INDEX OF TEXAS ARCHAEOLOGY

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Volume 2019

Article 24

2019

Addendum Report: Additional Cultural Resources Investigations of the Vista Ridge Regional Water Supply Project in Burleson, Lee, Bastrop, Caldwell, Guadalupe, Comal and Bexar Counties, Texas

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Addendum Report: Additional Cultural Resources Investigations of the Vista Ridge Regional Water Supply Project in Burleson, Lee, Bastrop, Caldwell, Guadalupe, Comal and Bexar Counties, Texas

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Manuscript 2449

**Addendum Report: Additional Cultural Resources Investigations
of the Vista Ridge Regional Water Supply Project in Burleson, Lee,
Bastrop, Caldwell, Guadalupe, Comal and Bexar Counties, Texas**

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Addendum Report: Additional Cultural Resources Investigations of the Vista Ridge Regional Water Supply Project in Burleson, Lee, Bastrop, Caldwell, Guadalupe, Comal and Bexar Counties, Texas

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The logo for the Southwest Cultural Antiquities Agency (SWCA) is positioned on the left side of the page. It consists of the letters 'SWCA' in a large, stylized, light blue font. The letters are bold and have a slightly irregular, hand-drawn appearance. The 'S' is particularly large and wraps around the 'W'. The 'C' and 'A' are also large and prominent.

Addendum Report: Additional Cultural Resources Investigations of the Vista Ridge Regional Water Supply Project in Burleson, Lee, Bastrop, Caldwell, Guadalupe, Comal and Bexar Counties, Texas

August 2019

Texas Antiquities Annual Permit No. 7295

PREPARED FOR

**Central Texas Regional Water Supply Corporation
and
VRRSP Consultants, LLC**

PREPARED BY

SWCA Environmental Consultants

Redacted

**ADDENDUM REPORT: ADDITIONAL CULTURAL RESOURCES
INVESTIGATIONS OF THE VISTA RIDGE REGIONAL WATER SUPPLY
PROJECT IN BURLESON, LEE, BASTROP, CALDWELL, GUADALUPE,
COMAL AND BEXAR COUNTIES, TEXAS**

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Texas Antiquities Permit No. 7295

SWCA Project No. 31410-AUS

SWCA Cultural Resource Report No. 18-540

August 2019

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ABSTRACT

On behalf of VRRSP Consultants, LLC, and Central Texas Regional Water Supply Corporation (CTRWSC), SWCA Environmental Consultants (SWCA), conducted further intensive cultural resources investigations of the Vista Ridge Regional Water Supply (Vista Ridge) Project in Burleson, Lee, Bastrop, Caldwell, Guadalupe, Comal, and Bexar Counties. The project will involve installation of a 140.2-mile-long, 60-inch-diameter water pipeline from Deansville, Burleson County, Texas, to north-central San Antonio, Bexar County, Texas. The area of potential effects (APE) will consist of the proposed centerline alignment and an 85-foot-wide corridor for temporary and permanent construction easements; however, SWCA surveyed a 100-foot-wide corridor to allow for minor shifts in the alignment.

This addendum report details the findings of additional cultural resources investigations between 2016 and 2018, on the alignment. The Vista Ridge Project is subject to review under Section 106 of the National Historic Preservation Act (54 USC 306108) and its implementing regulations (36 CFR 800), in anticipation of a Nationwide Permit 12 from the U.S. Army Corps of Engineers in accordance with Section 404 of the Clean Water Act. In addition, the work is subject to compliance with the Antiquities Code of Texas (ACT) under Permit No. 7295, as the Vista Ridge Project ultimately will be owned by a political subdivision of the State of Texas. Furthermore, all human burials in the state of Texas are protected by law, as per the Texas Health and Safety Code Section 711 General Provisions Relating to Cemeteries and the Texas Administrative Code Title 13, THC, Chapter 22 Cemeteries, Sections 22.1 through 22.6. If human burials are encountered in the Project Area and the remains are determined to be Native American, they will be handled in accordance with procedures established through coordination with the THC; work in the affected area would only resume per THC authorization.

Between 2016 and 2018, SWCA investigated approximately 29.5 miles of the current 140.2-mile-long project corridor and the proposed 6.9-mile-long wellfield pipeline that was not previously surveyed during the prior 2015 investigations (Acuña et al. 2016). Investigations consisted of intensive pedestrian survey augmented with shovel testing and hand-excavated auger probes and/or mechanical backhoe trenching in select areas. In addition, SWCA investigated the 25.82-acre terminus site slated for the construction of an integration system (Atwood and Ward 2017). SWCA also surveyed additional mileage, which included rerouted areas that are no longer part of the currently proposed alignment. SWCA excavated 967 shovel tests, 96 auger probes, and 85 backhoe trenches during these additional investigations.

SWCA documented or further investigated 28 cultural resources within the Vista Ridge Project during the 2016 to 2018 investigations. Of the 28 resources, seven were isolated finds that did not warrant formal site recording or require additional investigations. The remaining 21 cultural resources include 15 prehistoric sites, three historic sites, and three multi-component sites with both prehistoric and historic cultural materials.

Of the 21 sites, two (i.e., 41BP960 and 41BP961) are currently UNDETERMINED regarding eligibility for the National Register of Historic Places (NRHP) or as a State Antiquities Landmark (SAL), and one site (i.e., 41GU177) was determined to be ELIGIBLE for listing on the NRHP and for designation as a SAL. SWCA conducted testing and data recovery excavations at site 41GU177 and the results of testing investigations conducted under Permit No. 7295 are presented as an appendix to this report (Rodriguez et al. 2017); the data recovery investigations of site 41GU177 were completed under Permit No. 8231 and will be a separate report. Additionally, sites 41BP960 and 41BP961 have been avoided by design alignment changes and will not be impacted by the Vista Ridge Project. The remaining 18 cultural resources sites are considered NOT ELIGIBLE for nomination to the NRHP or for designation as SALs and no further cultural resources investigations or avoidance are recommended.

In addition, SWCA documented two cemeteries (the Hill Cemetery and the Hoffman Cemetery) during the 2016 to 2018 investigations. Due to subsequent reroutes, the Hill Cemetery (located within the boundaries of site 41BP818) is now avoided and will not be impacted by the project. Mechanical scraping was conducted adjacent

to the Hoffman Cemetery in compliance with the Texas Health and Safety Code; no evidence of interments was identified within the project area.

In accordance with 36 CFR 800.4 and the ACT, SWCA has made a reasonable and good faith effort to identify cultural resources within the project area. Two sites (i.e., 41BP960 and 41BP961) are recommended as having UNDETERMINED eligibility for listing on the NRHP or for SAL designation and one site (41GU177) is recommended as ELIGIBLE. The remaining 18 are recommended as NOT ELIGIBLE for listing on the NRHP or for SAL designation. Site 41GU177 has been mitigated and the results will be presented in a stand-alone report (Nielsen et al. 2019). The two sites (41BP960 and 41BP961) of UNDETERMINED eligibility have been avoided by design alignment changes and will not be impacted by the project. No further work or avoidance strategy is recommended for the remaining 18 archaeological sites identified during the Vista Ridge Project.

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Chapter 1 Introduction

Mercedes C. Cody, B.A., Christina Nielsen, M.A., and Brandon S. Young, M.A., RPA

On behalf of VRRSP Consultants, LLC, and the Central Texas Regional Water Supply Corporation (CTRWSC), SWCA Environmental Consultants (SWCA) has conducted intensive cultural resources investigations of the Vista Ridge Regional Water Supply Project (Vista Ridge) in Burleson, Lee, Bastrop, Caldwell, Guadalupe, Comal, and Bexar Counties, Texas, since June 2015 (Figures 1.1a and 1.1b). The project will involve installation of a 140.2-mile-long, 60-inch-diameter water pipeline from Deanville, Burleson County, Texas, to north-central San Antonio, Bexar County, Texas. The area of potential effects (APE) will consist of the proposed centerline alignment and an 85-foot-wide corridor for temporary and permanent construction easements; however, SWCA surveyed a 100-foot-wide corridor to allow for minor shifts in the alignment.

Investigations were conducted to comply with Section 106 of the National Historic Preservation Act (NHPA) (54 USC 306108) and its implementing regulations (36 Code of Federal Regulations [CFR] 800), in anticipation of a Nationwide Permit 12 from the U.S. Army Corps of Engineers (USACE) in accordance with Section 404 of the Clean Water Act. In addition, the work is subject to compliance with the Antiquities Code of Texas under Texas Antiquities Permit No. 7295, as the Vista Ridge Project will be ultimately owned by the CTRWSC, a political subdivision of the State of Texas. Furthermore, all human burials in the state of Texas are protected by law, as per the Texas Health and Safety Code Section 711 General Provisions Relating to Cemeteries and the Texas Administrative Code Title 13, THC, Chapter 22 Cemeteries, Sections 22.1 through 22.6. If human burials are encountered in the Project Area and the remains are determined to be Native American, they will be handled in accordance with procedures established through coordination with the THC; work in the affected area would only resume per THC authorization.

SUMMARY OF INVESTIGATIONS

2015

SWCA conducted a thorough background literature review and intensive field investigations within a 100-foot-wide corridor on available parcels of the previous 139.45-mile project area; due to alignment shifts and reroutes since the initial surveys, the alignment is now 140.2 miles in length. From June to December 23, 2015, SWCA conducted field investigations to inventory known and previously unidentified cultural resources within the project area. Approximately 24.42 miles was not surveyed based on the results of the background review and extensive disturbances as confirmed by vehicular survey. Of the remaining 115.03 miles, 101.8 miles were investigated using intensive pedestrian survey with shovel testing and limited backhoe trenching. By December 23, 2015, there remained approximately 13.23 miles requiring survey due to parcels being unavailable as a result of landowner restrictions or part of newly adopted reroutes. Additional mileage, which includes rerouted areas that are no longer part of the December 8, 2015 alignment, were also surveyed. Approximately 1,792 shovel tests were excavated during the 2015 investigations. The survey was also augmented with limited backhoe trenching at select locations along the proposed alignment.

Based on soil and geology, SWCA identified five stream crossings with the potential for intact, deeply buried archaeological deposits that could not be adequately assessed with standard shovel testing survey methodology. Following pedestrian investigations of two of the stream crossings, SWCA encountered very narrow floodplains with shallow terraces and these crossings were determined to not warrant additional mechanical investigations. Conversely, the pedestrian investigations determined that one previously unidentified crossing would require backhoe trench investigations. A total of 21 backhoe trenches were excavated within four of the identified stream crossings. Three of the 21 backhoe trenches encountered cultural materials; however, two of the positive backhoe trenches were recorded as isolated finds and did not warrant

Figure 1.1a. General project area location map, northern half.

Figure 1.1b. General project area location map, southern half.

documentation as archaeological sites. The remaining two positive backhoe trenches were excavated within the boundaries of newly documented archaeological site 41GU177.

Following the completion of survey investigations along accessible portions of the proposed pipeline alignment from June through December 23, 2015, SWCA prepared a draft report (Acuña et al. 2016) of the results of investigations to date and submitted it to the Texas Historical Commission (THC) on January 27, 2016, for review and comments. SWCA identified and recorded 59 cultural resources during the 2015 survey efforts for the Vista Ridge Project. Of the 59 resources, seven were isolated finds that did not warrant formal site recording or require additional investigations. The remaining 52 cultural resources included 34 prehistoric sites, 13 historic sites, and five multi-component sites with both prehistoric and historic materials. In addition to newly recorded resources, SWCA revisited two previously recorded archaeological sites and documented two cemeteries (Acuña et al. 2016).

Of the 52 recorded sites, seven (i.e., 41LE332, 41BP917, 41BP920, 41GU177, 41GU180, 41CM395, and 41BX2101) were recommended as having UNDETERMINED eligibility for inclusion to the National Register of Historic Places (NRHP) or for State Antiquities Landmark (SAL) designation and, as such, required avoidance or significance testing. Of the two previously recorded sites, only one was recommended for avoidance, due to the presence of a historic-age cemetery. Additionally, the previous investigations recommended avoidance of the two documented cemeteries. The remaining 45 cultural resources were recommended as NOT ELIGIBLE for nomination to the NRHP or for designation as SALs and no further cultural resources investigations or avoidance was warranted (Acuña et al. 2016).

Overall, the prehistoric sites not recommended for avoidance or significance testing (i.e., 41LE333–335, 41LE336, 41BP915–916, 41BP918–919, 41BP922, 41CW163–164, 41CW168, 41CM394, 41CM396–400, 41CM404, 41BX2096–2100, and 41BX2102–2106) had an absence of substantial subsurface deposits and/or exhibited significant horizontal and vertical disturbances from erosion and/or mechanical impacts from agricultural activities, vegetation clearing, two-track roads, and general land clearing and improvements. Based on these conditions, the sites could not provide

new or important data concerning regional prehistory (Acuña et al. 2016).

In terms of historic sites with structures and/or structural remains (i.e., 41BU115, 41CW162, 41GU176, 41GU179–181, 41CM391, and 41CM393) the integrity of the structures or structural remains has been compromised by modifications and age (e.g., dilapidation of structures or dismantling of stonewalls). However, because site 41GU180 contained a house and associated structures, it was recommended for additional investigations in the form of archival research to determine eligibility. Those sites with historic artifact scatters but no structures or structural remains (i.e., 41BP921, 41BP923, 41CW165–169, 41GU178, and 41CM401) have been impacted by erosion and land use and do not exhibit horizontal or vertical integrity. Given these conditions, it was the opinion of SWCA that those resources could not contribute new or important data to local and regional history. Following review of the January 2016 draft report, the THC concurred on February 18, 2016, with SWCA's recommendations that 45 of the sites recorded during survey were NOT ELIGIBLE for nomination to the NRHP or for designation as SALs, and avoidance or additional investigations was warranted at the seven sites recommended as having UNDETERMINED eligibility.

2016 to 2018

Subsequent to THC's review and concurrence with SWCA's draft report recommendations, SWCA completed survey of the remaining 13.23 miles of proposed alignment on all outstanding parcels where right-of-entry (ROE) had been unavailable in 2015. In addition, SWCA surveyed proposed ancillary facilities, including a well field and associated 40-acre pump and water tower facility in Burleson County, two 10- to 15-acre pump stations (one in Bastrop County and one in Guadalupe County), and a 26-acre terminus site at the southern end of the pipeline in Bexar County for integrating the water delivered by the Vista Ridge Project into the City of San Antonio's water system. Moreover, various reroutes and shifts in the pipeline alignment were surveyed during 2016 and 2018. Finally, SWCA conducted investigations at five (i.e., 41LE332, 41BP920, 41GU177, 41GU180, and 41BX2101) of the seven sites recommend as having UNDETERMINED eligibility; the remaining two sites (i.e., 41BP917 and 41CM395) have been avoided by

project reroutes. Continued investigations at these five sites included:

- hand scraping at site 41BX2101 to determine if a rock ring within a fenced enclosure represented a historical burial;
- additional shovel testing at site 41LE332 to determine if the cultural deposits within a sandy mantle were sufficiently intact to warrant avoidance or test excavations;
- test excavations at sites 41BP920 and 41GU177; and
- archival research for site 41GU180.

Ultimately, test excavations at site 41GU177 resulted in the need for further data recovery. SWCA conducted data recovery excavations at site 41GU177 from November 27 to December 21, 2017, and will be documented in a separate report to satisfy the requirements of the Texas Antiquities Permit No. 8231.

Overall, 28 cultural resources were documented or further investigated within the project area during the 2016 to 2018 investigations. Of the 28 resources, seven were isolated finds (i.e., IF08–IF14) that did not warrant formal site recording or require additional investigations. The remaining 21 resources include 12 newly recorded archaeological sites (i.e., 41BU122–41BU124, 41LE348–41LE350, 41BP959–41BP962, 41CW173, and 41GU200) and nine previously recorded sites (i.e., 41LE332, 41BP818, 41BP920, 41GU177, 41GU180, 41CM394, 41CM401, 41CM404, and 41BX2101) initially documented by SWCA during the 2015 investigations or previously recorded prior to the 2015 investigations. The further investigations of the previously recorded sites varied dependent upon recommendations reported in the 2015 initial cultural resources report and included archival research, survey, testing, and/or data recovery excavations. In addition,

two cemeteries (the Hill Cemetery and the Hoffman Cemetery) were documented during the 2016 to 2018 investigations. Due to subsequent reroutes, the Hill Cemetery (located within the boundaries of site 41BP818) is now avoided and will not be impacted by the project. Mechanical scraping was conducted adjacent to the Hoffman Cemetery in compliance with the Texas Health and Safety Code; no evidence of interments was identified within the project area.

Of the 21 sites, two sites (i.e., 41BP960 and 41BP961) remain UNDETERMINED regarding their NRHP and SAL eligibility; however, both have currently been avoided by design alignment changes by the Vista Ridge Project. Based on the results of the testing investigations, site 41BP920 has now been determined NOT ELIGIBLE for listing on the NRHP and for designation as a SAL. Site 41GU177 was determined to be ELIGIBLE for listing on the NRHP and for designation as a SAL and testing and data recovery excavations were conducted at the site. The remaining 18 sites are interpreted to have a low research value and are considered NOT ELIGIBLE for listing on the NRHP or for designation as SALs and no further work or avoidance is recommended.

The following report addresses the results of all survey efforts and additional site investigations by county that occurred during 2016 and 2018. The reader is directed to the initial survey draft report (Acuña et al. 2016) for a complete discussion of the project's environmental setting, previous investigations and known sites within or near the project area, the cultural history of the project area, and the results and recommendations for all investigations completed as of December 23, 2015. The results of test excavations at site 41BP920, test excavations at site 41GU177, and survey of the 26-acre project terminus site in San Antonio are presented in separate reports (see Atwood and Ward 2017; Rodriguez et al. 2017; Rodriguez and Young 2018).

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CHAPTER 2 METHODS

Mercedes C. Cody, B.A., and Christina Nielsen, M.A.

The investigations were designed to identify cultural resources in the project area and, to the extent possible, recover sufficient information to evaluate the significance of recorded prehistoric and historic sites. SWCA's investigations included background research and intensive field surveys. The methods and the level of effort used in these investigations were developed in consultation with the THC and in accordance with the Council of Texas Archaeologists (CTA) survey standards.

FIELD METHODS

The project area traverses both urban and rural settings with varying degrees of archaeological potential. High probability areas are defined as locales that possess or have a statistically higher likelihood of containing intact archaeological deposits. Moderate probability areas have a slightly elevated probability for containing archaeological deposits and are not typically associated with soil and/or stratigraphic integrity (e.g., slopes, uplands, or evident disturbance). Low probability areas are defined as locales where archaeological resources/sites are likely absent or have low probability to be present (e.g., uplands, evident disturbance, or very recent alluvial floodplains). River drainages, stream settings and terraces, existing archaeological sites, and moderate probability settings were thoroughly explored with subsurface investigations (i.e., shovel testing, auger probing, and/or backhoe trenching).

Although several river and large stream drainages with a high potential to contain cultural resources are traversed, a large portion of the project spans expansive tracts of agricultural fields that have been frequently plowed and terraced or are developed urban/utility areas. Based on the soils and these disturbances, portions of the project area within the Blackland Prairie in Guadalupe and Caldwell Counties, for instance, have a very low potential to contain buried stratified cultural resources, with sites typically limited to surface manifestations of prehistoric artifact scatters or historic materials associated with the late-nineteenth- to mid-twentieth-century settlement. Recent investigations

conducted by SWCA within Guadalupe County in similar settings suggest that in many areas much of the upper 30 to 40 centimeters (cm) of the surface have been disturbed by significant land clearing and plowing (Acuña et al. 2016; Acuña and Sloan 2014; Ward 2015). The majority of the soils within the project area in Guadalupe and Caldwell Counties are primarily Houston Black clay or Branyon clay. As these soils developed in place from clayey residuum from mudstone and clayey alluvium from mudstone, respectively, they possess limited potential to contain intact buried cultural deposits, particularly prehistoric cultural materials. These soils typically contain cultural resources (prehistoric and historic) that primarily are surface scatters of artifacts with little to no research value, due to poor horizontal integrity and a general lack of cultural features and buried components.

Considering the overall mixed archaeological potential of the project area, SWCA executed a flexible approach where intensive archaeological investigations were tailored to the specific settings encountered across the alignment. River drainages, stream settings and terraces, existing archaeological sites, and moderate probability settings were thoroughly explored with subsurface investigations (i.e., shovel testing, auger probing, and/or backhoe trenching) to THC survey standards. In disturbed and/or upland settings with little to no subsurface potential, SWCA minimized subsurface explorations or excluded survey all together. This also applied to those areas that have been previously surveyed by archaeologists in the last 10 years, per the Texas Archeological Sites Atlas.

SUBSURFACE INVESTIGATIONS

SWCA's investigations consisted of an intensive pedestrian survey with subsurface investigations within the 100-foot-wide survey corridor. The field survey consisted of teams of SWCA archaeologists walking all of the proposed cultural resources survey areas for the project. Archaeologists examined the ground surface and extensive erosional profiles and exposures along drainages for cultural resources.

SWCA used three methods of subsurface exploration during the survey: shovel testing, auger probing, and backhoe trenching. SWCA keyed the use of methods to the level of disturbances of the project and the nature of the soils, geology, and topography in a given area. Survey investigations were of sufficient intensity to determine the nature, extent, and, if possible, significance of cultural resources discovered within the proposed project area. Survey efforts met all THC-minimum archaeological survey standards for such projects with exceptions thoroughly documented. In most cases, artifacts were tabulated, analyzed, and documented in the field, but not collected. However, on sites with undetermined eligibility (i.e., 41BP960 and 41BP961) artifacts were collected in the field and will be returned to the landowner after reporting is complete. Following the review and acceptance of the final cultural resources report, all records and photographs will be curated with the Center for Archaeological Research at the University of Texas at San Antonio (CAR-UTSA), per requirements of the ACT.

SWCA archaeologists employ both metric (centimeters and meters) and English units of measurement (inches and feet) when conducting investigations within the Vista Ridge Project area. In compliance with archaeological standard practices, investigations such as shovel tests, auger probes, and backhoe trenches are recorded using metric units. Prehistoric archaeological resources, such as camp sites, features, and artifacts, are also recorded using metric units, whereas historic resources, such as farmsteads and associated historic features, are recorded using English units; no conversions for these measurements are provided.

SHOVEL TESTING

Shovel testing was not conducted in areas where steep slopes (i.e., greater than 20 percent) were encountered, where impervious substrates (i.e., caliche, concrete, and/or compact gravel) were present, within well-defined surface (i.e., runoff) drainage gullies, where evidence of extensive ground surface disturbance was observed (e.g., terraced agricultural fields), within 5 meters (m) of any identified/marked buried utility markers, or within 5 m of any paved/graveled road edges.

SWCA primarily used shovel testing when the project crossed upland topography with low potential for deeply buried sites. Archaeologists excavated shovel tests in 20-centimeter (cm) arbitrary levels to 1 m in

depth unless soil characteristics or bedrock precluded reaching that depth. The matrix was screened through ¼-inch mesh. The location of each shovel test was plotted using a hand-held sub-meter accurate global positioning system (GPS) receiver and was recorded on appropriate project forms in SWCA's field tablets.

Areas with previously recorded sites or other cultural resources identified during the archival research required additional shovel testing to explore the nature of the cultural deposits. For a linear corridor survey, THC survey standards minimally require that for every 100 feet of survey corridor width, 16 shovel tests need to be excavated every mile. For a project of this size (i.e., 140.2 miles), the shovel test investigations would require 2,243 shovel tests. However, as previously mentioned, these standards may be reduced in broad upland areas with shallow soils. If sites were encountered, SWCA excavated a minimum of six shovel tests per site to determine horizontal and vertical extent. If shovel testing could not adequately explore project impacts in soils with potential to contain buried archaeological materials, auger probes and/or backhoe trenches were utilized.

AUGER PROBES AND BACKHOE TRENCHING

Deeper investigation utilizing hand-excavated auger probe and/or mechanical backhoe trench excavations were conducted at drainages that had characteristics suggesting the potential for containing deeply buried Holocene-aged deposits (i.e., Middle Yegua Creek, Wilbarger Creek, the Colorado River, and the Guadalupe River).

Auger probes were excavated at approximately 50-m intervals, staggered across the proposed alignment to test across the width of the proposed 100-foot-wide survey corridor. All hand auger probes were excavated in 20-cm arbitrary levels to 2 m in depth, to compact soils, bedrock, or culturally sterile deposits, whichever came first. Matrix from the auger probes were screened through ¼-inch mesh.

When required, backhoe trenches were placed approximately 200–300 m apart. In larger floodplains, such as those associated with the Guadalupe and Colorado Rivers, backhoe trench intervals were widened. Trench placement was based on the level of disturbance within the project area, the location of buried utilities, the locations of any previously impacted areas, landowner concerns, and the preservation potential for archaeological sites. If a river or stream will be directionally

drilled, trenches were placed at drill locations and floodplain areas outside the bore ingress/egress locations. Trenches were limited or not excavated between the entry and exit points of the drill.

Backhoe trenches were excavated to a depth sufficient to determine the presence/absence of buried cultural materials and to allow the complete recording of all cultural features and geomorphic information to depths of project impacts. To differentiate the backhoe trenches excavated at different drainages across the project area, the trenches were given a prefix name followed by a number. For example, those trenches excavated at the Colorado River were designated CO, trenches excavated at the San Marcos River were designated SM, etc., followed by the sequential number it was excavated (e.g., CO2 and SM4).

Generally, trenches were 1.8 m deep, 7 m long, and 1.5 m wide. An experienced archaeologist monitored all trenching while excavations were underway. Trench documentation included stratigraphic descriptions for each excavated trench with soil descriptions for each trench containing cultural materials. When applicable, archaeologists mapped and photographed all cultural features encountered during trenching. To quantify artifact density and recovery, a column of soil was excavated and screened down one side of select trenches that contained cultural materials. The columns were roughly 30×30-cm in size, extending from the ground surface to the base of the trench or until soil characteristics or bedrock precluded reaching that depth. Soil from the column was removed in 20-cm levels and screened through ¼-inch hardware screen mesh.

All Occupational Safety and Health Standards (OSHA) safety protocols were used during backhoe trenching, with SWCA planning to shore and/or step back trenches as appropriate based on depth of excavations, soil characteristics, and field conditions. SWCA thoroughly photographed the entire process. All trenches were backfilled and leveled upon completion of excavation and recording.

SWCA archaeologists defined and recorded all discovered cultural resource sites following standard federal and state guidelines. All sites were mapped in detail with a Trimble hand-held sub-meter accurate GPS unit and plotted on U.S. Geological Survey 7.5-minute topographic maps and appropriate project maps for planning purposes.

SITE EVALUATIONS

All newly documented archaeological sites were evaluated according to the National Register Criteria for Evaluation (Criteria) as codified in 36 CFR 60.4, which states:

The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and

- (α) that are associated with events that have made a significant contribution to the broad patterns of our history; or
- (β) that are associated with the lives of persons significant in our past; or
- (χ) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- (δ) that have yielded, or may be likely to yield, information important in prehistory or history.

Additional evaluations will be made under the ACT 13.26 Rule 26.10 to determine SAL designation eligibility. The ACT criteria states:

The commission shall use one or more of the following criteria when assessing the appropriateness of official landmark designation, and/or the need for further investigations under the permit process:

- (1) the site has the potential to contribute to a better understanding of the prehistory and/or history of Texas by the addition of new and important information;
- (2) the site's archeological deposits and the artifacts within the site are preserved and intact, thereby supporting the research potential or preservation interests of the site;

- (3) the site possesses unique or rare attributes concerning Texas prehistory and/or history;
- (4) the study of the site offers the opportunity to test theories and methods of preservation, thereby contributing to new scientific knowledge; and
- (5) there is a high likelihood that vandalism and relic collecting has occurred or could occur, and official landmark designation is needed to ensure maximum legal protection, or alternatively, further investigations are needed to mitigate the effects of vandalism and relic collecting when the site cannot be protected.

When evaluating a historic structure under the ACT, the following criteria must be applied:

Buildings, structures, cultural landscapes, and non-archeological sites, objects, and districts may be designated as landmarks, provided that the following conditions are met:

- (1) the property fits within at least one of the following criteria:
 - (A) the property is associated with events that have made a significant contribution to the broad patterns of our history, including importance to a particular cultural or ethnic group;

- (B) the property is associated with the lives of persons significant in our past;

- (X) the property embodies the distinctive characteristics of a type, period, or method of construction, represents the work of a master, possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction;

- (Δ) the property has yielded, or may be likely to yield, information important in Texas culture or history;

- (2) the property retains integrity at the time of the nomination, as determined by the executive director of the commission; and
- (3) for buildings and structures only, the property must be listed in the National Register of Historic Places, either individually, or as a contributing property within a historic district. Contributing status may be determined by the Keeper of the National Register or the executive director of the commission.

CHAPTER 3 SURVEY RESULTS AND SITE DESCRIPTIONS

Mercedes C. Cody, B.A., and Christina Nielsen, M.A.

This chapter addresses the results of additional cultural resources investigations conducted by SWCA from January 2016 to June 2018 for the Vista Ridge Project. The 2016 to 2018 investigations follow the 2015 initial cultural resources investigations reported by Acuña et al. (2016). The current alignment as of October 24, 2017, includes new reroutes that were implemented after December 2015. The alignment sheets of the current project area are presented in Appendix A of this report. The alignment sheets depict both the 2015 initial investigations and the 2016 to 2018 additional investigations within the current project corridor. Field data (e.g., shovel tests and sites) depicted outside the current project corridor are from investigations of previously proposed alignments of the project area from 2015 through 2018 that have subsequently been dropped.

CULTURAL RESOURCES INVESTIGATIONS

Between 2016 and 2018, SWCA investigated approximately 29.5 miles of the current 140.2-mile-long project corridor and the proposed 6.9-mile-long well-field pipeline. Investigations consisted of intensive pedestrian survey augmented with shovel testing and hand-excavated auger probes and/or mechanical backhoe trenching in select areas. In addition, SWCA investigated the 25.82-acre terminus site in Bexar County slated for the construction of an integration system (Atwood and Ward 2017).

Overall, 28 cultural resources were documented or further investigated within the project area during the 2016 to 2018 investigations. The 28 resources include seven isolated finds, 15 prehistoric sites, three historic sites, and three multi-component sites with both prehistoric and historic materials. All archaeological sites are discussed in detail in the Cultural Resources section below. In addition, two cemeteries (the Hill Cemetery and the Hoffman Cemetery) were documented during the 2016 to 2018 investigations; the Hill Cemetery is now avoided by the project and mechanical scraping conducted in compliance with the Texas Health and Safety Code adjacent to the Hoffman Cemetery did not identify any interments extending into the proj-

ect area. Of note, two additional sites (41BP917 and 41CM395), previously recommended for avoidance in the 2016 report, are no longer within the construction footprint and will be avoided by the Project. These sites were avoided prior to the 2016 to 2018 investigations; therefore, these sites are not included in the cultural resource's totals provided above or in the cultural resource's discussion below.

SWCA's investigations determined that most of the project area is within a rural setting consisting of large, undeveloped parcels of land and agricultural fields with isolated single-family residences or farm/ranch complexes. Beginning in Burleson County, the alignment traverses across a mixture of heavily vegetated, undeveloped parcels; open pastureland; and some agricultural fields. Within Lee County, the alignment intersects a large lignite mine as it parallels Farm-to-Market Road (FM) 696. As the alignment continues southwest through Bastrop County southwest of Elgin, Texas, residential development increases, consisting of large-acre, single-family dwelling parcels and subdivisions. Large-scale agricultural fields are located within the floodplain of the Colorado River and Cedar Creek up to Caldwell County. Within Caldwell County and Guadalupe County, the alignment intersects primarily large-scale agricultural parcels and pastureland in various states of harvest. As the project area enters Comal County, the setting shifts from agricultural tracts to undeveloped, heavily vegetated uplands interspersed with residential parcels. In Bexar County, the alignment begins within a rural, undeveloped setting that is rapidly transitioning to residential and commercial development as it traverses west towards the western project terminus in northern San Antonio.

PEDESTRIAN SURVEY INVESTIGATIONS

SWCA excavated 967 shovel tests during the 2016 to 2018 investigations (Appendix B). The THC standards require 16 shovel tests per mile within a 100-foot corridor, or approximately 472 shovel tests for the 29.5 miles of centerline survey and 110 shovel tests for the 6.9 miles of wellfield pipeline. The additional excavated shovel tests reflect reroutes, site delineations,

and close-interval shovel testing conducted at site 41GU177. Table 3.1 lists the total mileage within the individual counties, miles reviewed through desktop/windshield survey, and miles surveyed to date along the current centerline, followed by approximate miles surveyed along the current centerline during the 2016 to 2018 investigations, number of subsurface tests (i.e., shovel tests, auger probes, and backhoe trenches), and number of cultural resources (i.e., sites and isolated finds) identified. Additional areas surveyed between 2016 and 2018 that are no longer within the current project area due to subsequent reroutes are not included in the table totals.

AUGER PROBE AND BACKHOE TRENCH INVESTIGATIONS

Prior to the 2016 to 2018 additional cultural resources investigations, SWCA identified four stream channel crossings not investigated, or only partially investigated, in 2015 that had characteristics suggesting the

potential for containing deeply buried Holocene-aged deposits. These characteristics varied for each of the drainages, but typically included position on the floodplain, previously documented buried soils (i.e., paleosols), and integrity. The stream crossings identified during this review from south to north include the Guadalupe River, the Colorado River, Wilbarger Creek, and Middle Yegua Creek (Table 3.2). Deeper investigation utilizing hand-excavated auger probe and/or mechanical backhoe trench excavations, dependent upon accessibility, were conducted at the identified drainages. The soils and geology for the overall project as well as those specific to the more prominent drainages (i.e., Colorado and Guadalupe Rivers) are discussed in the initial survey report (Acuña et al. 2016).

SWCA excavated a total of 81 auger probes and 85 backhoe trenches at the above-mentioned crossing locations during the 2016 to 2018 investigations (Appendix C). These investigations included the excavation of 15 auger probes and 46 backhoe trenches

Table 3.1. 2016–2018 Investigations Overview by County

Project Data				2016–2018 Investigations					
County	Total Mileage	Desktop/ Windshield Review Mileage	Surveyed Mileage to Date	Approx. Surveyed Mileage*	No. of Shovel Tests	No. of Auger Probes	No. of BHTs	No. of Sites	No. of Isolated Finds
Burleson	3.6	0.2	3.4	1.5	216**	0	0	3	1
Lee	25.8	4.9	20.9	2.8	132	0	2	4	0
Bastrop	36.4	1.5	34.9	20.1	409	72	72	6	4
Caldwell	20.7	4.6	16.1	0.4	12	0	0	1	0
Guadalupe	32.3	15.5	16.7	1.1	115	24	11	3	1
Comal	12.6	0.2	12.4	2.5	58	0	0	3	0
Bexar	8.9	1.8	7.1	1.2	25	0	0	1	1
Totals	140.2	28.8	111.4	29.5	967	96	85	21	7

*Approximate surveyed mileage only includes mileage for the current centerline; no offline surveyed areas are included.

**Includes shovel tests excavated along the approximately 6.9-mile-long wellfield pipeline alignment not included in the survey mileage above

Table 3.2. 2016–2018 Investigations Auger Probe and Backhoe Trench Areas

BHT Area	Drainage/ Crossing	No. of Auger Tests	No. of Backhoe Trenches	Cultural Resources Identified
Area 1	Guadalupe River	24	11	41GU200
Area 2	Colorado River	15	46	None
Area 3	Wilbarger Creek	42	26	41BP960 and 41BP961
Area 4	Middle Yegua Creek	0	2	None

along the broad Colorado River floodplain in Bastrop County; 42 auger probes and 26 backhoe trenches along Wilbarger Creek in Bastrop County; 24 auger probes and 11 backhoe trenches along the Guadalupe River located in Guadalupe County; and two backhoe trenches just north of the confluence of Middle Yegua and Cross Creeks located in Lee County (see Table 3.2). Fifteen additional auger probes were excavated within the project area at less-pronounced drainage crossings and/or within archaeological sites to test for deep subsurface cultural materials. In addition, column sampling was selectively conducted on several of these backhoe trenches (Appendix C). Specifically, this sampling was utilized when in proximity to a previously recorded site, when cultural materials were observed during the pedestrian survey, or when cultural materials were observed during profile inspection.

A total of three archaeological sites (i.e., 41BP960, 41BP961, and 41GU200) were newly identified during the auger probe and backhoe trench investigation; the results for these investigations are presented in the cultural resources descriptions section below. In addition, auger probe and/or backhoe trench investigations were also conducted at previously recorded archaeological sites 41BP920 and 41GU177. Both sites were identified during the initial 2015 investigations and were recommended for further evaluation (i.e., significance testing and/or data recovery). The auger probe and/or backhoe trench data for these cultural resources are presented within their respective significance testing reports (Rodriguez and Young 2018; Nielsen et al. 2018). All remaining auger probes and backhoe trenches excavated during the 2016 to 2018 investigations were negative for cultural materials (Appendix C).

In general, the auger probe and backhoe trench profiles exhibited successive horizons of gradually lighter colored silt loam deposits that graded into clay loam or clay with clear-gradual lower boundaries. The auger probes and backhoe trenches contained between three and nine stratigraphic layers at each crossing. At the Colorado River and Wilbarger Creek, the horizons had a friable consistency and subangular blocky structure, which graded into a massive, structureless horizon with increasing calcium carbonate inclusions and an extremely firm consistency. In contrast, at the Guadalupe River, the horizons had a friable to firm consistency and subangular blocky structure, which graded into a fine, weak, structureless horizon with

increasing limestone gravel and pebble inclusions and a friable to loose consistency.

Broadly defined, the deposits observed during the backhoe trenching along the project corridor varied from north to south. North of the San Marcos River as the project area shifts northeastward away from the Edwards Plateau, the deposits become siltier with more evident calcium carbonate development. The drainages at the southern end, including the San Marcos and Guadalupe Rivers, had broad floodplains with alluvial terraces composed of deep, calcareous clay loams and clays. These deposits appeared to have more evident input from the limestone dominated uplands of the Edwards Plateau that is positioned upstream from the project area. Accordingly, the deposits further north are older and exhibit more soil development, while the deposits at the southern end appear to contain younger, more recent soil development.

CULTURAL RESOURCES

Overall, 28 cultural resources were documented or further investigated within the project area during the 2016 to 2018 investigations. Of the 28 resources, seven were isolated finds (i.e., IF08–IF14) that did not warrant formal site recording or require additional investigations. The remaining 21 resources include 12 newly recorded archaeological sites (i.e., 41BU122–41BU124, 41LE348–41LE350, 41BP959–41BP962, 41CW173, and 41GU200), and nine previously recorded sites (i.e., 41LE332, 41BP818, 41BP920, 41GU177, 41GU180, 41CM394, 41CM401, 41CM404, and 41BX2101) initially documented by SWCA during the 2015 investigations or previously recorded prior to the 2015 investigations (Tables 3.3 and 3.4). The further investigations of the previously recorded sites varied dependent upon recommendations reported in the 2015 initial cultural resources report and included archival research, survey, testing, and/or data recovery excavations. In addition, two cemeteries (the Hill Cemetery and the Hoffman Cemetery) were documented during the 2016–2018 investigations. Due to subsequent reroutes, the Hill Cemetery (located within the boundaries of site 41BP818) is now avoided and will not be impacted by the project. Mechanical scraping was conducted adjacent to the Hoffman cemetery; no interments were identified within the project area. Based on the results of the testing investigations, site 41BP920 has now been recommended as NOT ELIGIBLE for listing on the NRHP or for designation as a SAL (Rodriguez and Young 2018).

