

# A Multi-Phased Archaeological Investigation of Sites SRT-3 (36CH1000) and SRT-4 (36CH1001)

Schuylkill River Trail Project  
Township Line Road to SR 0422

North Coventry, East Coventry, East Vincent, and East Pikeland Townships, Chester County, Pennsylvania

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The background of the slide is a photograph of an archaeological excavation site. On the left side, there is a vertical ruler with alternating red and white segments. In the center, a trowel with a pink handle and a metal blade is positioned vertically. The ground is a mix of brown soil and small, light-colored fragments. Green foliage is visible along the right and bottom edges of the site.

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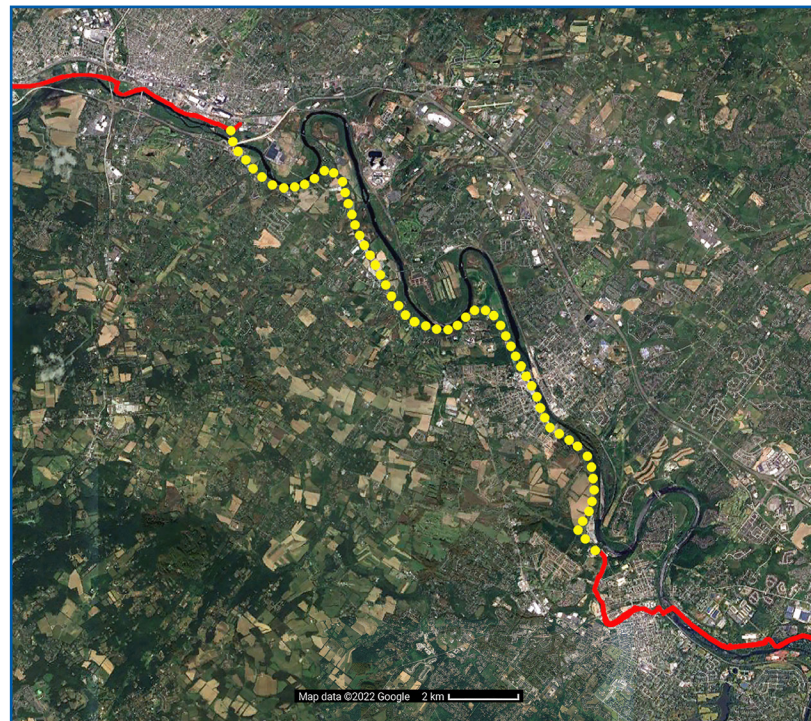
## Why an Archaeological Investigation Was Necessary

IN 2010, CHESTER COUNTY initiated a project to construct ten miles of shared-use pedestrian and bicycling path in the County's north-eastern corner. The project was designed to fill a ten-mile gap in the recreational Schuylkill River Trail (SRT), which, when all of its sections are completed, will extend 120 miles from Frackville, Schuylkill County, southeastward through Berks, Chester, Montgomery, and Philadelphia Counties to the Delaware River (access an interactive trail map [here](#)).

The gap that Chester County intended to fill lay between the SRT's Cromby Trailhead (one mile north of Phoenixville) and a bridge carrying U.S. 422 over the Schuylkill River on the Chester-Montgomery County border, east of Pottstown (the gap is represented by the yellow dotted line on the aerial photograph at *RIGHT*). Between those points lay a patchwork of farm fields, wooded tracts, golf courses, and residential lots surrounding the Borough of Spring City. Extending northwestwardly through much of that area was a strip of right-of-way formerly occupied by the Pennsylvania Railroad's Schuylkill Division. Abandoned and trackless since the early 1980s, that right-of-way offered an inviting corridor in which the County might build as many as eight miles of shared-use path. The remainder of the ten-mile trail segment would have to extend from the former railroad right-of-way westward to the Chester County end of the U.S. 422 bridge. That area happened to feature another abandoned transportation corridor: the former alignment of the Schuylkill Navigation Company's Girard Canal, unused since 1934.

Phased construction of the ten-mile trail segment began in 2010 and was completed in 2022. It included a new trailhead with ample parking at Parker Ford.

