULTURAL RESOURCE MANAGEMENT RECOMMENDATIONS

Phase I and II archaeological excavations were conducted within 8,400 linear feet of proposed right-of-way for the realignment of Persimmon Tree Lane, (Kent 337), the Dover-Leipsic Road (Kent 88), and a toll booth access road east of Dover Downs Racetrack. All of the improvements are associated with the

construction of U.S. 13 Relief Route (S.R.1). One historic archaeological site, the Spiro-Diamond site, and two sites with both historic and prehistoric archaeological components, the W. Eager and Bason Field sites, were located and identified. Phase II archaeological excavations were recommended for all three sites. The current status of all of the sites in the project area and all management recommendations are summarized in Table 1.

Phase II testing determined that two sites, the Spiro-Diamond site (7K-C-384) and the Bason Field site (7K-C-385), were not eligible for inclusion in the National Register of Historic Places. Both the historic and the prehistoric components of the Bason Field site were determined to be ineligible. No further work is recommended on either site. The historic component of the remaining site, the W. Eager site (7K-C-383), was determined to be eligible for listing on the National Register. Phase II testing, however, constituted data recovery. The prehistoric component of the W. Eager site was determined to be ineligible for listing on the National Register of Historic Places. No further work is recommended for this site. Thus, no further work is recommended for any site in the project area.

The northernmost of the three sites is the W. Eager site (7K-C-383, K-6443) on the south side of Muddy Branch just east of Kent 88 (Dover-Leipsic Road). The site was subjected to pedestrian survey and an undated prehistoric site and a mid-nineteenth century historic dwelling component were located on the same sandy knoll. This site is situated only 200 yards

downstream from the Dover Downs site (Riley et al. n.d.) and about 3/4 mile upstream from numerous large previously identified macro-band base camps (Custer et. al. 1986).

The historic component of the W. Eager site was determined to be the remains of a mid-to-late nineteenth century farm complex. The site was both tenant- and owner-occupied. Phase II testing identified the limits of the site and located intact historic features and artifacts in undisturbed contexts. Low densities of artifacts and historic features in initial shovel testing and test unit excavation led to the decision to mechanically remove all of the plow zone from the site in order to identify more historic features. Features and artifact densities locating the W. Eager house and identifying distinct yard areas were identified and completely excavated. The small size of the site and the extent of Phase II testing led to the determination that Phase II testing constituted data recovery. Thus no further work is recommended on the historic and primary component of the W. Eager site.

Phase II testing determined that the prehistoric component of the W. Eager site was not eligible for listing on the National Register of Historic Places. Phase II testing located a total of 729 prehistoric artifacts, but all of these artifacts came from disturbed contexts. No prehistoric features were identified. Diagnostic artifacts included projectile points and ceramics from the Woodland I Period and diagnostic ceramics from the Woodland II Period. The artifacts recovered from the Phase I and II surveys suggest that the site was a small procurement/processing site. Many of the artifacts showed extensive resharpening and

use wear and are probably discards. A substantial percentage of all lithic flakes (11%) had remaining cortex which suggests tool manufacturing and processing from cobble sources. No hearths, pit, or house features were located, but the presence of ceramics and fire-cracked rock indicate some domestic food preparation and storage activity.

The Bason Field site (7K-C-385, K-6445) consists of a light field scatter of historic and prehistoric artifacts. Phase I surface collection recovered a rhyolite Perkiomen Woodland I broadpoint fragment, a chert stemmed point, a quartz early stage biface reject, flakes and fire-cracked rock. Historic artifacts included coal, brick, whitewares, pearlwares, bottle glass, window glass, redwares, and a kaolin pipestem. Phase II testing, however, located no more prehistoric artifacts and only a handful of historic artifacts. Historic maps showed no structures in the area. No evidence of site function was identified. No historic or prehistoric features or artifact concentrations were located by either Phase I or Phase II testing. The Bason Field site was thus determined to be ineligible for listing on the National Register of Historic Places. No further work is recommended.

The third site lies southeast of the intersection of the Leipsic Road and Persimmon Tree Lane. This site, the Spiro-Diamond site (7K-C-384, K-6444), is the remains of a recent twentieth century dump. All of the nineteenth and twentieth century artifacts recovered from the Phase I and II tests came from recent fill introduced by the present owners, Dover Downs Raceway, to construct a parking lot. No cultural features were

identified and no artifacts were recovered from intact deposits. Plastic fuse boxes, pieces of plastic and metal lipstick cases were recovered from as deep as 3.5' below ground surface. Phase II testing determined that the Spiro-Diamond site is not eligible for listing on the National Register of Historic Places and no further work is recommended.

In conclusion, the Phase I survey of the realignments of Kent 88 and Kent 337 and the construction of the toll booth access road for the U.S. 13 Relief Route identified three archaeological sites. Phase II testing was completed on each site and this research will add much to our knowledge of the archaeology of Kent County and the Delaware Coastal Plain. No further work is recommended.