Table 3.3. 2016–2018 Investigations Cultural Resources

County	Site No.	USGS Quadrangle Map and No.	Parcel(s)	Site Type	NRHP and SAL Eligibility Recommendation	Additional Work Recommendations	Comments	Appendix A Page No.
Burleson	41BU122	Deanville (3096-234)	10056	Prehistoric lithic scatter	Not Eligible	No avoidance or further work recommended within project area.	Newly Recorded	A-22
	41BU123	Deanville (3096-234)	15045 and 15050	Prehistoric lithic scatter	Not Eligible	No avoidance or further work recommended within project area.	Newly Recorded	A-1
	41BU124	Deanville (3096-234)	15046	Prehistoric lithic scatter	Not Eligible	No avoidance or further work recommended within project area.	Newly Recorded	A-2
Lee	41LE332	Beaukiss (3097-143)	20285	Prehistoric lithic scatter	Not Eligible	No avoidance or further work recommended within project area.	Additional Shovel Tests July 21, 2016.	A-55; A-56
	41LE348	Lexington (3097-144)	20260	Prehistoric lithic scatter	Not Eligible	No avoidance or further work recommended within project area.	Newly Recorded	A-51; A-52
	41LE349	Lexington (3097-144)	20265	Prehistoric lithic scatter	Not Eligible	No avoidance or further work recommended within project area.	Newly Recorded	A-52; A-53
	41LE350	Lexington (3097-144)	20265	Prehistoric lithic scatter	Not Eligible	No avoidance or further work recommended within project area.	Newly Recorded	A-53; A-54
	41BP818	Utley (3097-123)	30345	Historic artifact scatter and prehistoric campsite project area	Not Eligible within project area	No avoidance or further work recommended for site within project area; however, avoidance of cemetery is recommended. Cemetery is avoided by reroute.	Previously recorded site	A-113
Bastrop	41BP920	Elgin West (3097-132)	30280	Prehistoric lithic and historic artifact scatter	Not Eligible	No avoidance or further work recommended within project area.	Significance Testing August 1–6, 2016.	A-100
	41BP959	Elgin East (3097-131)	30155 and 30160	Prehistoric lithic scatter	Not Eligible	No avoidance or further work recommended within project area.	Newly Recorded	A-92; A-93
	41BP960	Elgin West (3097-132)	30310	Prehistoric campsite	Undetermined	Avoidance or further work recommended within project area.	Newly Recorded	A-101
	41BP961	Elgin West (3097-132)	30305	Prehistoric campsite	Undetermined	Avoidance or further work recommended within project area.	Newly Recorded	A-101
Caldwell	41BP962	Elgin West (3097-132)	30320	Historic road and bridge embankment remnant	Not Eligible	No avoidance or further work recommended within project area.	Newly Recorded	A-106
	41CW173	Martindale (2997-331)	40360	Historic house and shed	Not Eligible	No avoidance or further work recommended within project area.	Newly Recorded	A-198

Table 3.3. continued

County	Site No.	USGS Quadrangle Map and No.	Parcel(s)	Site Type	NRHP and SAL Eligibility Recommendation	Additional Work Recommendations	Comments	Appendix A Page No.
Guadalupe	41GU177	New Braunfels West (2998-413)	50360	Prehistoric campsite	Eligible Mitigated within APE	No avoidance or further work recommended within project area.	Significance Testing October 12–14, 2016 and June 28–July 6, 2017. Data Recovery November 2017–January 2018.	A-250
	41GU180	McQueeney (2998-411)	50400	Historic house/ farm complex	Not Eligible	No avoidance or further work recommended within project area. (OFFLINE)	Archival Research by Vicki Myers	A-255
	41GU200	New Braunfels East (2998-414)	50359	Prehistoric lithic scatter	Not Eligible	No avoidance or further work recommended within project area.	Newly Recorded	A-249
	41CM394	New Braunfels West (2998-413)	60105, 60110, 60115, 60120, and 60125	Prehistoric lithic scatter	Not Eligible	No avoidance or further work recommended within project area.	Revisit slightly expanded site boundary.	A-282; A283
Comal	41CM401	New Braunfels West (2998-413)	60105 and 60106	Prehistoric lithic and historic artifact scatter	Not Eligible	No avoidance or further work recommended within project area.	Revisit significantly expanded site boundary.	A-277 to A-281
	41CM404	Bat Cave (2998-424)	60160	Prehistoric lithic scatter	Not Eligible	No avoidance or further work recommended within project area.	Revisit slightly expanded site boundary.	A-289
Bexar	41BX2101	Bulverde (2998-423)	70022	Prehistoric lithic scatter and recent dog burial	Not Eligible	No avoidance or further work recommended within project area.	Revisit identified feature as recent dog burial with site boundary not expanded.	A-304

Table 3.4 2016–2018 Investigations Isolated Finds

County	Isolated Find No.	USGS Quadrangle Map and No.	Parcel(s)	Description	NRHP and SAL Eligibility Recommendations	SWCA Recommendations	Comments	Appendix A Sheet No.
Burleson	IF09	Deanville (3096-234)	15081	Historic porcelain fragment (1) and whiteware fragment (1)	Not Eligible	No avoidance or further work recommended within project area.	On ground surface	A-11
Bastrop	IF08	Elgin East (3097-131)	30019	Prehistoric secondary flake (1)	Not Eligible	No avoidance or further work recommended within project area.	Within ST BKM05 between 0–50 cmbs	A-76
	IF10	Webberville (3097-214)	30370	Prehistoric tertiary flake (1)	Not Eligible	No avoidance or further work recommended within project area.	Within ST MFR06 between 0–10 cmbs	A-134
	IF13	Elgin East (3097-131)	30065	Prehistoric tertiary flakes (2)	Not Eligible	No avoidance or further work recommended within project area.	Within ST VM09 between 30–40 cmbs	A-83
	IF14	Elgin East (3097-131)	30065	Prehistoric tertiary flake (1)	Not Eligible	No avoidance or further work recommended within project area.	Within ST JIS10 between 0–10 cmbs	A-83
Guadalupe	IF12	San Marcos South (2997-332)	50085	Prehistoric primary flake (1)	Not Eligible	No avoidance or further work recommended within project area.	Within ST JIS06 between 10–20 cmbs	A-214
Bexar	IF11	Bat Cave (2998-424)	70015	Prehistoric crude biface (1), modified flake (1), and primary flake (1)	Not Eligible	No avoidance or further work recommended within project area.	On ground surface	A-299

Of the 21 sites, two sites (i.e., 41BP960 and 41BP961) are UNDETERMINED regarding NRHP and SAL eligibility; however, both have currently been avoided by design alignment changes by the Vista Ridge Project. Site 41GU177 was determined to be ELIGIBLE for listing on the NRHP and for designation as a SAL; testing and data recovery excavations were conducted at the site and the results will be presented in a separate report (Nielsen et al. 2019). The remaining 18 sites are interpreted to have a low research value and are considered NOT ELIGIBLE for listing on the NRHP or for designation as SALs and no further work or avoidance is recommended. The results reported in this chapter are organized by county, beginning in Burleson County and concluding in Bexar County in northern San Antonio, Texas.

BURLESON COUNTY

Three cultural resource sites and one isolated find were newly recorded in Burleson County (Figure 3.1; see Table 3.3). All three sites (i.e., 41BU122–41BU124) consist of prehistoric lithic scatters. The isolated find (i.e., IF09) consists of historic porcelain and white-ware sherd fragments and was not recorded as an archaeological site (Appendix A:11; see Table 3.4). SWCA recommends all three of the newly recorded archaeological sites (i.e., 41BU122–41BU124) as NOT ELIGIBLE for listing in the NRHP or for designation as SALs. No avoidance strategy or further work is recommended for the portions of these sites within the project corridor.

Restricted Information
Not for Public Disclosure

Figure 3.1. Burleson County map.

41BU122

Site 41BU122 is a deeply buried subsurface prehistoric lithic scatter of unknown temporal or cultural affiliation located approximately 0.87 mile northwest of the FM 696 and County Road (CR) 324 intersection in northwestern Burleson County, Texas (Figure 3.2; Appendix A:22). The site is situated along a forested upland terrace approximately 150 m east of East Yegua Creek (Figure 3.3). Vegetation consists of dense hardwood forest with thick secondary undergrowth coupled with open areas along a network of two-track roads on the property. Ground surface visibility was poor within the forested areas but approached 100 percent along the two-track that traverses the northern half of the site. Site 41BU122 is located on privately owned land used for ranching and oil and gas activities. Disturbances observed within the site include erosion, vegetation clearing, fence lines, two-track roads and nearby oil and gas activities.

Site 41BU122 measures approximately 30 m north/south by 45 m east/west within the project corridor, based on artifact distribution and landforms; however, the site may extend beyond the project area to the north and south. No cultural materials were observed along the ground surface despite good visibility along bordering and adjacent two-track roads.

SWCA excavated a total of six shovel tests (i.e., KH51–53 and MCC166–168) to delineate the site at approximately 25-m intervals, of which two (i.e., KH51 and MCC167) contained subsurface cultural materials (Table 3.5). Shovel tests typically revealed deep brown (7.5YR 5/4) sandy loam with 1–5 percent gravel and pebble inclusions. Shovel tests near the site terminated at depth (i.e., 100 cmbs), while shovel tests toward the southwest terminated at strong brown (7.5YR 5/8) sandy clay or clay between 35 and 60 cmbs. Cultural materials identified include one secondary chert flake, nine tertiary chert flakes, and one chert biface between 20 and 80 cmbs (Figure 3.4). No temporally diagnostic artifacts or cultural features were observed on the ground surface of within the excavated shovel tests.

41BU122 SUMMARY

Site 41BU122 consists of a low-density, deeply buried prehistoric lithic scatter of primarily debitage located from 20 to 80 cmbs. The site has a low density of artifacts and lacks temporally diagnostic artifacts or cultural features. Based on these data, it is SWCA's opinion that site 41BU122 does not have the potential to yield information important to the prehistory of the region. As such, SWCA recommends site 41BU122 as NOT ELIGIBLE for listing on the NRHP or for designation as a SAL. No further work or avoidance strategy

Table 3.5. Shovel Test Data for Site 41BU122

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/Reason for Termination
KH51	1	0-100	7.5YR 5/4	brown	Sandy Loam	1-5%	Pebbles	1: Biface [50-60 cmbs], 9: Flake (tertiary) [3 at 20-30 cmbs, 2 at 50-60 cmbs, and 4 at 70-80 cmbs].	Terminated at depth.
KH52	1	0-50	10YR 5/4	yellowish brown	Sandy Loam	1-5%	Pebbles, Roots	None	—
	2	50-60	7.5YR 5/8	strong brown	Sandy Clay	1-5%	None	None	Terminated at compact soil.
KH53	1	0-100	7.5YR 5/4	brown	Sandy Loam	1-5%	None	None	Terminated at depth.
MCC166	1	0-25	7.5YR 5/3	brown	Sandy Loam	1-5%	Gravels	None	—
	2	25-35	7.5YR 5/8	strong brown	Clay			None	Terminated at basal clay.
MCC167	1	0-100	7.5YR 5/3	brown	Sandy Loam	1-5%	Gravels	1: Flake (secondary) [50-60 cmbs].	Terminated at depth.
MCC168	1	0-50	7.5YR 5/3	brown	Sandy Loam	1-5%	Gravels	None	—
	2	50-60	7.5YR 5/8	strong brown	Clay	—	—	None	Terminated at basal clay.

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Figure 3.2. 41BU122 site map.

Figure 3.3. Overview of site 41BU122, facing east-northeast.

Figure 3.4. Biface and flakes from site 41BU122 in ST KH51 between 20–80 cmbs.

is recommended for the portions of site 41BU122 within the project area.

41BU123

Site 41BU123 is a possible Late Prehistoric surficial lithic scatter located along a fence line between two parcels approximately 1 mile southeast of CR 367 and 1.27 miles southwest of the State Highway (SH) 21 and FM 696 intersection in northwestern Burleson County, Texas (Figure 3.5; Appendix A:1). The site is situated within cleared ranch land along an upland terrace overlooking Buffalo Creek located approximately 150 m to the north (Figure 3.6). Vegetation in the area consists of sparse, short grasses and scattered juniper and scrub affording approximately 90 percent ground surface visibility and a robust riparian zone along the creek to the north. Site 41BU123 is located on privately owned land used for agricultural and ranching activities. Disturbances observed within the site include erosion, vegetation clearing, fence lines, two-track roads, and nearby land modification for stock ponds.

Site 41BU123 measures approximately 37 m north/south by 26 m east/west within the project area based on the distribution of surface artifacts. The artifact

assemblage observed consists of five secondary and four tertiary reduction flakes, two modified flakes, one possible perforator, one possible groundstone, and one arrow point midsection, likely a Perdiz point (Figures 3.7 and 3.8). The presence of the arrow point suggests a Late Prehistoric component. Raw material consists of chert except for the possible groundstone.

SWCA excavated a total of five shovel tests (i.e., AE14, CS14–15, DPR13, and MCC216) to delineate the site at approximately 25-m intervals, none of which contained subsurface cultural materials (Table 3.6). Additional survey shovel tests to the east and southeast were also negative for cultural materials. Shovel tests typically revealed deep brown (7.5YR 4/3) to very dark brown (7.5YR 2.5/3) sandy clay loam with 1–5 percent gravel and pebble inclusions. Shovel tests near Buffalo Creek, north of the site terminated at depth (i.e., 100 cmbs), while shovel tests toward the southwest terminated at red (2.5YR 5/8) or yellowish red (5YR 4/6) clay between 30 and 60 cmbs. Due to project constraints, the site was not fully delineated to the west or southwest, as investigations were not permitted outside the project ROW.

Table 3.6. Shovel Test Data for Site 41BU123

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/ Reason for Termination
AE14	1	0-35	7.5YR 3/4	dark brown	Sandy Clay Loam	1-5%	Gravels	None	–
	2	35-50	5YR 4/6	yellowish red	Clay	1-5%	Redox	None	Terminated at basal clay.
	1	0-30	7.5YR 4/3	brown	Sandy Loam	1-5%	Pebbles	None	–
CS15	2	30-50	10YR 4/4	dark yellowish brown	Sandy Clay Loam	–	–	None	–
	3	50-60	10YR 4/6	dark yellowish brown	Sandy Clay	1-5%	Iron oxide mottling	None	Terminated at basal clay.
	1	0-40	7.5YR 2.5/3	very dark brown	Sandy Clay Loam	–	–	None	–
DPR12	2	40-100	10YR 4/4	dark yellowish brown	Sandy Clay Loam	–	–	None	Terminated at depth.
	1	0-30	2.5YR 5/8	red	Clay	–	–	None	Terminated at basal clay.
MCC216	1	0-30	7.5YR 5/6	strong brown	Sandy Clay	–	–	None	–

Figure 3.5. 41BU123 site map.

Figure 3.6. Overview of site 41BU123, facing southeast.

Figure 3.7. Possible perforator from ground surface of site 41BU123.

Figure 3.8. Possible Perdiz arrow point midsection from ground surface of site 41BU123.

41BU123 SUMMARY

Site 41BU123 consists of a small surficial prehistoric lithic scatter of flakes and tools. The site has a low density of artifacts, lacks cultural features or temporally diagnostic artifacts with the exception of the arrow point midsection, and lacks deposition. Based on these data, it is SWCA's opinion that site 41BU123 does not have the potential to yield information important to the prehistory of the region. As such, SWCA recommends site 41BU123 as NOT ELIGIBLE for listing on the NRHP or for designation as a SAL. No further work or avoidance strategy is recommended for site 41BU123 within the project area.

41BU124

Site 41BU124 is a deeply buried, subsurface prehistoric lithic scatter of unknown temporal or cultural affiliation located approximately 0.70 mile southeast of CR 367 and 1.13 miles southwest of the SH 21 and FM 696 intersection in northwestern Burleson County, Texas (Figure 3.9; Appendix A:2). The site is situated within an open, grassy pasture on an upland terrace overlooking Buffalo Creek 115 m to the south (Figure 3.10). Vegetation in the area consists of short grasses within the pasture and a robust mixed hardwood riparian zone along the creek to the south. Ground surface visibility was poor due to grass cover and averaged 0–5 percent. Site 41BU124 is located on privately owned land used for agricultural and ranching activities. Disturbances include erosion, vegetation clearing, plowing, fence lines, two-track roads, and nearby land modification for stock ponds.

Site 41BU124 measures approximately 78 m north-west/southeast by 30 m northeast/southwest within the project area based on artifact distributions within shovel tests; however, the site may extend beyond the project area to the east and west. Due to the poor ground surface visibility, no cultural materials were observed along the ground surface.

SWCA excavated a total of six shovel tests (i.e., AE203–205, CS40, and MCC247–248) to delineate the site at approximately 25-m intervals, two of which (CS40 and MCC247) contained subsurface cultural materials (Table 3.7). Cultural materials recovered consist of one chert secondary reduction flake in shovel test MCC247 between 70 and 80 cmbs and one utilized chert flake in shovel test CS40 between 90 and 100 cmbs (Figures 3.11 and 3.12). In addition, charcoal chunks likely representing recent burning

events were also encountered in shovel test MCC247 between 0 and 70 cmbs above the level containing the secondary flake. Shovel tests typically revealed brown (7.5YR 5/4) sandy clay loam with 1–5 percent gravel and pebble inclusions. Shovel tests near Buffalo Creek, north of the site, terminated at depth (i.e., 100 cmbs), while shovel tests toward the northern edge of the site terminated at compacted brown (7.5YR 5/3) or yellowish red (5YR 4/6) sandy clay between 60 and 80 cmbs. Due to project constraints, the site was not fully delineated to the east or west, as investigations were not permitted outside the project ROW.

41BU124 SUMMARY

Site 41BU124 consists of a small, very low density buried prehistoric lithic scatter of debitage containing cultural material from 70 to 100 cmbs. The site has a very low quantity of artifacts and lacks temporally diagnostic artifacts or cultural features. Based on these data, site 41BU124 does not have the potential to yield information important to the prehistory of the region. As such, SWCA recommends site 41BU124 as NOT ELIGIBLE for the NRHP or for designation as a SAL. No further work or avoidance strategy is recommended for site 41BU124 within the project area.

LEE COUNTY

Three cultural resource sites were newly recorded and one previously recorded cultural resource site was revisited during further investigations in Lee County (Figure 3.13; see Table 3.3). The three newly recorded archaeological sites (i.e., 41LE348–41LE350) consist of prehistoric lithic scatters. The previously recorded archaeological site (i.e., 41LE332) consists of a prehistoric lithic scatter that was recommended for avoidance or further testing during the 2015 investigations. SWCA recommends all four sites as NOT ELIGIBLE for listing in the NRHP or SAL designation. No avoidance strategy or further work is recommended for the portions of these sites within the project corridor.

41LE332

Site 41LE332 is a surface and subsurface prehistoric lithic scatter of unknown temporal or cultural affiliation situated on an upland slope overlooking the confluence of Middle Yegua Creek and Pin Oak Branch in northwestern Lee County, Texas (Figure 3.14; Appendix A:55–56). The site was originally recorded during the initial 2015 investigations. Vegetation within the site area consists of moderately dense oak trees with a

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Figure 3.9. 41BU124 site map.

Figure 3.10. Overview of site 41BU124, facing southeast.

Table 3.7. Shovel Test Data for Site 41BU124

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/Reason for Termination
AE203	1	0-70	7.5YR 5/4	brown	Loamy Sand	—	—	None	Terminated at compact soil.
AE204	1	0-60	7.5YR 4/6	strong brown	Sandy Clay Loam	5-10%	Gravels, Pebbles	None	—
	2	60-80	7.5YR 5/3	brown	Sandy Clay Loam	1-5%	Gravels, Pebbles	None	Terminated at compact soil.
AE205	1	0-40	7.5YR 4/4	brown	Sandy Loam	—	—	None	—
	2	40-60	5YR 4/6	yellowish red	Sandy Clay	—	—	None	Terminated at basal clay.
CS40	1	0-100	7.5YR 4/3	brown	Loamy Sand	1-5%	Gravels	1: Flake (utilized) [90-100 cmbs].	Terminated at depth.
MCC247	1	0-70	7.5YR 4/4	brown	Sandy Loam	10-20%	Charcoal chunks likely from recent burning events	None	—
	2	70-100	7.5YR 5/4	brown	Sandy Loam	—	—	1: Flake (secondary) [70-80 cmbs].	Terminated at depth.
MCC248	1	0-60	7.5YR 5/4	brown	Sandy Loam	—	—	None	—
	2	60-70	10YR 6/3	pale brown	Sandy Loam	—	—	None	Terminated at water table.

Figure 3.11. Secondary flake from site 41BU124 in ST MCC247 at 70–80 cmbs

Figure 3.12. Utilized flake from site 41BU124 in ST CS40 at 90–100 cmbs.

light to moderate grass and shrub undergrowth, which afforded 35 to 100 percent ground surface visibility (Figure 3.15). The site is on private property used for hunting recreation activities, and disturbances observed include an existing underground water line and a two-track road utilized for hunting recreation access. SWCA's 2015 initial investigations recommended site 41LE332 as having an UNDETERMINED eligibility for listing in the NRHP or SAL designation and avoidance or further testing was recommended to explore the buried component of the site (Acuña et al. 2016). SWCA revisited the site in 2016 and excavated additional shovel tests to determine the quantity and context of the buried artifacts at the site.

Site 41LE332 measures 240 m southwest/northeast by 30 m northwest/southeast within the project corridor based on artifact distribution and landforms surrounding the site; however, the site likely extends beyond the project area to the northwest and southeast. Site boundaries were determined by ground surface inspection and shovel testing for subsurface cultural deposits within the project area boundaries. Cultural materials observed during ground surface inspection in 2015 and 2016 consist of approximately 20 chert tertiary reduction flakes, one fragment of reddish-gray

quartzite with ground facets on one face, and one tabular slab (measuring 10×15×4 cm) of brown chert with a smooth, uniform cortex.

In 2015, SWCA excavated six shovel tests (i.e., MN175–178 and MS144–145) at approximately 25-m intervals to delineate the site, of which three (i.e., MN175–176 and MS144) were positive for cultural materials, consisting of four chert tertiary reduction flakes from 0–30 cmbs and one tertiary flake from 90–100 cmbs (Table 3.8). In 2016, SWCA excavated 11 additional shovel tests (i.e., KH5–10 and MCC75–79) at approximately 10- to 15-m intervals to further test the site, with three (i.e., KH6 and MCC77–78) of these positive for cultural materials containing five chert tertiary reduction flakes from 20–60 cmbs (Figure 3.16). Shovel tests typically revealed grayish brown (10YR 5/2) to light brownish gray (10YR 6/2) sand or sandy loam with 1–5 percent gravel and pebble inclusions. Shovel tests in the central and eastern portion of the site terminated at depth (i.e., 100 cmbs), while shovel tests toward the western edge of the site terminated at compacted reddish yellow (7.5YR 6/8) sandy clay or bedrock between 10 and 70 cmbs.

Figure 3.13. Lee County map.

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Figure 3.14. 41LE332 site map.

Figure 3.15. Overview of site 41LE332, facing southwest.

Figure 3.16. Tertiary flakes from site 41LE332 in ST MCC78 at 20–60 cmbs.

Table 3.8. Shovel Test Data for Site 41LE332

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/ Reason for Termination
2015 Initial Cultural Resources Investigations									
MN175	1	0-100	10YR 5/2	Grayish brown	Sand	1-5%	Gravels	3: Flakes (tertiary) [2 at 0-10 cmbs and 1 at 20-30 cmbs]	Terminated at depth.
MN176	1	0-60	10YR 5/2	Grayish brown	Sand	1-5%	Gravels	1: Flake (tertiary) [0-10 cmbs]	—
	2	60-70	7.5YR 6/8	Reddish Yellow	Sandy Clay	—	—	None	Terminated at basal clay.
MN177	1	0-33	10YR 5/1	Gray	Sandy Loam	1-5%	Gravels	None	Terminated at basal clay.
MN178	1	0-100	10YR 5/1	Gray	Sand	—	—	None	Terminated at basal clay.
MS144	1	0-100	10YR 5/4	Yellowish brown	Sand	1-5%	Gravels	1: Flake (tertiary) [90-100 cmbs]	Terminated at depth
MS145	1	0-10	10YR 5/4	Yellowish brown	Sand	10-20%	Gravels, Large Rock Fragments	None	Terminated at bedrock.
2016–2018 Additional Cultural Resources Investigations									
KH5	1	0-10	10YR 5/2	grayish brown	Sand	1-5%	Pebbles	None	—
	2	10-100	10YR 7/3	very pale brown	Sand	1-5%	Pebbles	None	Terminated at depth.
KH6	1	0-10	10YR 6/2	light brownish gray	Sand	1-5%	Pebbles	None	—
	2	10-100	10YR 8/2	very pale brown	Sand	1-5%	Pebbles, Petrified wood	2: Flake (tertiary)	Terminated at depth.
KH7	1	0-100	10YR 8/2	very pale brown	Sand	1-5%	Pebbles, Petrified wood	None	Terminated at depth.
KH8	1	0-30	10YR 8/2	very pale brown	Sand	1-5%	Pebbles, Petrified wood	None	—
	2	30-50	7.5YR 6/6	reddish yellow	Sandy Clay	5-10%	Cobbles, Gravels, Pebbles	None	Terminated at basal clay.
KH9	1	0-10	10YR 8/2	very pale brown	Sand	5-10%	Gravels, Pebbles	None	—
	2	10-40	7.5YR 6/6	reddish yellow	Sand	>20%	Cobbles, Gravels, Decomposing bedrock	None	Terminated at decomposing bedrock.
KH10	1	0-100	10YR 8/2	very pale brown	Sand	—	Pebbles	None	Terminated at depth.
MCC75	1	0-100	10YR 6/2	light brownish gray	Sand	1-5%	Pebbles	None	Terminated at depth.
MCC76	1	0-35	10YR 6/2	light brownish gray	Sand	1-5%	Gravels, Pebbles	None	—
	2	35-100	10YR 6/3	pale brown	Sand	1-5%	Gravels, Pebbles	None	Terminated at depth.

Table 3.8. continued

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/ Reason for Termination
MCC77	1	0-40	10YR 6/2	light brownish gray	Sand	5-10%	Gravels, Pebbles	1: Flake (tertiary) [20-40 cmbs.]	—
MCC77	2	40-60	7.5YR 5/8	strong brown	Sandy Clay	—	—	None	Terminated at basal clay.
MCC78	1	0-30	10YR 6/2	light brownish gray	Sand	1-5%	Gravels, Pebbles	1: Flake (tertiary) [20-40 cmbs.]	—
	2	30-60	7.5YR 5/8	strong brown	Sandy Loam	1-5%	Gravels, Pebbles	1: Flake (tertiary) [40-60 cmbs.]	—
	3	60-100	10YR 6/3	pale brown	Sandy Loam	—	—	None	Terminated at depth.
MCC79	1	0-45	10YR 5/2	grayish brown	Sand	5-10%	Gravels, Pebbles	None	—
	2	45-50	7.5YR 5/8	strong brown	Sandy Clay	—	—	None	Terminated at basal clay.

No temporally diagnostic artifacts or cultural features were observed. All artifacts were recovered within the sand and sandy loam, and there was no evidence of a buried soil. Due to project constraints, the site was not fully delineated to the northwest or southeast, as investigations were not permitted outside the project ROW. Due to a shift of the project corridor since the original recording and revisit of the site, the northwestern portion and southeastern margin of the site are now outside the project area boundaries.

41LE332 SUMMARY

Site 41LE332 consists of a low density, buried prehistoric lithic scatter of debitage containing cultural material from the ground surface to 100 cmbs. The site has a relatively low density of artifacts and lacks temporally diagnostic artifacts or cultural features. Based on these data, site 41LE332 does not have the potential to yield information important to the prehistory of the region. As such, SWCA recommends site 41LE332 as NOT ELIGIBLE for the NRHP or for designation as a SAL. No further work or avoidance strategy is recommended for site 41LE332 within the project area.

41LE348

Site 41LE348 is a deeply buried subsurface prehistoric lithic scatter of unknown temporal or cultural affiliation located north of FM 696, approximately 3.0 miles northeast of Blue in northwestern Lee County, Texas (Figure 3.17; Appendix A:51–52). The site is situated in a wide-open, grassy pasture on a rolling upland

plain between an ephemeral tributary of Middle Yegua Creek to the east, and a wide, shallow swale to the west (Figures 3.18 and 3.19). Vegetation consists of short grasses with a scattering of mixed hardwood forest to the east along the riparian zone of the ephemeral drainage. Ground surface visibility was poor due to grass cover. Site 41LE348 is located on privately owned land used for agricultural and ranching activities. Disturbances include a water pipeline that runs west-southwest to east-northeast along the northern edge of the site. Additionally, disturbances to the area include erosion, numerous gopher burrows, vegetation clearing, plowing, fence lines, and nearby land modification for stock ponds.

Site 41LE348 is a diffuse, buried prehistoric lithic scatter of debitage that measures approximately 30 m northwest/southeast by 155 m northeast/southwest within the project corridor based on subsurface artifact distribution and landforms to the east and west; however, the site likely extends beyond the project area to the northwest and southeast. No cultural materials were observed along the ground surface due to poor visibility.

SWCA excavated 10 shovel tests (i.e., XBAD01–05 and XMC01–05) at approximately 25-m intervals to delineate the site, of which five (i.e., XBAD01–XBA02, XMC02, and XMC04–05) were positive for cultural materials from near surface to a maximum depth of 100 cmbs (Table 3.9). Cultural materials recovered included five secondary and 25 tertiary

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Figure 3.17. 41LE348 site map.

Figure 3.18. Overview of site 41LE348, facing east.

Figure 3.19. Overview of site 41LE348, facing west. Note noticeable swale in background.

Table 3.9. Shovel Test Data for Site 41LE348

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/ Reason for Termination
XBAD01	1	0-20	10YR 4/4	dark yellowish brown	Sand	—	—	1: Flake (secondary), 3: Flake (tertiary).	—
	2	20-40	10YR 4/4	dark yellowish brown	Sand	—	—	2: Flake (tertiary).	—
	3	40-60	10YR 4/4	dark yellowish brown	Sand	—	—	1: Flake (secondary), 1: Flake (tertiary).	—
	4	60-80	10YR 4/4	dark yellowish brown	Sand	—	—	None	—
	5	80-100	10YR 4/4	dark yellowish brown	Sand	—	—	1: Flake (secondary).	Terminated at depth.
XBAD02	1	0-20	10YR 4/4	dark yellowish brown	Sand	—	—	1: Flake (tertiary).	—
	2	20-40	10YR 4/4	dark yellowish brown	Sand	—	—	None	—
	3	40-60	10YR 5/4	yellowish brown	Sand	—	—	None	—
	4	60-80	10YR 5/4	yellowish brown	Sand	—	—	1: Flake (tertiary).	—
	5	80-90	5YR 5/4	reddish brown	Sandy Clay	—	—	None	Terminated at basal clay.
XBAD03	1	0-60	10YR 4/4	dark yellowish brown	Sand	—	—	None	—
	2	60-70	10YR 4/4	dark yellowish brown	Sandy Clay	10-20%	Mottles	None	Terminated at basal clay.
XBAD04	1	0-20	10YR 4/4	dark yellowish brown	Sand			None	—
	2	20-50	10YR 5/6	yellowish brown	Sand	>20%	Mottles	None	Terminated at hydric soils.
XBAD05	1	0-40	10YR 4/4	dark yellowish brown	Sandy Clay	10-20%	Mottles	None	Terminated at basal clay.
XMC01	1	0-25	10YR 6/3	pale brown	Sandy Loam	>20%	Clay subsoil nodules	None	—
	2	25-30	5YR 5/3	reddish brown	Sandy Clay	—	—	None	Terminated at basal clay.
XMC02	1	0-20	10YR 5/3	brown	Sand	1-5%	Gravels	2: Flake (tertiary).	—
	2	20-40	10YR 5/3	brown	Sand	1-5%	Gravels	1: Flake (secondary), 2: Flake (tertiary).	—
	3	40-60	10YR 5/3	brown	Sand	1-5%	Gravels	None	—
	4	60+	5YR 4/2	dark reddish gray	Sandy Clay	—	—	None	Terminated at basal clay.
XMC03	1	0-30	10YR 4/1	dark gray	Sand	5-10%	Redox staining	None	Terminated at water table.

Table 3.9. continued

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/Reason for Termination
XMC04	1	0-20	10YR 5/4	yellowish brown	Sand	>20%	Pebbles	6: Flake (tertiary).	Likely disturbed by existing water line.
	2	20-40	10YR 5/4	yellowish brown	Sand	>20%	Pebbles	1: Flake (secondary), 4: Flake (tertiary).	Likely disturbed by existing water line.
	3	40-60	10YR 5/4	yellowish brown	Sand	5-10%	Pebbles	2: Flake (tertiary).	Likely disturbed by existing water line.
	4	60-100	10YR 5/4	yellowish brown	Sand	5-10%	Pebbles	None	Terminated at depth.
XMC05	1	0-20	7.5YR 5/4	brown	Sand	1-5%	Pebbles	None	—
	2	20-40	7.5YR 5/4	brown	Sand	1-5%	Pebbles	1: Flake (tertiary).	—
	3	40-80	10YR 5/2	grayish brown	Sand	1-5%	Organics (decayed root)	None	Terminated at water table.

reduction flakes of chert and petrified wood (Figure 3.20). No temporally diagnostic artifacts or cultural features were observed. Shovel tests typically revealed dark yellowish brown (10YR 4/4) to brown (10YR 5/3) sand or sandy loam with variable amounts of gravel and pebble inclusions. Shovel tests terminated at depth (i.e., 100 cmbs) or at basal clay or water table between 30 and 90 cmbs. Due to project constraints, the site was not fully delineated to the northwest or southeast, as investigations were not permitted outside the project ROW. Due to a shift of the project corridor since the original recording of the site, the northwestern portion of the site is now outside the project area boundaries.

41LE348 SUMMARY

Site 41LE348 consists of a diffuse, buried prehistoric lithic scatter containing cultural materials from the near surface to 100 cmbs. The site has a relatively low density of artifacts and lacks temporally diagnostic artifacts or cultural features. Overall, site 41LE348 does not have the potential to yield information important to the prehistory of the region. As such, SWCA recommends site 41LE348 as NOT ELIGIBLE for the NRHP or for designation as a SAL. No further work or avoidance strategy is recommended for site 41LE348 within the project area.

Figure 3.20. Flakes recovered from site 41LE348 in ST XBAD01 at 0–100 cmbs.

41LE349

Site 41LE349 is a low density, buried prehistoric lithic scatter of unknown temporal or cultural affiliation located just east of a private roughly north/south-trending two-track road off of FM 696 approximately 2.5 miles northeast of Blue in northwestern Lee County, Texas (Figure 3.21; Appendix A:52–53). The site is situated in an open, grassy pasture on a level upland plain approximately 150 m northeast of Middle Yegua Creek and its confluence with Cross Creek (Figure 3.22). Vegetation surrounding the site consists of short grasses and mixed hardwood forest along the riparian zones of the two creeks. Ground surface visibility was obscured due to grass cover. Site 41LE349 is located on privately owned land used for agricultural and ranching activities. Disturbances include a water pipeline that runs west-southwest to east-northeast along the northern edge of the site. Additionally, disturbances to the area include erosion, numerous gopher burrows, vegetation clearing, plowing, fence lines, and nearby land modification for stock ponds.

Site 41LE349 measures approximately 30 m northwest/southeast by 289 m northeast/southwest within the project corridor based on subsurface artifact distribution and prominent landforms; however, the site likely extends beyond the project area to the northwest and southeast. No cultural materials were observed along the ground surface due to poor visibility.

SWCA excavated 13 shovel tests (i.e., XBAD08–14 and XMC09–13) at approximately 25-m intervals to delineate the site, of which six (i.e., XBAD12–13, XMC08–09, and XMC11–12) were positive for cultural materials from 20 cmbs to a maximum depth of 100 cmbs (Table 3.10). Cultural materials recovered included three primary, one secondary, and nine tertiary reduction flakes of chert and petrified wood, as well as one fire-cracked rock fragment (Figure 3.23).

No temporally diagnostic artifacts or intact cultural features were observed. Shovel tests typically revealed dark yellowish brown (10YR 4/4) or strong brown (7.5YR 4/6) sand and most terminated at depth (i.e., 100 cmbs). Due to project constraints, the site was not fully delineated to the northwest or southeast, as investigations were not permitted outside the project ROW. Due to a shift of the project corridor since the original recording of the site, the northwestern portion of the site is now outside the project area boundaries.

41LE349 SUMMARY

Site 41LE349 consists of a diffuse, buried prehistoric lithic scatter of mainly debitage with very limited fire-cracked rock from the near surface to 100 cmbs. The site has a low density of artifacts and lacks temporally diagnostic artifacts or intact cultural features. Overall, site 41LE349 does not have the potential to yield information important to the prehistory of the region. As such, SWCA recommends site 41LE349 as NOT ELIGIBLE for the NRHP or for designation as a SAL. No further work or avoidance strategy is recommended for site 41LE349 within the project area.

41LE350

Site 41LE350 is a diffuse, buried prehistoric lithic scatter of unknown temporal or cultural affiliation located approximately 0.82 mile northwest of the FM 696 and Private Road 7009 intersection approximately 2.0 miles northeast of Blue in northwestern Lee County, Texas (Figure 3.24; Appendix A:53–54). The site is situated along the lower slope of an undulating upland bisected by a tributary roughly trending north/south approximately 100 m south of its confluence with Middle Yegua Creek (Figure 3.25). The eastern boundary is defined at the start of the Middle Yegua Creek floodplain and associated wetland. Vegetation consists of short grasses with a mixed hardwood forest to the north and east along the riparian zone of

Table 3.10. Shovel Test Data for Site 41LE349

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/Reason for Termination
XBAD08	1	0-100	10YR 4/4	dark yellowish brown	Sand	–	–	None	Terminated at depth.
XBAD09	1	0-100	10YR 4/4	dark yellowish brown	Sand	–	–	None	Terminated at depth.
XBAD10	1	0-100	10YR 4/4	dark yellowish brown	Sand	–	–	None	Terminated at depth.

Table 3.10. continued

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/ Reason for Termination
XBAD11	1	0-100	10YR 4/4	dark yellowish brown	Sand	—	—	None	Terminated at depth.
	1	0-20	10YR 4/4	dark yellowish brown	Sand	1-5%	Pebbles	None	—
	2	20-40	10YR 4/4	dark yellowish brown	Sand	1-5%	Pebbles	2: Flake (primary).	—
XBAD12	3	40-60	10YR 4/4	dark yellowish brown	Sand	1-5%	Pebbles	None	—
	4	60-80	10YR 4/4	dark yellowish brown	Sand	1-5%	Pebbles	2: Flake (tertiary).	—
	5	80-100	10YR 4/4	dark yellowish brown	Sand	1-5%	Pebbles	None	Terminated at depth.
XBAD13	1	0-20	10YR 4/4	dark yellowish brown	Sand	—	—	None	—
	2	20-40	10YR 4/4	dark yellowish brown	Sand	—	—	1: Flake (secondary), 1: Flake (tertiary).	—
	3	40-60	10YR 4/4	dark yellowish brown	Sand	—	—	None	—
XBAD14	4	60-80	10YR 4/4	dark yellowish brown	Sand	—	—	1: Flake (tertiary).	—
	5	80-100	10YR 4/4	dark yellowish brown	Sand	—	—	None	Terminated at depth.
	1	0-90	10YR 3/6	dark yellowish brown	Sand	—	—	None	—
XMC08	2	90-100	10YR 3/6	dark yellowish brown	Sand	5-10%	Pebbles	None	Terminated at depth.
	1	0-40	7.5YR 5/6	strong brown	Sand	—	—	None	—
	2	40-60	7.5YR 5/6	strong brown	Sand	—	—	1: Flake (tertiary).	—
XMC09	3	60-80	7.5YR 5/6	strong brown	Sand	—	—	1: Flake (tertiary).	—
	4	80-100	7.5YR 5/6	strong brown	Sand	—	—	None	Terminated at depth.
	1	0-40	7.5YR 5/6	strong brown	Sand	—	—	None	—
XMC10	2	40-60	7.5YR 5/6	strong brown	Sand	—	—	2: Flake (tertiary).	—
	3	60-100	7.5YR 5/6	strong brown	Sand	—	—	None	Terminated at depth.
	1	0-100	7.5YR 5/6	strong brown	Sand	5-10%	Pebbles	None	Terminated at depth.
XMC11	1	0-40	7.5YR 5/6	strong brown	Sand	—	—	None	—
	2	40-60	7.5YR 5/6	strong brown	Sand	—	—	1: Flake (tertiary).	—
	3	60-80	7.5YR 5/6	strong brown	Sand	—	—	1: Fire cracked rock.	Terminated at depth.
XMC12	1	0-90	7.5YR 5/6	strong brown	Sand	—	—	None	—
	2	90-100	7.5YR 5/6	strong brown	Sand	—	—	1: Flake (primary).	Terminated at depth.
	1	0-20	5YR 4/4	reddish brown	Sandy Clay	—	—	None	Terminated at basal clay.

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Figure 3.21. 41LE349 site map.

Figure 3.22. Overview of site 41LE349, facing east.

Figure 3.23. Primary flake from site 41LE349 in ST XMC12 at 90–100 cmbs.

the drainage and creek. Ground surface visibility was poor due to grass cover. Site 41LE350 is located on privately owned land used for agricultural and ranching activities. Disturbances include erosion, vegetation clearing, fence lines, two-track roads, and nearby land modification for stock ponds.

Site 41LE350 measures approximately 30 m northwest/southeast by 315 m northeast/southwest within the project corridor based on subsurface artifact distribution and landforms surrounding the site; however, the site may extend beyond the project area to the northwest and southeast. No cultural materials were observed along the ground surface due to poor visibility.

SWCA excavated 10 shovel tests (i.e., AE507–512 and CS206–209) at approximately 50-m intervals to delineate the site, of which five (i.e., AE508, AE510, and CS206–208) were positive for cultural materials from near surface to a maximum depth of 80 cmbs (Table 3.11). Cultural materials recovered included two primary flakes, seven secondary flakes, 25 tertiary reduction flakes, two fragments of chert shatter, two probable fire-cracked rocks, and one charcoal fragment (Figures 3.26 and 3.27). No temporally diagnostic artifacts or intact cultural features were observed. Shovel

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Figure 3.24. 41LE350 site map.

Figure 3.25. Overview of site 41LE350 from shove test AE512, facing west.

Figure 3.26. Flakes from site 41LE350 in ST CS208 at 0–50 cmbs.

Figure 3.27. Charcoal and possible fire-cracked rock from site 41LE350 in ST CS207 at 0–80 cmbs.

Table 3.11. Shovel Test Data for Site 41LE350

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/Reason for Termination
AE507	1	0-60	7.5YR 5/4	brown	Sandy Loam	1-5%	Gravels, Pebbles	None	
	2	60-75	7.5YR 4/6	strong brown	Sandy Clay Loam	>20%	Mottles	None	Terminated at basal clay.
AE508	1	0-100	7.5YR 4/4	brown	Sandy Loam	1-5%	Gravels, Pebbles	1: Flake (secondary) [10-20 cmbs], 2: Flake (tertiary) [10-20 cmbs and 50-60 cmbs].	Terminated at depth.
AE509	1	0-30	7.5YR 4/4	brown	Sandy Loam	1-5%	Pebbles	None	–
	2	30-50	5YR 5/8	yellowish red	Sandy Clay	–	–	None	Terminated at basal clay.
AE510	1	0-100	7.5YR 5/4	brown	Sandy Loam	1-5%	Gravels, Pebbles	3: Flake (tertiary), 2: Shatter [1 tertiary flake and 1 shatter 10-20 cmbs; 1 tertiary flake and 1 shatter 20-30 cmbs; 1 tertiary flake 30-40 cmbs].	Terminated at depth.
AE511	–	–	–	–	–	–	–	None	Not Excavated due to wetland/ water table at surface.
AE512	1	0-100	7.5YR 4/4	brown	Sandy Loam	1-5%	Gravels, Pebbles	None	Terminated at depth.
CS206	1	0-100	7.5YR 4/4	brown	Loamy Sand	5-10%	Cobbles, Gravels, Pebbles	2: Flake (tertiary).	Terminated at depth.
CS207	1	0-80	7.5YR 4/3	brown	Loamy Sand	5-10%	Cobbles, Pebbles	1: Flake (primary), 2: Flake (secondary), 9: Flake (tertiary), 2: FCR, and 1: Charcoal Fragment.	–
	2	80-100	5YR 5/8	yellowish red	Sandy Clay	–	–	None	Terminated at depth.
CS208	1	0-50	7.5YR 4/3	brown	Loamy Sand	5-10%	Cobbles, Pebbles	1: Flake (primary), 4: Flake (secondary), 9: Flake (tertiary).	–
	2	50-60	5YR 5/8	yellowish red	Sandy Clay	–	–	None	Terminated at depth.
CS209	1	0-45	7.5YR 4/3	brown	Sandy Loam	–	–	None	–
	2	45-100	7.5YR 6/2	pinkish gray	Loamy Sand	–	–	None	Terminated at depth.

tests typically revealed brown (7.5YR 5/4) sandy loam overlying strong brown (7.5YR 4/6) sandy clay loam; although most terminated at depth (i.e., 100 cmbs), two shovel tests (i.e., AE507 and AE509) encountered compacted, impassible clays between 50 and 75 cmbs. All artifacts were encountered within the sandy loam layer. Due to project constraints, the site was not fully delineated to the northwest or southeast, as investigations were not permitted outside the project ROW. Due to a shift of the project corridor since the original recording of the site, the northwestern portion of the site is now outside the project area boundaries.