Because its trail-building project drew on public funding and required U.S. Army Corps of Engineers permitting, Chester County was obliged to follow "the Section 106 Process" from the earliest planning stage through the project's fruition. The unofficial but commonly used term "[Section 106 Process](#)" derives from Section 106 of the [National Historic Preservation Act of 1966](#), which is the cornerstone of the nation's cultural resource preservation policy. This



legislation was followed in 1969 by passage of the [National Environmental Policy Act](#), which requires federal agencies to prepare impact statements for undertakings that might have an effect on environmental quality (cultural resources being a contributor to environmental quality).

Section 106 requires federal agencies to take into account the effects of their undertakings or licensing activities on historic properties, while giving the [Advisory Council on Historic Preservation](#) (ACHP) an opportunity to review and comment on the potential effects of those activities. The ACHP has defined the procedure for satisfying Section 106 requirements in a set of regulations titled “[Protection of Historic Properties](#).” The process is further described in the ACHP’s [Citizen’s Guide to Section 106 Review](#).

In following the Section 106 Process, Chester County and its contractors needed to determine, prior to construction, if any above-ground or buried cultural resources were present within the trail-building project’s “Area of Potential Effects,” defined as “the geographic area or areas within which an undertaking may cause changes in the character or use of historic properties.” The Area of Potential Effects (abbreviated as APE) for the trail-building project was limited to a strip of land five meters (16.4 feet) wide and a half-meter (1.64 feet) deep.

If the resulting investigation identified a cultural resource within the APE, the resource would have to be evaluated for historical significance. The latter step was necessary for determining whether the resource met one or more criteria that would make it eligible for listing on the National Register of Historic Places. Any resource deemed eligible for listing on the National Register would warrant further consideration and possibly special treatment before trail construction could begin.



These views along the ten-mile trail segment completed in 2022 were recorded in November 2023. The view below is westward from the new Frick’s Lock Trailhead.



## Phases I and II of the Archaeological Investigation

CULTURAL HERITAGE RESEARCH SERVICES, INC. ([CHRS, Inc.](#)), of Lansdale, Pennsylvania, was contracted to conduct an archaeological investigation of the APE. In the summer of 2016, CHRS archaeologists evaluated the archaeological potential of the APE by various means. The Phase I Archaeological Survey included a review of [Pennsylvania Archaeological Site Survey](#) records on file at the Pennsylvania SHPO; a geomorphological analysis of soil profiles, employing hand-auger testing; and the excavation by hand of shovel test pits (STPs) at regular intervals along testable sections of the APE. In the course of the latter work, the archaeologists confirmed that the soils in much of the APE had been extensively disturbed by nineteenth-century railroad- and canal-building activities, and therefore held no potential for containing intact archaeological deposits from earlier eras.

Within the *undisturbed* sections of the APE—whose combined length was approximately one kilometer (0.6 miles)—the Phase I Archaeological Survey identified nine archaeological sites. Two of the identified sites dated to the historic period and yielded a few scattered fragments of domestic items such as dishes, bottles, nails, and window glass. The archaeologists suspected



that the two sites had been associated with larger sites of domestic activity, perhaps including houses, barns, or workshops. If larger sites existed, however, they were outside the trail project's APE, and were therefore beyond the scope of the Phase I survey. The limited nature of the two historic sites *within* the APE led the archaeologists to conclude that neither site warranted additional investigation.



Seven sites identified by the archaeologists were precontact sites. Four of them comprised low-density lithic scatters containing no temporally diagnostic artifacts. As a result, the archaeologists concluded that those four sites did not warrant further investigation.

Only three of the precontact sites identified during the Phase I survey appeared likely to yield important information pertaining to local or regional prehistory. One of those sites, the archaeologists soon learned, would not require further assessment, as a slight adjustment of the trail alignment excluded the site from the APE. That left two sites within the APE still requiring further assessment: SRT-3 (36CH1000) and SRT-4 (36CH1001).

At both SRT-3 and SRT-4, Phase I shovel testing had recovered a wide variety and relatively high density of precontact artifacts. SRT-3 yielded 33 precontact artifacts, 28 of which were flakes of either quartzite, jasper, quartz, chalcedony, or rhyolite. The non-flake artifacts comprised four pieces of [fire-cracked rock](#) (FCR) and one quartzite early stage biface. At the smaller SRT-4, about three-quarters of a mile to the west, a similar variety of 26 precontact artifacts had been extracted from four STPs. The variety and density of artifacts recovered from both sites suggested that more extensive testing might encounter archaeological [features](#) and charcoal that would enable radiocarbon dating. The archaeologists recommended that SRT-3 and SRT-4 be more extensively tested in order to further reveal their scope and character, which would bear directly on their eligibility for listing on the National Register. The County and the SHPO agreed with that recommendation and authorized Phase II testing to proceed.

CHRS archaeologists performed Phase II testing on SRT-3 and SRT-4 during the fall and winter of 2016-17. They hand-excavated 17 one-meter-square (10.76-square-foot) test units at SRT-3, and 11 units at SRT-4, digging each unit through the plow zone to a depth where culturally sterile subsoil was encountered. The SRT-3 test units yielded 828 precontact artifacts, 92% of which were stone flakes. The remaining artifact assemblage recovered from SRT-3 comprised tools in various stages of completion (mostly bifaces), 41 pieces of fire-cracked rock, and three small ceramic pottery sherds (*RIGHT TOP*).

One of the late-stage bifaces (*RIGHT*) was complete enough to be identified as a Pequea or Bare Island projectile point, produced between 7500 BP (the beginning of the Middle Archaic period) and 1000 BP (the close of the Middle Woodland period). The three ceramic sherds were datable to the Middle and Late Woodland periods (2000-600 BP). The three pottery sherds appeared to represent three different vessel types. The first contained gneiss and mica as

Ceramic pottery sherds, Middle and Late Woodland periods (2000-600 BP)



Pequea or Bare Island projectile point (7500-1000 BP)

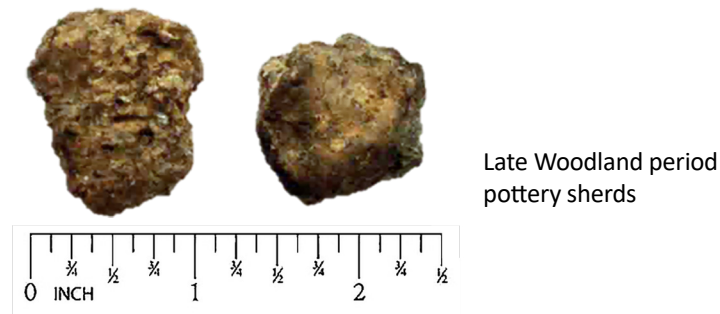
A large pit feature partially exposed through the excavation of a test unit was found to contain traces of charcoal and flakes of quartz, jasper, and argillite.



temper, with smoothed exterior and interior surface treatment. The temper of the second sherd consisted of quartz and mica, with cord-marking on both the interior and exterior. The third sherd also contained quartz and mica temper, but with cord-marking only on the exterior surface. All three were body sherds with no decoration. Two cultural features were uncovered in separate test units, one of which was a large pit (*ABOVE*). Both features contained enough charcoal to permit radiocarbon dating. One sample was dated to the Middle Woodland period (2000-1000 BP), and the other to the period after Native Americans made contact with Europeans.

Phase II testing at the SRT-4 site uncovered 349 precontact artifacts and three cultural features. The artifact assemblage was similar to that recovered from SRT-3, though on a smaller scale. Amid the multitude of quartz, quartzite, chalcedony, jasper, chert, and rhyolite flakes, 10 bifaces were unearthed. Unfortunately, none of the bifaces were sufficiently complete and well-preserved to allow identification and dating. Two small ceramic pottery sherds were recovered, both from the same test unit, and both dating to the Late Woodland period (1200-600 BP) (*BELOW*). Both sherds appeared to be from the same vessel. The temper consisted of fine sand or grit, and the interior surface was smoothed. Only one of the three features contained enough charcoal to permit radiocarbon dating. It was discovered to date to the Late Archaic period (5000-3000 BP).