41LE350 SUMMARY

Site 41LE350 consists of a buried, low density prehistoric lithic scatter from the near surface to 80 cmbs. The site lacks temporally diagnostic artifacts or intact cultural features. Overall, site 41LE350 does not have the potential to yield information important to the prehistory of the region. As such, SWCA recommends site 41LE350 as NOT ELIGIBLE for the NRHP or for designation as a SAL. No further work or avoidance strategy is recommended for site 41LE350 within the project area.

BASTROP COUNTY

Four cultural resource sites and four isolated finds were newly recorded, and two previously recorded cultural resource sites were revisited during further investigations in Bastrop County (Figure 3.28; see Table 3.3). The previously recorded archaeological sites consist of a multicomponent historic artifact scatter and prehistoric campsite (i.e., 41BP818) and a multicomponent artifact scatter (i.e., 41BP920) recorded and recommended for avoidance or further testing during the 2015 efforts. Site 41BP920 was revisited for significance testing during the 2016 and 2018 additional investigations and is reported in a separate report (Rodriguez and Young 2018). The isolated finds (i.e., IF08, IF10, IF13, and IF14) consist of prehistoric secondary and tertiary reduction flakes, none of which were recorded as archaeological sites (Appendix A: 76, 83, and 34; see Table 3.4). The newly recorded archaeological sites consist of one prehistoric lithic scatter (41BP959), two prehistoric campsites (i.e., 41BP960 and 41BP961), and one historic road and bridge embankment (i.e., 41BP962). In addition, one cemetery (the Hill Cemetery) was documented within the project area within the boundaries of site 41BP818.

Two of the newly recorded archaeological sites (i.e., 41BP960 and 41BP961) are recommended as having an UNDETERMINED eligibility for listing on the NRHP or for SAL designation; both have currently been avoided by design alignment changes by the Vista Ridge Project. Based on the results of the testing investigations, site 41BP920 has now been determined NOT ELIGIBLE for listing on the NRHP or for designation as a SAL (Rodriguez and Young 2018). SWCA recommends the remaining three archaeological sites (i.e., 41BP818, 41BP959, and 41BP962) in Bastrop County as NOT ELIGIBLE for listing on the NRHP or for SAL designation. No avoidance strategy or further work is recommended for these sites within the project corridor. The Hill Cemetery is now avoided and will not be impacted by the project. In addition, no further work is required or recommended to comply with the Texas Health and Safety code.

41BP818

Site 41BP818 is a prehistoric lithic scatter in northwest Bastrop County. The site was originally recorded in 2007 by PBS&J during the FM 969 Project (Appendix A:113) (THC 2018). The site was described as a prehistoric lithic scatter of an unknown temporal affiliation consisting of flakes, cultural shatter, and fire-cracked rock. The 2007 investigations recommended the site as NOT ELIGIBLE for listing and no further work was recommended (THC 2018).

The site is located on an upland formation overlooking an unnamed tributary of the Colorado River 220 m to the southwest (Figure 3.29). The site is in an open agricultural field bordered by FM 969 to the north and an active quarry to the south. A large spoil pile overlaps the southern boundary of the site, and the western site boundary is defined by a property fence line. The Hill Cemetery, discussed below, is located at the center of the site and northwest of the active quarry.

SWCA archaeologists revisited site 41BP818 and expanded the original site boundary to the south; this expansion includes a prehistoric lithic scatter with a historic artifact component and the Hill Cemetery. The new dimensions of the site measure 170 m northeast/southwest by 150 m northwest/southeast, but the site likely extends to the northwest and southeast, beyond the project boundaries. Site boundaries were determined by ground surface inspection, shovel testing for subsurface cultural deposits, and project area boundaries.

Restricted Information
Not for Public Disclosure

Figure 3.28. Bastrop County map.

Figure 3.29 41BP818 site map.

SWCA excavated 25 shovel tests (i.e., AY22–26, BM39, DR418–423, BD01–09, MN414–415, and PO01–03) within the site boundaries, of which 23 (i.e., AY22–25, AY26, BD01–04, BD06–08, BM39, DR418–23, MN414, and PO01–03) were positive for subsurface cultural materials from the ground surface to 60 cmbs (Table 3.12). Shovel tests typically revealed dark brown (7.5YR 3/4) sandy clay loam to light yellowish brown (10YR 6/4) overlying yellowish red (5YR 5/8) sandy clay loam; most terminated at compacted, impassible clays between 50 and 80 cmbs.

Cultural materials consist of: one historic earthenware sherd; 5–10 colorless glass fragments; 5–10 brown glass fragments; 10–15 aqua glass fragments; 20–40 milk glass fragments; one temporally non-diagnostic projectile point; 20–40 bifaces; 10–20 scrapers; 10–20 modified flakes; 500–700 burned rock fragments; 50–100 primary flakes; 75–150 secondary flakes; 200–400 tertiary flakes; and 300–600 cultural shatter fragments.

A review of aerial imagery indicates the northern half of the site was artificially terraced between 2009 and 2011 and has undergone repeated agricultural plowing

since that time. Additional disturbances include construction activities associated with the active quarry on the southeastern site boundary; the quarrying also appears to have begun around the same time as the agricultural activities (Figure 3.30). In addition, a large spoil pile overlaps the southern boundary of the site, and the western site boundary is defined by a property fence line (Figures 3.31a and 3.31b).

41BP818 SUMMARY

Overall, revisit investigations of site 41BP818 determined that the site consists of a prehistoric lithic scatter and historic artifact scatter with the Hill Cemetery at its center. Pedestrian survey and extensive shovel testing throughout the site determined that although a dense assemblage of artifacts is present, no diagnostic artifacts or intact cultural features associated with the prehistoric component or historic artifact component are present on site. In addition, pervasive disturbances (e.g., quarrying, agricultural plowing and artificial terracing) have reduced the potential for intact, cultural features to be present within the portions of the site in the project area. Due to its lack of potential research

Table 3.12. Shovel Test Data for Site 41BP818

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/Reason for Termination
AY22	1	0-50	7.5YR 3/4	dark brown	Sandy Clay Loam	>20%	Cobbles, Gravels, Pebbles	14: Flake (secondary), Flake (tertiary), Other Prehistoric	—
	2	50-60	5YR 5/8	yellowish red	Sandy Clay Loam	>20%	Cobbles, Gravels, Large Rock Frags, Pebbles	No cultural material encountered.	Terminated at gravel impass.
AY23	1	0-10	7.5YR 3/4	dark brown	Sandy Clay Loam	>20%	Cobbles, Gravels, Pebbles	6: Flake (secondary), Flake (tertiary), Other Prehistoric [3 tertiary, 1 secondary, 2 shatter]	—
	2	10-20	7.5YR 3/4	dark brown	Sandy Clay Loam	>20%	Cobbles, Gravels, Pebbles	4: Flake (tertiary) [3 tertiary, 1 shatter]	—
	3	20-30	7.5YR 3/4	dark brown	Sandy Clay Loam	>20%	Cobbles, Gravels, Pebbles	3: Flake (tertiary)	—
	4	30-40	7.5YR 3/4	dark brown	Sandy Clay Loam	>20%	Cobbles, Gravels, Pebbles	3: Flake (tertiary)	—
	5	40-50	5YR 5/8	yellowish red	Sandy Clay	>20%	Cobbles, Gravels	No cultural material encountered.	Terminated at basal clay.

Table 3.12. continued

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/Reason for Termination
	1	0-10	7.5YR 3/4	dark brown	Sandy Clay Loam	>20%	Cobbles, Gravels, Pebbles	13: Flake (tertiary), Other Prehistoric [7 tertiary flakes, 6 shatter]	—
	2	10-20	7.5YR 3/4	dark brown	Sandy Clay Loam	>20%	Cobbles, Gravels, Pebbles	27: Flake (secondary), Flake (tertiary), Other Prehistoric [2 secondary, 7 shatter, 18 tertiary]	—
	3	20-30	7.5YR 3/4	dark brown	Sandy Clay Loam	>20%	Cobbles, Gravels, Pebbles	20: Flake (tertiary), Other Prehistoric, Projectile Point [1 point frag, 11 tertiary, 7 shatter]	—
AY24									
	4	30-40	7.5YR 3/4	dark brown	Sandy Clay Loam	>20%	Cobbles, Gravels, Pebbles	31: Flake (secondary), Flake (tertiary), Other Prehistoric [19 tertiary, 7 secondary, 5 shatter]	—
	5	40-50	7.5YR 3/4	dark brown	Sandy Clay Loam	>20%	Cobbles, Gravels, Large Rock Frags, Pebbles	20: Flake (secondary), Flake (tertiary), Other Prehistoric [1 shatter, 1 secondary, 18 tertiary]	—
	6	50-60	7.5YR 3/4	dark brown	Sandy Clay Loam	>20%	Cobbles, Gravels, Large Rock Frags, Pebbles	2: Flake (secondary), Flake (tertiary) Terminated at gravel impass.	Terminated at gravel impass.

Table 3.12. continued

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/Reason for Termination
AY25	1	0-10	7.5YR 4/4	brown	Sandy Clay Loam	>20%	Cobbles, Gravels, Pebbles	8: Flake (tertiary), Other Prehistoric [4 tertiary, 4 shatter]	—
	2	10-20	7.5YR 4/4	brown	Sandy Clay Loam	>20%	Cobbles, Gravels, Pebbles	17: Flake (secondary), Flake (tertiary), Other Prehistoric [9 tertiary, 1 secondary, 7 shatter]	—
	3	20-30	7.5YR 4/4	brown	Sandy Clay Loam	>20%	Cobbles, Gravels, Pebbles	9: Flake (tertiary), Other Prehistoric [8 tertiary, 1 shatter]	—
	4	30-40	7.5YR 4/4	brown	Sandy Clay Loam	>20%	Cobbles, Gravels, Pebbles	4: Flake (tertiary), Other Prehistoric [3 tertiary, 1 shatter]	—
	5	40-50	7.5YR 4/4	brown	Sandy Clay Loam	>20%	Cobbles, Gravels, Large Rock Frags, Pebbles	4: Flake (tertiary), Other Prehistoric [3 tertiary, 1 shatter] Terminated at gravel impass.	Terminated at gravel impass.
AY26	1	0-40	7.5YR 3/4	dark brown	Sandy Clay Loam	10-20%	Gravels, Pebbles	2: Flake (tertiary) [0-15 cmbs 2 flakes]	—
	2	40-45	5YR 5/8	yellowish red	Clay Loam	1-5%	Gravels, Pebbles	No cultural material encountered.	Terminated at basal clay.
BD01	1	0-10	10YR 6/4	light yellowish brown	Sandy Loam	>20%	Cobbles, Gravels, Pebbles	3: Flake (secondary), Flake (tertiary)	—
	2	10-20	10YR 6/4	light yellowish brown	Sandy Loam	>20%	Cobbles, Gravels, Pebbles	5: Flake (secondary), Flake (tertiary)	—
	3	20-30	10YR 6/4	light yellowish brown	Sandy Loam	>20%	Cobbles, Gravels, Pebbles	1: Flake (secondary)	—
	4	40-50	10YR 6/4	light yellowish brown	Sandy Loam	>20%	Gravels, Pebbles	1: Flake (secondary)	—
	5	40-50	10YR 6/4	light yellowish brown	Sandy Loam	>20%	Gravels, Pebbles	1: Flake (secondary)	—
	6	50-60	10YR 6/4	light yellowish brown	Sandy Loam	>20%	Gravels, Pebbles	3: Flake (secondary), Flake (tertiary)	Terminated at depth.

Table 3.12. continued

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/Reason for Termination
BD02	1	0-10	10YR 6/4	light yellowish brown	Sandy Loam	5-10%	Pebbles	6: Flake (tertiary)	–
	2	10-20	10YR 6/4	light yellowish brown	Sandy Loam	5-10%	Pebbles	2: Flake (tertiary)	–
	3	20-30	10YR 6/4	light yellowish brown	Sandy Loam	5-10%	Pebbles	1: Flake (tertiary)	–
	4	30-40	10YR 6/4	light yellowish brown	Sandy Loam	5-10%	Pebbles	2: Flake (secondary), Flake – (tertiary)	–
	5	40-50	5YR 4/6	yellowish red	Sandy Clay Loam	–	–	No cultural material encountered.	–
	6	50-60	5YR 4/6	yellowish red	Sandy Clay Loam	–	–	No cultural material encountered.	Terminated at basal clay.
BD03	1	0-10	10YR 6/4	light yellowish brown	Sandy Loam	10-20%	Pebbles	18: Flake (secondary), Flake – (tertiary)	–
	2	10-20	10YR 6/4	light yellowish brown	Sandy Loam	10-20%	Pebbles	4: Flake (secondary), Flake – (tertiary)	–
	3	20-30	10YR 6/4	light yellowish brown	Sandy Loam	10-20%	Pebbles	2: Flake (secondary), Flake – (tertiary)	–
	4	30-40	10YR 6/4	light yellowish brown	Sandy Loam	10-20%	Pebbles	2: Core, Flake (tertiary)	–
	5	40-50	5YR 4/6	yellowish red	Sandy Clay Loam	–	–	No cultural material encountered.	–
	6	50-60	5YR 4/6	yellowish red	Sandy Clay Loam	–	–	No cultural material encountered.	Terminated at basal clay.
BD04	1	0-10	10YR 6/4	light yellowish brown	Silt	5-10%	Pebbles	1: Flake (tertiary)	–
	2	10-20	10YR 6/4	light yellowish brown	Sandy Loam	5-10%	Pebbles	No cultural material encountered.	–
	3	20-25	10YR 6/4	light yellowish brown	Sandy Loam	5-10%	Pebbles	No cultural material encountered.	–
	4	25-40	5YR 4/6	yellowish red	Sandy Clay Loam	–	–	No cultural material encountered.	–
	5	40-50	5YR 4/6	yellowish red	Sandy Clay Loam	–	–	No cultural material encountered.	–
	6	50-60	5YR 4/6	yellowish red	Sandy Clay Loam	–	–	No cultural material encountered.	Terminated at basal clay.

Table 3.12. continued

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/Reason for Termination
BD06	1	0-10	10YR 6/4	light yellowish brown	Sandy Loam	5-10%	Pebbles	13: Flake (secondary), Flake – (tertiary)	
	2	10-20	10YR 6/4	light yellowish brown	Sandy Loam	5-10%	Pebbles	2: Flake (secondary), Flake – (tertiary)	
	3	20-30	10YR 6/4	light yellowish brown	Sandy Loam	5-10%	Pebbles	4: Flake (tertiary)	–
	4	30-40	10YR 6/4	light yellowish brown	Sandy Loam	5-10%	Pebbles	19: Flake (primary), Flake (secondary), Flake – (tertiary)	
	5	40-50	10YR 6/4	light yellowish brown	Sandy Loam	5-10%	Pebbles	11: Flake (primary), Flake (secondary), Flake – (tertiary)	
	6	50-60	10YR 6/4	light yellowish brown	Sandy Loam	5-10%	Pebbles	4: Flake (secondary), Flake – (tertiary)	
	7	60-70	10YR 6/4	light yellowish brown	Sandy Loam	5-10%	Pebbles	1: Flake (secondary)	–
	8	70-75	10YR 6/4	light yellowish brown	Sandy Loam	5-10%	Pebbles	2: Flake (secondary), Flake – (tertiary)	
	9	75-90	5YR 4/6	yellowish red	Sandy Clay Loam	–	–	No cultural material encountered.	Terminated at depth.
BD07	1	0-10	10YR 6/4	light yellowish brown	Sandy Loam	10-20%	Pebbles	1: Flake (utilized) [Possibly biface base]	–
	2	10-20	10YR 6/4	light yellowish brown	Sandy Loam	10-20%	Pebbles	1: Flake (tertiary)	–
	3	20-30	5YR 4/6	yellowish red	Sandy Clay Loam	–	–	No cultural material encountered.	–
	4	30-40	5YR 4/6	yellowish red	Sandy Clay Loam	–	–	No cultural material encountered.	–
	5	40-50	5YR 4/6	yellowish red	Sandy Clay Loam	–	–	No cultural material encountered.	–
	6	50-60	5YR 4/6	yellowish red	Sandy Clay Loam	–	–	No cultural material encountered.	Terminated at basal clay.

Table 3.12. continued

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/Reason for Termination
BD08	1	0-10	10YR 6/4	light yellowish brown	Sandy Loam	1-5%	Pebbles	1: Flake (tertiary)	–
	2	10-20	10YR 6/4	light yellowish brown	Sandy Loam	1-5%	Pebbles	No cultural material encountered.	–
	3	20-30	10YR 6/4	light yellowish brown	Sandy Loam	1-5%	Pebbles	No cultural material encountered.	–
	4	30-40	10YR 6/4	light yellowish brown	Sandy Loam	–	–	No cultural material encountered.	–
	5	40-50	5YR 4/6	yellowish red	Sandy Clay Loam	–	–	No cultural material encountered.	–
	6	50-60	5YR 6/4	light reddish brown	Sandy Clay Loam	–	–	No cultural material encountered.	Terminated at basal clay.
BD09	1	0-10	10YR 3/2	very dark grayish brown	Clay	–	–	No cultural material encountered.	–
	2	10-20	10YR 3/2	very dark grayish brown	Clay	–	–	No cultural material encountered.	–
	3	20-30	10YR 3/2	very dark grayish brown	Clay	–	–	No cultural material encountered.	–
	4	30-40	10YR 3/2	very dark grayish brown	Clay	–	–	No cultural material encountered.	–
	5	40-50	10YR 3/2	very dark grayish brown	Clay	–	–	No cultural material encountered.	Terminated at too saturated.
BM39	1	0-70	10YR 5/4	yellowish brown	Sandy Clay	–	–	3: Flake (primary)	Terminated at soil change.
DR418	2	0-50	10YR 6/6	brownish yellow	Sandy Clay Loam	5-10%	Cobbles, Gravels, Pebbles	5: Flake (tertiary), Other Prehistoric [2 shatter 20-40 cmbs, 3 tertiary 40-50 cmbs]	–
	3	50-60	5YR 6/6	reddish yellow	Sandy Clay	1-5%	Pebbles	No cultural material encountered.	. Terminated at basal clay.

Table 3.12. continued

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/Reason for Termination
DR419	1	0-50	10YR 6/6	brownish yellow	Sandy Clay Loam	5-10%	Cobbles, Gravels, Pebbles	11: Flake (secondary), Flake (tertiary) [1 tertiary at 10-20; 1 tertiary at 20-30; 1 primary 3 tertiary at 30-40; 5 tertiary at 40-50]	
	2	50-60	5YR 6/6	reddish yellow	Clay Loam	5-10%	Cobbles, Gravels, Pebbles	No cultural material encountered.	Terminated at basal clay.
DR420	1	0-40	10YR 5/6	yellowish brown	Sandy Clay Loam	5-10%	Cobbles, Gravels, Pebbles	1: Flake (tertiary) [1 tertiary at 10-20 – cmbs]	
	2	40-45	5YR 6/6	reddish yellow	Clay Loam	5-10%	Cobbles, Gravels, Pebbles	No cultural material encountered.	Terminated at basal clay.
DR421	1	0-45	10YR 5/4	yellowish brown	Sandy Clay Loam	1-5%	Pebbles	4: Flake (secondary), Flake (tertiary), Other Prehistoric [1 tertiary, 1 shatter at 20-30; 1 tertiary, 1 shatter at 30-40]	
	2	45-55	10YR 4/3	brown	Clay Loam	1-5%	Pebbles	No cultural material encountered.	Terminated at compact soil.
DR422	1	0-40	10YR 4/3	brown	Sandy Clay Loam	5-10%	Cobbles, Gravels, Pebbles	10: Flake (tertiary), Other Prehistoric [1 shatter, 1 tertiary at 0-20; 7 tertiary at 20-30; 1 shatter 30-40]	
	2	40-50	5YR 4/4	reddish brown	Clay Loam	5-10%	Cobbles, Gravels, Pebbles	No cultural material encountered.	Terminated at basal clay.
DR423	1	0-50	10YR 4/3	brown	Sandy Clay Loam	5-10%	Cobbles, Gravels, Pebbles	15: Flake (tertiary), Other Prehistoric [1 secondary, 1 tertiary, 1 FCR at 0-20; 2 tertiary at 20-30; 1 tertiary at 30-40; 5 tertiary, 4 FCR at 40-50]	
	2	50-55	5YR 4/4	reddish brown	Clay Loam	1-5%	Cobbles, Gravels, Pebbles	No cultural material encountered.	Terminated at basal clay.

Table 3.12. continued

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/Reason for Termination
MN414	1	0-45	10YR 5/4	yellowish brown	Sandy Loam	5-10%	Cobbles, Gravels, Pebbles	2: Flake (tertiary)	
	2	45-55	10YR 5/6	yellowish brown	Sandy Clay	5-10%	Cobbles, Gravels, Pebbles	No cultural material encountered.	Terminated at basal clay.
MN415	1	0-45	10YR 3/2	very dark grayish brown	Sandy Clay Loam	—	—	No cultural material encountered.	Terminated at basal clay.
PO01	1	0-10	10YR 6/4	light yellowish brown	Sandy Loam	>20%	Pebbles	3: Flake (secondary), Flake – (tertiary)	
	2	10-20	10YR 6/4	light yellowish brown	Sandy Loam	>20%	Pebbles	1: Core	—
	3	20-30	10YR 6/4	light yellowish brown	Sandy Loam	>20%	Cobbles, Pebbles	1: Flake (secondary)	—
	4	30-40	10YR 6/4	light yellowish brown	Sandy Loam	>20%	Cobbles, Pebbles	1: Flake (tertiary)	Terminated at too many pebbles to get the auger through.
PO02	1	0-10	10YR 6/4	light yellowish brown	Sandy Loam	10-20%	Pebbles	2: Flake (secondary)	—
	2	10-20	10YR 6/4	light yellowish brown	Sandy Loam	10-20%	Pebbles	3: Flake (tertiary)	—
	3	20-30	10YR 6/4	light yellowish brown	Sandy Loam	10-20%	Pebbles	1: Flake (tertiary)	—
	4	30-40	10YR 6/4	light yellowish brown	Sandy Loam	10-20%	Pebbles	No cultural material encountered.	—
	5	40-50	5YR 4/6	yellowish red	Sandy Clay Loam	10-20%	Pebbles	No cultural material encountered.	—
	6	50-60	5YR 4/6	yellowish red	Sandy Clay Loam	10-20%	Pebbles	No cultural material encountered.	—
	7	60-70	5YR 4/6	yellowish red	Sandy Clay Loam	10-20%	Pebbles	No cultural material encountered.	—
	8	70-80	5YR 4/6	yellowish red	Sandy Clay Loam	10-20%	Pebbles	No cultural material encountered.	Terminated at basal clay.
PO03	1	0-30	10YR 2/2	very dark brown	Silty Clay	—	—	1: Flake (tertiary)	—
	2	30-45	10YR 2/1	black	Clay Loam	1-5%	Gravels	No cultural material encountered.	—
	3	45-60	10YR 2/1	black	Clay	1-5%	Gravels, Mottles	No cultural material encountered.	Terminated at compact soil.

Figure 3.30 Overview of quarrying disturbances at site 41BP818, facing southeast.

Figure 3.31a Overview of spoil pile disturbances at site 41BP818, facing southeast.

Figure 3.31b Close-up of disturbed soils at site 41BP818.

value, the prehistoric and historic components of site 41BP818 within the project boundaries are recommended as NOT ELIGIBLE for listing on the NRHP or for designation as a SAL. The Hill Cemetery, discussed below, is avoided by the project and will not be impacted.

41BP920

Site 41BP920 is an early Archaic lithic scatter with a historic component in northwestern Bastrop County. The site was originally recorded during the 2015 initial cultural resources investigations. The site is situated on a generally level upland formation overlooking an unnamed ephemeral tributary of Wilbarger Creek (Figure 3.32; Appendix A:100). After the 2015 investigations, SWCA recommended site 41BP920 for significance testing to determine the site's eligibility for SAL designation or listing on the NRHP due to the presence of buried artifacts, including burned rock that suggested the presence of buried cultural features, and temporally diagnostic projectile points (Acuña et al. 2016).

SWCA revisited the site in 2016 to conduct further testing which consisted of backhoe trenching and 1×1-m hand excavations units; the results of these investigations are presented in a separate report (Rodriguez and Young 2018) and the recommendations are summarized below.

The test investigations indicate that the cultural deposit within the proposed waterline corridor at 41BP920 is a palimpsest consisting of an unknown number of overprinted and mixed occupations encompassing the Late Archaic to the present. The site has been impacted by the removal of an unknown amount of the topsoil from the site, vegetation clearing, and plowing. As a result, neither the surface nor subsurface deposits within the project area are intact, having been displaced and fragmented to varying degrees. Under such circumstances, it is impossible to identify individual site occupations that could potentially contribute new or important data concerning regional prehistory.

Based on these recommendations, SWCA recommended the Vista Ridge Project will not impact cultural deposits eligible for SAL designation or listing on the NRHP within the proposed waterline alignment. However, the parts of the site outside the project area have not been evaluated, so their SAL and NRHP eligibility areas are currently UNDETERMINED. Should the proposed project require design changes that result in impacts to parts of the site outside the currently pro-

posed corridor, then additional investigations in those areas would be necessary.

41BP959

Site 41BP959 is a buried prehistoric lithic scatter of unknown temporal or cultural affiliation located 0.5 mile east-northeast of the FM 1704 and Monkey Road intersection south of Elgin in northern Bastrop County, Texas (Figure 3.33; Appendix A:92–93). The site is situated along a semi-forested gradually rising upland slope overlooking branches of Little Sandy Creek to the west-southwest and east-southeast. Vegetation consists of open areas with grasses and scattered juniper and scrub in the northeastern half and a robust mixed hardwood riparian zone within the southwestern half approaching the creek (Figure 3.34). Ground surface visibility was poor due to grass cover and leaf litter. Site 41BP959 is located on privately owned land used for ranching and residential activities. Disturbances include transmission line corridors that run northeast to southwest along the northwestern margin and run northwest to southeast traversing the northeastern portion of the site. Additionally, disturbances to the area include erosion, vegetation clearing, fence lines, two-track roads, and nearby land modification for stock ponds.

Site 41BP959 is a diffuse shallow to deeply buried prehistoric lithic scatter of debitage and shatter with few small fire-cracked rocks that measures approximately 243 m northeast/southwest by 50 m northwest/southeast. The site was originally recorded during survey of the project corridor within the parcels and was subsequently revisited and expanded due to a shift of the project corridor since the original recording. As such, the southwestern portion of the site is now outside the project area boundaries, and site dimensions within the current project corridor are approximately 195 m northeast/southwest by 26 m northwest/southeast.

Site boundaries were determined by the extent of subsurface cultural deposits within the project area boundaries. No cultural materials were observed along the ground surface due to poor visibility. SWCA excavated 18 shovel tests (i.e., AE307–308, MCC250–252, MCC516–518, MCC520–522, TN516–519, and TN521–523) as part of the survey and to delineate the site, of which nine (i.e., AE307–308, MCC251, MCC517–518, MCC521–522, TN516, and TN523) were positive for cultural materials from near surface to a maximum depth of 80 cmbs (Table 3.13). Cultural

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Figure 3.32. 41BP920 site map.

Figure 3.33. 41BP959 site map.

Table 3.13. Shovel Test Data for Site 41BP959

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/ Reason for Termination
AE307	1	0-10	10YR 5/3	brown	Loamy Sand	–	–	None	–
	2	10-20	10YR 5/3	brown	Loamy Sand	–	–	1: Flake (primary), 7: Flake (tertiary), 1: Shatter.	–
	3	20-30	10YR 5/3	brown	Loamy Sand	–	–	1: Flake (primary), 3: Flake (tertiary), 2: FCR.	–
	4	30-50	10YR 6/2	light brownish gray	Clay	>20%	Mottles	None	Terminated at basal clay.
AE308	1	0-10	10YR 5/3	brown	Loamy Sand	–	–	1: Flake (tertiary), 1: Shatter.	–
	2	10-20	10YR 5/3	brown	Loamy Sand	–	–	1: Flake (tertiary), 1: Shatter.	–
	3	20-30	10YR 5/3	brown	Loamy Sand	–	–	None	–
	4	30-50	7.5YR 4/4	brown	Sandy Clay	>20%	Mottles	None	Terminated at basal clay.
MCC250	1	0-45	7.5YR 5/4	brown	Sandy Loam			None	–
	2	45-55	7.5YR 5/8	strong brown	Sandy Clay	>20%	Mottles	None	Terminated at basal clay.
MCC251	1	0-35	7.5YR 5/4	brown	Sandy Loam			1: Flake (secondary), 1: Flake (tertiary).	–
	2	35-45	7.5YR 5/8	strong brown	Sandy Clay	>20%	Mottles	None	Terminated at basal clay.
MCC252	1	0-30	10YR 5/3	brown	Clay Loam	–	–	None	–
	2	30-40	7.5YR 5/8	strong brown	Clay	–	–	None	Terminated at basal clay.
MCC516	1	0-25	10YR 5/4	yellowish brown	Silt Loam	–	–	None	–
	2	25-30	7.5YR 4/6	strong brown	Clay	–	–	None	Terminated at basal clay.
MCC517	1	0-80	10YR 7/3	very pale brown	Sand	–	–	3: Flake (secondary) [60-80 cmbs], Other Prehistoric-FCR [20-40 cmbs].	–
	2	80-85	7.5YR 5/8	strong brown	Sandy Clay	–	–	None	Terminated at basal clay.
MCC518	1	0-80	10YR 7/3	very pale brown	Sand	–	–	4: Flake (tertiary) [2 at 20-40 cmbs and 2 at 60-80 cmbs].	–
	2	80-85	7.5YR 5/8	strong brown	Sandy Clay	–	–	None	Terminated at basal clay.
MCC520	1	0-10	10YR 5/2	grayish brown	Sandy Loam	10-20%	Mottles	None	Terminated at compact soil.

Table 3.13. continued

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/ Reason for Termination
MCC521	1	0-25	10YR 5/2	grayish brown	Sand	—	—	1: Other Prehistoric-Shatter.	—
	2	25-30	7.5YR 5/8	strong brown	Clay	—	—	None	Terminated at basal clay.
MCC522	1	0-35	10YR 5/2	grayish brown	Sand	—	—	3: Flake (primary), Flake (secondary), Flake (tertiary).	—
	2	35-40	7.5YR 5/8	strong brown	Sandy Clay	—	—	None	Terminated at basal clay.
TN516	1	0-50	10YR 5/3	brown	Sandy Loam	1-5%	Pebbles	5: Flake (secondary), Flake (tertiary), Other Prehistoric-FCR.	—
	2	50-55	7.5YR 5/8	strong brown	Sandy Clay Loam	5-10%	Sandstone, Manganese	None	Terminated at basal clay.
TN517	1	0-50	10YR 5/4	yellowish brown	Silt Loam	1-5%	Pebbles	None	—
	2	50-60	5YR 4/6	yellowish red	Silty Clay Loam	1-5%	Pebbles, Manganese nodules	None	Terminated at basal clay.
TN518	1	0-50	10YR 5/4	yellowish brown	Silt Loam	1-5%	Pebbles	None	—
	2	50-60	5YR 4/6	yellowish red	Silty Clay Loam	1-5%	Pebbles, Manganese nodules	None	Terminated at basal clay.
TN519	1	0-30	10YR 5/4	yellowish brown	Silt Loam	1-5%	Pebbles	None	—
	2	30-40	5YR 4/6	yellowish red	Silty Clay Loam	1-5%	Pebbles, Manganese nodules	None	Terminated at basal clay.
TN521	1	0-5	10YR2/1	black	Silty Clay Loam	—	—	None	Terminated at compact soil.
TN522	1	0-10	10YR 6/3	pale brown	Silty Clay Loam	>20%	Mottles	None	Terminated at basal clay.
TN523	1	0-75	10YR 6/3	pale brown	Sandy Loam	1-5%	Pebbles	2: Flake (tertiary), Other Prehistoric-FCR.	—
	1	75-80	10YR 5/8	yellowish brown	Sandy Clay Loam	5-10%	Gravels, Pebbles	None	Terminated at basal clay.

Figure 3.34. Overview of site 41BP959 from northwest margin of site, facing east-southeast.

materials recovered included five primary, 10 secondary, and 21 tertiary reduction flakes and four shatter fragments of chert, along with five small fire-cracked rocks (Figure 3.35). No temporally diagnostic artifacts or cultural features were observed. Shovel tests typically revealed brown (10YR 5/3) to yellowish brown (10YR 5/4) sandy or silty loam overlying compacted yellowish red (5YR 4/6) sandy clay; most terminated at in this compacted substratum between 30 and 80 cmbs. Due to project constraints, the site was not fully delineated to the east and southeast, as investigations were not permitted outside the project ROW, and the site may extend beyond the project area in those directions. Survey of the original and current project corridor resulted in additional negative shovel tests to the northwest, north, northeast, and west of the site.

41BP959 SUMMARY

Site 41BP959 consists of a diffuse shallow to deeply buried prehistoric lithic scatter of mainly debitage and shatter with few fire-cracked rock fragments containing cultural material from the near surface to 80 cmbs. The site has a relatively low density of artifacts and lacks temporally diagnostic artifacts or cultural features. Overall, site 41BP959 does not have the potential to yield information important to the prehistory of the

region. As such, SWCA recommends site 41BP959 as NOT ELIGIBLE for the NRHP or for designation as a SAL. No further work or avoidance strategy is recommended for site 41BP959 within the project area.

41BP960

Sites 41BP960 and 41BP961 were initially recorded as one deeply buried prehistoric campsite along the eastern terraces of Wilbarger Creek approximately 0.45 mile east-northeast of the Upper Elgin Road and Hogeye Road intersection in Bastrop County, Texas (Figure 3.36; Appendix A:101). The one site was subsequently split into two sites separated by approximately 90 m due to an unnamed tributary drainage of Wilbarger Creek running between two discrete cultural deposits. Site 41BP960 is situated along the T2 terrace southwest of the tributary drainage. Vegetation consists of tall, dense hay field within pastures, and mixed wooded and riparian secondary growth along the drainages (Figure 3.37). Ground surface visibility was poor due to the dense vegetation. Site 41BP960 is located on privately owned land used for agricultural and ranching activities. Disturbances include erosion, vegetation clearing, fence lines, two-track roads, and nearby land modification for stock ponds.

Figure 3.35. Artifacts and fire-cracked rock from site 41BP959 in ST AE307 at 10–30 cmbs.

Site 41BP960 is a deeply buried prehistoric campsite with bone-tempered pottery, lithic debitage and tools, and faunal remains that measures approximately 109 m northeast/southwest by 27 m northwest/southeast within the project corridor based on artifact distribution and landforms; however, the site may extend beyond the project area to the east and west. Due to the presence of deep alluvial deposits along Wilbarger Creek and the unnamed tributary drainage, site boundaries were determined by intensive systematic excavation of hand auger probes followed by excavation of mechanical backhoe trenches with column sampling in select backhoe trenches. In areas not accessible by the backhoe (i.e., dense trees and other vegetation), only auger probes were excavated. No cultural materials were observed along the ground surface due to the poor visibility.

SWCA excavated 11 auger probes (i.e., AU09–17 and AU33–34) at approximately 50-m intervals to investigate the project corridor and delineate the site, two of which (i.e., AU14–15) were positive for cultural materials from approximately 90 to 100 cmbs (Table 3.14). SWCA also excavated eight backhoe trenches (i.e., BHT01–03 and BHT05–09), of which two (i.e., BHT07 and BHT09) were positive for cultural materi-

als from approximately 80 to 100 cmbs (Table 3.15). Column samples measuring 50×50-cm were excavated off the walls of the positive trenches in arbitrary 10-cm levels (Appendix C). In addition, SWCA had previously excavated one shovel test (i.e., DR206) within the site boundary and one shovel test (i.e., AJ07) approximately 30 m northeast of the site boundary, both of which were negative for cultural materials.

The trenches typically consisted of six to seven strata with alternating horizons of dark grayish brown (10YR 4/2) or dark gray (10YR 4/1) clay loam and light yellowish brown (10YR 6/4) or brown (10YR 5/3) sandy clay loam deposits with clear-gradual lower boundaries. The light yellowish brown horizon had a friable to loose consistency crumb structure, while the remaining horizons typically had a firm consistency and subangular blocky structure, which graded into a massive, structureless horizon with increasing calcium carbonate inclusions and an extremely firm consistency. The investigations encountered an upper buried soil between 50 and 115 cmbs containing the cultural materials and a lower buried soil at approximately 180 cmbs and below that contained a mussel shell (Figure 3.38).

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Figure 3.36. 41BP960 site map.

Figure 3.37. Riparian secondary growth along Wilbarger Creek along the western edge of site 41BP960, facing east.

Table 3.14. Auger Probe Data for Site 41BP960

Auger Probe No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/ Reason for Termination
AU09	1	0-30	10YR 4/4	dark yellowish brown	Silt Loam	—	—	None	—
	2	30-160	10YR 5/6	yellowish brown	Silt Loam	—	—	None	—
	3	160-170	10YR 6/4	light yellowish brown	Sandy Loam	1-5%	Calcium Carbonate, White Fungus or Calcium	None	—
	4	170-200	10YR 6/3	pale brown	Silty Clay Loam	1-5%	Calcium Carbonate	None	Terminated at depth.
AU10	1	0-65	10YR 4/4	dark yellowish brown	Silt Loam	—	—	None	—
	2	65-150	10YR 6/4	light yellowish brown	Silt Loam	—	—	None	—
	3	165-200	10YR 3/4	dark yellowish brown	Silty Clay	—	—	None	Terminated at depth.

Table 3.14. continued

Auger Probe No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/ Reason for Termination
AU11	1	0-40	10YR 4/4	dark yellowish brown	Silt Loam	—	—	None	—
	2	40-180	10YR 6/4	light yellowish brown	Silt Loam	—	—	None	—
	3	180-200	10YR 3/4	dark yellowish brown	Silty Clay	—	—	None	Terminated at depth.
AU12	1	0-40	10YR 4/4	dark yellowish brown	Silt Loam	—	—	None	—
	2	40-150	10YR 5/6	yellowish brown	Silt Loam	—	—	None	—
	3	150-200	10YR 6/4	light yellowish brown	Sandy Loam	1-5%	Calcium Carbonate, White Fungus or Calcium	None	—
AU13	1	0-40	10YR 4/4	dark yellowish brown	Loam	—	—	None	—
	2	0-150	10YR 5/4	yellowish brown	Silty Clay Loam	—	—	None	—
	3	150-200	10YR 6/4	light yellowish brown	Silty Clay Loam	1-5%	Calcium Carbonate	None	Terminated at depth.
AU14	1	0-80	10YR 4/2	dark grayish brown	Clay Loam	—	—	None	—
	2	80-120	10YR 4/1	dark gray	Clay Loam	1-5%	Snail Shell	1: Ceramic (prehistoric) [shell tempered pottery with burnished exterior at 90-100 cmbs]	—
	3	120-180	10YR 5/2	grayish brown	Silt Loam	1-5%	Calcium Carbonate	None	Terminated at depth.
AU15	1	0-30	10YR 4/3	brown	Clay Loam	—	—	None	—
	2	30-80	10YR 5/2	grayish brown	Clay Loam	—	—	None	—
	3	80-120	10YR 4/2	dark grayish brown	Clay Loam	1-5%	Snail Shell	1: Ceramic (prehistoric)	—
	4	120-180	10YR 5/4	yellowish brown	Silt Loam	1-5%	Calcium Carbonate	None	Terminated at depth.
AU16	1	30	10YR 4/1	dark gray	Clay Loam	1-5%	Roots	None	—
	2	30-80	10YR 5/2	grayish brown	Clay Loam	1-5%	None	None	—
	3	80-120	10YR 4/1	dark gray	Clay Loam	1-5%	None	None	—
	4	120-165	10YR 5/3	brown	Silty Clay Loam	1-5%	Calcium Carbonate	None	Terminated at depth.

Table 3.14. continued

Auger Probe No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/ Reason for Termination
AU17	1	0-30	10YR 4/2	dark grayish brown	Clay Loam	—	—	None	—
	2	30-120	10YR 5/2	grayish brown	Clay Loam	—	—	None	—
	3	120-150	10YR 5/3	brown	Silty Clay Loam	1-5%	Calcium Carbonate	None	Terminated at depth.
AU33	1	0-35	10YR 4/2	dark grayish brown	Silty Clay	—	—	None	—
	2	35-110	10YR 5/2	grayish brown	Silty Clay Loam	—	—	None	—
	3	110-200	10YR 5/3	brown	Silt Loam	1-5%	Calcium Carbonate	None	Terminated at depth.
AU34	1	0-35	10YR 4/2	dark grayish brown	Silty Clay	—	—	None	—
	2	35-120	10YR 5/2	grayish brown	Silty Clay Loam	—	—	None	—
	3	120-150	10YR 5/3	brown	Silt Loam	1-5%	Calcium Carbonate	None	—
	4	150-200	10YR 4/1	dark gray	Silty Clay Loam	5-10%	Calcium Carbonate	None	Terminated at depth.

Figure 3.38. BHT 07 profile, golf tees show location of artifacts within possible buried soils.