CHRS, Inc. reported the results of its Phase I and II testing in a Phase I/II Archaeological Survey report submitted to Chester County and federal and state review agencies in June 2017. Among the archaeologists' conclusions was that SRT-3 appeared to be eligible for listing on the National Register both as an individual archaeological site and, based on the numerous jasper artifacts unearthed, as a contributing element of the Hardyston Jasper Prehistoric Archaeological District. SRT-3 had other qualities, the archaeologists noted—including overall



physical integrity, intact features, patterning in its artifact distribution, and datable charcoal from the same period as the datable artifacts—that gave it significant potential for “providing important information concerning changing settlement patterns and precontact use of the Lower Schuylkill River Valley during the Middle Woodland Period.” On the basis of that potential, the archaeologists recommended “additional work to further define the nature of that occupation.”

SRT-4 also contained intact deposits and recognizable patterns in artifact and feature distribution. A thorough investigation of the site would likely yield data useful in “addressing research questions concerning prehistoric lifeways in eastern Pennsylvania,” the report authors maintained. On the other hand, cultural components from at least two non-consecutive periods of occupation (Late Archaic and Late Woodland) had been discovered overlapping in SRT-4, and the portion of the site within the five-meter-wide (16.4 feet) APE was fairly small, had a relatively low artifact density, and held its artifacts within a shallow stratum (essentially the plow zone). As only the limited portion of the site within the APE would be available for testing, the archaeologists were not convinced that further testing would yield enough information to warrant additional work.

The agencies reviewing the Phase I/II Archaeological Survey report and its recommendations agreed that a final phase of testing was warranted for SRT-3. PennDOT and the Pennsylvania SHPO also determined that the portion of SRT-4 within the APE held enough informational potential to justify a comprehensive survey. Both sites would thus be subjected to Phase III data recovery excavations.

Seven research questions were developed to guide the Phase III investigations. As presented in the work plan included in the Phase I/II Archaeological Survey report, the questions were:

- Is there the potential for finding stratified [layered] deposits and/or intact features?
- Do either of the sites represent multiple occupations?
- Is it possible to define horizontally discrete occupations and/or activity areas within the sites?
- Is it possible to ascertain site function?
- Is it possible to infer statements about lithic procurement, tool manufacture, tool use, and discard?
- Kingsley, Robertson and Roberts (1990) hypothesize that only hunting and gathering forays were undertaken in the Lower Schuylkill Valley. Is there sufficient data to indicate that this hypothesis is invalid?
- Is there a difference between sites located along the Schuylkill River and those located away from the river along small tributaries?



## Phase III of the Archaeological Investigation: Data Recovery

CHRS, INC. ARCHAEOLOGISTS conducted fieldwork for the Phase III investigation of SRT-3 and SRT-4 during the spring, summer, and fall of 2018. They began by excavating a series of one-meter-square test units at regular intervals along the lengths of both sites. In some locations, they placed two or more test units side-by-side, creating a block of units better suited to revealing spatial patterning across a broader area. In some other locations, they placed test units alongside Phase II test units that had proven particularly productive. The lengthier SRT-3 was subjected to 50 additional test units, while half that number were

needed to test the shorter SRT-4. Following standard archaeological practices, the archaeologists excavated each test unit by hand, screening the excavated soil through quarter-inch hardware cloth to isolate artifacts larger than a quarter-inch. They also carefully recorded the location and stratigraphy of each unit, photographing, drawing, and soil-sampling all features as they were exposed.

After all of the test units had been excavated and recorded, the archaeologists brought in a backhoe to strip the topsoil from the



Differing plow zone soil depths within SRT-3 were revealed in Test Unit 31 (*above left*; 17 inches) and Test 44 (*above right*; 12 inches), spaced 200 feet apart.

remaining portions of the sites within the APE to expose the tops of archaeological features present at the base of the plow zone. The archaeologists then excavated the areas where the tops of features had been exposed, recording the features just as they had when digging test units.

Between their excavation of systematically-placed test units, and the testing performed in the wake of mechanical stripping, the archaeologists discovered features in SRT-3 and SRT-4.

Phase III testing of SRT-3 unearthed 5,940 precontact artifacts, almost all of which were concentrated in the upper 12 inches of the plow zone. Stone flakes made up the vast majority of the artifact

assemblage (93%), with pieces of jasper and quartzite predominating. Fifty-one bifaces in various stages of production were recovered, along with 16 biface fragments and 8 cores. The recovered artifacts *not* produced through knapping comprised three small pottery sherds and 404 pieces of fire-cracked rock. The three body sherds recovered during the Phase III investigations appeared to represent three additional vessel types. The first sherd contained a quartz temper with a granular interior and exterior surface. The second sherd contained quartz and gneiss temper with smooth interior and exterior surface treatment. The third sherd had a quartz temper with possible cord-markings on the interior and exterior surfaces. In total, six sherds were recovered from SRT-3.

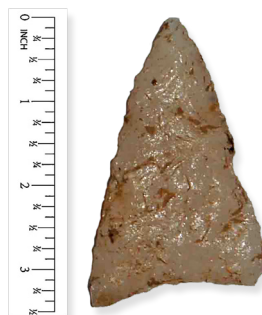


A backhoe strips plow zone soils from a portion of SRT-4 in July 2018.



The results of mechanical stripping in a section of SRT-3, November 2018.

Phase III testing at SRT-4 unearthed 1,539 precontact artifacts. Stone flakes predominated here, too, with fire-cracked rocks and bifaces accounting for the next-largest percentages of the assemblage. One of the bifaces was a complete and intact quartz Levanna Triangle (point), datable to the Late Woodland period (RIGHT). Also standing out from the collection of stone artifacts was a drill and a hammerstone (the latter used in knapping). Five additional ceramic sherds were recovered, all appearing to date to the Late Woodland period. The first sherd was similar to those recovered during the Phase II investigations, consisting of a fine sand or grit temper with smooth interior and exterior surfaces. The remaining sherds all appeared to represent distinct vessel types. The second sherd contained quartz temper and a burnt interior surface. The temper of the third sherd consisted of quartz and gneiss, with a gritty, burnt interior surface. The fourth sherd contained quartz and mica temper with a smooth, burnt interior and an eroded exterior surface. The last sherd contained gneiss temper, burnt interior and exterior surfaces, and incised lines as decoration.



Quartz Levanna Triangle, Late Woodland period, recovered from SRT-4



Broken argillite point, recovered from SRT-3



Quartzite Otter Creek point, Middle to Late Archaic period, recovered from SRT-3

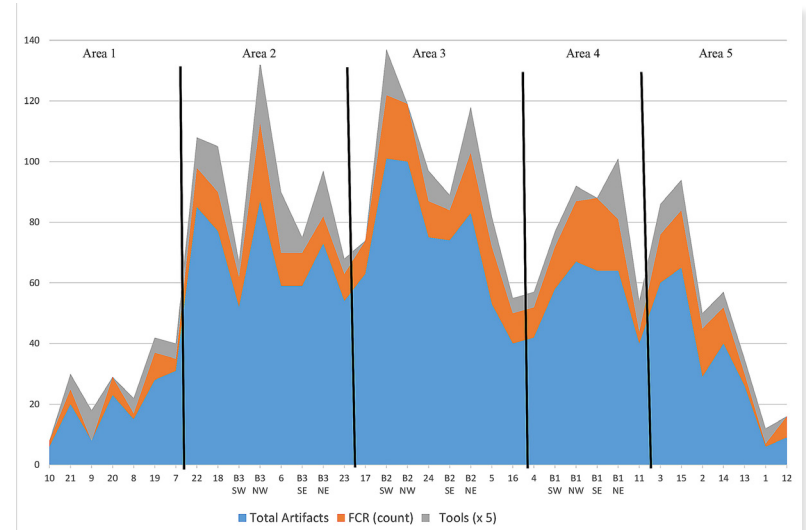
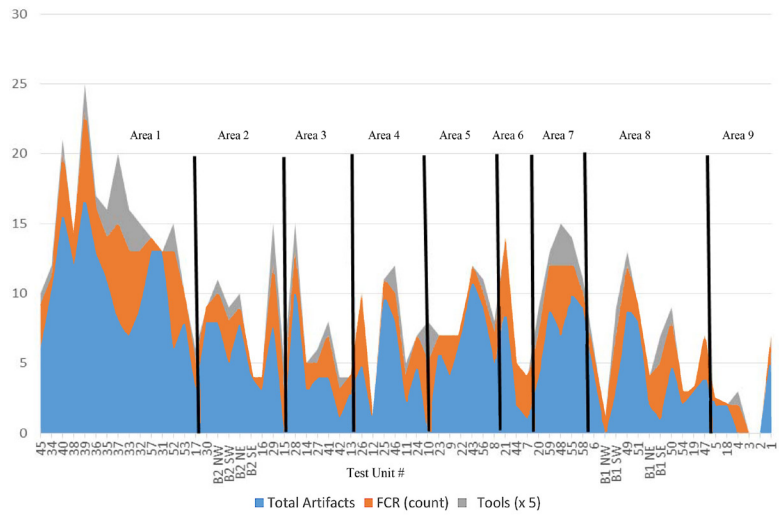