Table 3.15. Backhoe Trench Data for Site 41BP960

Backhoe Trench No.	Depth (cmbs)	Munsell Soil Value	Munsell Color	Soil Texture	Horizon Discussion	Lower Boundary	Cultural Materials	Comments
BHT01	0-20	10YR 4/2	Dark grayish brown	Clay Loam	Firm, subangular, medium size, moderate grade, roots 2-5%, rootlets 15%, snail shell 1%, worm casts 2%	Gradual, horizontal	None	–
	20-70	10YR 5/2	Grayish brown	Sandy Clay Loam	Firm, subangular, coarse size, strong grade, rootlets 10%, pin holes 1-2%, worm casts 2%, snail shells 1%	Clear, horizontal	None	–
	70-101	10YR 4/2	Dark grayish brown	Clay Loam	Firm, crumb to subangular, medium size, moderate grade, rootlets 7%, pinhole 5%, snail shell 1-2%	Clear, smooth	None	–
	101-142	10YR 5/3	Brown	Sandy Clay Loam	Firm, subangular to almost platy, coarse size, moderate to strong grade, rootlets 1-2%, pinholes 5%, worm casts 1%	Gradual, smooth	None	–
	142-195	10YR 6/4	Light Yellowish Brown	Sandy Clay Loam	Friable to loose, crumb to slightly subangular, fine to medium size, weak grade, multiple lamina of sand and calcium carbonate (2cm long) 5%	Clear, smooth	None	–
	195-300	10YR 2/2	Very dark brown	Clay Loam	Extremely firm, blocky almost massive, coarse size, strong grade, calcium carbonate 1-5mm (1-5%), some iron and manganese mottles 5%	Unobserved	None	–
	0-30	10YR 4/2	Dark grayish brown	Clay Loam	Firm, subangular, medium size, moderate grade, roots 2-5%, rootlets 15%, snail shell 1%, worm casts 2%	Gradual, horizontal	None	–
	30-81	10YR 5/2	Grayish brown	Sandy Clay Loam	Firm, subangular, coarse size, strong grade, rootlets 10%, pin holes 1-2%, worm casts 2%, snail shells 1%	Clear, horizontal	None	Numerous sand lenses between 52-65 cmbs
BHT02	81-99	10YR 4/2	Dark grayish brown	Clay Loam	Firm, crumb to subangular, medium size, moderate grade, rootlets 7%, pinhole 5%, snail shell 1-2%	Slightly sloping down to NE	None	–
	99-147	10YR 5/3	Brown	Sandy Clay Loam	Firm, subangular to almost platy, coarse size, moderate to strong grade, rootlets 1-2%, pinholes 5%, worm casts 1%	Gradual, smooth	None	–
	147-205	10YR 6/4	Light Yellowish Brown	Sandy Clay Loam	Friable to loose, crumb to slightly subangular, fine to medium size, weak grade, multiple lamina of sand and calcium carbonate (2cm long) 5%	Clear, smooth	None	–
	205-290	10YR 4/1	Dark grayish brown	Clay Loam	Extremely firm, blocky almost massive, coarse size, strong grade, calcium carbonate 1-5mm (5-10%), some iron and manganese mottles 5%	Unobserved	None	–

Table 3.15. continued

Backhoe Trench No.	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Horizon Discussion	Lower Boundary	Cultural Materials	Comments
BHT03	0-27	10YR 4/2	Dark grayish brown	Clay Loam	Firm, subangular, medium size, moderate grade, roots 2-5%, rootlets 15%, snail shell 1%, worm casts 2%	Gradual, horizontal	None	–
	27-116	10YR 5/2	Grayish brown	Sandy Clay Loam	Firm, subangular, coarse size, strong grade, roots 10%, rootlets 10%, pin holes 1-2%, worm casts 2%, snail shells 1%	Clear, horizontal	None	Numerous sand lenses between 48-64 and 81-116 cmbs; more numerous toward the bottom of the layer
	116-137	10YR 4/2	Dark grayish brown	Clay Loam	Firm, crumb to subangular, medium size, moderate grade, rootlets 7%, pinhole 5%, snail shell 1-2%	Slightly sloping down to NE	None	–
	137-170	10YR 5/3	Brown	Sandy Clay Loam	Firm, subangular to almost platy, coarse size, moderate to strong grade, rootlets 1-2%, pinholes 5%, worm casts 1%	Gradual, smooth	None	–
	170-230	10YR 6/4	Light Yellowish Brown	Sandy Clay Loam	Friable to loose, crumb to slightly subangular, fine to medium size, weak grade, multiple lamina of sand and calcium carbonate (2cm long) 5%	Clear, smooth	None	–
BHT05	230-300	10YR 4/1	Dark gray	Clay Loam	Extremely firm, blocky almost massive, coarse size, strong grade, calcium carbonate 1-5mm (5-10%), some iron and manganese mottles 5%	Unobserved	None	–
	0-21	10YR 4/2	Dark grayish brown	Loamy Clay Loam	Friable, Subangular, medium size, moderate grade, roots 10%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (1%)	Clear, Slightly Wavy	None	–
	21-42	10YR 4/3	Brown	Loam to Clay Loam	Friable, crumb to subangular, fine size, weak grade, roots 5%, rootlets 15%, pin holes 15%, worm casts 5%, snail fragments 5%, whole snail, 1% (hello)	Gradual, smooth	None	–
	42-81	10YR 5/3	Brown	Sandy Clay Loam	Friable, angular, medium to coarse size, moderate grade, roots 1-3%, rootlets 1-5%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (hello)	Abrupt, smooth	None	–
	81-109	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	Friable to slightly firm, angular, medium to coarse size, moderate to strong grade, rootlets 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (lip tooth)	Clear, smooth	None	Matrix from insect burrows (5%) brought down from strat III, possible buried soil
	109-141	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	Friable, angular, medium to coarse size, moderate grade, rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Gradual, smooth	None	–
	141-253	10YR 6/3-6/4	Pale brown to light yellowish brown	Silty Clay Loam	Friable, angular, medium to coarse size, moderate grade, rootlets 3%, pinholes 5%, worm casts 2%, white filaments (2-3mm), no snail shell	Abrupt, smooth	None	Beds of fine sand
	253-290+	10YR 3/1	Very dark gray	Loamy Clay	Firm, angular to massive, coarse size, moderate grade, rootlets 2%, pin holes 1%, worm casts 2%, white nodules (5-10mm) 10%	Unobserved	None	Possible buried soil

Table 3.15. continued

Backhoe Trench No.	Depth (cmbs)	Munsell Soil Value	Munsell Color	Soil Texture	Horizon Discussion	Lower Boundary	Cultural Materials	Comments
BHT06	0-15	10YR 4/2	Dark grayish brown	Loamy Clay Loam	Friable, Subangular, medium size, moderate grade, roots 10%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (1%)	Clear, Slightly Wavy	None	–
	15-43	10YR 5/3	Brown	Sandy Clay Loam	Friable, angular, medium to coarse size, moderate grade, roots 1-3%, rootlets 1-5%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (helio)	Abrupt, smooth	None	–
	43-62	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	Friable to slightly firm, angular, medium to coarse size, moderate to strong grade, rootlets 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (liptooth)	Clear, smooth	None	Slightly higher clay content than BHT05
	62-89	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	Friable, angular, medium to coarse size, moderate grade, rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Gradual, smooth	None	Slightly higher clay content than BHT05
	89-254	10YR 6/3-6/4	Pale brown to light yellowish brown	Silty Clay Loam	Friable, angular, medium to coarse size, moderate grade, rootlets 3%, pinholes 5%, worm casts 2%, white filaments (2-3mm), no snail shell	Abrupt, smooth	None	–
BHT07	254-290	10YR 3/1	Very dark gray	Loamy Clay	Firm, angular to massive, coarse size, moderate grade, rootlets 2%, pin holes 1%, worm casts 2%, white nodules (5-10mm) 10%	Unobserved	None	Possible buried soil
	0-19	10YR 4/2	Dark grayish brown	Loamy Clay Loam	Friable, Subangular, medium size, moderate grade, roots 15%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (5%)	Clear, Slightly Wavy	None	–
	19-44	10YR 5/3	Brown	Sandy Clay Loam	Friable, angular, medium to coarse size, moderate grade, roots 5-10%, rootlets 20%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (helio)	Abrupt, smooth	None	–
	44-84	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	Firm, angular, medium to coarse size, moderate to strong grade, rootlets 5-10%, roots 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (liptooth)	Clear, smooth	None	–
	84-119	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	Friable, angular, medium to coarse size, moderate grade, rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Gradual, smooth	None	Between 83 to 105 cmbs: 1 projectile point distal tip, 2 modified flakes, 2 scrapers, 1 biface, 2 primary flakes, 9 secondary flakes, 9 tertiary flakes, and nine unidentified bones.
	119-137	10YR 3/1	Very dark gray	Loamy Clay	Firm, angular to massive, coarse size, moderate grade, rootlets 2%, pin holes 1%, worm casts 2%, white filaments (2-3mm) 5%	Unobserved	None	–

Table 3.15. continued

Backhoe Trench No.	Depth (cmbs)	Munsell Soil Value	Munsell Color	Soil Texture	Horizon Discussion	Lower Boundary	Cultural Materials	Comments
BHT08	0-16	10YR 4/2	Dark grayish brown	Loamy Clay Loam	Friable, Subangular, medium size, moderate grade, roots 10%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (1%)	Clear, Slightly Wavy	None	–
	16-31	10YR 4/3	Brown	Loam to Clay Loam	Friable, crumb to subangular, fine size, weak grade, roots 5%, rootlets 15%, pin holes 15%, worm casts 5%, snail fragments 5%, whole snail, 1% (rabdodus)	Gradual, smooth	None	–
	31-52	10YR 5/3	Brown	Sandy Clay Loam	Friable, angular, medium to coarse size, moderate grade, roots 1-3%, rootlets 1-5%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (hello)	Abrupt, smooth	None	–
	52-72	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	Friable to slightly firm, angular, medium to coarse size, moderate to strong grade, rootlets 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (lip tooth)	Clear, smooth	None	Possible buried soil
	72-116	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	Friable, angular, medium to coarse size, moderate grade, rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Gradual, smooth	None	Tan pockets of 10YR 7/3-7/4 silt (6-10 mm thick) 89-90 and 104-105 cmbs, discontinuous, possibly flood drape
	116-178	10YR 6/3-6/4	Pale brown to light yellowish brown	Silty Clay Loam	Friable, angular, medium to coarse size, moderate grade, rootlets 3%, pinholes 5%, worm casts 2%, white filaments (2-3mm), no snail shell	Abrupt, smooth	None	–
	178-247	10YR 3/1	Very dark gray	Loamy Clay	Firm, angular to massive, coarse size, moderate grade, rootlets 2%, pin holes 1%, worm casts 2%, white nodules (5-10mm) 10%	Gradual, smooth	None	Mussel shell at 186 cmbs, possibly a buried soil
	247-305	10YR 4/2-4/3	Dark gray to dark grayish brown	Loamy Clay	Firm, angular parting to prismatic, coarse size, moderate to strong grade, white nodules (5-8 mm/15%), iron staining (1-2 mm/1%), iron nodules, snail fragments 1%, insect burrows 2-3%	Gradual, smooth	None	–
	305-336	10YR 5/3	Brown	Silty Clay Loam	Friable, prismatic, medium size, moderate grade, rootlets 1%, slickensides 2-3 cm (2%), white nodules (5-15 mm/10-15%), snail fragments 1%, iron pebbles (2-4mm) <1%	Unobserved	None	Shrink swell

Table 3.15. continued

Backhoe Trench No.	Depth (cmbs)	Munsell Soil Value	Munsell Color	Soil Texture	Horizon Discussion	Lower Boundary	Cultural Materials	Comments
BHT09	0-16	10YR 4/2	Dark grayish brown	Loamy Clay Loam	Friable, Subangular, medium size, moderate grade, roots 10%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (1%)	Clear, Slightly Wavy	None	–
	16-37	10YR 5/3	Brown	Sandy Clay Loam	Friable, angular, medium to coarse size, moderate grade, roots 1-3%, rootlets 1-5%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (lip tooth)	Abrupt, smooth	None	–
	37-84	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	Friable to slightly firm, angular, medium to coarse size, moderate to strong grade, rootlets 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (lip tooth)	Clear, smooth	None	Tan lenses (discontinuities 10YR 7/4, silt loam (65-66, 72-73, 61-62 cmbs)
	84-114	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	Friable, angular, medium to coarse size, moderate grade, rootlets 3%, pin holes 5%, worm casts 1%, insect burrows Gradual, with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth		Possible buried soil with: 2 unidentified bone fragments, 1 modified flake, 3 primary flakes, 16 secondary flakes, 17 tertiary flakes, and 1 scraper from 100 to 110 cmbs. Additionally: 7 ceramic sherds, 3 primary flakes, 7 secondary flakes, and 14 tertiary flakes were encountered in the trench with no depth recorded.	Possible buried soil
	114-139	10YR 6/3-6/4	Pale brown to light yellowish brown	Silty Clay Loam	Friable, angular, medium to coarse size, moderate grade, rootlets 3%, pinholes 5%, worm casts 2%, white filaments (2-3mm), no snail shell	Abrupt, smooth	N	–
	139-165	10YR 3/1	Very dark gray	Loamy Clay	Firm, angular to massive, coarse size, moderate grade, rootlets 2%, pin holes 1%, worm casts 2%, white nodules (5-10mm) 10%	Unobserved	N	–

Cultural materials observed include prehistoric ceramic sherds, lithic debitage and tools, fire-cracked chert, and faunal remains. The two positive auger probes (i.e., AU14 and AU15) each recovered one ceramic sherd between 90–100 cmbs and 80–120 cmbs, respectively. BHT07 contained a distal top of a non-diagnostic projectile point, two scrapers, two modified flakes, one early-stage biface, 20 chert flakes (nine tertiary, nine secondary, and two primary), and nine fragments of non-diagnostic animal bone; artifacts were recovered from between 85 and 105 cmbs. The column sample excavated on the edge of BHT07 was also positive for cultural material. Materials encountered consisted of five tertiary flakes and a possible fired quartzite rock recovered from between 83 and 105 cmbs (Appendix C). BHT09 encountered seven prehistoric ceramic sherds, one modified flake, 60 chert flakes (31 tertiary, 23 secondary, and 6 primary), and two non-diagnostic animal bones; artifacts were recovered from between 100 and 110 cmbs (Figure 3.39). BHT09's column sample was positive for cultural material including 20 chert flakes (17 tertiary, two secondary, and one primary), two fragments of non-diagnostic animal bone, and a single ceramic sherd; artifacts were recovered from between 89 and 101 cmbs (Appendix C). The

thickness of the ceramic sherds recovered from the site range from 5.4 to 6.3 mm. Four of the sherds are burnished with a red slip (2.5YR 4/8) applied to both surfaces. Six of the sherds are burnished with a possible self-slip consistent with the color of the paste. The paste is a strong brown (7.5YR 5/6) color and is the same for all of the sherds. Some of the sherds were fired unevenly and contain a dark yellowish brown (10YR 3/4) core or cortex. All of the sherds contain bone temper, although one (from AU15) also contains some coarse sand temper. All of the sherds are body fragments from indeterminate vessel types. One of the sherds (from AU14) exhibits a rubified and worn interior typical of cooking vessels when the interior slip is removed from repeated stirring or boiling revealing the underlying paste (Figure 3.40). Another sherd (from AU15) exhibits two possible faint fingernail punctations along the exterior surface. The presence of these ceramic sherds with burnished surface treatment, buff colored paste, red slip, and bone temper may indicate an occupation attributed to the Leon Plain or Doss Redware ceramic assemblage, which dates from A.D. 1300 to 1700 and is associated with the Late Prehistoric Toyah Phase (Boyd 2012; Perttula et al. 1995; Texas Beyond History 2018).

Figure 3.39. Artifacts recovered from BHT07 at site 41BP960 (top left: animal bone; bottom left: non-diagnostic projectile point tip; top right and center: scrapers; bottom right: early-stage biface).

41BP960 SUMMARY

Site 41BP960 is a deeply buried prehistoric campsite containing an upper and lower buried soil with bone-tempered pottery, lithic debitage and tools, and faunal remains. The site contains temporally diagnostic prehistoric ceramics indicating a Late Prehistoric Toyah Phase cultural affiliation. Lithic debitage and tools, and well-preserved faunal remains recovered within discrete stratified intact cultural deposits suggest the potential for intact cultural features and additional temporally diagnostic artifacts to be recovered from the unexcavated portions of the site. Based on these data, site 41BP960 has the potential to contribute new and important information to the understanding of regional prehistory, including the Late Prehistoric Toyah Phase that also extended into the historic era (circa A.D. 1540 to 1700). As such, avoidance of the site or significance testing is recommended to determine the site's eligibility for SAL designation or listing on the NRHP. SWCA conducted backhoe trenching along a reroute approximately 60 m to the east of the site and determined that site 41BP960 does not extend into these areas; the site is now being avoided by these design alignment changes.

41BP961

Site 41BP961 is situated along the T2 terrace situated northeast of the tributary drainage and consists of open pasture and hay fields along the riparian zones of the waterways (Figure 3.41; Appendix A:101). Vegetation consists of tall, dense hay field within pastures, and mixed wooded and riparian secondary growth along the drainages. Ground surface visibility was poor due to the dense vegetation. Site 41BP961 is located on privately owned land used for agricultural and ranching activities. Disturbances include erosion, vegetation clearing, fence lines, two-track roads, and nearby land modification for stock ponds.

Site 41BP961 is also a deeply buried prehistoric campsite of unknown temporal or cultural affiliation with lithic debitage and tools, fire-cracked chert/rock, and red ochre that measures approximately 180 m northeast/southwest by 27 m northwest/southeast within the project corridor based on artifact distribution and landforms; however, the site may extend beyond the project area to the southeast and northwest. Similar to site 41BP960, intensive systematic excavation of hand auger probes was conducted followed by excavation of mechanical backhoe trenches with selective column

Figure 3.40a. Prehistoric ceramics showing exterior surface recovered from AU14 and AU15 at site 41BP960.

Figure 3.40b. Prehistoric ceramics showing interior surface recovered from AU14 and AU15 at site 41BP960.

Restricted Information
Not for Public Disclosure

Figure 3.41. 41BP961 site map.

sampling. No cultural materials were observed along the ground surface due to poor visibility.

SWCA excavated 11 auger probes (i.e., AU04–08 and AU34–39) at approximately 50-m intervals to investigate the project corridor and delineate the site, of which three (i.e., AU35 and AU37–38) were positive for cultural materials from 0 to 170 cmbs (Table 3.16). SWCA also excavated seven backhoe trenches (i.e., BHT04 and BHT10–15), of which six (i.e., BHT04 and BHT10–14) were positive for cultural materials from 20 to 150 cmbs (Table 3.17). Column samples measuring 50×50-cm were excavated off the walls of the positive trenches in arbitrary 10-cm levels (Appendix C). In addition, SWCA had previously excavated two shovel tests (i.e., DR207 and AJ08) approximately 10 m and 20 m northwest, respectively, and one shovel test (i.e., AJ07) approximately 50 m southwest of the site, all of which were negative for cultural materials.

The trenches typically consisted of four to seven strata with alternating horizons of dark grayish brown (10YR 4/2) to dark gray (10YR 4/1) clay loam and light yellowish brown (10YR 6/4), pale brown (10YR 6/3), or brown (10YR 5/3) silty or sandy clay loam deposits with clear-gradual lower boundaries. The horizons typically had a friable consistency and subangular blocky structure, which graded into a massive, structureless

horizon with increasing calcium carbonate inclusions and an extremely firm consistency. The investigations encountered an upper buried soil from approximately 80 to 120 cmbs, a second lower buried soil at approximately 140 cmbs and below, and a shallow cultural horizon situated above the buried soils between 0 and 50 cmbs containing the cultural materials observed during the investigations (Figure 3.42).

Cultural materials observed included lithic debitage and few flake tools of chert, fire-cracked chert/rock, and a red ochre fragment. The positive auger probes recovered a piece of fire-cracked chert (within AU35) at approximately 110 cmbs within the upper buried soil, an *in situ* chert tertiary reduction flake (within AU37) in old alluvium at a depth of 160 to 170 cmbs within the lower encountered buried soil, and a chert secondary reduction flake (within AU38) between 0 and 30 cmbs within a cultural horizon situated above the two buried soils observed. The six positive backhoe trenches (i.e., BHT04 and BHT10–BHT14) recovered 19 chert flakes (15 tertiary, three secondary and one primary), one fragment of chert thermal shatter, and fire-cracked chert/rock, all within the buried soils identified above (Figure 3.43; Appendix C). In total the six positive backhoe trenches recovered 108 chert flakes (64 tertiary, 35 secondary, and nine primary), two

Figure 3.42. Overview of site 41BP961 from BHT 11 location, facing west.

Table 3.16. Auger Probe Data for Site 41BP961

Auger Probe No.	Level	Depth (cmts)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/ Reason for Termination
AU04	1	0-130	10YR 5/4	yellowish brown	Silty Clay Loam	—	—	None	—
	2	130-200	10YR 4/4	dark yellowish brown	Clay Loam	—	—	None	Terminated at depth.
AU05	1	0-140	10YR 5/2	grayish brown	Clay Loam	—	—	None	—
	2	140-170	10YR 5/6	yellowish brown	Clay Loam	10-20%	Calcium Carbonate, Gravels, Pebbles, Iron concretions	None	Terminated at depth.
AU06	1	0-40	10YR 5/2	grayish brown	Clay Loam	—	—	None	—
	2	40-110	10YR 5/6	yellowish brown	Clay Loam	10-20%	Calcium Carbonate, Gravels, Pebbles, Iron concretions	None	Terminated at depth.
AU07	1	0-140	10YR 5/2	grayish brown	Clay Loam	—	—	None	—
	2	140-160	10YR 5/6	yellowish brown	Clay Loam	10-20%	Calcium Carbonate, Gravels, Pebbles, Iron concretions	None	Terminated at depth.
AU08	1	0-40	10YR 4/4	dark yellowish brown	Silt Loam	—	—	None	—
	2	40-120	10YR 5/6	yellowish brown	Silt Loam	—	—	None	—
	3	120-170	10YR 6/4	light yellowish brown	Sandy Loam	1-5%	Calcium Carbonate, White Fungus or Calcium	None	—
	4	170-200	10YR 6/3	pale brown	Silty Clay Loam	1-5%	Calcium Carbonate	None	Terminated at depth.
AU34	1	0-35	10YR 4/2	dark grayish brown	Silty Clay	—	—	None	—
	2	35-120	10YR 5/2	grayish brown	Silty Clay Loam	—	—	None	—
	3	120-150	10YR 5/3	brown	Silt Loam	1-5%	Calcium Carbonate	None	—
	4	150-200	10YR 4/1	dark gray	Silty Clay Loam	5-10%	Calcium Carbonate	None	Terminated at depth.

Table 3.16. continued

Auger Probe No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/ Reason for Termination
AU35	1	0-40	10YR 4/2	dark grayish brown	Silty Clay	—	—	None	—
	2	40-90	10YR 5/2	grayish brown	Silty Clay Loam	—	—	None	—
	3	90-120	10YR 4/1	dark gray	Silty Clay Loam	—	—	1: Other Prehistoric-FCC found [110 cmbs]	—
	4	120-160	10YR 5/3	brown	Silt Loam	1-5%	Calcium Carbonate	None	Terminated at depth.
AU36	1	0-40	10YR 4/2	dark grayish brown	Silty Clay	—	—	None	—
	2	40-90	10YR 5/2	grayish brown	Silty Clay Loam	—	—	None	—
	3	90-165	10YR 5/3	brown	Silty Clay Loam	1-5%	Calcium Carbonate	None	Terminated at depth.
AU37	1	0-60	10YR 4/1	dark gray	Silty Clay	—	—	None	—
	2	40-90	10YR 5/2	grayish brown	Silty Clay Loam	—	—	None	—
	3	90-140	10YR 4/1	dark gray	Silty Clay	—	—	None	—
	4	140-180	10YR 4/1	dark gray	Silty Clay	1-5%	Calcium Carbonate	1: Flake (tertiary) [160-170 cmbs]	—
	5	180-200	10YR 5/3	brown	Silty Clay Loam	5-10%	Calcium Carbonate	None	Terminated at depth.
AU38	1	0-50	10YR 4/2	dark grayish brown	Silty Clay	—	—	1: Flake (secondary)	—
	2	50-100	10YR 5/2	grayish brown	Silty Clay Loam	—	—	None	—
	3	100-150	10YR 5/3	brown	Silty Clay Loam	5-10%	Calcium Carbonate	None	Terminated at depth.
AU39	1	0-40	10YR 4/1	dark gray	Silty Clay	—	—	None	—
	2	40-100	10YR 5/2	grayish brown	Silty Clay Loam	—	—	None	—
	3	100-140	10YR 4/1	dark gray	Loam	—	—	None	—
	4	140-200	10YR 5/3	brown	Silt Loam	—	—	None	Terminated at depth.

Table 3.17. Backhoe Trench Data for Site 41BP961

Backhoe Trench No.	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Horizon Discussion	Lower Boundary	Cultural Materials	Comments
BHT04	0-45	10YR 4/2	Dark grayish brown	Clay Loam	Firm, subangular, medium size, moderate grade, roots 2-5%, rootlets 15%, snail shell 1%, worm casts 2%	Gradual, horizontal	None	–
	45-77	10YR 5/2	Grayish brown	Sandy Clay Loam	Firm, subangular, coarse size, strong grade, rootlets 10%, pin holes 1-2%, worm casts 2%, snail shells 1%	Clear, horizontal	None	–
	77-132	10YR 4/2	Dark grayish brown	Clay Loam	Firm, crumb to subangular, medium size, moderate grade, rootlets 7%, pinhole 5%, snail shell 1-2%	Clear, smooth	9 tertiary flakes were identified in the backhoe spoil pile during excavation and came from a depth of between 140 to 150 cmbs. Additionally: 1 secondary soil flake and 7 pieces of thermal shatter were collected from an unknown depth.	Possible buried soil
	132-193	10YR 4/2	Dark grayish brown	Clay Loam	Firm, angular, medium size, moderate grade, prominent slickensides, calcium carbonate (2-5mm) 3-5%	Clear, horizontal	None	Possible buried soil
	193-300	10YR 6/4	Light Yellowish Brown	Sandy Clay Loam	Firm, subangular, coarse size, strong grade, calcium carbonate 1 cm (2%), prominent slickensides	Unobserved	None	–
BHT10	0-16	10YR 4/2	Dark grayish brown	Loamy Clay Loam	Friable, Subangular, medium size, moderate grade, roots 10%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (1%)	Clear, Slightly Wavy	None	–
	16-44	10YR 4/3	Brown	Loam to Clay Loam	Friable, crumb to subangular, fine size, weak grade, roots 5%, rootlets 15%, pin holes 15%, worm casts 5%, snail fragments 2%, whole snail, 1% (helio)	Gradual, smooth	Charcoal and burned clay	–
	44-74	10YR 5/3	Brown	Sandy Clay Loam	Friable, angular, medium to coarse size, moderate grade, roots 3%, rootlets 1-5%, pin holes 5-10%, worm casts 2%, snail fragments 2%, whole snail 1% (helio)	Abrupt, smooth	None	–
	74-101	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	Friable to slightly firm, angular, medium to coarse size, moderate to strong grade, rootlets 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (liptooth)	Clear, smooth	Burned rock fragment at 90 cmbs	Possible buried soil
	101-151	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	Friable, angular, medium to coarse size, moderate grade, rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Gradual, smooth	None	–
BHT10	151-205	10YR 6/3-6/4	Pale brown to light yellowish brown	Silty Clay Loam	Friable, angular, medium to coarse size, moderate grade, rootlets 3%, pinholes 5%, worm casts 2%, white filaments (2-3mm), no snail shell	Abrupt, smooth	None	–
	205-305	10YR 3/1	Very dark gray	Loamy Clay	Firm, angular to massive, coarse size, moderate grade, rootlets 2%, pin holes 1%, worm casts 2%, white nodules (5-10mm) 10%	Unobserved	None	–

Table 3.17. continued

Backhoe Trench No.	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Horizon Discussion	Lower Boundary	Cultural Materials	Comments
BHT11	0-10	10YR 4/2	Dark grayish brown	Loamy Clay Loam	Friable, Subangular, medium size, moderate grade, roots 15%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (5%)	Clear, Slightly Wavy	None	Ground surface slightly sloping toward the west
	10-23	10YR 5/3	Brown	Sandy Clay Loam	Friable, angular, medium to coarse size, moderate grade, roots 5-10%, rootlets 20%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (helio)	Irregular, wavy	None	–
	23-41	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	Firm, angular, medium to coarse size, moderate to strong grade, rootlets 5-10%, roots 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (liptooth)	Abrupt, wavy	None	–
	41-82	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	Friable, angular, medium to coarse size, moderate grade, rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Clear, wavy	Possible graver at 63 cmbs, two tertiary flakes at 78 and 79 cmbs, and a primary flake at 82 cmbs.	–
BHT12	82-146	10YR 3/1	Very dark gray	Loamy Clay	Firm, angular to massive, coarse size, moderate grade, rootlets 2%, pin holes 1%, worm casts 2%, white filaments (10-30mm) 3-5%	Unobserved	None	–
	0-20	10YR 4/2	Dark grayish brown	Loamy Clay Loam	Friable, Subangular, medium size, moderate grade, roots 15%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (5%)	Clear, Slightly sloping west	None	–
	20-42	10YR 5/3	Brown	Sandy Clay Loam	Friable, angular, medium to coarse size, moderate grade, roots 5-10%, rootlets 20%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (helio)	Gradual, wavy	None	–
	42-101	10YR 4/1-4/2	Dark gray to dark grayish brown	Loamy Clay	Firm, subangular, coarse size, moderate grade, less than 1% snail shell, roots 5%, rootlets 5%, pin holes 5%, worm casts 1%	Clear, horizontal	A secondary flake and piece of thermal shatter at 62 cmbs, a tertiary flake at 74 cmbs, and a piece of thermal shatter at 83 cmbs.	Possible buried soil
	101-154	10YR 3/1	Very dark gray	Loamy Clay	Firm, angular to massive, coarse size, moderate grade, rootlets 2%, pin holes 1%, worm casts 2%, white filaments (10-30mm) 3-5%	Unobserved	None	–

Table 3.17. continued

Backhoe Trench No.	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Horizon Discussion	Lower Boundary	Cultural Materials	Comments
BHT13	0-18	10YR 4/2	Dark grayish brown	Loamy Clay Loam	Friable, Subangular, medium size, moderate grade, roots 10%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (1%)	Clear, Slightly Wavy	None	–
	18-37	10YR 4/3	Brown	Loam to Clay Loam	Friable, crumb to subangular, fine size, weak grade, roots 5%, rootlets 15%, pin holes 15%, worm casts 5%, snail fragments 5%, whole snail, 1% (helio)	Gradual, smooth	None	–
	37-51	10YR 5/3	Brown	Sandy Clay Loam	Friable, angular, medium to coarse size, moderate grade, roots 1-3%, rootlets 1-5%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (helio)	Gradual, smooth	None	Lower boundaries are very gradual
	51-74	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	Friable to slightly firm, angular, medium to coarse size, moderate to strong grade, rootlets 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (liptooth)	Gradual, smooth	A single tertiary flake at 50, 63, and 69cmbs. Additionally, a secondary flake and five tertiary flakes were identified in the backhoe spoil pile with no known depths of origin. Lower boundaries are very gradual	Lower boundaries are very gradual; possible buried soil
	74-147	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	Friable, angular, medium to coarse size, moderate grade, rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Unobserved	None	–
BHT14	0-15	10YR 4/2	Dark grayish brown	Loamy Clay Loam	Friable, Subangular, medium size, moderate grade, roots 10%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (1%)	Clear, Slightly Wavy	None	–
	15-38	10YR 4/3	Brown	Loam to Clay Loam	Friable, crumb to subangular, fine size, weak grade, roots 5%, rootlets 15%, pin holes 15%, worm casts 5%, snail fragments 5%, whole snail, 1% (helio)	Gradual, smooth	None	–
	38-50	10YR 5/3	Brown	Sandy Clay Loam	Friable, angular, medium to coarse size, moderate grade, roots 1-3%, rootlets 1-5%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (helio)	Gradual, smooth	None	–
	50-93	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	Friable to slightly firm, angular, medium to coarse size, moderate to strong grade, rootlets 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (liptooth)	Gradual, smooth	Single tertiary flake at 90 cmbs.	Possible buried soil
	93-140	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	Friable, angular, medium to coarse size, moderate grade, rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Unobserved	Single tertiary flake at 95 cmbs, one piece of thermal shatter at 96 cmbs, and one piece of thermal shatter at 98 cmbs. Within the backhoe spoil pile one tertiary flake and one piece of FCR was collected. Additionally, two tertiary flakes were collected from an unknown depth.	–

Table 3.17. continued

Backhoe Trench No.	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Horizon Discussion	Lower Boundary	Cultural Materials	Comments
BHT15	0-15	10YR 4/2	Dark grayish brown	Loamy Clay Loam	Friable, Subangular, medium size, moderate grade, roots 10%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (1%)	Clear, Slightly Wavy	None	–
	15-28	10YR 4/3	Brown	Loam to Clay Loam	Friable, crumb to subangular, fine size, weak grade, roots 5%, rootlets 15%, pin holes 15%, worm casts 5%, snail fragments 5%, whole snail, 1% (helio)	Gradual, smooth	None	–
	28-55	10YR 5/3	Brown	Sandy Clay Loam	Friable, angular, medium to coarse size, moderate grade, roots 1-3%, rootlets 1-5%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (helio)	Abrupt, smooth	None	–
	55-79	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	Friable to slightly firm, angular, medium to coarse size, moderate to strong grade, rootlets 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (liptooth)	Clear, smooth	None	Possible buried soil
	79-121	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	Friable, angular, medium to coarse size, moderate grade, rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Clear, smooth	None	–
	121-210	10YR 3/1	Very dark gray	Loamy Clay	Firm, angular to massive, coarse size, moderate grade, rootlets 2%, pin holes 1%, worm casts 2%, white nodules (5-10mm) 10%	Abrupt, smooth	None	–
	210-330	10YR 5/3	Brown	Silty Clay Loam	Friable, prismatic, medium size, moderate grade, rootlets 1%, slickensides 2-3 cm (2%), white nodules (5-15 mm/10-15%), snail fragments 1%, iron pebbles (2-4mm) <1%	Unobserved	None	–

Figure 3.43. BHT 11 profile, golf tees at stratigraphic horizon boundaries.

Figure 3.44. Artifacts recovered from BHT 11 at site 41BP961.

pieces of fire-cracked rock, 11 pieces of thermally altered chert shatter, three modified flakes, three scrapers, one biface, two fragments of unidentified bone, seven ceramic sherds, one possible graver, and charcoal and burned clay fragments. The column samples excavated off of BHT04 and BHT14 were also positive for cultural material. The column sample at BHT04 identified two pieces of thermal shatter and three tertiary chert flakes from between 79 and 100 cmbs. The BHT14 column sample encountered a single secondary flake at 97 cmbs (Appendix C).

41BP961 SUMMARY

Site 41BP961 is a deeply buried prehistoric campsite containing an upper and lower buried soil with a shallower cultural horizon above the two buried soils. The site contains lithic debitage and tools, fire-cracked chert/rock, and red ochre within discrete stratified intact cultural deposits, suggesting the potential for intact cultural features to be present within the site. Based on these data, site 41BP961 has the potential to contribute new and important information to the understanding of regional prehistory. As such, avoidance of the site or significance testing is recommended to determine the site's eligibility for SAL designation or listing on the NRHP. SWCA conducted backhoe trenching along a reroute approximately 20 m to the east of the site and

determined that site 41BP961 does not extend into these areas; the site is now being avoided by these design alignment changes.

41BP962

Site 41BP962 is a historic-age remnant of a raised roadbed and approach to a no longer extant bridge over Dry Creek. The roadbed is located approximately 75 feet west of the existing Upper Elgin River Road and approximately 1.1 miles northeast of its intersection with CR 416 (Figure 3.45; Appendix A:106). Vegetation at the site consists predominately of mesquite trees with some oak and briar and the fence line parallel to Upper Elgin River Road is cleared with medium to tall grass (Figure 3.46). Ground surface visibility was approximately 0–20 percent across the site.

A review of historic topographic maps suggests site 41BP962 may represent the original bridge crossing over Dry Creek depicted on the 1904 Bastrop map, although an exact alignment cannot be determined. No other depiction of Upper Elgin River Road matches the alignment of site 41BP962. The raised roadbed is approximately 150 feet long, 60 feet wide, and approximately 10–15 feet tall (see Figure 3.46). The structure is oriented approximately 16 degrees east and may have

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Figure 3.45. 41BP962 site map.

Table 3.18. Shovel Test Data for Site 41BP962

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/Reason for Termination
DR1009	1	0-35	10YR 4/4	dark yellowish brown	Sandy Clay Loam	10-20%	Cobbles, Gravels, Pebbles	None	Terminated at basal clay.
DR1010	1	0-30	7.5YR 2.5/1	black	Silty Clay	5-10%	Cobbles, Gravels, Mottles, Pebbles	None	Terminated at disturbed soil.
JFA10	1	0-30	7.5YR 2.5/1	black	Silty Clay	5-10%	Cobbles, Gravels, Mottles, Pebbles	None	Terminated at disturbed soil.
NMG09	1	0-25	10YR 4/4	dark yellowish brown	Sandy Clay Loam	10-20%	Cobbles, Gravels, Pebbles	None	—
	2	25-45	10YR 3/2	very dark grayish brown	Clay Loam	5-10%	Cobbles, Gravels, Mottles, Pebbles	None	—
	3	45-60	10YR 3/2	very dark grayish brown	Clay Loam	5-10%	Calcium Carbonate, Cobbles, Mottles	None	Terminated at basal clay.
NMG10	1	0-20	10YR 5/4	yellowish brown	Sandy Loam	>20%	Calcium Carbonate, Cobbles, Gravels, Large Rock Frags, Mottles, Pebbles, Snail Shell	None	Terminated at heavy disturbance.
NMG11	1	0-25	10YR 4/4	dark yellowish brown	Sandy Clay Loam	10-20%	Cobbles, Gravels, Pebbles	None	—
	2	25-45	10YR 3/2	very dark grayish brown	Clay Loam	5-10%	Cobbles, Gravels, Mottles, Pebbles	None	—
	3	45-60	10YR 3/2	very dark grayish brown	Clay Loam	5-10%	Calcium Carbonate, Cobbles, Mottles	None	Terminated at basal clay.

once met up with the current roadway to the south. No bridge remains were located at the site.

Six shovel tests (i.e., DR1009–1010, JFA10, and NMG09–11) were excavated on site, all of which were negative for cultural materials (Table 3.18). Shovel tests typically revealed dark yellowish brown (10YR 4/4) sandy clay loam or black (7.5YR 2.5/1) silty clay and terminated at compacted, disturbed soils with 5–20 percent mottles between 30 and 60 cmbs.

41BP962 SUMMARY

Site 41BP962 is a historic-age remnant of a raised roadbed and bridge approach located on the west bank of Dry Creek approximately 75 feet west of Upper

Elgin Road, and may be depicted on historic topographic maps dating to the early twentieth century. Six shovel tests, all negative for cultural materials, were excavated within the project corridor near the road bed and no cultural materials were identified along the ground surface. Overall, site 41BP962 does not have the potential to yield information important to the history of the region. Due to the lack of diagnostic material or intact cultural features, SWCA recommends site 41BP962 as NOT ELIGIBLE for the NRHP or for designation as a SAL. No further work or avoidance strategy is recommended for site 41BP962 within the project area.

Figure 3.46. Overview of site 41BP962, roadbed in background, facing west.

HILL CEMETERY

The Hill Cemetery is a multiple family, historic-age cemetery, located within site 41BP818 approximately 70 m southeast of FM 696 in northwestern Bastrop County (see Figure 3.29; Appendix A:113). The cemetery measures approximately 20×20 m and overlooks an unnamed tributary of the Colorado River approximately 230 m to the southwest. A post and barbed wire fence forms the boundaries of the cemetery. A plowed agricultural field is north and east of the cemetery boundary, and an active quarry is to the southeast. Vegetation consists of overgrown grasses, small shrubs, and mixed hardwood trees.

Field investigations identified 9 to 12 grave markers in various stages of deterioration and collapse (Figure 3.47). The markers range from 1885 to 1895 and represent individuals from the Hill, Bragg, Griffin, Storey, and Hubbard Families; a monument is erected within the cemetery commemorating the five families represented (Figure 3.48). Avoidance of the cemetery with a 75-foot buffer was recommended; subsequently, the project alignment was rerouted to the east and the cemetery will not be impacted by the current project.

Figure 3.47. Overview of headstones at Hill Cemetery, facing north.

Figure 3.48. Monument within the Hill Cemetery commemorating the Hill, Bragg, Griffin, Storey, and Hubbard Families.

CALDWELL COUNTY

One cultural resource site was newly recorded in Caldwell County (Figure 3.49; see Table 3.3). The archaeological site (i.e., 41CW173) consists of a historical house and shed with a sparse artifact scatter. SWCA recommends site 41CW173 as NOT ELIGIBLE for listing in the NRHP or for SAL designation. No avoidance strategy or further work is recommended for the site.

41CW173

Site 41CW173 is an early to mid-twentieth century house and associated shed outbuilding located along

NW River Road along the western margin of Caldwell County, Texas (Figure 3.50; Appendix A:198). The site is situated on a prominent rocky ridge on a flat terrace which slopes steeply to the southwest towards the immediately adjacent San Marcos River. Vegetation consists primarily of short grasses with a few hickory and oak trees, and ground surface visibility was fairly high within areas of erosion. Site 41CW173 is located on privately owned land. The general area consists of cultivated fields or open pastures and has been disturbed through agricultural plowing and erosion caused by flooding events. The historic-age main house and shed, as well as other modern structures within the parcel, are used as a motorcycle repair shop, and the area is littered with motorcycle parts, tires, and household debris.

Site 41CW173 consists of a historic-age house (Feature F01), a shed outbuilding (Feature F02), and associated historic artifact scatter measuring approximately 265 feet northeast/southwest by 130 feet northwest/southeast. Both structures are depicted on the 1964 San Marcos USGS 7.5-minute topographic quadrangle map within the site area (USGS 2018). Additionally, two structures are depicted near the site area on the 1919 San Marcos USGS topographic quadrangle map; however, due to the large scale of the map, it is unclear if these are the same two structures (Foster et al. 2006).

The main house (F01) has very few windows, a peaked roof, is covered with corrugated metal, and is constructed with a pier and beam foundation (Figure 3.51). A small dilapidated front porch is in the front of the house facing southeast (Figure 3.52). Behind the main house is a small wooden shed outbuilding (F02), which is also of pier and beam construction (Figure 3.53). The shed has a corrugated metal roof and is made of wood panels. A modern wooden porch has been constructed in front of the shed. The house and outbuildings are both in poor condition. Just west of the wooden shed is a smaller storage shed constructed of a mixture of wood paneling and sheet metal and a large metal storage container is located just southwest of the storage shed; the storage shed and container are not historic-age.

In addition, a very sparse historic artifact scatter of whiteware sherds and fragmented aqua and green glass was observed on the surface mixed with modern debris (Figure 3.54). Six shovel tests (MRC100–105) were excavated in the vicinity of the structures, none of which contained cultural materials (Table 3.19). Shovel tests

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Figure 3.49. Caldwell County map.

Figure 3.50. 41CW173 site map.

Figure 3.51. Overview of back of main house at 41CW173, facing south.

Figure 3.52. Overview of front of main house at site 41CW173, facing north.

Figure 3.53. Overview of shed outbuilding at 41CW173, facing north.

typically revealed very dark grayish brown (10YR 3/2) silt loam with dense introduced gravels; all terminated at compacted, disturbed gravel lenses at 10 cmbs.

41CW173 SUMMARY

41CW173 consists of an early- to mid-twentieth-century main house and shed outbuilding that has been heavily altered for use as a motorcycle repair shop. Despite the modern alterations, the structures are in disrepair. The site lacks buried cultural material and

although some possible historic-age whiteware sherds and glass were observed on the ground surface, these were sparse and scattered. Due to the lack of integrity and poor condition, coupled with a very sparse surficial artifact scatter, site 41CW173 has generally low research value and is recommended as NOT ELIGIBLE for the NRHP or for designation as a SAL. Due to a shift of the project corridor since the original recording of the site, the resource is no longer within the project area boundaries and will not be impacted by the project.