Broken argillite Bare Island point, recovered from SRT-3

## Analysis and Conclusions

WRAPPING UP THEIR FIELDWORK in the late fall of 2018, the archaeologists returned to their laboratory to wash, label, and catalogue the thousands of recovered artifacts, convert their field notes and photographs into tables, charts, and figures, then begin the long process of finding meaning in the multitude of recovered data. Their analysis was guided by the seven research questions they had devised for the Phase III work plan, but they were also open to following avenues of inquiry suggested by unusual findings during the final round of testing.

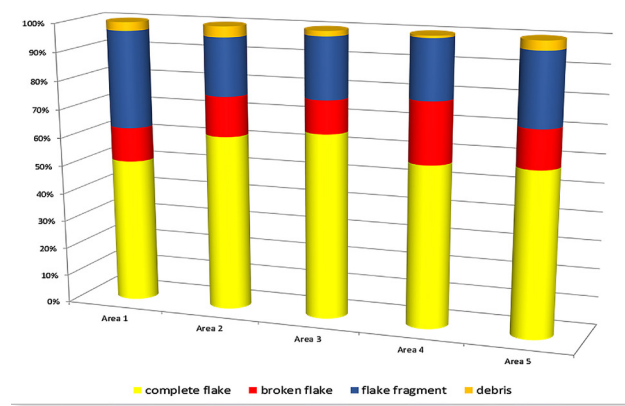
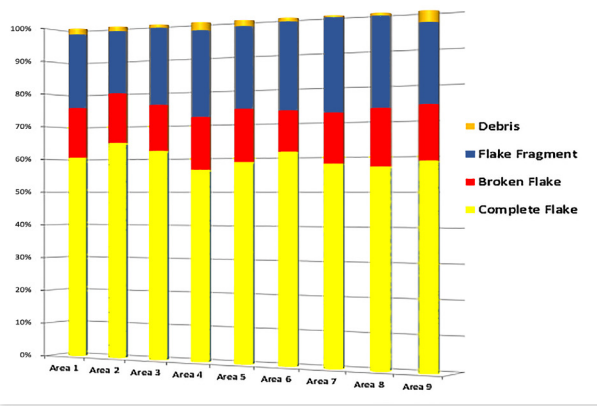
The archaeologists used a variety of analytical methods in attempting to discern significant patterns in the numbers, types, and locations of the myriad artifacts and features. In one approach, they entered artifact quantities from each test unit into a linear graph representing a geographic progression from one end of each site to the other. The numerical peaks and valleys in the resulting diagrams allowed the archaeologists to distinguish nine areas of cultural activity (tool production, fire-making, etc.) within SRT-3 (*BELOW LEFT*), and five areas of cultural activity within SRT-4 (*BELOW RIGHT*).



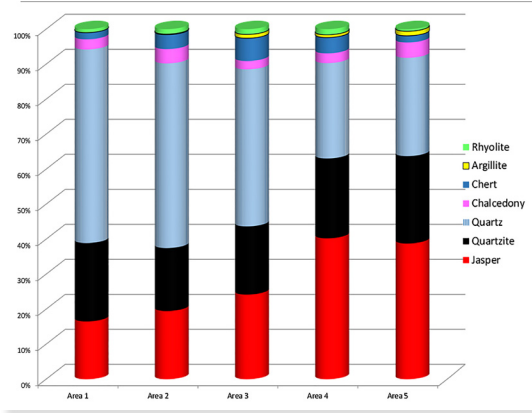
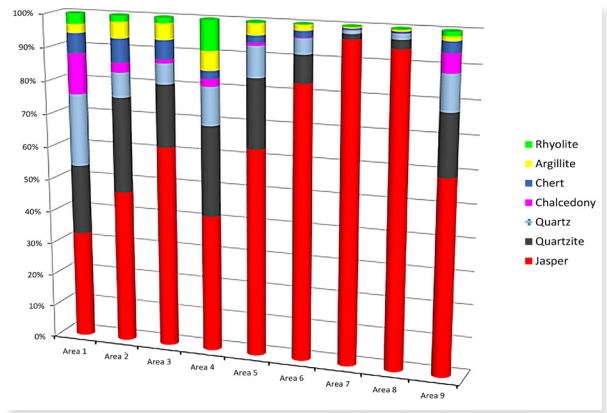
Plotting artifact quantities of successive test units along the lengths of both sites enabled archaeologists to discern nine areas of cultural activity (tool production, fire-making, etc.) within SRT-3 (*above left*), and five within SRT-4 (*above right*).

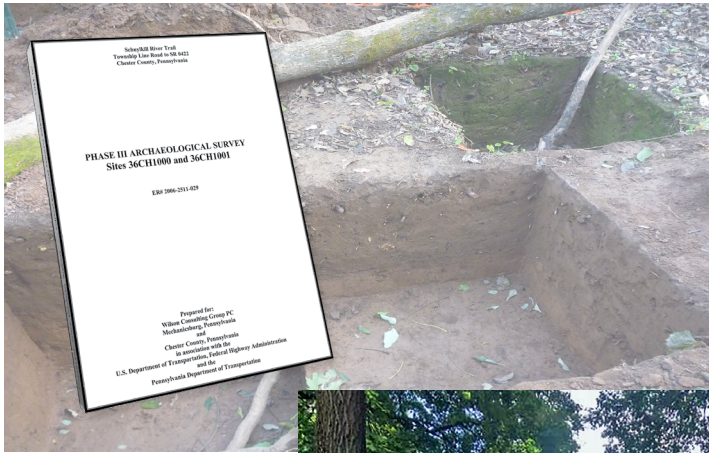
The archaeologists then looked for patterns in the artifact assemblages recovered from each activity area. One approach involved plotting stone artifacts by type (complete flake, broken flake, flake fragment, and debris), and another approach entailed plotting them by material (argillite, chalcedony, chert, jasper, quartz, quartzite, rhyolite). The resulting pair of graphs for each site are reproduced **BELOW**.

Other analytical efforts included examining recovered pottery for evidence of manufacturing technique, temper, decoration, and cultural affiliation; “floating” soil samples in order to recover small artifacts and organic materials such as seeds which could aid in interpreting seasonal site use; and extracting C-14 samples from significant features and sending them to a laboratory for radio-metric dating.



In an effort to discern patterns within the nine activity areas of SRT-3 (left) and five activity areas of SRT-4 (right), archaeologists plotted stone artifacts by type (top graphs) and material (bottom graphs).





(Right) Photograph 31 in the Phase III report (*above, inset*) provided a westward view of a stripped portion of SRT-4.



The archaeologists' attempts to interpret the results of their analytical efforts was complicated by the fact that all of the data had been extracted from an APE only five meters (16.4 feet) wide. That limitation meant that only a narrow cross-section of each activity area was subjected to testing. If the archaeologists had been authorized to investigate the full extents of Sites SRT-3 and SRT-4—rather than medial strips—larger sample sizes would have provided more complete pictures of the sites, allowing fuller and more confident interpretation. As it was, the archaeologists were challenged to draw conclusions from a geographically constrained collection of data.

The full data analysis and conclusions ultimately drawn by the archaeologists were presented in a Phase III archaeological survey report submitted by CHRS, Inc. in July 2023 (*LEFT TOP*). In addition, CHRS, Inc. president Kenneth J. Basalik, Ph.D., offered a virtual presentation to the Philadelphia Archaeological Forum in October 2021.