Table 3.19. Shovel Test Data for Site 41CW173

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/ Reason for Termination
MRC100	1	0-10	10YR 3/2	very dark grayish brown	silt loam	>20%	Gravels	None	Terminated at disturbance-dense introduced gravels.
MRC101	1	0-10	10YR 3/2	very dark grayish brown	silt loam	>20%	Gravels	None	Terminated at disturbance-dense introduced gravels.
MRC102	1	0-10	10YR 3/2	very dark grayish brown	silt loam	>20%	Gravels	None	Terminated at disturbance-dense introduced gravels.
MRC103	1	0-10	10YR 3/2	very dark grayish brown	silt loam	>20%	Gravels	None	Terminated at disturbance-dense introduced gravels.
MRC104	1	0-10	10YR 3/2	very dark grayish brown	silt loam	>20%	Gravels	None	Terminated at disturbance-dense introduced gravels.
MRC105	1	0-10	10YR 3/2	very dark grayish brown	silt loam	>20%	Gravels	None	Terminated at disturbance-dense introduced gravels.

Figure 3.54. Artifacts from ground surface of site 41CW173.

GUADALUPE COUNTY

One cultural resource site and one isolated find were newly recorded and two previously recorded cultural resource sites were revisited and/or further investigated in Guadalupe County (Figure 3.55; see Table 3.3) The newly recorded archaeological site (i.e., 41GU200) consists of a prehistoric lithic scatter. The isolated find (i.e., IF12) consists of a single prehistoric lithic primary reduction flake that was not recorded as an archaeological site (Appendix A:214; see Table 3.4). Testing and data recovery investigations were conducted at the previously recorded prehistoric campsite (i.e., 41GU177), while archival research was conducted for the historic farm complex (i.e., 41GU180), based on recommendations from the 2015 initial cultural resources investigations.

One of the previously recorded archaeological sites (i.e., 41GU177) is recommended as ELIGIBLE for listing on the NRHP and for SAL designation. SWCA recommends avoidance or further investigations for the portions of the site which were not further investigated and mitigated. SWCA recommends the remaining two archaeological sites (i.e., 41GU180 and 41GU200) in Guadalupe County as NOT ELIGIBLE for listing on the NRHP or for SAL designation. No avoidance strategy or further work is recommended for these remaining two sites within the project corridor.

41GU177

Site 41GU177 is a multicomponent campsite containing components deposited intermittently from the approximate Late Archaic to Transitional Archaic periods

through Late Prehistoric times located in northwestern Guadalupe County. The site is on the western high bank of the Guadalupe River, with a 30- to 40-foot vertical drop to the river bottom to the east and gently sloping (2–5 percent slope) terrain to the west (Figure 3.56; Appendix A:250). The site was originally recorded during the 2015 initial cultural resources investigations.

Ultimately, the 2015 investigations revealed intact prehistoric subsurface cultural materials and a buried cultural feature in the northeastern/eastern portion of the site. Given the apparent integrity of the cultural deposit and the depth of observed artifacts, SWCA recommended that a phase of test excavations was warranted to better explore the cultural deposits through hand excavations and to determine if the cultural deposits retained sufficient integrity to warrant SAL designation. SWCA revisited the site in 2016 to conduct further testing under Permit No. 7295 which consisted of backhoe trenching and 1×1-m hand excavations units (Appendix D; Rodriguez et al. 2017). Following completion of the limited testing excavations, and consultation with the THC, it was determined that there was sufficient evidence to recommend that portions of the site warranted SAL designation and either avoidance or data recovery excavations.

In 2017, SWCA conducted close interval shovel testing and additional backhoe trenching at the site to better determine the nature, depth, and extent of its cultural deposits (i.e., was there more than one temporal component represented) and to ultimately refine the proposed data recovery areas. Based on the results of the phased investigations at the site, SWCA refined the location and extent of potential data recovery efforts, focusing on the more significant and intact parts of the site identified during the various investigations that would be impacted by construction-related activities. Data recovery excavations conducted under Permit No. 8231 at 41GU1277 began the last week of November 2017 and extended through December 28, 2017. The analysis and reporting for the data recovery investigations are ongoing and will be presented in a separate report (Nielsen et al. 2019).

41GU180

Site 41GU180 is a historic farmstead situated on a generally level upland terrace of Long Creek approximately 400 m northwest overlooking an unnamed drainage to the east in northwest Guadalupe County, Texas (Figure 3.57; Appendix A:255). Vegetation on site consists of heavily overgrown mesquite and mixed

Figure 3.55. Guadalupe County map.

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Figure 3.56. 41GU177 site map.

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Figure 3.57. 41GU180 site map.

thorny bramble, vines, grasses, and cacti, which afforded 0 to 10 percent ground surface visibility. The site is on private property and has been impacted by erosion, vegetation clearing, plowing, and cattle ranching.

Site 41GU180 was originally recorded by SWCA in 2015 as a historic farmstead that measures 5 m north-west/southeast by 30 m northeast/southwest within the project corridor. Visual inspection revealed a historic farmstead containing seven structures and an associated scatter of historic artifacts consisting of yellow and white/gray brick, corrugated metal fragments, miscellaneous wood fragments, and spools of barbed wire. The seven cultural features found at 41GU180 include a stone-lined well (HR01), the main house (HR02), a metal cistern (HR03), a dilapidated barn (HR04), a board and batten siding shed (HR05), five vertical concrete footings (HR06), and a second dilapidated board and batten barn (HR07). All shovel tests excavated within the site area were negative for cultural materials and encountered pre-Holocene clay at or near the surface.

SWCA's 2015 initial investigations recommended site 41GU180 as NOT ELIGIBLE for the listing in the NRHP under Criterion D or for designation as a SAL, since the remains of the structures and the associated surficial scatter of construction materials does not have the potential to yield significant, new information on turn-of-the-century homesteads in the area. However, further archival and deed research was recommended to determine if the site is ELIGIBLE for NRHP listing under Criterion A or B as it is currently unknown if site 41GU180 is associated with important events or persons. As such, avoidance of the site, pending further archival research, was recommended.

SWCA's architectural historian Victoria Myers, M.A., conducted archival and deed research for site 41GU180. Research of the county deed records did not locate the original acquisition for the property in which site 41GU180 is located. Archival research indicated that the property was associated with the Altwein and Jensch families in the late nineteenth century and with the Hoffman/Zipp family throughout the twentieth century. In 1959, the parcel was sold to the current owner and her husband. Additional archival research was conducted by Nesta Anderson from Pape Dawson.

Deed research was able to determine that in 1898, the Altweins conveyed the 65-acre subject tract to their son Fritz (Guadalupe County Deed Records [GCDR]

1898:14:16). The 1900 Guadalupe County census notes Fritz as a 27-year-old farmer living in Precinct 2 of Guadalupe County with his wife Frieda (25) and children Erna (2) and Edward (7 months). The census notes Fritz owned the property he was living on, suggesting he would have been living on the subject parcel.

The Altweins only retained the property for 6 years, conveying it to Otto Jensch in 1904 (GCDR 1904:24:511). Otto in return only kept the property for 2 years, conveying it to Albert Altwein in 1906 (GCDR 1906:28:248). The Jensch family, which in the 1910 Guadalupe County Census consisted of Otto (30), his wife Ida (29), and their daughter Elsie (5), may have lived on the property, but given their short period of ownership, likely lived elsewhere.

Albert Altwein owned the property for 3 years, conveying it to Meta Hoffman with a vendor's lien in 1909 (GCDR 1909:33:137). Albert appears in the 1900 census as a 21-year-old farm laborer living in his father William's household. William (60) was a farmer who lived with his daughters Emma (23) and Meda (18) and sons Henry (22), Albert, and Arthur (14). It is uncertain if William and his family lived on the property, but if so it was only for a brief time.

Meta Hoffman appears in the 1910 Guadalupe County census as a 32-year-old farmer who had mortgaged her property. Her household included her sons Herbert (9) and Adolph (1) as well as her daughters Hertha (7), Irma (5), and Thelma (3). The family lived in Justice Precinct #2. In 1914, Meta married Robert Zipp (Guadalupe County Marriage Records [GCMR] 1914:7:274). The 1920 Guadalupe County census shows Robert (45) and Meta (41) living on Schumansville-New Braunfels Road in Justice Precinct 2. Their household includes Robert's daughters from his first marriage, Ruby (17) and Cora (13), and Meta's children from her first marriage, Hertha (17), Thelma (13), and Otto (10). Robert and Meta's children Mary (4) and Margarite (8 months) were also living in the household. The couple owned the property they lived on free of mortgage. The 1930 Guadalupe County census shows them continuing to live on Schumansville Road, suggesting they likely lived on the subject parcel.

Meta Zipp died in 1956, at which time her probated will notes that her land assets consist of a 65-acre tract of land on which she resided at the time of her death (Guadalupe County Probate Minutes [GCPM] 1956:10:553–562). Meta's children inherited the

property and kept it in the family until 1959, when they conveyed it to the Veteran's Land Board (GCDR 1959:326:225). The Veterans Land Board conveyed it to Howard A. Altenhof within a month (GCDR 1959:326:226), and the Altenhof family continues to own the land today.

Although the site likely dates to the late nineteenth century, it is unclear whether the Altwein family lived on the property or whether they could have had tenants that may have occupied the property. The Altwein family is significant to the local area and Official Texas Historical Marker No. 12797 for the Altwein Family indicates that the cemetery associated with the family still exists in the area. The cemetery, which is definitively tied to the family and has information potential under Criterion D, is a better association with the Altweins than the potential association between the family and site 41GU180; however, the cemetery is not located within the current project area. For this reason, site 41GU180 is recommended NOT ELIGIBLE for NRHP listing under Criteria A and B.

As Meta (Hoffman) Zipp lived on the 65-acre property, it is likely that 41GU180 is associated with her occupation. According to the Handbook of Texas, the Zipp family was associated with Zipp or Zippville, Texas, a village established in the early 1900s near Seguin. It is unlikely the subject tract was part of this community, as Zipp is approximately 2 miles west of Seguin (Jasinski 2010) and site 41GU180 is about 17 miles northwest of Seguin. As a result, although the Zipp family may have been important at the local level in Guadalupe County, the Zipp community is a better representation of the family's association with the area. As a result, site 41GU180 is recommended not eligible for NRHP listing under Criteria A or B.

41GU180 SUMMARY

41GU180 is a historic farmstead with seven features: a well (HR01), house (HR02), cistern (HR03), barn (HR04), shed (HR05), five vertical concrete footings (HR06), and a second barn (HR07). Based on SWCA's 2015 initial investigations, site 41GU180 was recommended as NOT ELIGIBLE for the listing in the NRHP under Criterion D or for designation as a SAL. Although of historic age, the condition of the house and associated structures have diminished much of the historic integrity required for NRHP eligibility and it is therefore recommended NOT ELIGIBLE for listing in the NRHP. In addition, archival research during the

2016 to 2018 investigations did not indicate any link to historically significant persons or events that would trigger considerations under NRHP Criterion A or B. SWCA recommends that the portion of site 41GU180 within the project corridor cannot provide information important to the regional history and no further work or avoidance is recommended. Due to project design changes, the site is no longer within the project area and will not be affected by the current project.

41GU200

Site 41GU200 consists of a shallow to moderately buried subsurface prehistoric lithic scatter of unknown temporal or cultural affiliation situated along Waterway Pass approximately 0.3 mile west of its intersection with Canal Lane, which begins at State Highway (SH) 46 approximately 1.0 mile northeast (Figure 3.58; Appendix A:249). The site is situated along a semi-forested terrace with residential development approximately 0.14 mile east and 0.09 mile north of the Guadalupe River (Figure 3.59). Vegetation consists of patches of hardwood forest interspersed among residential properties and two-track roads leading to them. Ground surface visibility is poor within the semi-forested area within the center of the site and 100 percent along Waterway Pass and the other two-track roads leading to residences and bounding the site. Site 41GU200 is located on privately owned land used for residential as well as agricultural activities. Disturbances include erosion, vegetation clearing, fence lines, two-track roads, and residential development.

Site 41GU200 measures approximately 174 m north-west/southeast by 30 m north/south within the project corridor based on subsurface artifact distribution; however, the site may extend beyond the project area. No cultural materials were observed along the ground surface. Twelve auger probes (i.e., ATJFA03, ATJFA05, ATJIS03–04, ATJIS06, ATMCC02, ATMFV02–04, and ATVM02–04) were excavated at approximately 15- to 30-m intervals to delineate the site, of which four (i.e., ATJIS03, ATJIS06, ATMFV04, and ATVM02) were positive for cultural materials mostly between 30 and 60 cmbs, with the exception of one probe (i.e., ATJIS06) with contained one flake between 180 and 190 cmbs (Table 3.20). SWCA also excavated 16 shovel tests (i.e., CXS05–08, JIS11–13, MCC554–556, MFV12–14, and VM12–14) interspersed amongst the auger probes to further investigate the site, with one (i.e., JIS12) positive for cultural materials (Table

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Figure 3.58. 41GU200 site map.

Figure 3.59. Overview of site 41GU200, facing east-southeast.

Table 3.20. Auger Probe Data for Site 41GU200

Auger Probe No.	Level	Depth (cmb)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/Reason for Termination
ATJFA03	1	0-110	10YR 3/2	very dark grayish brown	Silty Clay Loam	1-5%	Snail Shell	None	—
	2	110-150	10YR 4/2	dark grayish brown	Silty Clay Loam	1-5%	Snail Shell	None	—
	3	150-200	10YR 6/4	light yellowish brown	Sandy Clay Loam	1-5%	Snail Shell	None	Terminated at depth.
ATJFA05	1	0-110	10YR 3/2	very dark grayish brown	Silty Clay Loam	1-5%	Snail Shell	None	—
	2	110-150	10YR 4/2	dark grayish brown	Silty Clay Loam	1-5%	Snail Shell	None	—
	3	150-200	10YR 6/4	light yellowish brown	Sandy Clay Loam	1-5%	Snail Shell	None	Terminated at depth.
ATJIS03	1	0-55	10YR 2/2	very dark brown	Silt Loam	—	—	None	—
	2	55-110	10YR 5/3	brown	Sandy Loam	—	—	None	—
	3	110-210	10YR 7/4	pale red	Sand	1-5%	Pebbles, Snail Shell	1: Flake (tertiary) [approx 180-190 cmb]	Terminated at depth.
ATJIS04	1	0-45	10YR 4/2	dark grayish brown	Silt Loam	—	—	None	—
	2	45-210	10YR 6/4	light yellowish brown	Loamy Sand	1-5%	Pebbles, Snail Shell	None	Terminated at depth.

Table 3.20. continued

Auger Probe No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/Reason for Termination
ATJIS06	1	0-30	10YR 4/3	brown	Silt Loam	—	—	None	—
	2	30-50	10YR 5/3	brown	Sandy Loam	—	—	None	—
	3	50-210	10YR 6/4	light yellowish brown	Sand	1-5%	Pebbles	1: Flake (tertiary) [approx 60 cmbs]	Terminated at depth.
ATMCC02	1	0-80	10YR 4/2	dark grayish brown	Silt Loam	1-5%	Snail Shell	None	—
	2	80-200	10YR 6/4	light yellowish brown	Sandy Clay Loam	1-5%	Snail Shell	None	Terminated at depth.
ATMFV02	1	0-100	10YR 4/2	dark grayish brown	Silt Loam	1-5%	Calcium Carbonate, Snail Shell	None	—
	2	100-200	10YR 6/4	light yellowish brown	Silt Loam	1-5%	Calcium Carbonate	None	Terminated at depth.
ATMFV03	1	0-80	10YR 2/2	very dark brown	Silt Loam	1-5%	Snail Shell, Common Roots and Rootlets	None	—
	2	80-100	10YR 3/3	dark brown	Silt Loam	1-5%	Snail Shell, Common Roots and Rootlets	None	—
	3	100-200	10YR 6/6	brownish yellow	Silt Loam	1-5%	Snail Shell, Common Roots and Rootlets	None	Terminated at depth.
ATMFV04	1	0-60	2.5YR 4/3	reddish brown	Silt Loam	5-10%	Snail Shell, Common Roots and Worms	1: Flake (tertiary) [approx 30 cmbs]	—
	2	60-200	2.5YR 7/6	light red	Silt Loam	1-5%	Snail Shell, Roots	None	Terminated at depth.
ATVM02	1	0-60	10YR 4/3	brown	Silty Clay Loam	1-5%	Snail Shell	2: Flake (tertiary) [approx 30-40 cmbs]	—
	2	60-210	10YR 7/4	very pale brown	Sandy Clay Loam	1-5%	Snail Shell	None	Terminated at depth.
ATVM03	1	0-60	10YR 4/3	brown	Sandy Loam	1-5%	Snail Shell	None	—
	2	60-180	10YR 6/4	light yellowish brown	Silt	1-5%	Snail Shell	None	—
	3	180-210	10YR 6/4	light yellowish brown	Silty Clay Loam	1-5%	Snail Shell	None	Terminated at depth.
ATVM04	1	0-80	10YR 4/3	brown	Silty Clay Loam	1-5%	Snail Shell	None	—
	2	80-200	10YR 7/4	very pale brown	Silty Clay Loam	1-5%	Snail Shell	None	Terminated at depth.

Table 3.21. Shovel Test Data for Site 41GU200

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/Reason for Termination
CXS05	1	0-25	10YR 2/2	very dark brown	Clay Loam	10-20%	Snail Shell	None	—
	2	25-100	10YR 5/4	yellowish brown	Sandy Clay Loam	10-20%	Snail Shell	None	Terminated at depth.
CXS06	1	0-35	10YR 2/2	very dark brown	Sandy Loam	10-20%	Snail Shell	None	—
	2	35-100	10YR 5/4	yellowish brown	Sandy Clay Loam	10-20%	Pebbles, Snail Shell	None	Terminated at depth.
CXS07	1	0-50	10YR 3/2	very dark grayish brown	Sandy Loam	10-20%	Pebbles, Snail Shell	None	—
	2	50-100	10YR 5/4	yellowish brown	Sandy Clay Loam	5-10%	Pebbles, Snail Shell	None	Terminated at depth.
CXS08	1	0-70	10YR 2/2	very dark brown	Sandy Loam	5-10%	Snail Shell	None	—
	2	70-100	10YR 5/4	yellowish brown	Sandy Clay Loam	5-10%	Pebbles, Snail Shell	None	Terminated at depth.
JIS11	1	0-30	10YR 3/2	very dark grayish brown	Loamy Sand	1-5%	Snail Shell	None	—
	2	30-60	10YR 4/3	brown	Loamy Sand	1-5%	Snail Shell	None	—
	3	60-80	10YR 5/4	yellowish brown	Sand	1-5%	Snail Shell	None	—
	4	80-100	10YR 6/4	light yellowish brown	Sand	5-10%	Calcium Carbonate, Snail Shell	None	Terminated at depth.
JIS12	1	0-30	10YR 3/2	very dark grayish brown	Loamy Sand	1-5%	Pebbles, Snail Shell	None	—
	2	30-60	10YR 4/3	brown	Loamy Sand	1-5%	Pebbles, Snail Shell	1: Flake (secondary)	—
	3	60-80	10YR 5/4	yellowish brown	Sand	1-5%	Snail Shell	None	—
	4	80-100	10YR 6/4	light yellowish brown	Sand	1-5%	Snail Shell	None	Terminated at depth.
JIS13	1	0-10	10YR 3/3	dark brown	Sandy Loam	1-5%	Snail Shell	None	—
	2	20-50	10YR 5/6	yellowish brown	Loamy Sand	1-5%	Snail Shell	None	—
	3	50-90	10YR 4/3	brown	Loamy Sand	1-5%	Snail Shell	None	—
	4	90-100	10YR 6/3	pale brown	Sand			None	Terminated at depth.
MCC554	1	0-60	10YR 4/2	dark grayish brown	Silt Loam	1-5%	Snail Shell	None	—
	2	60-85	10YR 5/4	yellowish brown	Silt Loam	1-5%	Snail Shell	None	—
	3	85-100	10YR 6/4	light yellowish brown	Sandy Clay Loam	1-5%	Snail Shell	None	Terminated at depth.
MCC555	1	0-60	10YR 4/2	dark grayish brown	Silt Loam	1-5%	Pebbles, Snail Shell	None	—
	2	60-85	10YR 5/4	yellowish brown	Sandy Loam	1-5%	Pebbles, Snail Shell	None	—
	3	85-100	10YR 6/4	light yellowish brown	Sandy Clay Loam			None	Terminated at depth.

Table 3.21. continued

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/ Reason for Termination
MCC556	1	0-10	10YR 4/2	dark grayish brown	Sandy Loam	1-5%	Pebbles	None	—
	2	10-45	10YR 6/4	light yellowish brown	Sandy Loam	1-5%	Pebbles	None	—
	3	45-100	10YR 7/4	very pale brown	Sandy Loam	1-5%	Pebbles	None	Terminated at depth.
MFV12	1	0-50	10YR 3/3	dark brown	Silt Loam	10-20%	Gravels, Pebbles, Snail Shell, Common Roots and Rootlets	None	—
	2	50-60	10YR 3/6	dark yellowish brown	Silt Loam	10-20%	Gravels, Pebbles, Snail Shell, Common Roots and Rootlets	None	Terminated at large root at 60.
MFV13	1	0-40	10YR 3/3	dark brown	Silty Clay	10-20%	Gravels, Pebbles, Snail Shell, Roots and worms	None	—
	2	40-70	10YR 4/3	brown	Silty Clay	10-20%	Gravels, Pebbles, Snail Shell, Roots	None	Terminated at impenetrable root.
MFV14	1	1-30	10YR 4/3	brown	Sandy Loam	5-10%	Cobbles, Gravels, Snail Shell	None	—
	2	30-80	10YR 4/4	dark yellowish brown	Sandy Loam	10-20%	Gravels, Pebbles, Snail Shell, Roots	None	—
	3	80-100	10YR 5/4	yellowish brown	Sandy Loam	5-10%	Gravels, Pebbles, Roots	None	Terminated at depth.
VM12	1	0-55	10YR 3/2	very dark grayish brown	Sandy Loam	1-5%	Snail Shell	None	—
	2	55-100	10YR 5/4	yellowish brown	Sandy Clay Loam	1-5%	Pebbles, Snail Shell	None	Terminated at depth.
VM13	1	0-20	10YR 3/3	dark brown	Sandy Loam		Pebbles, Snail Shell	None	—
	2	20-95	10YR 5/3	brown	Sandy Clay Loam	1-5%	Pebbles, Snail Shell	None	—
	3	95-100	10YR 7/1	light gray	Sandy Clay Loam	1-5%	Pebbles	None	Terminated at depth.
VM14	1	0-55	10YR 3/2	very dark grayish brown	Sandy Loam	1-5%	Snail Shell	None	—
	2	55-100	10YR 5/4	yellowish brown	Sandy Clay Loam	1-5%	Pebbles, Snail Shell	None	Terminated at depth.

3.21). Cultural materials recovered were very sparse and included one secondary reduction flake and five tertiary reduction flakes of fine-grained chert (Figure 3.60). No temporally diagnostic artifacts or cultural features were observed.

Auger probes and shovel tests typically revealed dark grayish brown (10YR 4/2) silt loam overlying light yellowish brown (10YR 6/4) silt loam to very pale brown (10YR 7/4) silty clay loam with pebble, gravel, and calcium carbonate inclusions. Shovel tests and auger probes terminated at depth (i.e., 100 cmbs for shovel tests and 200 cmbs for auger probes).

41GU200 SUMMARY

Site 41GU200 consists of a diffuse, shallow to moderately buried prehistoric lithic scatter of debitage containing cultural materials predominantly between 30 and 60 cmbs. The site has a very low density of artifacts, lacks temporally diagnostic artifacts or cultural features, and is situated within a disturbed residential development setting. Overall, site 41GU200 does not have the potential to yield information important to the prehistory of the region. As such, SWCA recommends site 41GU200 as NOT ELIGIBLE for the NRHP or for designation as a SAL. No further work or avoidance strategy is recommended for the portion of site 41GU200 within the project area.

HOFFMAN CEMETERY SCRAPING

SWCA identified a family cemetery plot (the Hoffman Cemetery) on the western edge of the survey corridor adjacent to parcel 50360, approximately 0.7 mile northeast of FM 725 (Figure 3.61; Appendix A:250). The fenced-in cemetery contains at least three interments of the Hoffman family, the previous landowners (Figure 3.62). A post and barbed-wire fence forms the boundaries of the cemetery. A residence and open pasture are west and southwest of the cemetery boundary, the Guadalupe River is 0.7 mile to the northeast, and wooded ranchland surrounds the rest of the cemetery. Vegetation consists of overgrown grasses, small shrubs, and mixed hardwood trees. The cemetery was not fully recorded, as it is located outside of the current project area; however, scraping along the edge of the family burial plot was recommended to verify there were no additional interments outside its current fence line.

The cemetery scraping was conducted in November 2017 prior to the data recovery investigations for site 41GU177, which is just east of the cemetery. Mechanical excavations were conducted to a depth sufficient to determine the presence/absence of interments and buried cultural materials (i.e., 6 feet). The mechanical scraping involved gradually removing strips of soil until reaching a depth unlikely to contain burials or

Figure 3.60. Artifacts from site 41GU200 in ST ATVM02 at 0–60 cmbs.

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Figure 3.61. Hoffman Cemetery scraping map.

bedrock, whichever came first. Trenches were excavated parallel to the cemetery fence line within an approximately 40×40-foot-wide area. An experienced archeologist and bioarcheologist monitored all trenching while excavations proceeded. Once the trench was excavated to depth, an SWCA archeologist scraped representative profiles, checking for anomalies that could indicate graves (Figure 3.63). The scraping revealed a temporary grave marker identified approximately 1.5 m east of the cemetery fence line in the upper 10 cm of unconsolidated sandy sediments. No other associated artifacts or indications of graves were identified, and the marker is inferred to be displaced from its original context within the cemetery. Excluding the temporary grave marker, no human remains and/or burial shafts were identified during the scraping investigations. Upon completion of excavation, each trench was backfilled and returned as closely as possible to their original surface contours. SWCA performed all work in accordance with OSHA regulations (29 CFR 1926).

COMAL COUNTY

Three previously recorded cultural resource sites were revisited and further investigated within Comal County (Figure 3.64; see Table 3.3). The three previously recorded archaeological sites consist of two prehistoric lithic scatters (i.e., 41CM394 and 41CM404) and one multicomponent artifact scatter (i.e., 41CM401). SWCA recommends all three sites as NOT ELIGIBLE for listing on the NRHP or for SAL designation. No avoidance strategy or further work is recommended for the portion of these three sites within the project corridor.

41CM394

Site 41CM394 is a shallowly buried prehistoric lithic scatter of unknown temporal or cultural affiliation situated on an upland formation approximately 0.5 mile north of Dry Comal Creek in southern Comal County, Texas (Figure 3.65; Appendix A:282–283). The site was originally recorded during the 2015 initial cultural resources investigations and SWCA revisited the site during the 2016 to 2018 investigations for reroute surveys. SWCA's 2015 initial investigations recommended site 41CM394 as NOT ELIGIBLE for listing in the NRHP or SAL designation with no avoidance or further work warranted due to shallow deposits, lack of temporally diagnostic artifacts or cultural features, and significant disturbances in the area (Acuña et al. 2016).

Vegetation on site consists of secondary juniper and mixed hardwood growth with short to tall grasses, which afforded 70 to 100 percent ground surface visibility with exposed bedrock and concentrations of limestone gravels, cobbles, and large rocks along the ground surface (Figure 3.66). The site is on privately owned land used for land modification, agricultural and residential purposes. Land disturbances observed include erosion, vegetation clearing, fence lines, two-track roads, and a transmission line corridor with two exiting overhead transmission lines.

Site 41CM394 initially measured 2.5 km long by 30 m wide, oriented southwest/northeast then southeast and, in plan, appears “L” shaped based on results of the 2015 initial investigations. The revisit of the site in 2018 resulted in a small extension that measures 235 m long by 27 m wide oriented northwest/southeast creating a “T” shape at its intersection approximately 520 m southwest of the bend in the “L” shape. All site measurements are within the project corridor at the time of investigations based on surface and subsurface artifact distributions; however, the site likely extends beyond the project area in all directions.

Cultural materials observed during ground surface inspection in 2015 and 2018 consist of approximately 65 cores; 30 modified flakes; 140 primary, 25 secondary, and 150 tertiary reduction flakes; and 20 burned limestone rock fragments (Figure 3.67). All lithic materials observed were composed of chert material types with the exception of the burned rock fragments.

In 2015, SWCA excavated 30 shovel tests (i.e., DR79–83, KS100–107, KS120–121, RW73–77, RW300–308, and RW321) to delineate the site, of which only one (i.e., RW300) was positive for cultural materials consisting of two chert secondary reduction flakes at a maximum depth of 10 cmbs immediately atop bedrock (Table 3.22). In 2018, SWCA excavated two additional shovel tests (i.e., MCC588 and MXR19) to delineate the site; both were negative for cultural materials (see Table 3.22). No temporally diagnostic artifacts or cultural features were observed. Shovel tests typically revealed dark brown (7.5YR 3/4) to dark reddish brown (5YR 3/2) clay loam with over 20 percent gravel, cobble, and rock inclusions overlying bedrock between 5 and 25 cmbs. Due to project constraints, the site was not fully delineated in all directions, as investigations were not permitted outside the project ROW. Due to a shift of the project corridor since the original recording

Figure 3.62. Overview of headstones at the Hoffman Cemetery, facing north.

Figure 3.63. Overview of scraping investigations near the Hoffman Cemetery, facing northeast.

Figure 3.64. Comal County map.

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Figure 3.65. 41CM394 site map.

Figure 3.66. Overview of site 41CM394 revisit, facing north.

Figure 3.67. Artifacts recovered from site 41CM394 revisits.

of the site, the majority of the site is now outside the project area boundaries.

41CM394 SUMMARY

Site 41CM394 consists of a prehistoric lithic scatter of unknown temporal and cultural affiliation with shallow soil deposits and a low potential for containing subsurface cultural material. The site lacks subsurface cultural deposition and temporally diagnostic artifacts or cultural features, and has been significantly disturbed by agricultural, residential, and modern development in the area. Overall, site 41CM394 does not have the potential to yield information important to the prehistory of the region. As such, SWCA recommends site 41CM394 as NOT ELIGIBLE for the NRHP or for designation as a SAL. No further work or avoidance strategy is recommended for site 41CM394 within the project area. However, because the site likely extends in all directions beyond the project area, should the alignment shift, additional investigations would be necessary.

Table 3.22. Shovel Test Data for Site 41CM394

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/Reason for Termination
2015 Initial Cultural Resources Investigations									
DR79	1	0-10	10YR 4/4	dark yellowish brown	Clay Loam	>20%	Calcium Carbonate, Cobbles, Gravels	None	Terminated at bedrock.
DR80	1	0-5	10YR 4/4	dark yellowish brown	Clay Loam	>20%		None	Terminated at bedrock.
DR81	1	0-10	10YR 4/4	dark yellowish brown	Clay Loam	>20%		None	Terminated at bedrock.
DR82	1	0-10	10YR 4/4	dark yellowish brown	Clay Loam	>20%		None	Terminated at bedrock.
DR83	1	0-5	10YR 4/4	dark yellowish brown	Clay Loam	>20%		None	Terminated at bedrock.
KS100	1	0-5	10YR 3/3	dark brown	Clay Loam	10-20%	Gravels	None	Terminated at bedrock.
KS101	1	0-5	10YR 3/3	dark brown	Clay Loam	10-20%	Gravels	None	Terminated at bedrock.
KS102	1	0-5	10YR 3/3	dark brown	Clay Loam	10-20%	Gravels	None	Terminated at bedrock.
KS103	1	0-15	10YR 3/4	dark brown	Clay Loam	10-20%	Gravels, 10YR 5/3 mottles	None	Terminated at bedrock.
KS104	1	0-5	10YR 3/3	dark brown	Clay Loam	5%	Gravels	None	Terminated at bedrock.
KS105	1	0-5	10YR 3/3	dark brown	Clay Loam	5%	Gravels	None	Terminated at bedrock.
KS106	1	0-5	10YR 3/3	dark brown	Clay Loam	5%	Gravels	None	Terminated at bedrock.
KS107	1	0-5	10YR 3/3	dark brown	Clay Loam	5%	Gravels	None	Terminated at bedrock.
KS120	1	0-5	5YR 2.5/2	dark reddish brown	Clay Loam	10-20%	Cobbles, Gravels, Large Rock Frags	None	Terminated at bedrock.
KS121	1	0-5	5YR 2.5/2	dark reddish brown	Clay Loam	10-20%	Cobbles, Gravels, Large Rock Frags	None	Terminated at bedrock.
RW73	1	0-10	7.5YR 3/4	dark brown	Clay Loam	10-20%	Cobbles, Gravels	None	Terminated at bedrock.
RW74	1	0-10	7.5YR 3/4	dark brown	Clay Loam	10-20%	Cobbles, Gravels	None	Terminated at bedrock.
RW75	1	0-10	7.5YR 3/4	dark brown	Clay Loam	10-20%	Cobbles, Gravels	None	Terminated at bedrock.
RW76	1	0-10	7.5YR 3/4	dark brown	Clay Loam	10-20%	Cobbles, Gravels	None	Terminated at bedrock.
RW77	1	0-10	7.5YR 3/4	dark brown	Clay Loam	10-20%	Cobbles, Gravels	None	Terminated at bedrock.
RW300	1	0-10	5YR 3/2	dark reddish brown	Clay Loam	>20%	Cobbles, Gravels, Large Rock Frags	2: Flake (secondary)	Terminated at bedrock.
RW301	1	0-10	5YR 3/2	dark reddish brown	Clay Loam	>20%	Cobbles, Gravels, Large Rock Frags	None	Terminated at bedrock.
RW302	1	0-10	5YR 3/2	dark reddish brown	Clay Loam	>20%	Cobbles, Gravels, Large Rock Frags	None	Terminated at bedrock.
RW303	1	0-10	5YR 3/2	dark reddish brown	Clay Loam	>20%	Cobbles, Gravels, Large Rock Frags	None	Terminated at bedrock.

Table 3.22. continued

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/ Reason for Termination
RW304	1	0-10	5YR 3/2	dark reddish brown	Clay Loam	>20%	Cobbles, Gravels, Large Rock Frags	None	Terminated at bedrock.
RW305	1	0-10	5YR 3/2	dark reddish brown	Clay Loam	>20%	Cobbles, Gravels, Large Rock Frags	None	Terminated at bedrock.
RW306	1	0-10	5YR 3/2	dark reddish brown	Clay Loam	>20%	Cobbles, Gravels, Large Rock Frags	None	Terminated at bedrock.
RW307	1	0-10	5YR 3/2	dark reddish brown	Clay Loam	>20%	Cobbles, Gravels, Large Rock Frags	None	Terminated at bedrock.
RW308	1	0-10	5YR 3/2	dark reddish brown	Clay Loam	>20%	Cobbles, Gravels, Large Rock Frags	None	Terminated at bedrock.
RW321	1	0-10	5YR 2.5/2	dark reddish brown	Clay Loam	>20%	Cobbles, Gravels, Large Rock Frags	None	Terminated at bedrock.
2016–2018 Additional Cultural Resources Investigations									
MCC588	1	0-25	10YR 3/3	dark brown	Silty Clay Loam	10-20%	Gravels	None	Terminated at bedrock.
MXR19	1	0-25	10YR 3/3	dark brown	Silty Clay Loam	10-20%	Gravels	None	Terminated at bedrock.

41CM401

Site 41CM401 is shallowly buried multicomponent prehistoric and historic artifact scatter situated on an upland formation that steeply slopes up from erosional drainages, then gently slopes down due south towards the lower terraces of Dry Comal Creek (Figure 3.68; Appendix A:277–281). The site was originally recorded during SWCA's 2015 investigations and is located in southern Comal County, Texas. Vegetation on site consists of tall grasses, weeds, and shrubs in open pasture fields with sporadic clusters of oak and other mixed hardwood trees, which afforded 50 to 100 percent ground surface visibility with exposed bedrock and dense concentrations of gravely clay along the ground surface (Figure 3.69). Site 41CM401 is located within privately owned land used for mining operations along with associated infrastructure as well as cattle ranching and farming, and disturbances observed include erosion, vegetation clearing, land modification, fence lines, two-track roads, and a railroad track along the southern boundary (Figure 3.70). SWCA's 2015 initial investigations recommended site 41CM401 as

NOT ELIGIBLE for listing in the NRHP or for SAL designation with no avoidance or further work warranted due to shallow deposits, lack of temporally diagnostic artifacts or cultural features, and significant disturbances in the area (Acuña et al. 2016).

Site 41CM401 initially measured 780 m northwest/southeast by 30 m northeast/southwest based on the results of the 2015 initial investigations. The revisit of the site in 2018 resulted in a significant extension that measures 2,784 m long by 27 m wide, starting from the previous southeastern margin trending northeast/southwest, then southeast/northwest, and then southwest/northeast creating an incomplete square shape missing one segment for the entire site boundary. All site measurements are within the project corridor at the time of investigations based on artifact distributions; however, the site likely extends beyond the project area in all directions.

Cultural materials observed during ground surface inspection in 2015 and 2018 consist of approximately 150 prehistoric chert cores, seven prehistoric chert

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Not for Public Disclosure

Figure 3.68. 41CM401 site map.

Figure 3.69. Overview of site 41CM401 revisit along southeast margin, facing northeast.

Figure 3.70. Overview of site 41CM401 revisit along southwest margin, facing northwest.

bifaces, 500 prehistoric chert primary reduction flakes, 900 prehistoric chert secondary reduction flakes, 600 prehistoric chert tertiary reduction flakes, 1,200 pieces of chert cultural shatter, four porcelain sherds, 14 whiteware sherds, 20 crockery fragments, six milk glass fragments, three blue glass fragments, three cobalt blue glass fragments, five amethyst glass fragments, four green glass fragments, 10 aqua glass fragments, 25 brown glass fragments, six solarized glass fragments, 15 colorless glass fragments, 20 miscellaneous metal fragments, and one metal spoon (Figures 3.71a–3.71b). Although the artifacts are not clearly diagnostic (i.e., identifiable makers marks or brands), general manufacturing dates suggest an age from the early twentieth century onward. Amethyst-colored glass was caused by the addition of magnesium to the glass production process. When magnesium glass is exposed to ultraviolet radiation, it turns a purple or amethyst color. In the United States, magnesium ceased to be added to glass after the start of World War I (about 1917) when the main source of magnesium, Germany, was cut off (Kendrick 1966:59–61 in IMACS 2001). Aqua-colored glass occurs due to iron impurities found in most sand. Aqua glass was generally common before the 1920s when it was largely replaced by colorless glass, with the exception of Coca-Cola bottles and Ball fruit jars (Munsey 1970). No other diagnostic artifacts or cultural features were observed; however, SWCA observed a cattle barn, likely dating to the early to mid-twentieth century, immediately adjacent to the southern boundary of the site.

In 2015, SWCA excavated eight shovel tests (i.e., KS108–11 and RW309–12) to delineate the site and all were negative for subsurface cultural materials (Table 3.23). In 2018, SWCA excavated an additional 28 shovel tests to further delineate the site (i.e., JFA07–13, JIS01–5, MCC543–548, MFV01–05, VM01–05), of which nine (i.e., JIS02, JIS04, MCC547, MFV01–04, VM03, and VM05) were positive for cultural materials between 0 and 60 cmbs, although the majority of artifacts were recovered from 0–25 cmbs. Prehistoric cultural materials recovered include one core, one complete biface, one biface fragment, five chert primary reduction flakes, two chert secondary reduction flakes, four chert tertiary reduction flakes, and one chert shatter fragment. Historic cultural materials include one amber bottle base and one colorless bottle glass fragment (see Table 3.23). No temporally diagnostic artifacts or cultural features were observed within these later shovel tests.

Shovel tests varied, but typically revealed very dark brown (10YR 2/2) to reddish brown (5YR 5/3) clay loam with 5 percent to greater than 20 percent cobble, gravel, and large rock fragment inclusions overlying compacted, impassible clays or bedrock between 15 and 70 cmbs. Due to project constraints, the site was not fully delineated in all directions, as investigations were not permitted outside the project ROW. Due to a shift of the project corridor since the original recording of the site, the originally recorded portion of the site is now outside the project area boundaries.

Archival research conducted in 2018 and 2019 indicates that site 41CM401 is located on two tracts of land

Figure 3.71a. Artifacts recovered from site 41CM401.

Figure 3.71b. Artifacts recovered from site 41CM401.

Table 3.23. Shovel Test Data for Site 41CM401

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/ Reason for Termination
2015 Initial Cultural Resources Investigations									
RW309	1	0-10	10YR 5/4	yellowish brown	Sandy Clay Loam	>20%	Cobbles, Gravels, Large Rock Fragments	None	Terminated at bedrock.
RW310	1	0-10	10YR 5/4	yellowish brown	Sandy Clay Loam	>20%	Cobbles, Gravels, Large Rock Fragments	None	Terminated at bedrock.
RW311	1	0-15	10YR 2/1	black	Clay Loam	5-10%	Cobbles	None	Terminated at basal clay.
RW312	1	0-15	10YR 2/1	black	Clay Loam	5-10%	Cobbles	None	Terminated at basal clay.
KS108	1	0-10	10YR 5/4	yellowish brown	Sandy Clay Loam	>20%	Cobbles, Gravels, Large Rock Fragments	None	Terminated at bedrock.
KS109	1	0-10	10YR 5/4	yellowish brown	Sandy Clay Loam	>20%	Cobbles, Gravels, Large Rock Fragments	None	Terminated at bedrock.
KS110	1	0-15	10YR 2/1	black	Clay Loam	5-10%	Cobbles	None	Terminated at basal clay.
KS111	1	0-15	10YR 2/1	black	Clay Loam	5-10%	Cobbles	None	Terminated at basal clay.
2016–2018 Additional Cultural Resources Investigations									
JFA07	1	0-5	10YR 2/2	very dark brown	Silty Clay	>20%	Gravels, Mottles, Pebbles	None	Terminated at bedrock.
JFA08	1	0-30	5YR 3/2	dark reddish brown	Silty Clay Loam	5-10%	Cobbles, Pebbles	None	Terminated at bedrock.
JFA09	1	1-15	5YR 3/2	dark reddish brown	Silty Clay Loam	10-20%	Cobbles, Mottles, Pebbles	None	Terminated at bedrock.
JFA10	1	0-15	10YR 2/2	very dark brown	Silty Clay Loam	5-10%	Cobbles, Pebbles	None	Terminated at bedrock.
JFA11	1	0-30	10YR 2/2	very dark brown	Silty Clay Loam	>20%	Cobbles, Pebbles	None	Terminated at bedrock.
JFA12	1	0-30	10YR 2/2	very dark brown	Clay	5-10%	Cobbles, Pebbles	None	–
	2	30-50	10YR 3/6	dark yellowish brown	Clay	5-10%	Cobbles, Pebbles	None	Terminated at basal clay.
JFA13	1	0-30	5YR 3/2	dark reddish brown	Silty Clay Loam	5-10%	Cobbles, Pebbles	None	Terminated at bedrock.
JIS01	1	0-30	10YR 4/4	dark yellowish brown	Clay Loam	>20%	Cobbles, Gravels, Mottles, Pebbles	None	Terminated at bedrock.
JIS02	1	0-5	10YR 4/4	dark yellowish brown	Silt Loam	10-20%	Mottles, Pebbles	1: Biface	–
	2	5-20	10YR 2/2	very dark brown	Silty Clay	1-5%	Pebbles	None	–
	3	20-50	5YR 3/2	dark reddish brown	Silty Clay	1-5%	Pebbles	None	Terminated at bedrock.
JIS03	1	0-25	10YR 5/8	yellowish brown	Sandy Clay Loam	1-5%	Mottles, Pebbles	None	Terminated at disturbed.

Table 3.23. continued

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/Reason for Termination
JIS04	1	0-30	10YR 3/1	very dark gray	Silty Clay	5-10%	Cobbles, Gravels, Pebbles	1: Core, 1: Flake (primary), 1: Flake (secondary), 1: Flake (tertiary), Amber bottle base fragment [All b/w 0-10 cmbs]	Terminated at impenetrable cobbles.
JIS05	1	0-70	10YR 3/1	very dark gray	Clay	1-5%	Pebbles	None	Terminated at compact soil.
MCC543	1	0-20	10YR 6/6	brownish yellow	Clay	>20%	Gravels, Mottles	None	Terminated at bedrock.
MCC544	1	0-10	10YR 6/6	brownish yellow	Clay	>20%	Gravels, Mottles	None	—
	2	10-30	10YR 3/2	very dark grayish brown	Silty Clay Loam	>20%	Gravels	None	Terminated at bedrock.
MCC545	1	0-15	10YR 4/2	dark grayish brown	Clay	10-20%	Gravels	None	—
	2	15-25	5YR 5/6	yellowish red	Clay	—	—	None	Terminated at basal clay.
MCC546	1	0-20	10YR 3/2	very dark grayish brown	Silt Loam	>20%	Gravels	None	Terminated at bedrock.
MCC547	1	0-20	10YR 4/2	dark grayish brown	Silty Clay Loam	>20%	Gravels	1: Flake (primary), 1: Flake (secondary)	Terminated at thick gravels.
MCC548	1	0-40	10YR 4/2	dark grayish brown	Silty Clay Loam	10-20%	Gravels	None	—
	2	40-50	7.5YR 5/6	strong brown	Clay	—	—	None	Terminated at basal clay.
MFV01	1	0-6	2.5YR 5/4	reddish brown	Clay	>20%	Cobbles, Gravels, Large Rock Frags, Mottles, Pebbles	None	—
	2	6-45	2.5YR 3/2	dusky red	Clay	5-10%	Cobbles, Pebbles	2: Flake (primary) [approx 40 cmbs]	Terminated at bedrock.
MFV02	1	0-15	2.5YR 5/4	reddish brown	Clay	>20%	Cobbles, Gravels, Large Rock Frags, Mottles, Pebbles	None	—
	2	15-22	2.5YR 3/1	dark reddish gray	Clay	5-10%	Cobbles, Large Rock Frags, Pebbles	1: Flake (tertiary)	Terminated at large rock and bedrock.

Table 3.23. continued

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/Reason for Termination
MFV03	1	0-7	2.5YR 5/8	red	Clay	10-20%	Calcium Carbonate, Cobbles, Gravels, Large Rock Frags, Mottles, Pebbles	None	–
	2	7-15	2.5YR 3/1	dark reddish gray	Clay	10-20%	Cobbles, Gravels, Large Rock Frags, Pebbles	1: Flake (tertiary)	Terminated at large boulder and large tree root.
MFV04	1	0-15	2.5YR 3/1	dark reddish gray	Clay Loam	>20%	Cobbles, Gravels, Large Rock Frags, Pebbles	1: Flake (tertiary)	Disturbed ground at area of shovel test. Terminated at impenetrable cobbles.
MFV05	1	0-40	2.5YR 3/1	dark reddish gray	Clay	1-5%	Gravels, Pebbles	None	Terminated at compact soil.
VM01	1	0-7	2.5YR 3/2	dusky red	Clay	>20%	Gravels, Mottles, Pebbles, Sand and organic material like leaves	None	No cultural material encountered.
	2	7-30	10YR 2/2	very dark brown	Clay Loam	5-10%	Cobbles, Large Rock Frags, Snail Shell	None	–
	3	30-40	7.5YR 2.5/1	black	Clay Loam	5-10%	Pebbles	None	Terminated at bedrock.
VM02	1	0-10	2.5YR 4/6	red	Clay	>20%	Gravels, Mottles, Pebbles	None	–
	2	10-30	10YR 2/2	very dark brown	Clay Loam	5-10%	Large Rock Frags, Pebbles	None	Terminated at bedrock.
VM03	1	0-17	5YR 5/3	reddish brown	Clay	>20%	Cobbles, Gravels, Mottles, Pebbles	None	–
	2	17-25	10YR 2/2	very dark brown	Clay Loam	5-10%	Cobbles, Large Rock Frags	1: Biface Fragment, 4: Shatter.	Terminated at bedrock.
VM04	1	0-70	10YR 2/2	very dark brown	Clay Loam	>20%	Pebbles, Snail Shell	None	Terminated at impassable cobbles at 70 cmbs.
VM05	1	0-20	10YR 2/2	very dark brown	Clay Loam	>20%	Cobbles, Gravels, Pebbles, Snail Shell	1: Flake (primary), 1 Glass fragment [0-10 cmbs].	–
	2	20-50	10YR 2/2	very dark brown	Clay Loam	>20%	Cobbles, Gravels, Pebbles, Snail Shell	None	–
	3	50-60	10YR 2/2	very dark brown	Clay Loam	5-10%	Cobbles, Gravels, Pebbles	1: Core, 1: Flake (secondary)	Terminated at depth.

that were originally out of the Valentine Bennett Survey and the Francisco Rodriguez Survey. The current size of the land tracts comprising the subject property include a 155.7-acre tract of land out of the Valentine Bennett and Francisco Rodriguez surveys and a 291.5-acre tract of land out of the Bennett and Rodriguez surveys. Although there is some overlap between these two tracts of land, the majority of the 155.7-acre tract comes from the Bennett survey and the majority of the 291.5 acre tract comes from the Rodriguez survey. These two tracts of land were associated with various different families throughout history.

The 155.7-acre tract was initially part of a larger 213.33-acre tract that Catharina and W.S. Pryor of Tennessee conveyed to Peter Markwardt in 1866 (Comal County Deed Records [CCDR] 1866:H:403). This was the first division of the Bennett survey. Markwardt retained the property until 1880, when he sold it to his son, Friederich Markwardt (CCDR 1880:O:767).

Prior to his purchase of the property, the 1860 Comal County census indicates that Peter Markwardt and his family, including his 8-year-old son Friederich (Fritz) lived outside New Braunfels. By 1870, the Comal County census shows Peter Markwardt as a resident of Precinct 2. Markwardt was listed as a 69-year-old farmer heading a household containing Carline (sic) (48), Fritz (18), Bernardine (14), Wilhelm (13), Mathilde (11), and Albert (7). The 1880 Comal County census shows Peter Markwardt (79), his wife Caroline (58), and children Wilhelm (23), Mathilde (20), and Albert (17) were still residing in Precinct 2. Both records show that the Markwardts were living next to Wilhelmine Wiederstein and her children, suggesting they could have lived on the subject tract. Fritz (27), their son, and his wife Dorthea (29) were also living next to them in 1880, suggesting they could also have lived on the tract.

By 1898, Fritz and his new wife had conveyed the property to Adolph Jonas (CCDR 1898:Y:31), and the 1900 Comal County Census shows Fritz had remarried and lived in New Braunfels. The 1900 Comal County census also shows that Adolph Jonas was a 38-year-old farmer living with his family in Precinct 2. Jonas was shown as a property owner. He continued to live in Precinct 2 in 1910, when the Comal County Census shows him as a 48-year-old farmer living with his wife Caroline (45), and children Elfrieda (18), Olga (15), and Oscar (4). By 1920, Adolph (58), Caroline

(55), and Oscar (19) were living on Bracken Road in Precinct 2.

The 1930 Comal County census indicates that Adolph (68) and Caroline (65) had moved in with Oscar (29), his wife Valesca (24), and their son Woodroe (3) by that time, still living in Precinct 2. Adolph appears to have passed away sometime prior to 1935, when Caroline and her daughters conveyed the subject tract to Oscar (CCDR 1935:64:471). Oscar (38), Valesca (36), and Woodroe (13) were living on a private road in Precinct 1 in the same house where they had lived in 1935, suggesting they could have lived on the property. As the Jonas family continued to keep the property in their possession through the twenty-first century, it is likely site 41CM410 could be associated with their family.

The 291.5-acre tract included part of the property owned by the Jonas family as described above and also partially consists of a 179-acre tract owned by the Friesenhahn family throughout the late nineteenth and early twentieth centuries. Originally part of the league and labor granted to Francisco Rodriguez and patented by William Bracken in 1847 (GLO 2019), this tract was not subdivided until 1865, when John James (who had obtained the tract directly from William Bracken in 1847) conveyed 603 acres containing the subject tract to Anna Syring (CCDR 1865:H:55). James, who was a well-known surveyor in San Antonio (Strong 2019) did not live on the tract.

Within a few weeks of acquiring the property, Anna Syring conveyed the property to her sons, Andreas Friesenhahn, Nicolaus Friesenhahn, and Heinrich Syring (CCDR 1865:H:61; Comal County 2015). The brothers partitioned the land in 1870, at which time Heinrich was still a minor. Each party received 179 acres of land, with Nicolaus receiving the westernmost tract, Henrich the middle, and Andreas the eastern tract (CCDR 1870:K:348).

In 1860, the Comal County census shows Anna Luhring (sic) as a 44-year-old farmer who was head of a household containing Andreas Friesenhahn (17), also a farmer, Nicolaus Friesenhahn (15), a waggoner, and Heinrich Luhring (sic) (7). Nicolaus had moved from their mother's household by 1870, when the 1870 Comal County census shows Anna Syring as a 55-year-old head of household living in Precinct 2 with her son Heinrich (16). Andreas Friesenhahn (32), a farmer, and his wife Polasita (sic) [Placida] (22) also resided in the household at that time. By 1880, Anna

Syring (63) was living in her son Andreas' household in Precinct 2 of Comal County. As deed research indicates that Nicolaus Friesenhahn owned the portion of the property containing the subject tract, Anna does not appear to have lived on the subject tract.

Nicolaus conveyed his 179-acre tract to his wife Pauline in 1876 along with his entire stock of longhorns and four mares. Pauline kept the property until 1914 when she conveyed it to Joseph Friesenhahn (CCDR 1914:14:525). Both the 1870 and 1880 Comal County census records show that Nicolaus lived in Precinct 2. In 1870, his household consisted of himself (25) and his wife Pauline (20). By 1880, Nicolaus (35), a farmer, headed a household containing his wife Caroline (sic) (28) and children Joseph (9), Marie (6), and Clara (2). By 1900, Nickolaus (sic) (55) was shown to be a farmer who owned the property where he lived. His household included his wife Pauline (44), daughters Regina (19), Paulina (17), Anna (12), and Hedwig (10) as well as his son Edward (15) and a boarder, Louis Lorscheib (49). Henry Syring (45) and his family lived next door, suggesting these families may have lived on the land tracts they received from Anna Syring. The 1910 Comal County census shows Nicolaus and Pauline had moved to New Braunfels by that time.

Joseph Friesenhahn kept the land until 1944 when he conveyed the property to Harry Brotze (CCDR 1944:80:227). He appears in the 1900 Comal County census as a 29-year-old farmer living in Precinct 2. His wife Marie (22) and daughter Olivia (5 months) lived in the household. The family is shown as renting their property. By 1910, Joseph is shown as a property-owner with a mortgage. He was listed as a 49-year-old farmer heading a household containing his children Olivia (10), Carl (8), Oseda (7), Amalia (6), Christine (3), and Hugo (1). A boarder, 24-year-old Emma Barton, and a servant, 22-year-old Rosa Fey, also lived with the family. By 1920, the Comal County census shows Joseph Friesenhahn (49) as owning his residence on Bracken Road. The household included his wife Emma (35), children Olivia (20), Carl (18), Osida (17), Amalia (16), Christina (12), Hugo (10), Alfred (8), Edmund (7), and Nathalia (5). The 1930 and 1940 Comal County censuses show the family continued to live in Precinct 2, although no road is listed in 1930, and the family is shown to reside on a private road in 1940. As a result, it is unknown whether the family or tenants lived on the subject tract.

The research suggests site 41CM410 is associated with the Friesenhahn and the Jonas families in the late nineteenth/early twentieth centuries. The Friesenhahns may have played a significant role in local development, as Anna (Friesenhahn) Syring was one of the early settlers in Comal County. She lived outside of New Braunfels. According to early county history, her land was the site of a homestead and cotton and corn mill, which her son Roman took over. The farm was located near Old Nacogdoches Road and FM 482, which is just outside the project area to the northeast (Comal County 2015). This suggests the original homestead may be just outside the current project area. The Jonas family does not appear to have been significant to the development of the local or regional area.

Although site 41CM401 is not eligible under Criterion D, it is likely the site extends outside the current project area. The portion of the site within the project area is recommended not eligible for listing under Criteria B, C, or D. Site 41CM401 is recommended eligible for the NRHP under Criterion A; however, given that deposits likely extend outside the project area, no additional work is recommended for the current project area. Further archival research may be required in the future if the site is impacted outside the current project area.

41CM401 SUMMARY

Site 41CM401 consists of a multicomponent prehistoric and historic artifact scatter with very minimal, shallow subsurface deposits. Temporally diagnostic artifacts encountered include historic ceramic and glass that indicate an early-twentieth-century historic component. No other diagnostic artifacts or cultural features were observed; however, a cattle barn likely dating to the early to mid-twentieth century was observed immediately adjacent to the southern boundary of the site. The site lacks deposition and isolable activity areas and has been significantly disturbed by mining operations and associated infrastructure as well as cattle ranching and farming activities. It is the opinion of SWCA that site 41CM401 does not have the potential to yield information important to the prehistory or history of the region. As such, SWCA recommends site 41CM401 as NOT ELIGIBLE for the NRHP or for designation as a SAL. No further work or avoidance strategy is recommended for site 41CM401 within the project area. However, because the site likely extends in all directions beyond the project area, should the alignment shift, additional investigations would be necessary.

41CM404

Site 41CM404 is a surficial prehistoric lithic scatter of unknown temporal or cultural affiliation situated on an open field along an upland slope approximately 0.28 mile southeast of Bear Creek and 0.2 miles west of Dry Comal Creek in southern Comal County, Texas (Figure 3.72; Appendix A:289). The site was originally recorded during the initial 2015 cultural resources investigations. Vegetation at the site consists primarily of grasses and sporadic mesquite with moderately dense juniper and oak woods along the northwestern periphery, which afforded nearly 100 percent ground surface visibility with exposed areas of dense limestone cobble and gravel outcrops (Figure 3.73). The site is on privately owned land currently utilized for agricultural purposes and wild game hunting, and disturbances observed include erosion, vegetation clearing, fence lines, and two-track roads. SWCA's 2015 initial investigations recommended site 41CM401 as NOT ELIGIBLE for listing in the NRHP or SAL designation with no avoidance or further work warranted due to shallow deposits, lack of temporally diagnostic artifacts or cultural features, and significant disturbances in the area (Acuña et al. 2016).

Site 41CM404 initially measured 100 m northeast/southwest by 85 m northwest/southeast based on results of the 2015 initial investigations. The revisit of the site in 2017 resulted in a small extension along the southern margin of the original boundary that measures 60 m northwest/southeast by 20 m wide northeast/southwest. All site measurements are based on surface artifact distributions. Site boundaries were determined by ground surface inspection and shovel testing for subsurface cultural deposits within the project area boundaries.

Cultural materials observed during ground surface inspection consist of two stone choppers, one unifacial drill, and numerous secondary and tertiary reduction flakes (Figure 3.74). A few scattered burned rocks were also observed around the northwestern end of the site where limestone concentrations were prevalent. All lithic materials observed were composed of chert raw material types with the exception of the burned rock fragments.

In 2015, SWCA excavated six shovel tests (i.e., RW738–741 and SMM83–84) at approximately 20- to 25-m intervals to delineate the site, all of which were negative for cultural materials (Table 3.24). In 2017,

SWCA excavated three shovel tests (i.e., 41RW2520–2521 and SS15) at approximately 35-m intervals to further delineate the site, all of which were negative for cultural materials (see Table 3.24). No temporally diagnostic artifacts or cultural features were observed. Shovel tests typically revealed dark yellowish brown (10YR 3/4) clay loam with 1–5 percent calcium carbonates and gravel inclusions overlying brown (7.5YR 4/4) clay with 10–20 percent calcium carbonate inclusions; shovel tests terminated at compacted clay or degrading bedrock around 30 cmbs. Due to a shift of the project corridor since the original recording of the site, the majority of the site is now outside the project area boundaries.

41CM404 SUMMARY

Site 41CM404 consists of a strictly surficial prehistoric lithic scatter site of unknown temporal and cultural affiliation. The site lacks deposition and temporally diagnostic artifacts or cultural features and has been disturbed by agricultural activities. Based on these data, site 41CM404 does not have the potential to yield information important to the prehistory of the region. As such, SWCA recommends site 41CM404 as NOT ELIGIBLE for the NRHP or for designation as a SAL. No further work or avoidance strategy is recommended for site 41CM404.

BEXAR COUNTY

One isolated find was newly recorded and one previously recorded cultural resource site was revisited and further investigated in Bexar County (Figure 3.75; see Table 3.3). The previously recorded multicomponent site (i.e., 41BX2101) consists of a prehistoric lithic scatter and historic-aged enclosure with a rock ring recorded and recommended for avoidance or further testing during the 2015 initial investigations and revisited for significance testing of the historic component due to the possibility of a burial during the 2016 to 2018 additional investigations. The isolated find (i.e., IF11) consists of a prehistoric crude biface, modified flake, and primary reduction flake observed along the ground surface and not recorded as an archaeological site (Appendix A:299; see Table 3.4). SWCA recommends the previously recorded archaeological site (i.e., 41BX2101) as NOT ELIGIBLE for listing in the NRHP or SAL designation. No avoidance strategy or further work is recommended this site within the project corridor.

Figure 3.72. 41CM404 site map.

Figure 3.73. Overview of site 41CM404, facing southeast.

Figure 3.74. Artifacts recovered from site 41CM404.

Table 3.24. Shovel Test Data for Site 41CM404

Shovel Test No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Cultural Materials	Comments/ Reason for Termination
2015 Initial Cultural Resources Investigations									
RW738	1	0-25	10YR 3/4	Dark yellowish brown	Clay Loam	1-50%	Calcium Carbonate, Gravels	None	—
	2	25-30	7.5YR 4/4	Brown	Clay	10-20%	Calcium Carbonate	None	Terminated at basal clays.
RW739	1	0-25	10YR 3/4	dark yellowish brown	Clay Loam	1-5%	Calcium Carbonate, Gravels	None	—
	2	25-30	7.5YR 4/4	brown	Clay	10-20%	Calcium Carbonate	None	Terminated at basal clays.
RW740	1	0-25	10YR 3/4	dark yellowish brown	Clay Loam	1-5%	Calcium Carbonate, Gravels	None	—
	2	25-30	7.5YR 4/4	brown	Clay	10-20%	Calcium Carbonate	None	Terminated at basal clays.
RW741	1	0-25	10YR 3/4	dark yellowish brown	Clay Loam	1-5%	Calcium Carbonate, Gravels	None	—
	2	25-30	7.5YR 4/4	brown	Clay	10-20%	Calcium Carbonate	None	Terminated at basal clays.
SMM83	1	0-15	10YR 4/2	dark grayish brown	Clay Loam	5-10%	Cobbles, pebbles	None	—
	2	15-30	2.5Y 6/6	olive yellow	Clay Loam	>20%	Calcium Carbonate	None	Terminated at basal clays.
SMM84	1	0-10	10YR 4/3	brown	Clay Loam	5-10%	Cobbles, pebbles	None	—
	2	10-20	2.5Y 6/6	olive yellow	Clay Loam	>20%	Calcium Carbonate	None	Terminated at basal clays.
2016–2018 Additional Cultural Resources Investigations									
41RW2520	1	0-35	10YR 3/3	very dark brown	Clay Loam	20%	Calcium Carbonate	None	Terminated at caliche
41RW2521	1	0-10	10YR 3/3	very dark brown	Clay Loam	20%	Cobbles	None	Terminated at bedrock.
41SS15	1	0-35	10YR 4/2	dark grayish brown	Silty Clay Loam	>20%	Gravels, Cobbles	None	Terminated at bedrock.

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Figure 3.75. Bexar County map.

41BX2101

Site 41BX2101 is a multicomponent surficial prehistoric lithic scatter of unknown temporal or cultural affiliation, and a possible historic-age unmarked grave situated along an upland formation that parallels the lower terraces overlooking Elm Waterhole Creek approximately 65 m north located in northeastern San Antonio, Bexar County, Texas (Figure 3.76; Appendix A:304). SWCA's 2015 initial investigations recommended the prehistoric component as NOT ELIGIBLE for listing in the NRHP or SAL designation with no avoidance or further work warranted (Acuña et al. 2016). However, SWCA recommended the possible historic-age burial/grave as having an UNDETERMINED eligibility for listing in the NRHP or SAL designation and recommended avoidance or further investigations to determine whether the feature was a burial (Acuña et al. 2016).

On July 21 and 22, 2016, SWCA conducted archaeological testing that consisted of visual inspection of the ground surface and controlled hand scraping to efficiently explore the subsurface of the 13×13-m enclosure and rock ring to ensure that no unmarked graves were present. The goal of the work was to expose the subsurface soils for examination and locate evidence of grave shafts, if present, in compliance with the Texas Health and Safety Code. Hand scraping was excavated to a depth sufficient to determine the presence/absence of any grave shafts and allow the complete recording of any features (to eroding bedrock). Within the enclosure, vegetation consisted of leaf litter underlain by short grasses, and juniper trees and roots; ground visibility ranged from 0 to 50 percent (Figure 3.77).

Prior to the investigations, the enclosure was cleared of the overlying vegetation to clearly expose the underlying ground surface and rock ring (Figures 3.78 and 3.79). Once the overburden was removed, the ground surface was examined to identify potential discoloration of the soils, depressions, and any other stone alignments that may indicated potential interments. Examination of the surface did not reveal any markers, depressions, or soils changes. Due to the lack of immediate evidence of possible interments, scraping continued at an interval of 5 cmbs across the area within the enclosure. As the scraping progressed, loose rocks were removed while those that were more securely imbedded to the soils were left until they became loose with each passing.

Scraping of the area continued for six passes reaching a depth of 30 cmbs where bedrock outcropping oc-

curred and large flat-limestone cobbles were eroding (Figure 3.80). During the scraping, numerous limestone cobbles ranging in size from 5 to 30 cm were removed (Figure 3.81). In addition to the removal of limestone cobbles, prehistoric materials were also encountered (Figure 3.82). Cultural materials encountered consisted of primary and secondary flakes. No other cultural materials were encountered, and no evidence of unmarked graves were identified outside of the rock ring. Loose cobbles were removed to determine the shape of the rock ring feature (Figure 3.83). Once the feature was mapped, continued scraping removed additional cobbles, revealing a second ring (Figure 3.84). The second ring was slightly offset to the east from the original ring and contained some of the initial limestone cobbles encountered within the original ring. Within the center of the additional ring, pieces of packing tape and plastic was observed (see Figure 3.84).

Based on the presence of the plastic bag and packing tape at the center of the feature, it was determined that something was buried within the feature. Rather than scraping the area, soils were excavated using a hand trowel and screened through ¼-inch mesh. During the excavations, the limestone cobbles were removed, exposing naturally occurring cobbles and an eroded plastic bag with packing tape around it (Figure 3.85). As the excavation progressed, animal bones began to appear within the soils starting at approximately 12 cmbs. The animal bones encountered were identified as a small dog that had been buried (Figure 3.86). The extent of the animal burial reached a depth of 35 cmbs above eroded bedrock.

41BX2101 SUMMARY

Site 41BX2101 is a surficial prehistoric lithic scatter located on land that is currently overgrown with forest. The prehistoric component of site 41BX2101 is limited to the ground surface and does not contain any diagnostic cultural material. In addition to the prehistoric component, a 13×13-m historic barbwire enclosure with a rock ring at its north-central portion is present. Investigations of the enclosure and the rock ring revealed that it marked the burial of a family pet (i.e., a small dog). No evidence of other burials within the enclosure were identified. Based on these investigations and the previous 2015 investigations, site 41BX2101 is unlikely to contribute new or important information to local or regional history. As such, site 41BX2101 is recommended as NOT ELIGIBLE for listing in the NRHP or for SAL designation. No avoidance strategy or further work is recommended for this site within the project corridor.

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Figure 3.76. 41BX2101 site map.

Figure 3.77. Overview of the enclosure at site 41BX1201, facing northwest.

Figure 3.78. Removal of overburden at the site, facing northwest.

Figure 3.79. Exposure of the rock ring, facing west.

Figure 3.80. Bedrock outcropping at 30 cmbs, facing south-southeast.

Figure 3.81. Limestone cobbles removed during scraping; facing west-northwest.

Figure 3.82. Prehistoric artifacts encountered during the scraping investigations.

Figure 3.83. Overview of the fully exposed rock ring, facing west.

Figure 3.84. Second rock ring with plastic and packing tape at its center, facing west.

Figure 3.85. Plastic bag encountered at the center of the second stone ring.

Figure 3.86. Remains of a small dog encountered below the second rock alignment.

CHAPTER 4 SUMMARY AND RECOMMENDATIONS

Christina Nielsen, M.A., and Brandon S. Young, M.A., RPA

On behalf of VRRSP Consultants, LLC, and CTRWSC, SWCA conducted intensive cultural resources investigations of the Vista Ridge Project in Burleson, Lee, Bastrop, Caldwell, Guadalupe, Comal, and Bexar Counties. The investigations were conducting to comply with Section 106 of the NHPA (54 USC 306108) and its implementing regulations (36 CFR 800), in anticipation of a Nationwide Permit 12 from the USACE in accordance with Section 404 of the Clean Water Act. In addition, the work is subject to compliance with the ACT under Permit No. 7295, as the Vista Ridge Project will be ultimately owned by CTRWSC, a political subdivision of the State of Texas. Any additional work completed for the Vista Ridge Project after the submittal of this addendum report will be reported in subsequent addendum reports.

INVESTIGATIONS SUMMARY

Between 2016 and 2018, SWCA investigated approximately 29.5 miles of the current 140.2-mile-long project corridor and the proposed 6.9-mile-long wellfield pipeline that was not previously surveyed during the 2015 investigations. Investigations consisted of intensive pedestrian survey augmented with shovel testing and hand-excavated auger probes and/or mechanical backhoe trenching in select areas. In addition, SWCA investigated the 25.82-acre terminus site slated for the construction of an integration system (Atwood and Ward 2017). Additional mileage, which includes rerouted areas that are no longer part of the October 24, 2017 alignment, were also surveyed. SWCA excavated 967 shovel tests, 96 auger probes, and 85 backhoe trenches during the investigations. The following briefly synthesizes the inventory of cultural resources documented during SWCA's investigations and the subsequent recommendations for those resources.

CULTURAL RESOURCES SUMMARY

SWCA documented or further investigated 28 cultural resources within the project area during the 2016 to 2018 investigations. Of the 28 resources, seven were isolated finds that did not warrant formal site recording

or require additional investigations. The remaining 21 cultural resources include 15 prehistoric sites, three historic sites, and three multi-component sites with prehistoric and historic materials (Table 4.1).

Of the 21 sites, two sites (i.e., 41BP960 and 41BP961) remain UNDETERMINED regarding their NRHP and SAL eligibility; however, both have currently been avoided by design alignment changes by the Vista Ridge Project. Based on the results of the testing investigations, site 41BP920 has now been determined NOT ELIGIBLE for listing on the NRHP or for designation as a SAL. One site (41GU177) was determined to be ELIGIBLE for listing on the NRHP and for designation as a SAL. SWCA conducted testing excavations at 41GU177 under Permit No. 7295 (Rodriguez et al. 2017); data recovery excavations at site 41GU177 were conducted under Permit No. 8231 and will be presented in a separate report (Nielsen et al. 2019).

The remaining 18 cultural resources sites (see Table 4.1) are considered not eligible for the NRHP or for designation as SALs and no further cultural resources investigations or avoidance are recommended. Based on the results of the testing investigations, site 41BP920 has now been recommended NOT ELIGIBLE for listing on the NRHP and for designation as a SAL (Rodriguez and Young 2018). The remaining prehistoric sites and historic artifact scatters without structural remains not recommended for avoidance or significance testing (i.e., 41BU122–41BU124, 41LE332, 41LE348–41LE350, 41BP818, 41BP920, 41BP959, 41GU200, 41CM394, 41CM401, 41CM404, and 41BX2101) have an absence of substantial subsurface deposits and/or exhibit significant horizontal and vertical disturbances from erosion and/or mechanical impacts from agricultural activities, vegetation clearing, two-track roads, and general land clearing and improvements. Based on these conditions, the sites cannot provide new or important data concerning regional prehistory.

In terms of historic sites with structures and/or structural remains (i.e., 41BP962, 41CW173, and 41GU180) the integrity of the structures or structural remains has

Table 4.1. Cultural Resources Summary and Recommendations

County	Site No.	Site Type	NRHP and SAL Eligibility Recommendation	Additional Work Recommendations
Burlison	41BU122	Prehistoric lithic scatter	Not Eligible	No avoidance or further work recommended within project area.
	41BU123	Prehistoric lithic scatter	Not Eligible	No avoidance or further work recommended within project area.
	41BU124	Prehistoric lithic scatter	Not Eligible	No avoidance or further work recommended within project area.
Lee	41LE332	Prehistoric lithic scatter	Not Eligible	No avoidance or further work recommended within project area.
	41LE348	Prehistoric lithic scatter	Not Eligible	No avoidance or further work recommended within project area.
	41LE349	Prehistoric lithic scatter	Not Eligible	No avoidance or further work recommended within project area.
	41LE350	Prehistoric lithic scatter	Not Eligible	No avoidance or further work recommended within project area.
Bastrop	41BP818	Historic artifact scatter, prehistoric campsite, and cemetery	Not Eligible within project area	No avoidance or further work recommended for site within project area; however, avoidance of cemetery is recommended. Cemetery is avoided by reroute.
	41BP920	Prehistoric lithic and historic artifact scatter	Not Eligible	No avoidance or further work recommended within project area.
	41BP959	Prehistoric lithic scatter	Not Eligible	No avoidance or further work recommended within project area.
	41BP960	Prehistoric campsite	Undetermined	Avoidance or further work recommended within project area. Avoided by reroute.
	41BP961	Prehistoric campsite	Undetermined	Avoidance or further work recommended within project area. Avoided by reroute.
	41BP962	Historic road and bridge embankment remnant	Not Eligible	No avoidance or further work recommended within project area.
Caldwell	41CW173	Historic house and shed	Not Eligible	No avoidance or further work recommended within project area.
Guadalupe	41GU177	Prehistoric campsite	Eligible Mitigated within APE	No avoidance or further work recommended within project area.
	41GU180	Historic house/farm complex	Not Eligible	No avoidance or further work recommended within project area. (OFFLINE)
	41GU200	Prehistoric lithic scatter	Not Eligible	No avoidance or further work recommended within project area.
Comal	41CM394	Prehistoric lithic scatter	Not Eligible	No avoidance or further work recommended within project area.
	41CM401	Prehistoric lithic and historic artifact scatter	Not Eligible	No avoidance or further work recommended within project area.
	41CM404	Prehistoric lithic scatter	Not Eligible	No avoidance or further work recommended within project area.
Bexar	41BX2101	Prehistoric lithic scatter and recent dog burial	Not Eligible	No avoidance or further work recommended within project area.

been compromised by modifications and age (e.g., dilapidation of structures or dismantling of roadway) (see Table 4.1). Given these conditions, it is the opinion of SWCA that these resources cannot contribute new or important data to regional history.

In accordance with 36 CFR 800.4 and the ACT, SWCA has made a reasonable and good faith effort to identify cultural resources within the project area. Portions of site 41GU177 within the Vista Ridge Project corridor have been mitigated and the results will be presented in a stand-alone report (Nielsen et al. 2019). Two newly recorded sites (41BP960 and 41BP961) are recommended as having UNDETERMINED eligibility for listing on the NRHP or for SAL designation and one site (41GU177) is recommended as ELIGIBLE. The remaining 18 sites are recommended as NOT ELIGIBLE for listing on the NRHP or for SAL designation. It is SWCA's recommendation that the two sites of UNDETERMINED eligibility should be avoided, or subject to further significance testing. No further work or avoidance strategy is recommended for the remaining 18 archaeological sites associated with the Vista Ridge Project.

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REFERENCES

- Acuña, Laura I., Brandon Young, and Rhiana D. Ward
2016 *Cultural Resources Investigations of the Vista Ridge Regional Water Supply Project in Burleson, Lee, Bastrop, Caldwell, Guadalupe, Comal and Bexar Counties, Texas*. SWCA Cultural Resources Report No. 15-548. Austin, Texas.
- Acuña, L. I. and K. Sloan
2014 *Cultural Resource Investigations of the Canyon Regional Water Authority Wells Ranch Santa Clara to Wagner Transmission Line Project, Guadalupe County, Texas*. SWCA Cultural Resources Report No. 13-462. San Antonio, Texas.
- Atwood, Kirsten, Ph. D., and Rhiana Ward, M.A.
2017 *Cultural Resources Survey of the Proposed Terminus Site for the Vista Ridge Regional Water Supply Project, Bexar County, Texas*. SWCA Cultural Resources Report No. 15-548. San Antonio, Texas.
- Boyd, Douglas K.
2012 What Is Northern Toyah Phase? The Toyah Phenomenon on the Texas Southern Plains. In *The Toyah Phase of Central Texas: Late Prehistoric Economic and Social Processes*. Edited by Nancy A. Kenmotsu and Douglas K. Boyd, pp. 128–151. Texas A&M University Press. College Station, Texas.
- Comal County
2015 *Comal Settlement*. Available at: http://www.co.comal.tx.us/Historical/Properties/Comal_Settlement.htm. Accessed July 2019.
- Comal County Deed Records (CCDR)
1866–1935 Various volumes.
- Foster, T. R., T. Summerville, and T. Brown
2006 *The Texas Historic Overlay: A Geographic Information System of Historic Map Images for Planning Transportation Projects in Texas*. Prepared for the Texas Department of Transportation by PBS&J, Austin.
- Guadalupe County Deed Records (GCDR)
1845–2017 Various volumes.
- Guadalupe County Marriage Records (GCMR)
1914 Robert Zipp and Meta Hoffman, Volume 7, page 274.
- Guadalupe County Probate Minutes (GCPM)
1956 Volume 10, pages 553–562.
- Jasinski, Laurie E.
2010 *Zipp, Texas. The Handbook of Texas*. Available at: <http://www.tshaonline.org/handbook/online/articles/hlz04>. Accessed July 2019.
- Munsey, Cecil
1970 *The Illustrated Guide to Collecting Bottles*. Hawthorn Books, Inc., New York.
- Nielsen, Christina, Ashley Eyeington, Ken Lawrence, and Brandon S. Young
2019 *Draft Report: Date Recovery Excavations at the Snakeskin Bluff Site (41GU177), Guadalupe County, Texas*. SWCA Cultural Resource Report No. 19-XXX. Austin, Texas.
- Perttula, Timothy K., M. R. Miller, R. A. Ricklis, D. J. Prikryl, and C. Lintz
1995 Prehistoric and Historic Aboriginal Ceramics in Texas. *Bulletin of the Texas Archaeological Society* 66:175–235.

- Rodriguez, Daniel, Ken Lawrence, and Brandon S. Young
 2017 *Interim Report: Archaeological Investigations at 41GU177 on the Guadalupe River, Guadalupe County, Texas*. SWCA. Austin, Texas.
- Rodriguez, Dan, and Brandon S. Young
 2018 *Draft Report: Site Significance Testing Report of Site 41BP920 on the 140-Mile-Long Vista Ridge Water Pipeline in Bastrop County, Texas*. SWCA Cultural Resources Report No. 18-541. Austin, Texas.
- Schertz Historical Preservation Committee
 2019 *Historic Church Bells – Schertz (Comal Settlement Contributors)*. Remembrances Special Edition Article.
- Strong, Berniece
 2019 *John James*. Handbook of Texas Online. Available at: <https://tshaonline.org/handbook/online/articles/fja17>. Accessed July 2019.
- Texas Beyond History (TBH)
 2018 Toyah Culture. Available at: <https://www.texasbeyondhistory.net/plateaus/prehistory/images/toyah.html>. Accessed August 3, 2018.
- Texas General Land Office (GLO)
 2019 Guadalupe County, Abstract 260. File no. 000081, Land Grant Database. Available at: www.glo.texas.gov/history/archives/land-grants/index.cfm. Accessed July 2019.
- Texas Historical Commission (THC)
 2018 Texas Archeological Site Atlas restricted database. Available at: <http://nueces.thc.state.tx.us/>. Accessed July 2018.
- U.S. Geological Survey (USGS)
 2018 The National Geologic Map Database (TopoView). Historical topographic map collection. Available at: <http://ngmdb.usgs.gov/maps/TopoView/>. Accessed July 2018.
- Ward, R.
 2015 *Cultural Resource Investigations of the Canyon Regional Water Authority Wells Ranch Crystal Clear Transmission Line Project, Guadalupe County, Texas*. SWCA Cultural Resources Report No. 14-599. San Antonio, Texas.
- Weinert, Willie Mae
 2010 *Schumansville, TX*. The Handbook of Texas Online. Available at: <http://www.tshaonline.org/handbook/online/articles/HLS28>. Accessed July 2019.

APPENDIX A. SURVEY RESULTS MAPS

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Figure 4. Isolated Find schematic map.