Dr. Basalik began his [illustrated lecture](#), titled “Trials and Tribulations in Digging the Trail to Pottstown,” by describing the peculiar and challenging circumstances surrounding the Phase III investigations of SRT-3 and SRT-4. After exhibiting pictures of excavations, features, and artifacts, then displaying some of the graphs prepared in an effort to find patterns in the recovered date, Dr. Basalik summarized his firm’s findings at SRT-3 and SRT-4 through the following bullet points:

### *Summary of Conclusions, Site SRT-3*

- 6,801 precontact artifacts were recovered through three phases of testing within a corridor 105 meters long by 5 meters wide.
- Precontact artifacts were concentrated in the plow zone soils.
- The artifact assemblage primarily comprised lithic debitage (by-product flakes and chips from stone tool production; 93% of the assemblage).
- Jasper and quartzite were the most prevalent lithic source materials.
- Materials dating from the Early Woodland period (3000-2000 BP) through the Late Woodland period (1200-600 BP) were recovered, with materials from the Middle Woodland period (2000-1200 BP) predominating.
- Despite some overlap, it was possible to identify nine discrete occupation/activity areas.
- Similar hunting and hide-processing activities were evidenced in all areas.
- Although SRT-3 is located near the Schuylkill River, no materials suggestive of fishing were discovered.
- SRT-3 is an example of a geographic setting that native peoples found attractive for short-term settlement over many generations and eras.

### *Summary of Conclusions, Site SRT-4*

- 1,914 precontact artifacts were recovered through three phases of testing within a corridor 60 meters long by 5 meters wide.
- Precontact artifacts were concentrated in the plow zone soils (as was the case with SRT-3).
- The artifact assemblage primarily comprised lithic debitage.
- Quartz was the most prevalent lithic source material.
- Materials dating from the late Middle Woodland period (circa 1400 BP) through the early Late Woodland period (circa 1000 BP) were recovered.
- Despite some overlap, it was possible to identify five discrete occupation/activity areas.
- Hunting and hide-processing activities were evidenced in all areas, while no materials suggestive of fishing were discovered.
- Featuring a dense, continuous spread of material over a wide area, SRT-4 is another example of a geographic setting that native peoples found favorable for short-term settlement through a range of periods.

Dr. Basalik concluded his presentation with the following observations:



Drawing firm conclusions concerning the activities undertaken at the two sites investigated is difficult and is subject not only to some probable temporal mixing, but may also be due to the sample size of the archaeologically tested area. Phase III archaeological investigations were limited to the portion of the sites to be impacted, which consisted of a linear strip approximately five meters wide.

The initial analysis at each site was an attempt to ascertain the type of occupation which the archaeological remains represented. After the earlier investigations, SRT-3 was seen to be a good candidate for a base camp occupation. Very few sites within the Schuylkill drainage dating to the Middle Woodland period (2000-1000 BP) have been found to contain features which could represent living structures and or living/work areas. However, data recently recovered from other archaeological sites along the Schuylkill River have provided evidence for occupational residency during that period.

If the sites represented the remains of a base camp, a large number and variety of tool types and artifact classes would be expected. Neither site contained a large number of tools. A base camp might also be expected to contain a wide variety of features. Relatively few cultural features were encountered suggesting a base camp. Specialized tool production areas that are spatially segregated could be expected to be present at a base

camp. While activity areas have been postulated at both sites, these areas appear to represent similar activities rather than specialized activity areas. The sites may represent the remains of temporary specialized procurement camps. Such sites could be expected to have a limited range and number of tool types and artifact classes, features would be limited in number and distribution, and lithic fabrication would be restricted to late-stage biface production and maintenance. Both sites appear to meet these criteria.

The portions of the sites investigated appear to fit well with the character of Woodland group social organization posited for similar cultural complexes by Custer.\* Custer suggests that groups of this period had a mixed subsistence base incorporating the use of a variety of animal and wild and domesticated plant foods. They moved seasonally through a variety of micro-band and macro-band and special-purpose camps. Domesticated plant foods were added only slowly to the food base in the later part of the Late Woodland Period (c. 800 BP) and never constituted the primary focus of their subsistence activities. The socioeconomic patterns (basic food procurement systems) of even the early Late Woodland groups in southeastern Pennsylvania differed only slightly from that of earlier Woodland and Archaic groups.



\*Custer, Jay F. *Prehistoric Cultures of Eastern Pennsylvania. Anthropological Series No. 7.* Harrisburg, PA: Pennsylvania Historical and Museum Commission, 1996.