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- Project Centerline
- Survey Corridor
- - - Drainage
- Parcel Boundary
- Negative Backhoe Trench

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Project Centerline	Drainage
Survey Corridor	Parcel Boundary
Negative Shovel Test	Parcel Desktop/Windshield Review

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APPENDIX B. SHOVEL TEST DATA

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Appendix B. Shovel Test Data

Site No.	Shovel Test No.	Level	Depth (cms)	Munsell Soil value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Positive (P) or Negative (N)	Comments/ Reason for Termination
NA	AE01	1	0-30	10YR 4/4	dark yellowish brown	Sandy Loam	–	–	N	–
		2	30-45	10YR 5/2	grayish brown	Sandy Clay Loam	–	–	N	Terminated at compact soil.
NA	AE01	1	0-85	7.5YR 5/4	brown	Sand	–	–	N	Terminated at compact soil.
NA	AE02	1	0-30	10YR 3/2	very dark grayish brown	Sandy Clay Loam	–	–	N	–
		2	30-45	7.5YR 6/4	light brown	Clay	–	–	N	Terminated at basal clay.
NA	AE02	1	0-70	7.5YR 5/4	brown	Loamy Sand	–	–	N	–
		2	70-95	10YR 7/2	light gray	Sandy Loam	5-10%	Redox	N	Terminated at depth.
NA	AE03	1	0-20	10YR 5/3	brown	Sandy Loam	–	–	N	–
		2	20-35	2.5YR 4/6	red	Clay	10-20%	Mottles	N	Terminated at basal clay.
NA	AE03	1	0-35	7.5YR 5/4	brown	Sandy Loam	–	–	N	–
		2	35-50	7.5YR 4/6	strong brown	Clay Loam	–	–	N	Terminated at compact soil.
NA	AE04	1	0-100	10YR 5/3	brown	Sandy Loam	1-5%	Gravels	N	Terminated at depth.
NA	AE04	1	0-35	7.5YR 5/4	brown	Sandy Loam	–	–	N	–
		2	35-50	7.5YR 4/6	strong brown	Clay Loam	–	–	N	Terminated at compact soil.
NA	AE05	1	0-100	10YR 5/3	brown	Sandy Loam	1-5%	Gravels	N	Terminated at depth.
NA	AE05	1	0-60	7.5YR 5/4	brown	Loamy Sand	–	–	N	–
		2	60-75	7.5YR 4/6	strong brown	Clay	1-5%	Redox	N	Terminated at compact soil.
NA	AE06	1	0-75	10YR 5/3	brown	Sandy Loam	1-5%	Gravels	N	Terminated at compact soil.
NA	AE06	1	0-75	7.5YR 4/4	brown	Loamy Sand	5-10%	Redox	N	Terminated at large root.
NA	AE07	1	0-75	10YR 5/3	brown	Sandy Loam	1-5%	Gravels	N	Terminated at compact soil.
NA	AE08	1	0-30	10YR 4/3	brown	Sandy Loam	–	–	N	–
		2	30-45	7.5YR 4/6	strong brown	Clay	–	–	N	Terminated at basal clay.
NA	AE09	1	0-65	10YR 5/4	yellowish brown	Sandy Loam	–	–	N	–
		2	65-75	7.5YR 4/6	strong brown	Clay Loam	–	–	N	Terminated at compact soil.
NA	AE10	1	0-35	10YR 2/2	very dark brown	Clay Loam	–	–	N	–
		2	35-50	7.5YR 4/6	strong brown	Clay	10-20%	Mottles, Iron nodules	N	Terminated at basal clay.
NA	AE11	1	0-55	10YR 2/2	very dark brown	Clay Loam	1-5%	Redox	N	Terminated at compact soil.
NA	AE12	1	0-55	10YR 2/2	very dark brown	Clay Loam	1-5%	Redox	N	Terminated at compact soil.
NA	AE13	1	0-35	7.5YR 3/4	dark brown	Sandy Clay Loam	1-5%	Gravels	N	–
		2	35-50	5YR 4/6	yellowish red	Clay	1-5%	Redox	N	Terminated at basal clay.
41BU123	AE14	1	0-35	7.5YR 3/4	dark brown	Sandy Clay Loam	1-5%	Gravels	N	–
		2	35-50	5YR 4/6	yellowish red	Clay	1-5%	Redox	N	Terminated at basal clay.
NA	AE15	1	0-90	7.5YR 5/4	brown	Silt	1-5%	Gravels, Pebbles	N	Terminated at depth.
NA	AE16	1	0-35	7.5YR 3/4	dark brown	Sandy Clay Loam	1-5%	Gravels	N	–
		2	35-50	5YR 4/6	yellowish red	Clay	1-5%	Redox	N	Terminated at basal clay.
NA	AE17	1	0-30	7.5YR 4/6	strong brown	Clay	5-10%	Gravels, Pebbles	N	Terminated at basal clay.
NA	AE18	1	0-35	10YR 2/2	very dark brown	Sandy Clay Loam	1-5%	Gravels, Pebbles	N	–
		2	35-50	7.5YR 4/6	strong brown	Clay	1-5%	Gravels, Pebbles	N	Terminated at basal clay.
NA	AE19	1	0-20	10YR 3/3	dark brown	Silt Loam	>20%	Cobbles, Gravels	N	Terminated at compact soil.
NA	AE20	1	0-20	10YR 3/3	dark brown	Silt Loam	>20%	Cobbles, Gravels	N	Terminated at compact soil.
NA	AE21	1	0-20	10YR 2/1	black	Silt Loam	>20%	Cobbles, Gravels	N	–
		2	20-35	7.5YR 2.5/2	very dark brown	Silt Loam	>20%	Cobbles, Gravels	N	Terminated at compact soil.
NA	AE22	1	0-30	10YR 2/1	black	Silt Loam	5-10%	Cobbles, Gravels	N	Terminated at compact soil.
NA	AE23	1	0-20	10YR 4/4	dark yellowish brown	Silt Loam	>20%	Cobbles, Gravels	N	Terminated at compact soil.
NA	AE24	1	0-15	7.5YR 4/4	brown	Silt Loam	>20%	Cobbles, Gravels	N	Terminated at compact soil.
NA	AE25	1	0-25	10YR 2/1	black	Silt Loam	>20%	Cobbles, Gravels	N	Terminated at compact soil.
NA	AE26	1	0-20	10YR 3/3	dark brown	Silt Loam	>20%	Cobbles, Gravels	N	Terminated at compact soil.
NA	AE27	1	0-70	7.5YR 2.5/1	black	Silty Clay Loam	>20%	Mottles	N	Terminated at compact soil.
NA	AE28	1	0-25	7.5YR 3/3	dark brown	Sandy Clay Loam	–	–	N	–
		2	25-40	7.5YR 5/8	strong brown	Sandy Clay	10-20%	Mottles, Pebbles	N	Terminated at basal clay.
NA	AE29	1	0-25	7.5YR 3/3	dark brown	Sandy Clay Loam	–	–	N	–
		2	25-40	7.5YR 5/8	strong brown	Sandy Clay	10-20%	Mottles, Pebbles	N	Terminated at basal clay.
NA	AE30	1	0-70	7.5YR 2.5/1	black	Silty Clay Loam	>20%	Mottles	N	Terminated at compact soil.
NA	AE200	1	0-80	7.5YR 3/4	dark brown	Sandy Loam	–	–	N	–
		2	80-100	7.5YR 4/6	strong brown	Loamy Sand	–	–	N	Terminated at depth.
NA	AE201	1	0-25	7.5YR 3/4	dark brown	Loamy Sand	–	–	N	–
		2	25-40	5YR 4/6	yellowish red	Sandy Clay	5-10%	Pebbles, Redox and manganese	N	Terminated at basal clay.
NA	AE202	1	0-100	7.5YR 4/6	strong brown	Sand	–	–	N	Terminated at depth.
41BU124	AE203	1	0-70	7.5YR 5/4	brown	Loamy Sand	–	–	N	Terminated at compact soil.
41BU124	AE204	1	0-60	7.5YR 4/6	strong brown	Sandy Clay Loam	5-10%	Gravels, Pebbles	N	–
		2	60-80	7.5YR 5/3	brown	Sandy Clay Loam	1-5%	Gravels, Pebbles	N	Terminated at compact soil.
41BU124	AE205	1	0-40	7.5YR 4/4	brown	Sandy Loam	–	–	N	–
		2	40-60	5YR 4/6	yellowish red	Sandy Clay	–	–	N	Terminated at basal clay.
NA	AE300	1	0-30	7.5YR 3/4	dark brown	Loamy Sand	–	–	N	–
		2	30-50	7.5YR 4/6	strong brown	Sandy Clay Loam	5-10%	Gravels, Pebbles	N	Terminated at basal clay.
NA	AE301	1	0-80	7.5YR 4/6	strong brown	Loamy Sand	1-5%	Gravels, Pebbles	N	Terminated at saturated soils.
NA	AE302	1	0-5	7.5YR 3/4	dark brown	Loamy Sand	–	–	N	–
		2	5-45	5YR 4/6	yellowish red	Sandy Clay Loam	5-10%	Gravels, Pebbles, Manganese	N	Terminated at basal clay.
NA	AE303	1	0-100	10YR 5/4	yellowish brown	Loamy Sand	1-5%	Gravels, Pebbles	N	Terminated at depth.
NA	AE304	1	0-50	7.5YR 3/4	dark brown	Loamy Sand	1-5%	Gravels, Pebbles	N	–
		2	50-65	7.5YR 5/8	strong brown	Sandy Clay Loam	5-10%	Gravels, Pebbles	N	Terminated at compact soil.

Appendix B. Shovel Test Data

Site No.	Shovel Test No.	Level	Depth (cmbs)	Munsell Soil value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Positive (P) or Negative (N)	Comments/ Reason for Termination
NA	AE305	1	0-50	7.5YR 3/4	dark brown	Loamy Sand	1-5%	Gravels, Pebbles	N	–
		2	50-65	7.5YR 5/8	strong brown	Sandy Clay Loam	5-10%	Gravels, Pebbles	N	Terminated at compact soil.
NA	AE306	1	0-65	7.5YR 3/4	dark brown	Sandy Clay Loam	1-5%	Gravels, Pebbles	N	Terminated at water table.
41BP959	AE307	1	0-10	10YR 5/3	brown	Loamy Sand	–	–	N	–
		2	10-20	10YR 5/3	brown	Loamy Sand	–	–	Y	7: Flake (primary), Flake (tertiary), Other Prehistoric
		3	20-30	10YR 5/3	brown	Loamy Sand	–	–	Y	3: Flake (primary), Flake (tertiary), Other Prehistoric
		4	30-50	10YR 6/2	light brownish gray	Clay	>20%	Mottles	N	Terminated at basal clay.
41BP959	AE308	1	0-10	10YR 5/3	brown	Loamy Sand	–	–	Y	1: Flake (tertiary), Other Prehistoric
		2	10-20	10YR 5/3	brown	Loamy Sand	–	–	Y	1: Flake (tertiary), Other Prehistoric
		3	20-30	10YR 5/3	brown	Loamy Sand	–	–	N	–
		4	30-50	7.5YR 4/4	brown	Sandy Clay	>20%	Mottles	N	Terminated at basal clay.
NA	AE309	1	0-10	10YR 2/2	very dark brown	Loamy Sand	–	–	N	–
		2	10-60	10YR 4/4	dark yellowish brown	Loamy Sand	–	–	N	–
		3	60-90	10YR 2/2	very dark brown	Loamy Sand	–	–	N	–
		4	90-100	10YR 5/2	grayish brown	Loamy Sand	10-20%	Mottles	N	Terminated at depth.
NA	AE310	1	0-10	10YR 2/2	very dark brown	Sandy Loam	–	–	N	–
		2	10-45	10YR 5/3	brown	Sandy Clay	>20%	Mottles, Pebbles	N	Terminated at basal clay.
NA	AE500	1	0-50	7.5YR 2.5/2	very dark brown	Clay	10-20%	Mottles	N	Terminated at water table.
NA	AE501	1	0-55	7.5YR 4/4	brown	Clay Loam	>20%	Mottles, Redox and leached gray clay	N	–
		2	55-90	7.5YR 2.5/1	black	Clay	10-20%	Redox in filaments	N	–
		3	90-100	7.5YR 5/1	gray	Clay	10-20%	Redox	N	Terminated at depth.
NA	AE502	1	0-20	7.5YR 5/6	strong brown	Sand	5-10%	Gravels, Pebbles	N	–
		2	20-45	7.5YR 5/1	gray	Clay Loam	>20%	Gravels, Mottles, Pebbles	N	–
		3	45-60	7.5YR 5/1	gray	Clay	10-20%	Redox	N	Terminated at compact soil.
NA	AE503	1	0-100	7.5YR 4/4	brown	Loamy Sand	5-10%	Gravels, Pockets of 5YR 5/8 sandy clay throughout; subrounded gravels - sparse	N	Terminated at depth.
NA	AE504	1	0-60	7.5YR 2.5/2	very dark brown	Clay Loam	>20%	Pebbles, Redox; 20-30%	N	Terminated at compact soil.
NA	AE505	1	0-60	7.5YR 4/1	dark gray	Clay	>20%	Redox	N	Terminated at compact soil.
NA	AE506	1	0-130	7.5YR 5/4	brown	Sandy Loam	5-10%	Cobbles, Gravels, Pebbles	N	Terminated at limestone gravels.
41LE350	AE507	1	0-60	7.5YR 5/4	brown	Sandy Loam	1-5%	Gravels, Pebbles	N	–
		2	60-75	7.5YR 4/6	strong brown	Sandy Clay Loam	>20%	Mottles	N	Terminated at basal clay.
41LE350	AE508	1	0-100	7.5YR 4/4	brown	Sandy Loam	1-5%	Gravels, Pebbles	Y	2: Flake (secondary), Flake (tertiary) [1 Secondary flake 10-20; 1 tertiary flake 20-30; 1 tertiary flake 50-60] Terminated at depth.
41LE350	AE509	1	0-30	7.5YR 4/4	brown	Sandy Loam	1-5%	Pebbles	N	–
		2	30-50	5YR 5/8	yellowish red	Sandy Clay	–	–	N	Terminated at basal clay.
41LE350	AE510	1	0-100	7.5YR 5/4	brown	Sandy Loam	1-5%	Gravels, Pebbles	Y	3: Flake (tertiary), Other Prehistoric [1 shatter and 1 tertiary flake 10-20; 2 shatter and 1 tertiary flake 20-30; 1 tertiary flake 30-40] Terminated at depth.
41LE350	AE511	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Not excavated due to inundation.
41LE350	AE512	1	0-100	7.5YR 4/4	brown	Sandy Loam	1-5%	Gravels, Pebbles	Y	2: Flake (secondary), Flake (tertiary) [1 Secondary flake 10-20; 1 tertiary flake 20-30; 1 tertiary flake 50-60] Terminated at depth.
NA	AME01	1	0-10	10YR 2/2	very dark brown	Clay Loam	>20%	Cobbles, Gravels	N	No cultural material encountered. Terminated at compact soil.
NA	AME01	1	0-20	10YR 4/3	brown	Sandy Loam	–	–	N	–
		2	20-50	5YR 5/8	yellowish red	Clay	10-20%	Mottles, Redox	N	Terminated at compact soil.
NA	AME02	1	0-10	10YR 2/2	very dark brown	Clay Loam	>20%	Cobbles, Gravels	N	Terminated at compact soil.
NA	AME02	1	0-20	10YR 3/3	dark brown	Sandy Loam	1-5%	Gravels, Pebbles	N	–
		2	20-25	10YR 4/3	brown	Sandy Loam	–	–	N	–
		3	25-50	5YR 5/8	yellowish red	Clay	10-20%	Mottles, Redox	N	Terminated at compact soil.
NA	AME03	1	0-30	10YR 2/2	very dark brown	Clay Loam	>20%	Cobbles, Gravels	N	Terminated at compact soil.
NA	AME03	1	0-20	10YR 4/3	brown	Sandy Loam	1-5%	Gravels, Pebbles	N	–
		2	20-100	10YR 4/6	dark yellowish brown	Loamy Sand	1-5%	Gravels, Pebbles	N	Terminated at depth.
NA	AME04	1	0-30	10YR 2/2	very dark brown	Clay Loam	>20%	Cobbles, Gravels	N	Terminated at compact soil.
NA	AME04	1	0-20	10YR 4/3	brown	Sandy Loam	1-5%	Gravels, Pebbles	N	–
		2	20-100	10YR 4/6	dark yellowish brown	Loamy Sand	1-5%	Gravels, Pebbles	N	Terminated at depth.
NA	AME05	1	0-30	7.5YR 4/6	strong brown	Loamy Sand	>20%	Cobbles, Gravels	N	Terminated at compact soil.
NA	AME05	1	0-20	10YR 4/3	brown	Sandy Loam	1-5%	Gravels, Pebbles	N	–
		2	20-100	10YR 4/6	dark yellowish brown	Loamy Sand	1-5%	Gravels, Pebbles	N	Terminated at depth.
NA	AME06	1	0-30	10YR 2/2	very dark brown	Clay Loam	>20%	Cobbles, Gravels	N	Terminated at compact soil.
NA	AME06	1	0-70	10YR 4/3	brown	Sandy Loam	10-20%	Gravels, Mottles, Pebbles	N	Terminated at compact soil.
NA	AME07	1	0-30	10YR 2/2	very dark brown	Clay Loam	>20%	Cobbles, Gravels	N	Terminated at compact soil.
NA	AME07	1	0-25	10YR 3/3	dark brown	Sandy Loam	1-5%	Gravels, Pebbles	N	–
		2	25-70	10YR 5/4	yellowish brown	Sandy Loam	1-5%	Gravels, Pebbles	N	–
		3	70-80	10YR 4/3	brown	Clay Loam	5-10%	Gravels, Pebbles	N	Terminated at compact soil.
IF10	AME08	1	0-30	7.5YR 6/1	gray	Clay Loam	>20%	Cobbles, Gravels	N	Terminated at compact soil.
NA	AME08	1	0-10	10YR 3/3	dark brown	Sandy Loam	–	–	N	–
		2	10-35	5YR 5/8	yellowish red	Clay	5-10%	Mottles	N	Terminated at basal clay.

Appendix B. Shovel Test Data

Site No.	Shovel Test No.	Level	Depth (cmbs)	Munsell Soil value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Positive (P) or Negative (N)	Comments/ Reason for Termination
IF10	AME09	1	0-30	7.5YR 3/4	dark brown	Sandy Loam	>20%	Cobbles, Gravels	N	Terminated at compact soil.
NA	AME09	1	0-55	10YR 4/4	dark yellowish brown	Loamy Sand	–	–	N	–
		2	55-70	10YR 5/8	yellowish brown	Clay	5-10%	Mottles	N	Terminated at basal clay.
NA	AME10	1	0-30	10YR 2/2	very dark brown	Clay Loam	>20%	Cobbles, Gravels	N	Terminated at compact soil.
		1	0-60	7.5YR 5/4	brown	Loamy Sand	1-5%	Gravels, Pebbles	N	–
NA	AME10	2	60-80	7.5YR 3/4	dark brown	Sandy Loam	1-5%	Gravels, Pebbles	N	–
		3	80-90	10YR 6/1	gray	Clay Loam	5-10%	Mottles	N	Terminated at basal clay.
NA	AME11	1	0-30	10YR 2/2	very dark brown	Clay Loam	>20%	Cobbles, Gravels	N	Terminated at bedrock.
NA	AME11	1	0-10	7.5YR 6/4	light brown	Sandy Loam	–	–	N	Terminated at bedrock.
NA	AME12	1	0-30	10YR 2/2	very dark brown	Clay Loam	>20%	Cobbles, Gravels	N	Terminated at bedrock.
		1	0-25	7.5YR 6/4	light brown	Loamy Sand	1-5%	Gravels	N	–
NA	AME12	2	25-50	7.5YR 4/6	strong brown	Clay	>20%	Redox, 20-30 percent	N	Terminated at basal clay.
NA	AME13	1	0-30	7.5YR 2.5/2	very dark brown	Clay Loam	10-20%	Cobbles, Gravels	N	–
		2	30-45	5YR 4/6	yellowish red	Clay Loam	5-10%	Gravels, Pebbles	N	Terminated at basal clay.
NA	AP01	1	0-70	10YR 4/3	brown	Sandy Clay	1-5%	None	N	Terminated at hydric clay.
NA	AP02	1	0-60	7.5YR 6/8	reddish yellow	Sandy Loam	1-5%	None	N	Terminated at hydric.
NA	AP03	1	0-25	10YR 4/3	brown	Sandy Clay	1-5%	None	N	Terminated at hydric.
NA	AP04	1	0-70	7.5YR 6/6	reddish yellow	Sandy Loam	1-5%	Pebbles	N	Terminated at hydric.
NA	AP100	1	0-80	10YR 6/4	light yellowish brown	Sandy Loam	5-10%	Roots	N	Terminated at basal clay.
NA	AP101	1	0-20	7.5YR 2.5/3	very dark brown	Clay	5-10%	Roots	N	Terminated at basal clay.
NA	AP102	1	0-70	7.5YR 4/4	brown	Sand	1-5%	Gravels	N	Terminated at basal clay.
NA	AP103	1	0-50	7.5YR 4/4	brown	Sand	1-5%	Gravels	N	Terminated at basal clay.
NA	AP104	1	0-20	7.5YR 2.5/3	very dark brown	Clay	5-10%	Roots	N	Terminated at basal clay.
NA	AP105	1	0-20	7.5YR 2.5/3	very dark brown	Clay	5-10%	Roots	N	Terminated at basal clay.
NA	AP106	1	0-40	7.5YR 4/4	brown	Sand	1-5%	Gravels	N	Terminated at basal clay.
NA	AP107	1	0-70	7.5YR 4/4	brown	Sand	1-5%	Gravels	N	Terminated at basal clay.
NA	BKM01	1	0-40	10YR 6/4	light yellowish brown	Sandy Clay	1-5%	Pebbles	N	Terminated at basal clay.
NA	BKM02	1	0-60	10YR 5/3	brown	Sandy Clay Loam	–	–	N	Terminated at bedrock.
NA	BKM03	1	0-80	10YR 6/3	pale brown	Sandy Clay Loam	–	–	N	Terminated at basal clay.
NA	BKM04	1	0-80	10YR 6/3	pale brown	Sandy Clay Loam	–	–	N	Terminated at basal clay.
IF08	BKM05	1	0-50	10YR 7/4	very pale brown	Silty Clay Loam	1-5%	Sandstone rock chunks	Y	1: Flake (secondary) Terminated at basal clay.
NA	BKM06	1	0-50	10YR 6/3	pale brown	Sandy Clay Loam	1-5%	Gravels, Pebbles	N	Terminated at basal clay.
NA	BKM07	1	0-50	10YR 6/3	pale brown	Sandy Clay Loam	1-5%	Gravels, Pebbles	N	Terminated at basal clay.
NA	BKM08	1	0-40	10YR 8/6	yellow	Sandy Loam	–	–	N	Terminated at compact soil.
NA	BKM09	1	0-40	10YR 8/6	yellow	Sandy Loam	–	–	N	Terminated at compact soil.
NA	BKM10	1	0-40	10YR 4/6	dark yellowish brown	Sandy Clay Loam	5-10%	Gravels, Pebbles	N	Terminated at bedrock.
NA	BKM11	1	0-25	10YR 4/1	dark gray	Clay	>20%	Mottles	N	Terminated at compact soil.
NA	BM210	1	0-100	10YR 6/6	brownish yellow	Sandy Loam	–	–	N	Terminated at depth.
NA	BM211	1	0-40	10YR 5/6	yellowish brown	Sandy Clay Loam	–	–	N	Terminated at basal clay.
NA	BM212	1	0-40	10YR 4/6	dark yellowish brown	Sandy Clay Loam	–	–	N	Terminated at compact soil.
NA	BM213	1	0-40	10YR 4/6	dark yellowish brown	Sandy Clay Loam	–	–	N	Terminated at compact soil.
NA	BM214	1	0-40	10YR 4/6	dark yellowish brown	Sandy Clay Loam	–	–	N	Terminated at compact soil.
NA	BM215	1	0-30	10YR 4/1	dark gray	Clay Loam	–	–	N	Terminated at basal clay.
NA	BM216	1	0-30	10YR 4/1	dark gray	Clay Loam	–	–	N	Terminated at basal clay.
NA	BM217	1	0-60	10YR 4/1	dark gray	Silty Clay	–	–	N	Terminated at basal clay.
NA	BM218	1	0-60	10YR 4/1	dark gray	Silty Clay	–	–	N	Terminated at basal clay.
NA	BM219	1	0-60	10YR 4/1	dark gray	Silty Clay	–	–	N	Terminated at basal clay.
NA	BM220	1	0-50	10YR 3/2	very dark grayish brown	Clay Loam	–	–	N	Terminated at basal clay.
NA	BM221	1	0-50	10YR 3/2	very dark grayish brown	Clay Loam	–	–	N	Terminated at basal clay.
NA	BM222	1	0-50	10YR 3/2	very dark grayish brown	Clay Loam	–	–	N	Terminated at basal clay.
NA	BM301	1	0-50	10YR 4/3	brown	Clay Loam	–	–	N	Terminated at basal clay.
NA	BM302	1	0-40	7.5YR 7/8	reddish yellow	Sandy Clay Loam	–	–	N	Terminated at bedrock.
NA	BM303	1	0-40	10YR 3/2	very dark grayish brown	Clay Loam	5-10%	Cobbles, Gravels	N	Terminated at bedrock.
NA	BM304	1	0-40	10YR 3/4	dark yellowish brown	Clay Loam	5-10%	Gravels, Pebbles	N	Terminated at basal clay.
NA	BY01	1	0-5	10YR 7/2	light gray	Loam	5-10%	Pebbles	N	–
		2	5-35	10YR 7/2	light gray	Sandy Clay Loam	1-5%	Pebbles	N	Terminated at compact soil.
NA	BY01	1	0-22	10YR 4/4	dark yellowish brown	Sandy Loam	1-5%	Sandstone frags	N	–
		2	22-50	10YR 7/2	light gray	Sandy Loam	5-10%	Sandstone frags	N	Terminated at water table hit.
NA	BY02	1	0-40	10YR 5/4	yellowish brown	Loam	1-5%	Gravels, Pebbles	N	–
		2	40-50	10YR 7/3	very pale brown	Sandy Clay Loam	1-5%	Gravels, Pebbles	N	Terminated at compact clay subsoil.
NA	BY02	1	0-22	10YR 4/4	dark yellowish brown	Sandy Loam	1-5%	Sandstone fragments	N	–
		2	22-50	10YR 7/2	light gray	Sandy Loam	5-10%	Sandstone fragments	N	Terminated at water table.
NA	BY03	1	0-10	10YR 5/4	yellowish brown	Loam	1-5%	Gravels, Pebbles	N	–
		2	10-50	10YR 5/3	brown	Sandy Clay	1-5%	Pebbles, Grass roots	N	Terminated at compact soil.

Appendix B. Shovel Test Data

Site No.	Shovel Test No.	Level	Depth (cmbs)	Munsell Soil value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Positive (P) or Negative (N)	Comments/ Reason for Termination
NA	BY03	1	0-25	10YR 7/2	light gray	Sandy Loam	1-5%	Grass roots	N	–
		2	25-35	7.5YR 5/2	brown	Sandy Clay	1-5%	Grass roots	N	Terminated at clay subsoil.
NA	BY04	1	0-65	7.5YR 6/4	light brown	Sandy Loam	1-5%	Grass roots	N	Terminated at water table.
NA	BY05	1	0-30	10YR 5/4	yellowish brown	Sandy Loam	5-10%	Grass and tree roots	N	–
		2	30-45	7.5YR 4/1	dark gray	Sandy Loam	1-5%	Grass and tree roots	N	Terminated at wet; dense and sticky matrix at depth.
NA	BY06	1	0-75	10YR 6/4	light yellowish brown	Sandy Loam	1-5%	Grass and tree roots	N	–
		2	75-80	7.5YR 6/2	pinkish gray	Sandy Loam	5-10%	Tree roots	N	Terminated at compact soil.
NA	CM01	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Not excavated due to bedrock at surface
NA	CM02	1	0-10	10YR 3/2	very dark grayish brown	Clay Loam	>20%	Gravels, Large Rock Frags	N	Terminated at bedrock.
NA	CMS01	1	0-30	7.5YR 2.5/1	black	Clay Loam	10-20%	Gravels	N	Terminated at compact soil.
NA	CMS02	1	0-30	7.5YR 2.5/2	very dark brown	Clay Loam	–	–	N	Terminated at compact soil.
NA	CMS03	1	0-30	10YR 4/2	dark grayish brown	Clay Loam	–	–	N	Terminated at compact soil.
NA	CMS04	1	0-30	10YR 3/1	very dark gray	Clay	–	–	N	Terminated at compact soil.
NA	CMS05	1	0-30	10YR 2/2	very dark brown	Clay Loam	–	–	N	Terminated at compact soil.
NA	CMS06	1	0-30	10YR 2/2	very dark brown	Clay	–	–	N	Terminated at compact soil.
NA	CMS07	1	0-30	10YR 3/2	very dark grayish brown	Clay Loam	–	–	N	Terminated at compact soil.
NA	CMS09	1	0-30	10YR 3/2	very dark grayish brown	Silty Clay	–	–	N	Terminated at compact soil.
NA	CMS10	1	0-20	10YR 2/2	very dark brown	Clay Loam	>20%	Cobbles, Pebbles	N	Terminated at rock impasse.
NA	CMS11	1	0-20	10YR 2/2	very dark brown	Clay Loam	>20%	Cobbles, Pebbles	N	Terminated at rock impasse.
NA	CMS12	1	0-20	10YR 2/2	very dark brown	Clay Loam	>20%	Cobbles, Pebbles	N	Terminated at rock impasse.
NA	CMS13	1	0-20	10YR 2/2	very dark brown	Clay Loam	>20%	Cobbles, Pebbles	N	Terminated at rock impasse.
NA	CMS14	1	0-30	7.5YR 2.5/1	black	Clay Loam	10-20%	Cobbles	N	Terminated at compact soil.
NA	CS01	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Not excavated due to inundation.
NA	CS02	1	0-40	7.5YR 4/3	brown	Sand	–	–	N	–
		2	40-65	7.5YR 5/4	brown	Sand	–	–	N	Terminated at bedrock.
NA	CS03	1	0-30	7.5YR 4/2	brown	Sand	–	–	N	–
		2	30-40	7.5YR 5/3	brown	Sand	–	–	N	Terminated at hydric sand.
NA	CS04	1	0-25	7.5YR 4/2	brown	Sand	–	–	N	–
		2	25-50	7.5YR 6/4	light brown	Sand	–	–	N	Terminated at bedrock.
NA	CS05	1	0-55	10YR 4/3	brown	Sand	–	–	N	–
		2	55-70	10YR 6/4	light yellowish brown	Sand	–	–	N	Terminated at water table.
NA	CS06	1	0-45	10YR 4/3	brown	Sand	–	–	N	–
		2	45-60	7.5YR 6/4	light brown	Sand	–	–	N	Terminated at bedrock.
NA	CS07	1	0-50	7.5YR 4/4	brown	Sandy Loam	>20%	Gravels, Pebbles	N	–
		2	50-60	7.5YR 5/8	strong brown	Sandy Clay	>20%	Gravels, Pebbles	N	Terminated at compact soil.
NA	CS08	1	0-80	10YR 4/3	brown	Loamy Sand	–	–	N	–
		2	80-100	10YR 4/6	dark yellowish brown	Loamy Sand	1-5%	Gravels	N	Terminated at depth.
NA	CS09	1	0-25	7.5YR 4/4	brown	Sandy Loam	>20%	Gravels	N	–
		2	25-35	5YR 4/6	yellowish red	Clay	–	–	N	Terminated at compact soil.
NA	CS10	1	0-40	7.5YR 4/4	brown	Sandy Loam	10-20%	Gravels	N	–
		2	40-60	10YR 5/6	yellowish brown	Loamy Sand	5-10%	Gravels	N	Terminated at bedrock.
NA	CS10	1	0-35	7.5YR 5/6	strong brown	Sandy Loam	–	–	N	–
		2	35-45	5YR 5/8	yellowish red	Sandy Clay	–	–	N	Terminated at basal clay.
NA	CS11	1	0-20	7.5YR 4/4	brown	Sandy Loam	10-20%	Gravels	N	–
		2	20-30	5YR 4/6	yellowish red	Clay	–	–	N	Terminated at compact soil.
NA	CS11	1	0-15	7.5YR 4/4	brown	Sandy Loam	–	–	N	–
		2	15-25	2.5YR 4/8	red	Clay	–	–	N	Terminated at basal clay.
NA	CS12	1	0-20	7.5YR 4/4	brown	Sandy Loam	10-20%	Gravels	N	–
		2	20-30	5YR 4/6	yellowish red	Clay	1-5%	Gravels	N	Terminated at basal clay.
NA	CS13	1	0-10	7.5YR 4/4	brown	Sandy Loam	10-20%	Gravels	N	–
		2	10-30	5YR 4/6	yellowish red	Clay	1-5%	Gravels	N	Terminated at compact soil.
41BU123	CS14	1	0-40	7.5YR 2.5/3	very dark brown	Sandy Clay Loam	–	–	N	–
		2	40-100	10YR 4/4	dark yellowish brown	Sandy Clay Loam	–	–	N	Terminated at depth.
41BU123	CS15	1	0-30	7.5YR 4/3	brown	Sandy Loam	1-5%	Pebbles	N	–
		2	30-50	10YR 4/4	dark yellowish brown	Sandy Clay Loam	–	–	N	–
NA	CS16	1	0-45	10YR 4/3	brown	Loamy Sand	–	–	N	–
		2	45-100	7.5YR 4/2	brown	Loamy Sand	–	–	N	Terminated at depth.
NA	CS17	1	0-30	7.5YR 4/3	brown	Sand	–	–	N	–
		2	30-50	5YR 4/6	yellowish red	Sandy Clay	–	–	N	Terminated at compact soil.
NA	CS18	1	0-40	10YR 2/2	very dark brown	Clay Loam	–	–	N	–
		2	40-50	7.5YR 4/2	brown	Clay Loam	–	–	N	Terminated at compact soil.
NA	CS19	1	0-30	7.5YR 4/4	brown	Sand	–	–	N	–
		2	30-40	5YR 4/6	yellowish red	Sandy Clay	–	–	N	Terminated at basal clay.
NA	CS20	1	0-15	7.5YR 2.5/2	very dark brown	Loam	>20%	Cobbles, Pebbles	N	Terminated at impenetrable pebble/cobble layer.
NA	CS21	1	0-15	7.5YR 2.5/3	very dark brown	Loam	>20%	Cobbles, Pebbles	N	Terminated at impenetrable pebble/cobble layer.
NA	CS22	1	0-10	10YR 2/2	very dark brown	Clay Loam	>20%	Pebbles	N	–
		2	10-20	10YR 7/3	very pale brown	Clay	>20%	Pebbles	N	Terminated at basal clay.
NA	CS23	1	0-15	7.5YR 2.5/3	very dark brown	Loam	>20%	Cobbles, Pebbles	N	Terminated at impenetrable pebble/cobble layer.
NA	CS24	1	0-25	7.5YR 2.5/2	very dark brown	Loam	5-10%	Pebbles	N	Terminated at impenetrable pebble/cobble layer.
NA	CS25	1	0-15	7.5YR 2.5/2	very dark brown	Loam	>20%	Pebbles	N	Terminated at impenetrable pebble /cobble layer.

Appendix B. Shovel Test Data

Site No.	Shovel Test No.	Level	Depth (cms)	Munsell Soil value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Positive (P) or Negative (N)	Comments/ Reason for Termination
NA	CS26	1	0-15	7.5YR 2.5/3	very dark brown	Loam	>20%	Pebbles	N	Terminated at impenetrable pebble layer.
NA	CS27	1	0-15	7.5YR 2.5/1	black	Loam	>20%	Pebbles	N	Terminated at impenetrable pebble layer.
NA	CS28	1	0-50	7.5YR 2.5/3	very dark brown	Loam	10-20%	Clay from level 2	N	-
		2	50-70	7.5YR 4/2	brown	Clay	-	-	N	Terminated at basal clay.
NA	CS29	1	0-35	7.5YR 2.5/1	black	Clay Loam	-	-	N	-
		2	35-45	5YR 5/8	yellowish red	Sandy Clay	-	-	N	Terminated at basal clay.
NA	CS35	1	0-70	7.5YR 5/4	brown	Sand	-	-	N	Terminated at water table.
NA	CS36	1	0-25	7.5YR 4/4	brown	Sandy Loam	-	-	N	-
		2	25-35	5YR 4/6	yellowish red	Sandy Clay	10-20%	Pebbles	N	Terminated at bedrock.
NA	CS37	1	0-80	7.5YR 5/4	brown	Sand	1-5%	Gravels	N	-
		2	80-90	7.5YR 6/6	reddish yellow	Sandy Clay	5-10%	Gravels	N	Terminated at basal clay.
NA	CS38	1	0-30	7.5YR 4/4	brown	Sandy Loam	1-5%	Gravels	N	-
		2	30-40	7.5YR 6/6	reddish yellow	Sandy Clay	5-10%	Gravels, Pebbles	N	Terminated at basal clay.
NA	CS39	1	0-60	7.5YR 4/4	brown	Sandy Loam	-	-	N	-
		2	60-80	7.5YR 7/3	pink	Sandy Loam	5-10%	Iron oxide	N	-
		3	80-90	7.5YR 6/6	reddish yellow	Sandy Clay	-	-	N	Terminated at basal clay.
41BU124	CS40	1	0-100	7.5YR 4/3	brown	Loamy Sand	1-5%	Gravels	Y	1: Flake (utilized) Terminated at depth.
NA	CS100	1	0-20	7.5YR 4/4	brown	Sandy Loam	10-20%	Pebbles	N	-
		2	20-30	7.5YR 5/6	strong brown	Sandy Clay	-	-	N	Terminated at basal clay.
NA	CS101	1	0-100	7.5YR 3/4	dark brown	Loamy Sand	-	-	N	Terminated at depth.
NA	CS102	1	0-60	7.5YR 3/4	dark brown	Loamy Sand	5-10%	Gravels, Pebbles	N	-
		2	60-70	7.5YR 5/6	strong brown	Sandy Clay	5-10%	Pebbles	N	Terminated at basal clay.
NA	CS103	1	0-100	7.5YR 4/6	strong brown	Sand	1-5%	Pebbles	N	Terminated at depth.
NA	CS104	1	0-70	7.5YR 5/4	brown	Sand	1-5%	Pebbles	N	-
		2	70-80	10YR 5/6	yellowish brown	Sandy Clay	-	-	N	Terminated at basal clay.
NA	CS105	1	0-20	7.5YR 4/4	brown	Sandy Loam	10-20%	Pebbles	N	-
		2	20-30	7.5YR 5/6	strong brown	Sandy Clay	-	-	N	Terminated at basal clay.
NA	CS106	1	0-50	7.5YR 4/4	brown	Sandy Loam	-	-	N	-
		2	50-60	10YR 5/6	yellowish brown	Sandy Clay	-	-	N	Terminated at basal clay.
NA	CS107	1	0-50	7.5YR 4/4	brown	Sandy Loam	-	-	N	-
		2	50-60	10YR 5/6	yellowish brown	Sandy Clay	-	-	N	Terminated at basal clay.
NA	CS108	1	0-50	7.5YR 4/4	brown	Sandy Loam	-	-	N	-
		2	50-60	10YR 5/6	yellowish brown	Sandy Clay	-	-	N	Terminated at basal clay.
NA	CS200	1	0-50	7.5YR 4/1	dark gray	Clay Loam	-	-	N	Terminated at water table.
NA	CS201	1	0-60	7.5YR 4/1	dark gray	Clay Loam	-	-	N	Terminated at compact soil.
NA	CS202	1	0-20	7.5YR 4/2	brown	Sandy Clay Loam	-	-	N	-
		2	20-50	7.5YR 4/1	dark gray	Clay	-	-	N	Terminated at compact soil.
NA	CS203	1	0-123	7.5YR 4/3	brown	Sandy Loam	5-10%	Cobbles, Pebbles	N	Terminated at bedrock.
NA	CS204	1	0-20	7.5YR 4/2	brown	Sandy Clay Loam	1-5%	Gravels, Pebbles	N	-
		2	20-85	7.5YR 4/1	dark gray	Clay Loam	-	-	N	-
		3	85-160	7.5YR 5/1	gray	Clay	-	-	N	Terminated at water table.
NA	CS205	1	0-40	7.5YR 4/1	dark gray	Sandy Clay Loam	-	-	N	-
		2	40-128	7.5YR 5/1	gray	Sandy Clay	-	-	N	Terminated at water table.
41LE350	CS206	1	0-100	7.5YR 4/4	brown	Loamy Sand	5-10%	Cobbles, Gravels, Pebbles	Y	2: Other Prehistoric Terminated at depth.
41LE350	CS207	1	0-80	7.5YR 4/3	brown	Loamy Sand	5-10%	Cobbles, Pebbles	Y	9: Flake (primary), Flake (secondary), Flake (tertiary), Other Prehistoric, Other Prehistoric
		2	80-100	5YR 5/8	yellowish red	Sandy Clay	-	-	N	Terminated at depth.
41LE350	CS208	1	0-50	7.5YR 4/3	brown	Loamy Sand	5-10%	Cobbles, Pebbles	Y	9: Flake (primary), Flake (secondary), Flake (tertiary)
		2	50-60	5YR 5/8	yellowish red	Sandy Clay	-	-	N	Terminated at depth.
41LE350	CS209	1	0-45	7.5YR 4/3	brown	Sandy Loam	-	-	N	-
		2	45-100	7.5YR 6/2	pinkish gray	Loamy Sand	-	-	N	Terminated at depth.
NA	CS215	1	0-45	7.5YR 4/3	brown	Sandy Loam	-	-	N	-
		2	45-55	7.5YR 5/6	strong brown	Sandy Loam	-	-	N	Terminated at water table.
NA	CS216	1	0-35	7.5YR 2.5/1	black	Clay	1-5%	Pebbles	N	Terminated at compact soil.
NA	CS217	1	0-100	7.5YR 5/4	brown	Sand	-	-	N	Terminated at depth.
NA	CS218	1	0-100	7.5YR 5/4	brown	Sand	-	-	N	Terminated at depth.
NA	CS219	1	0-30	7.5YR 4/2	brown	Sandy Loam	-	-	N	-
		2	30-65	7.5YR 6/1	gray	Sandy Clay	-	-	N	Terminated at compact soil.
NA	CS220	1	0-100	7.5YR 6/4	light brown	Sand	1-5%	Gravels	N	Terminated at depth.
NA	CS221	1	0-100	7.5YR 6/4	light brown	Sand	1-5%	Gravels	N	Terminated at depth.
NA	CS222	1	0-100	7.5YR 6/4	light brown	Sand	1-5%	Gravels	N	Terminated at depth.
NA	CS223	1	0-100	7.5YR 6/4	light brown	Sand	1-5%	Gravels	N	Terminated at depth.
NA	CS224	1	0-40	7.5YR 4/4	brown	Loamy Sand	5-10%	Gravels	N	-
		2	40-50	2.5YR 4/8	red	Clay	-	-	N	Terminated at basal clay.
NA	CS225	1	0-25	7.5YR 4/6	strong brown	Loamy Sand	>20%	Gravels, Pebbles	N	Terminated at bedrock.
		1	0-50	10YR 3/1	very dark gray	Clay Loam	-	-	N	-
NA	CS230	2	50-65	10YR 4/2	dark grayish brown	Clay	1-5%	Snail Shell	N	Terminated at compact soil.
		1	0-40	10YR 3/1	very dark gray	Clay Loam	-	-	N	-
NA	CS231	2	40-55	10YR 4/2	dark grayish brown	Clay	-	-	N	Terminated at compact soil.
		1	0-45	10YR 3/3	dark brown	Clay Loam	-	-	N	-
NA	CS232	2	45-100	10YR 5/4	yellowish brown	Sand	-	-	N	Terminated at depth.
		1	0-50	10YR 3/1	very dark gray	Clay	-	-	N	Terminated at compact soil.
NA	CS234	1	0-50	10YR 3/1	very dark gray	Clay Loam	-	-	N	Terminated at compact soil.
NA	CS235	1	0-40	10YR 2/2	very dark brown	Clay Loam	-	-	N	-
		2	40-50	10YR 2/1	black	Clay	-	-	N	Terminated at compact soil.
NA	CS236	1	0-30	10YR 2/2	very dark brown	Clay Loam	-	-	N	-
		2	30-40	10YR 2/1	black	Clay	-	-	N	Terminated at compact soil.

Appendix B. Shovel Test Data

Site No.	Shovel Test No.	Level	Depth (cmbs)	Munsell Soil value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Positive (P) or Negative (N)	Comments/ Reason for Termination
NA	CS237	1	0-30	10YR 3/2	very dark grayish brown	Clay Loam	–	–	N	–
		2	30-40	10YR 2/1	black	Clay	–	–	N	Terminated at compact soil.
NA	CXS01	1	0-35	10YR 5/3	brown	Sandy Loam	–	–	N	–
		2	35-50	10YR 6/1	gray	Sandy Clay	>20%	Mottles	N	Terminated at compact soil.
NA	CXS02	1	0-50	10YR 5/4	yellowish brown	Sand	–	–	N	–
		2	50-60	10YR 6/8	brownish yellow	Sandy Clay	–	–	N	Terminated at compact soil.
NA	CXS03	1	0-85	10YR 5/4	yellowish brown	Sand	10-20%	Gravels	N	–
		2	85-95	5YR 4/6	yellowish red	Sandy Clay	10-20%	Gravels	N	Terminated at compact soil.
NA	CXS04	1	0-35	10YR 4/3	brown	Sandy Loam	–	–	N	–
		2	35-45	10YR 5/1	gray	Sandy Clay	–	–	N	Terminated at compact soil.
41GU200	CXS05	1	0-25	10YR 2/2	very dark brown	Clay Loam	10-20%	Snail Shell	N	–
		2	25-100	10YR 5/4	yellowish brown	Sandy Clay Loam	10-20%	Snail Shell	N	Terminated at depth.
41GU200	CXS06	1	0-35	10YR 2/2	very dark brown	Sandy Loam	10-20%	Snail Shell	N	–
		2	35-100	10YR 5/4	yellowish brown	Sandy Clay Loam	10-20%	Pebbles, Snail Shell	N	Terminated at depth.
41GU200	CXS07	1	0-50	10YR 3/2	very dark grayish brown	Sandy Loam	10-20%	Pebbles, Snail Shell	N	–
		2	50-100	10YR 5/4	yellowish brown	Sandy Clay Loam	5-10%	Pebbles, Snail Shell	N	Terminated at depth.
41GU200	CXS08	1	0-70	10YR 2/2	very dark brown	Sandy Loam	5-10%	Snail Shell	N	–
		2	70-100	10YR 5/4	yellowish brown	Sandy Clay Loam	5-10%	Pebbles, Snail Shell	N	Terminated at depth.
NA	CXS09	1	0-30	10YR 5/1	gray	Clay	>20%	Mottles	N	Terminated at compact soil.
NA	CXS10	1	0-30	10YR 5/1	gray	Clay	>20%	Mottles	N	Terminated at compact soil.
NA	CXS11	1	0-100	7.5YR 5/4	brown	Sand	–	–	N	Terminated at depth.
NA	CXS12	1	0-100	7.5YR 5/4	brown	Sand	–	–	N	Terminated at depth.
NA	CXS13	1	0-100	7.5YR 5/4	brown	Sand	10-20%	Gravels, Pebbles	N	Terminated at depth.
NA	DPR01	1	0-70	10YR 6/4	light yellowish brown	Loamy Sand	1-5%	Mottles	N	Terminated at water table.
NA	DPR02	1	0-30	10YR 6/4	light yellowish brown	Loamy Sand	–	–	N	–
		2	30-50	7.5YR 7/3	pink	Sandy Clay	1-5%	Mottles	N	Terminated at basal clay.
NA	DPR03	1	0-70	10YR 6/4	light yellowish brown	Loamy Sand	1-5%	Mottles	N	Terminated at water table.
NA	DPR04	1	0-70	10YR 6/4	light yellowish brown	Loamy Sand	–	–	N	–
		2	70-80	7.5YR 7/3	pink	Sandy Clay	1-5%	Mottles	N	Terminated at basal clay.
NA	DPR05	1	0-30	10YR 6/4	light yellowish brown	Loamy Sand	–	–	N	–
		2	30-50	7.5YR 7/3	pink	Sandy Clay	1-5%	Mottles	N	Terminated at basal clay.
NA	DPR06	1	0-30	10YR 6/4	light yellowish brown	Loamy Sand	–	–	N	–
		2	30-50	7.5YR 7/3	pink	Sandy Clay	1-5%	Mottles	N	Terminated at basal clay.
NA	DPR07	1	0-30	10YR 6/4	light yellowish brown	Loamy Sand	–	–	N	–
		2	30-50	7.5YR 7/3	pink	Sandy Clay	1-5%	Mottles	N	Terminated at basal clay.
NA	DPR08	1	0-100	10YR 4/6	dark yellowish brown	Loamy Sand	–	–	N	Terminated at depth.
NA	DPR09	1	0-30	10YR 6/4	light yellowish brown	Loamy Sand	–	–	N	–
		2	30-50	7.5YR 7/3	pink	Sandy Clay	1-5%	Mottles	N	Terminated at basal clay.
NA	DPR10	1	0-40	10YR 3/3	dark brown	Silty Clay Loam	5-10%	Mottles	N	Terminated at water table.
NA	DPR11	1	0-40	10YR 3/3	dark brown	Silty Clay Loam	5-10%	Mottles	N	Terminated at water table.
NA	DPR12	1	0-40	7.5YR 2.5/3	very dark brown	Sandy Clay Loam	–	–	N	–
		2	40-100	10YR 4/4	dark yellowish brown	Sandy Clay Loam	–	–	N	Terminated at depth.
41BU123	DPR13	1	0-30	2.5YR 5/8	red	Clay	–	–	N	Terminated at basal clay.
NA	DPR14	1	0-40	7.5YR 5/4	brown	Sandy Loam	–	–	N	–
		2	40-50	2.5YR 5/8	red	Clay	–	–	N	Terminated at basal clay.
NA	DPR15	1	0-50	7.5YR 5/4	brown	Sandy Loam	–	–	N	–
		2	50-60	2.5YR 5/8	red	Clay	–	–	N	Terminated at basal clay.
NA	DPR16	1	0-40	7.5YR 8/3	pink	Sandy Clay	>20%	Gravels, Pebbles	N	Terminated at compact soil.
NA	DPR18	1	0-40	10YR 6/2	light brownish gray	Sandy Loam	1-5%	Manganese	N	–
		2	40-50	5YR 6/4	light reddish brown	Clay Loam	–	–	N	Terminated at basal clay.
NA	DPR19	1	0-30	7.5YR 2.5/1	black	Clay Loam	10-20%	Gravels	N	Terminated at compact soil.
NA	DPR20	1	0-30	10YR 4/2	dark grayish brown	Silt Loam	1-5%	Gravels, Pebbles	N	Terminated at compact soil.
NA	DPR21	1	0-30	10YR 4/2	dark grayish brown	Silt Loam	1-5%	Gravels, Pebbles	N	Terminated at compact soil.
NA	DPR22	1	0-30	10YR 4/2	dark grayish brown	Silt Loam	1-5%	Gravels, Pebbles	N	Terminated at compact soil.
NA	DPR23	1	0-35	10YR 5/4	yellowish brown	Silty Clay Loam	1-5%	Cobbles	N	Terminated at compact soil.
NA	DPR24	1	0-35	10YR 5/4	yellowish brown	Silty Clay Loam	1-5%	Cobbles	N	Terminated at compact soil.
NA	DPR25	1	0-30	10YR 4/2	dark grayish brown	Silt Loam	1-5%	Gravels, Pebbles	N	Terminated at compact soil.
NA	DPR26	1	0-30	10YR 4/2	dark grayish brown	Silt Loam	1-5%	Gravels, Pebbles	N	Terminated at compact soil.
NA	DPR27	1	0-30	10YR 4/2	dark grayish brown	Silt Loam	1-5%	Gravels, Pebbles	N	Terminated at compact soil.
NA	DPR28	1	0-30	10YR 4/2	dark grayish brown	Silt Loam	1-5%	Gravels, Pebbles	N	Terminated at compact soil.
NA	DPR29	1	0-10	10YR 5/4	yellowish brown	Silt Loam	5-10%	Cobbles, Pebbles	N	–
		2	10-30	10YR 6/3	pale brown	Clay Loam	1-5%	Cobbles	N	Terminated at basal clay.
NA	DPR30	1	0-40	10YR 3/4	dark yellowish brown	Silty Clay Loam	5-10%	Cobbles	N	Terminated at compact large (15 cm diameter) cobbles.

Appendix B. Shovel Test Data

Site No.	Shovel Test No.	Level	Depth (cmbs)	Munsell Soil value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Positive (P) or Negative (N)	Comments/ Reason for Termination
NA	DPR31	1	0-40	10YR 3/4	dark yellowish brown	Silty Clay Loam	5-10%	Cobbles	N	Terminated at compact large (15 cm diameter) cobbles.
NA	DPR32	1	0-40	10YR 3/4	dark yellowish brown	Silty Clay Loam	5-10%	Cobbles	N	Terminated at compact large (15 cm diameter) cobbles.
NA	DPR33	1	0-15	10YR 3/4	dark yellowish brown	Silty Clay Loam	5-10%	Cobbles, Large Rock Frags	N	Terminated at compacted large cobble layer.
NA	DPR34	1	0-15	10YR 3/4	dark yellowish brown	Silty Clay Loam	5-10%	Cobbles, Large Rock Frags	N	Terminated at compacted large cobble layer.
NA	DPR35	1	0-40	10YR 3/4	dark yellowish brown	Silty Clay Loam	5-10%	Cobbles, Large Rock Frags	N	Terminated at compacted large cobble layer.
NA	DPR36	1	0-20	10YR 6/4	light yellowish brown	Sandy Loam	5-10%	Cobbles, Pebbles	N	-
		2	20-30	5YR 5/8	yellowish red	Sandy Clay	1-5%	Cobbles, Pebbles	N	Terminated at basal clay.
NA	DPR37	1	0-15	10YR 3/4	dark yellowish brown	Silty Clay Loam	5-10%	Cobbles, Large Rock Frags	N	Terminated at compacted large cobble layer.
NA	DPR38	1	0-20	10YR 3/4	dark yellowish brown	Silty Clay Loam	5-10%	Cobbles, Large Rock Frags	N	Terminated at compacted large cobble layer.
NA	DPR39	1	0-8	10YR 3/4	dark yellowish brown	Silty Clay Loam	5-10%	Cobbles, Large Rock Frags	N	Terminated at compacted large cobble layer.
NA	DPR40	1	0-15	10YR 5/4	yellowish brown	Silty Clay Loam	10-20%	Cobbles, Gravels, Pebbles	N	Terminated at compact bed of river gravels and cobbles.
NA	DPR41	1	0-20	10YR 3/4	dark yellowish brown	Silty Clay Loam	5-10%	Cobbles, Large Rock Frags	N	Terminated at compacted large cobble layer.
NA	DPR42	1	0-30	10YR 3/4	dark yellowish brown	Silty Clay Loam	5-10%	Cobbles, Large Rock Frags	N	Terminated at compacted large cobble layer.
NA	DPR43	1	0-15	10YR 3/4	dark yellowish brown	Silty Clay Loam	5-10%	Cobbles, Large Rock Frags	N	Terminated at compacted large cobble layer.
NA	DPR44	1	0-15	10YR 3/4	dark yellowish brown	Silty Clay Loam	5-10%	Cobbles, Large Rock Frags	N	Terminated at compacted large cobble layer.
NA	DR1001	1	0-100	10YR 5/1	gray	Silty Clay	-	-	N	Terminated at depth.
NA	DR1002	1	0-60	10YR 5/2	grayish brown	Silty Clay	10-20%	Mottles, Pebbles	N	-
		2	60-70	10YR 5/2	grayish brown	Clay	1-5%	Pebbles	N	Terminated at compact soil.
NA	DR1003	1	0-60	10YR 5/2	grayish brown	Silty Clay	10-20%	Mottles, Pebbles	N	-
		2	60-70	10YR 5/2	grayish brown	Clay	1-5%	Pebbles	N	Terminated at compact soil.
NA	DR1004	1	0-30	10YR 3/4	dark yellowish brown	Silty Clay Loam	5-10%	Cobbles, Pebbles	N	-
		2	30-40	10YR 5/2	grayish brown	Silty Clay Loam	5-10%	Calcium Carbonate, Pebbles	N	Terminated at basal clay.
NA	DR1005	1	0-30	10YR 3/4	dark yellowish brown	Silty Clay Loam	5-10%	Cobbles, Pebbles	N	-
		2	30-40	10YR 5/2	grayish brown	Silty Clay Loam	5-10%	Calcium Carbonate, Pebbles	N	Terminated at basal clay.
NA	DR1006	1	0-10	10YR 3/4	dark yellowish brown	Silty Clay Loam	5-10%	Cobbles, Pebbles	N	-
		2	10-50	10YR 5/2	grayish brown	Silty Clay Loam	5-10%	Calcium Carbonate, Pebbles	N	Terminated at basal clay.
NA	DR1007	1	0-30	10YR 3/4	dark yellowish brown	Silty Clay Loam	5-10%	Cobbles, Pebbles	N	-
		2	30-40	10YR 5/2	grayish brown	Silty Clay Loam	5-10%	Calcium Carbonate, Pebbles	N	Terminated at basal clay.
NA	DR1008	1	0-20	10YR 4/1	dark gray	Silty Clay Loam	1-5%	Pebbles	N	-
		2	20-50	10YR 2/1	black	Silty Clay	1-5%	Gravels, Pebbles	N	-
		3	50-60	10YR 2/1	black	Clay	5-10%	Pebbles, Very Coarse grain sand	N	Terminated at compact soil.
41BP961	DR1009	1	0-35	10YR 4/4	dark yellowish brown	Sandy Clay Loam	10-20%	Cobbles, Gravels, Pebbles	N	Terminated at compact soil.
41BP961	DR1010	1	0-30	7.5YR 2.5/1	black	Silty Clay	5-10%	Cobbles, Gravels, Mottles, Pebbles	N	Terminated at disturbed soil.
NA	JFA01	1	0-50	10YR 5/6	yellowish brown	Sandy Loam	-	-	N	-
		2	50-65	10YR 5/8	yellowish brown	Sandy Clay Loam	-	-	N	-
		3	65-70	10YR 6/8	brownish yellow	Sandy Clay	-	-	N	Terminated at basal clay.
NA	JFA01	1	0-65	2.5Y 4/2	dark grayish brown	Silty Clay	-	-	N	Terminated at tree root.
NA	JFA02	1	0-10	7.5YR 5/8	strong brown	Sandy Clay	>20%	Mottles	N	Terminated at compact soil.
NA	JFA02	1	0-65	10YR 4/1	dark gray	Silty Clay	1-5%	Pebbles	N	Terminated at compact soil.
NA	JFA03	1	0-100	10YR 6/4	light yellowish brown	Sand	1-5%	Pebbles	N	Terminated at depth.
NA	JFA03	1	0-85	10YR 4/1	dark gray	Silty Clay	10-20%	Calcium Carbonate, Cobbles, Pebbles	N	Terminated at compact soil.
NA	JFA04	1	0-100	10YR 6/4	light yellowish brown	Sand	1-5%	Pebbles	N	Terminated at depth.
NA	JFA04	1	0-30	10YR 4/1	dark gray	Silty Clay	>20%	Cobbles, Pebbles	N	Terminated at compact chert and soil.
NA	JFA05	1	0-100	10YR 6/4	light yellowish brown	Sand	1-5%	Pebbles	N	Terminated at depth.
NA	JFA05	1	0-85	10YR 4/1	dark gray	Silty Clay	10-20%	Calcium Carbonate, Cobbles, Pebbles	N	Terminated at compact soil.
NA	JFA06	1	0-10	10YR 5/8	yellowish brown	Sandy Clay	1-5%	Pebbles	N	Terminated at basal clay.
NA	JFA06	1	0-60	10YR 2/1	black	Silty Clay	-	-	N	Terminated at compact soil.
41CM401	JFA07	1	0-5	10YR 2/2	very dark brown	Silty Clay	>20%	Gravels, Mottles, Pebbles	N	Terminated at bedrock.
NA	JFA07	1	0-10	10YR 2/2	very dark brown	Silt Loam	>20%	Cobbles, Pebbles	N	Terminated at compact chert.
41CM401	JFA08	1	0-30	5YR 3/2	dark reddish brown	Silty Clay Loam	5-10%	Cobbles, Pebbles	N	Terminated at bedrock.
NA	JFA08	1	0-50	10YR 2/1	black	Silty Clay	1-5%	Pebbles	N	Terminated at compact soil.
41CM401	JFA09	1	1-15	5YR 3/2	dark reddish brown	Silty Clay Loam	10-20%	Cobbles, Mottles, Pebbles	N	Terminated at bedrock.
NA	JFA09	1	0-50	10YR 2/1	black	Silty Clay	1-5%	Pebbles	N	Terminated at compact soil.
41CM401	JFA10	1	0-15	10YR 2/2	very dark brown	Silty Clay Loam	5-10%	Cobbles, Pebbles	N	Terminated at bedrock.
NA	JFA10	1	0-30	7.5YR 2.5/1	black	Silty Clay	5-10%	Cobbles, Gravels, Mottles, Pebbles	N	Terminated at disturbed soil.
41CM401	JFA11	1	0-30	10YR 2/2	very dark brown	Silty Clay Loam	>20%	Cobbles, Pebbles	N	Terminated at bedrock.

Appendix B. Shovel Test Data

Site No.	Shovel Test No.	Level	Depth (cmbs)	Munsell Soil value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Positive (P) or Negative (N)	Comments/ Reason for Termination
NA	JFA11	1	0-45	10YR 5/2	grayish brown	Silty Clay	5-10%	Calcium Carbonate, Gravels, Pebbles	N	Terminated at basal clay.
41CM401	JFA12	1	0-30	10YR 2/2	very dark brown	Clay	5-10%	Cobbles, Pebbles	N	–
		2	30-50	10YR 3/6	dark yellowish brown	Clay	5-10%	Cobbles, Pebbles	N	Terminated at basal clay.
41CM401	JFA12	1	0-50	10YR 2/1	black	Silty Clay	1-5%	Pebbles	N	Terminated at compact soil.
41CM401	JFA13	1	0-30	10YR 2/2	very dark brown	Clay	5-10%	Cobbles, Pebbles	N	–
		2	30-50	10YR 3/6	dark yellowish brown	Clay	5-10%	Cobbles, Pebbles	N	Terminated at basal clay.
NA	JFA13	1	0-30	10YR 2/2	very dark brown	Silt Loam	>20%	Cobbles, Gravels, Pebbles	N	Terminated at compact chert.
NA	JFA14	1	0-50	10YR 2/2	very dark brown	Clay	1-5%	Cobbles, Pebbles	N	Terminated at compact soil.
NA	JFA14	1	0-30	10YR 2/2	very dark brown	Silt Loam	>20%	Cobbles, Gravels, Pebbles	N	Terminated at compact chert.
NA	JFA15	1	0-50	10YR 2/2	very dark brown	Clay	1-5%	Cobbles, Pebbles	N	Terminated at compact soil.
NA	JFA15	1	0-45	2.5Y 4/2	dark grayish brown	Silty Clay Loam	5-10%	Cobbles, Pebbles	N	Terminated at compact soil.
NA	JFA16	1	0-60	2.5Y 3/2	very dark grayish brown	Silty Clay	1-5%	Pebbles	N	Terminated at compact soil.
NA	JFA17	1	0-60	2.5Y 3/2	very dark grayish brown	Silty Clay	1-5%	Pebbles	N	Terminated at compact soil.
41CM401	JIS02	1	0-5	10YR 4/4	dark yellowish brown	Sandy Loam	10-20%	Mottles, Pebbles	P	One biface.
		2	5-20	10YR 2/2	very dark brown	Silty Clay	1-5%	Pebbles	N	–
		3	20-50	5YR 3/2	dark reddish brown	Silty Clay	1-5%	Pebbles	N	Terminated at bedrock.
41CM401	JIS03	1	0-25	10YR 5/8	yellowish brown	Sandy Clay Loam	1-5%	Mottles, Pebbles	N	Terminated at disturbance.
41CM401	JIS04	1	0-30	10YR 3/1	very dark gray	Silty Clay	5-10%	Cobbles, Gravels, Pebbles	Y	1: Core, Flake (primary), Flake (secondary), Flake (tertiary), Glass [All artifacts b/w 0-10 cmbs] Terminated at impenetrable cobbles.
41CM401	JIS05	1	0-70	10YR 3/1	very dark gray	Clay	1-5%	Pebbles	N	Terminated at compact soil.
IF12	JIS06	1	0-40	10YR 2/2	very dark brown	Clay	5-10%	Cobbles, Gravels	Y	1: Flake (primary) [Primary flake observed 10-20 cmbs] Terminated at basal clay.
NA	JIS07	1	0-40	10YR 2/2	very dark brown	Clay	5-10%	Cobbles, Gravels	N	Terminated at basal clay.
NA	JIS08	1	0-30	7.5YR 4/4	brown	Sand	1-5%	Pebbles	N	–
		2	30-65	7.5YR 5/6	strong brown	Sand	–	Pebbles	N	–
		3	65-80	5YR 5/8	yellowish red	Sand	>20%	Cobbles, Gravels, Pebbles	N	Terminated at stream rolled gravel and cobbles.
NA	JIS09	1	0-20	10YR 4/3	brown	Sand	–	–	N	–
		2	20-55	10YR 6/6	brownish yellow	Sand	–	–	N	–
		3	55-100	7.5YR 6/8	reddish yellow	Sand	–	–	N	Terminated at depth.
IF14	JIS10	1	0-10	10YR 3/3	dark brown	Sandy Loam	–	–	Y	1: Flake (tertiary)
		2	10-50	10YR 7/6	yellow	Sand	–	–	Y	1: Flake (tertiary) [Tertiary flake observed approximately 40-50 cmbs]
		3	50-70	10YR 6/4	light yellowish brown	Sandy Clay	1-5%	Mottles	N	Terminated at basal clay.
41GU200	JIS11	1	0-30	10YR 3/2	very dark grayish brown	Loamy Sand	1-5%	Snail Shell	N	–
		2	30-60	10YR 4/3	brown	Loamy Sand	1-5%	Snail Shell	N	–
		3	60-80	10YR 5/4	yellowish brown	Sand	1-5%	Snail Shell	N	–
		4	80-100	10YR 6/4	light yellowish brown	Sand	5-10%	Calcium Carbonate, Snail Shell	N	Terminated at depth.
41GU200	JIS12	1	0-30	10YR 3/2	very dark grayish brown	Loamy Sand	1-5%	Pebbles, Snail Shell	N	–
		2	30-60	10YR 4/3	brown	Loamy Sand	1-5%	Pebbles, Snail Shell	Y	1: Flake (secondary)
		3	60-80	10YR 5/4	yellowish brown	Sand	1-5%	Snail Shell	N	–
		4	80-100	10YR 6/4	light yellowish brown	Sand	1-5%	Snail Shell	N	Terminated at depth.
41GU200	JIS13	1	0-10	10YR 3/3	dark brown	Sandy Loam	1-5%	Snail Shell	N	–
		2	20-50	10YR 5/6	yellowish brown	Loamy Sand	1-5%	Snail Shell	N	–
		3	50-90	10YR 4/3	brown	Loamy Sand	1-5%	Snail Shell	N	–
		4	90-100	10YR 6/3	pale brown	Sand	–	–	N	Terminated at depth.
NA	JIS14	1	0-20	10YR 2/1	black	Loamy Sand	5-10%	Mottles, Charcoal	N	–
		2	20-50	10YR 5/6	yellowish brown	Loamy Sand	–	–	N	–
		3	50-90	10YR 4/3	brown	Sandy Clay	–	–	N	–
		4	90-100	10YR 5/4	yellowish brown	Sand	–	–	N	Terminated at depth.
NA	JIS15	1	0-10	10YR 3/3	dark brown	Sand	–	–	N	–
		2	10-30	10YR 4/6	dark yellowish brown	Sand	–	–	N	–
		3	30-40	5YR 5/8	yellowish red	Sandy Clay	–	–	N	Terminated at basal clay.
NA	JIS16	1	0-10	10YR 4/4	dark yellowish brown	Loamy Sand	–	–	N	–
		2	10-60	10YR 5/6	yellowish brown	Sand	–	–	N	–
		3	60-100	10YR 6/6	brownish yellow	Sand	–	–	N	Terminated at depth.
NA	JL10	1	0-25	10YR 5/3	brown	Sandy Loam	–	–	N	–
		2	25-45	10YR 4/3	brown	Sandy Clay	–	–	N	–
		3	45-55	2.5YR 3/6	dark red	Clay	–	–	N	Terminated at basal clay.
NA	JL11	1	0-35	10YR 5/3	brown	Sandy Loam	–	–	N	–
		2	35-80	10YR 4/3	brown	Sandy Loam	–	–	N	–
		3	80-90	10YR 5/1	gray	Clay	–	–	N	Terminated at hydric clay.
NA	JL12	1	0-65	7.5YR 4/6	strong brown	Sandy Loam	–	–	N	–
		2	65-75	10YR 5/2	grayish brown	Sandy Clay	–	–	N	Terminated at hydric sandy clay.
NA	JL13	1	0-75	7.5YR 5/4	brown	Sandy Loam	–	–	N	–
		2	75-85	10YR 7/6	yellow	Sandy Clay	–	–	N	Terminated at hydric clay.
NA	JL14	1	0-30	10YR 4/3	brown	Sandy Loam	–	–	N	–
		2	30-40	10YR 7/6	yellow	Sand	–	–	N	Terminated at root impasse.
NA	JL15	1	0-35	7.5YR 5/6	strong brown	Sandy Loam	–	–	N	–
		2	35-45	2.5YR 3/4	dark reddish brown	Sandy Clay	–	–	N	Terminated at basal clay.

Appendix B. Shovel Test Data

Site No.	Shovel Test No.	Level	Depth (cmbs)	Munsell Soil value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Positive (P) or Negative (N)	Comments/ Reason for Termination
NA	JL16	1	0-30	10YR 5/8	yellowish brown	Sandy Loam	–	–	N	–
		2	30-45	7.5YR 4/3	brown	Sandy Clay	–	–	N	Terminated at hydric clay at 30cmbs.
NA	JL17	1	0-80	7.5YR 5/4	brown	Sandy Loam	–	–	N	–
		2	80-90	2.5YR 3/4	dark reddish brown	Sandy Clay	–	–	N	Terminated at basal clay.
NA	JL18	1	0-35	7.5YR 6/6	reddish yellow	Sandy Loam	–	–	N	–
		2	35-45	7.5YR 6/8	reddish yellow	Sandy Clay	–	–	N	Terminated at basal clay.
NA	JL19	1	0-90	10YR 4/4	dark yellowish brown	Sandy Loam	1-5%	Gravels	N	–
		2	90-100	7.5YR 4/6	strong brown	Sandy Clay Loam	–	–	N	Terminated at depth.
NA	JL20	1	0-30	7.5YR 4/4	brown	Sandy Loam	1-5%	Pebbles	N	–
		2	30-40	7.5YR 5/8	strong brown	Clay	–	–	N	Terminated at basal clay.
NA	JL21	1	0-25	10YR 4/3	brown	Sandy Loam	–	–	N	–
		2	25-65	10YR 6/4	light yellowish brown	Sandy Loam	1-5%	Mottles	N	–
		3	65-75	7.5YR 5/8	strong brown	Sandy Clay	1-5%	Mottles	N	Terminated at basal clay.
NA	JL22	1	0-60	7.5YR 4/4	brown	Sandy Loam	–	–	N	–
		2	60-100	7.5YR 6/6	reddish yellow	Sandy Loam	–	–	N	Terminated at depth.
NA	JL23	1	0-40	10YR 5/3	brown	Sandy Loam	–	–	N	–
		2	40-100	10YR 6/4	light yellowish brown	Sandy Loam	–	–	N	Terminated at depth.
NA	JU01	1	0-30	10YR 3/2	very dark grayish brown	Clay Loam	10-20%	Gravels, Mottles	N	Terminated at disturbance.
NA	JU02	1	0-35	10YR 4/2	dark grayish brown	Silty Clay Loam	1-5%	Gravels	N	Terminated at compact soil.
NA	JU03	1	0-25	10YR 2/1	black	Clay	>20%	Cobbles, Gravels	N	Terminated at impassable cobbles.
NA	JU04	1	0-35	10YR 3/2	very dark grayish brown	Clay	1-5%	Gravels	N	Terminated at compact soil.
NA	JU05	1	0-25	10YR 2/1	black	Clay	>20%	Cobbles, Gravels	N	Terminated at impassable cobbles.
NA	KA01	1	0-47	10YR 4/1	dark gray	Silty Clay	10-20%	Cobbles	N	Terminated at rock impasse.
NA	KA02	1	0-7	7.5YR 3/1	very dark gray	Silty Clay	>20%	Cobbles	N	–
		2	7-30	10YR 4/1	dark gray	Silty Clay	>20%	Cobbles, Calcium Carbonate	N	Terminated at compact soil.
NA	KA03	1	0-7	7.5YR 3/1	very dark gray	Silty Clay	10-20%	Cobbles	N	–
		2	7-30	10YR 4/1	dark gray	Silty Clay	>20%	Cobbles, Calcium Carbonate	N	Terminated at compact soil.
NA	KA04	1	0-12	7.5YR 3/1	very dark gray	Silty Clay	10-20%	Cobbles	N	–
		2	12-15	10YR 4/1	dark gray	Silty Clay	>20%	Cobbles, Calcium Carbonate	N	Terminated at root impasse.
NA	KA05	1	0-25	10YR 3/1	very dark gray	Silty Clay	5-10%	Gravels	N	–
		2	25-30	7.5YR 3/1	very dark gray	Silty Clay	5-10%	Gravels	N	Terminated at compact soil.
NA	KA300	1	0-47	10YR 4/1	dark gray	Silty Clay	10-20%	Cobbles	N	Terminated at rock impasse.
NA	KA301	1	0-7	7.5YR 3/1	very dark gray	Silty Clay	>20%	Cobbles	N	–
		2	7-30	10YR 4/1	dark gray	Silty Clay	>20%	Cobbles, Calcium Carbonate	N	Terminated at compact soil.
NA	KA302	1	0-7	7.5YR 3/1	very dark gray	Silty Clay	10-20%	Cobbles	N	–
		2	7-30	10YR 4/1	dark gray	Silty Clay	>20%	Cobbles, Calcium Carbonate	N	Terminated at compact soil.
NA	KA303	1	0-12	7.5YR 3/1	very dark gray	Silty Clay	10-20%	Cobbles	N	–
		2	12-15	10YR 4/1	dark gray	Silty Clay	>20%	Cobbles, Calcium Carbonate	N	Terminated at root impasse.
NA	KA304	1	0-25	10YR 3/1	very dark gray	Silty Clay	5-10%	Gravels	N	–
		2	25-30	7.5YR 3/1	very dark gray	Silty Clay	5-10%	Gravels	N	Terminated at compact soil.
NA	KA305	1	0-50	10YR 4/1	dark gray	Silty Clay	10-20%	Cobbles	N	Terminated at rock impasse.
NA	KH01	1	0-100	10YR 8/2	very pale brown	Sand	1-5%	Pebbles	N	Terminated at depth.
NA	KH02	1	0-100	10YR 8/2	very pale brown	Sand	1-5%	Pebbles	N	Terminated at depth.
41LE332	KH05	1	0-10	10YR 5/2	grayish brown	Sand	1-5%	Pebbles	N	–
		2	10-100	10YR 7/3	very pale brown	Sand	1-5%	Pebbles	N	Terminated at depth.
41LE332	KH06	1	0-10	10YR 6/2	light brownish gray	Sand	1-5%	Pebbles	N	–
		2	10-100	10YR 8/2	very pale brown	Sand	1-5%	Pebbles, Petrified wood	Y	2: Flake (tertiary) Terminated at depth.
41LE332	KH07	1	0-100	10YR 8/2	very pale brown	Sand	1-5%	Pebbles, Petrified wood	N	Terminated at depth.
41LE332	KH08	1	0-30	10YR 8/2	very pale brown	Sand	1-5%	Pebbles, Petrified wood	N	–
		2	30-50	7.5YR 6/6	reddish yellow	Sandy Clay	5-10%	Cobbles, Gravels, Pebbles	N	Terminated at basal clay.
41LE332	KH09	1	0-10	10YR 8/2	very pale brown	Sand	5-10%	Gravels, Pebbles	N	–
		2	10-40	7.5YR 6/6	reddish yellow	Sand	>20%	Cobbles, Gravels, Decomposing bedrock	N	Terminated at decomposing bedrock.
41LE332	KH10	1	0-100	10YR 8/2	very pale brown	Sand	1-5%	Pebbles	N	Terminated at depth.
NA	KH50	1	0-100	7.5YR 5/4	brown	Sandy Loam	–	–	N	Terminated at depth.
41BU122	KH51	1	0-100	7.5YR 5/4	brown	Sandy Loam	1-5%	Pebbles	Y	9: Biface, Flake (tertiary) [3 tertiary flakes at 20-30 cm; 2 tertiary flakes and 1 biface fragment at 50-60cm; and 4 tertiary flakes at 70-80 cm.] Terminated at depth.
41BU122	KH52	1	0-50	10YR 5/4	yellowish brown	Sandy Loam	1-5%	Pebbles, Roots	N	–
		2	50-60	7.5YR 5/8	strong brown	Sandy Clay	–	–	N	Terminated at compact soil.
41BU122	KH53	1	0-100	7.5YR 5/4	brown	Sandy Loam	–	–	N	Terminated at depth.
NA	KH54	1	0-100	10YR 7/6	yellow	Sand	–	–	N	Terminated at depth.
NA	KH55	1	0-60	7.5YR 5/3	brown	Sandy Loam	–	–	N	–
		2	60-70	7.5YR 5/8	strong brown	Clay	–	–	N	Terminated at basal clay.
NA	MCC50	1	0-30	7.5YR 5/4	brown	Sandy Clay Loam	–	–	N	–
		2	30-50	7.5YR 5/6	strong brown	Clay	–	–	N	Terminated at compact soil.
NA	MCC51	1	0-60	7.5YR 5/4	brown	Sandy Loam	–	–	N	–
		2	60-75	10YR 5/2	grayish brown	Sandy Loam	–	–	N	Terminated at water table.
NA	MCC52	1	0-50	7.5YR 5/6	strong brown	Sandy Loam	1-5%	Gravels	N	–
		2	50-80	10YR 6/2	light brownish gray	Sandy Clay	–	–	N	Terminated at compact soil.

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NA	MCC53	1	0-50	7.5YR 5/6	strong brown	Sandy Loam	1-5%	Gravels	N	–
		2	50-80	10YR 6/2	light brownish gray	Sandy Clay	–	–	N	Terminated at compact soil.
NA	MCC54	1	0-50	7.5YR 5/6	strong brown	Sandy Loam	1-5%	Gravels	N	–
		2	50-80	10YR 6/2	light brownish gray	Sandy Clay	–	–	N	Terminated at compact soil.
41LE332	MCC75	1	0-100	10YR 6/2	light brownish gray	Sand	1-5%	Pebbles	N	Terminated at depth.
41LE332	MCC76	1	0-35	10YR 6/2	light brownish gray	Sand	1-5%	Gravels, Pebbles	N	–
		2	35-100	10YR 6/3	pale brown	Sand	1-5%	Gravels, Pebbles	N	Terminated at depth.
41LE332	MCC77	1	0-40	10YR 6/2	light brownish gray	Sand	5-10%	Gravels, Pebbles	Y	1: Flake (tertiary) [Tertiary flake 20-40 cmbs.]
		2	40-60	7.5YR 5/8	strong brown	Sandy Clay	–	–	N	Terminated at basal clay.
41LE332	MCC78	1	0-30	10YR 6/2	light brownish gray	Sand	1-5%	Gravels, Pebbles	Y	1: Flake (tertiary) [Tertiary flake 20-40 cmbs.]
		2	30-60	7.5YR 5/8	strong brown	Sandy Loam	1-5%	Gravels, Pebbles	Y	1: Flake (tertiary) [Tertiary flake 40-60 cmbs.]
		3	60-100	10YR 6/3	pale brown	Sandy Loam	–	–	N	Terminated at depth.
41LE332	MCC79	1	0-45	10YR 5/2	grayish brown	Sand	5-10%	Gravels, Pebbles	N	–
		2	45-50	7.5YR 5/8	strong brown	Sandy Clay	–	–	N	Terminated at basal clay.
NA	MCC150	1	0-30	10YR 5/3	brown	Sandy Loam	–	–	N	–
		2	30-60	10YR 4/3	brown	Sandy Loam	–	–	N	–
		3	60-70	5YR 5/6	yellowish red	Sandy Clay Loam	–	–	N	Terminated at hydric.
NA	MCC151	1	0-60	7.5YR 6/6	reddish yellow	Sandy Loam	–	–	N	–
		2	60-65	2.5YR 4/6	red	Clay	>20%	Mottles	N	Terminated at basal clay.
NA	MCC152	1	0-60	7.5YR 5/3	brown	Sandy Loam	5-10%	Gravels	N	–
		2	60-65	2.5YR 4/6	red	Clay	>20%	Mottles	N	Terminated at basal clay.
NA	MCC153	1	0-55	10YR 4/3	brown	Sandy Loam	1-5%	Gravels	N	–
		2	55-65	7.5YR 5/6	strong brown	Sandy Clay	–	–	N	Terminated at basal clay.
NA	MCC154	1	0-40	7.5YR 4/4	brown	Sandy Loam	–	–	N	–
		2	40-50	7.5YR 4/6	strong brown	Clay	–	–	N	Terminated at basal clay.
NA	MCC155	1	0-65	7.5YR 4/6	strong brown	Sandy Loam	–	–	N	–
		2	65-75	2.5YR 4/6	red	Sandy Clay	–	–	N	Terminated at basal clay.
NA	MCC156	1	0-70	7.5YR 4/4	brown	Sandy Loam	–	–	N	–
		2	70-100	7.5YR 5/6	strong brown	Sandy Loam	–	–	N	Terminated at depth.
NA	MCC157	1	0-65	7.5YR 4/4	brown	Sandy Loam	–	–	N	–
		2	65-75	7.5YR 5/6	strong brown	Sandy Clay	>20%	Mottles	N	Terminated at hydric clay..
NA	MCC158	1	0-50	7.5YR 5/4	brown	Sandy Loam	1-5%	Pebbles	N	–
		2	50-60	7.5YR 5/6	strong brown	Clay	–	–	N	Terminated at basal clay.
NA	MCC159	1	0-45	10YR 4/2	dark grayish brown	Clay	–	–	N	–
		2	45-55	7.5YR 6/6	reddish yellow	Clay	>20%	Mottles	N	Terminated at hydric clay.
NA	MCC160	1	0-40	7.5YR 4/4	brown	Sandy Loam	–	–	N	–
		2	40-50	7.5YR 5/8	strong brown	Clay	>20%	Mottles	N	Terminated at hydric clay.
NA	MCC161	1	0-15	10YR 5/3	brown	Sandy Loam	–	–	N	–
		2	15-60	10YR 5/6	yellowish brown	Sandy Loam	–	–	N	–
		3	60-70	7.5YR 5/6	strong brown	Clay	–	–	N	Terminated at basal clay.
NA	MCC162	1	0-40	10YR 5/3	brown	Sandy Loam	–	–	N	–
		2	40-100	10YR 6/4	light yellowish brown	Sandy Loam	–	–	N	Terminated at depth.
NA	MCC165	1	0-100	7.5YR 5/3	brown	Sandy Loam	1-5%	Gravels	N	Terminated at depth.
41BU122	MCC166	1	0-25	7.5YR 5/3	brown	Sandy Loam	1-5%	Gravels	N	–
		2	25-35	7.5YR 5/8	strong brown	Clay	–	–	N	Terminated at basal clay.
41BU122	MCC167	1	0-100	7.5YR 5/3	brown	Sandy Loam	1-5%	Gravels	Y	1: Flake (secondary) [Secondary flake b/w 50-60cmbs.] Terminated at depth.
41BU122	MCC168	1	0-50	7.5YR 5/3	brown	Sandy Loam	1-5%	Gravels	N	–
		2	50-60	7.5YR 5/8	strong brown	Clay	–	–	N	Terminated at basal clay.
NA	MCC169	1	0-40	7.5YR 5/3	brown	Sandy Loam	1-5%	Gravels	N	–
		2	40-50	7.5YR 5/8	strong brown	Sandy Clay	–	–	N	Terminated at basal clay.
NA	MCC170	1	0-40	7.5YR 5/3	brown	Sandy Loam	1-5%	Gravels	N	–
		2	40-50	7.5YR 5/8	strong brown	Sandy Clay	–	–	N	Terminated at basal clay.
NA	MCC171	1	0-65	10YR 5/3	brown	Sandy Loam	1-5%	Gravels	N	–
		2	65-75	5YR 4/6	yellowish red	Sandy Clay	–	–	N	Terminated at basal clay.
NA	MCC172	1	0-100	7.5YR 5/4	brown	Sandy Loam	1-5%	Gravels	N	Terminated at depth.
NA	MCC173	1	0-65	7.5YR 5/4	brown	Sandy Loam	–	–	N	–
		2	65-75	10YR 7/1	light gray	Sandy Clay	>20%	Mottles	N	Terminated at basal clay.
NA	MCC174	1	0-100	7.5YR 5/4	brown	Sandy Loam	–	–	N	Terminated at depth.
NA	MCC175	1	0-100	7.5YR 5/4	brown	Sandy Loam	–	–	N	Terminated at depth.
NA	MCC176	1	0-65	7.5YR 4/6	strong brown	Sandy Loam	–	–	N	–
		2	65-70	2.5YR 4/6	red	Sandy Clay	–	–	N	Terminated at basal clay.
NA	MCC177	1	0-60	10YR 6/4	light yellowish brown	Sandy Loam	–	–	N	Terminated at compact soil.
NA	MCC178	1	0-25	10YR 4/1	dark gray	Clay	>20%	Mottles	N	Terminated at compact soil.
NA	MCC201	1	0-30	10YR 4/3	brown	Sandy Loam	–	–	N	–
		2	30-75	7.5YR 5/4	brown	Sandy Loam	–	–	N	Terminated at water table.
NA	MCC202	1	0-30	10YR 4/3	brown	Sandy Loam	–	–	N	–
		2	30-75	7.5YR 5/4	brown	Sandy Loam	–	–	N	Terminated at water table.
NA	MCC203	1	0-30	10YR 4/3	brown	Sandy Loam	–	–	N	–
		2	30-75	10YR 6/4	light yellowish brown	Sandy Loam	–	–	N	Terminated at wet hydric soil..
NA	MCC204	1	0-30	10YR 4/3	brown	Sandy Loam	–	–	N	–
		2	30-75	10YR 6/4	light yellowish brown	Sandy Loam	–	–	N	Terminated at wet hydric soil..
NA	MCC205	1	0-30	10YR 4/3	brown	Sandy Loam	–	–	N	–
		2	30-75	10YR 6/4	light yellowish brown	Sandy Loam	–	–	N	Terminated at wet hydric soil..
NA	MCC206	1	0-45	7.5YR 5/3	brown	Sandy Loam	–	–	N	–
		2	45-55	7.5YR 5/8	strong brown	Sandy Clay	–	–	N	Terminated at basal clay.

Appendix B. Shovel Test Data

Site No.	Shovel Test No.	Level	Depth (cmbs)	Munsell Soil value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Positive (P) or Negative (N)	Comments/ Reason for Termination
NA	MCC207	1	0-30	10YR 4/3	brown	Sandy Loam	-	-	N	-
		2	30-60	7.5YR 5/6	strong brown	Sandy Loam	-	-	N	-
		3	60-70	7.5YR 5/6	strong brown	Sandy Clay	-	-	N	Terminated at basal clay.
NA	MCC208	1	0-40	7.5YR 5/4	brown	Sandy Loam	-	-	N	-
		2	40-50	10YR 5/6	yellowish brown	Sandy Loam	-	-	N	-
		3	50-60	7.5YR 5/6	strong brown	Sandy Clay	-	-	N	Terminated at basal clay.
NA	MCC209	1	0-30	10YR 4/3	brown	Sandy Loam	-	-	N	-
		2	30-40	7.5YR 5/6	strong brown	Sandy Clay	-	-	N	Terminated at disturbance.
NA	MCC210	1	0-30	7.5YR 4/3	brown	Sandy Loam	1-5%	Gravels	N	-
		2	30-40	5YR 4/6	yellowish red	Clay	-	-	N	Terminated at basal clay.
NA	MCC211	1	0-30	7.5YR 4/3	brown	Sandy Loam	1-5%	Gravels	N	-
		2	30-40	5YR 4/6	yellowish red	Clay	-	-	N	Terminated at basal clay.
NA	MCC212	1	0-30	7.5YR 4/3	brown	Sandy Loam	1-5%	Gravels	N	-
		2	30-40	5YR 4/6	yellowish red	Clay	-	-	N	Terminated at basal clay.
NA	MCC213	1	0-30	7.5YR 4/3	brown	Sandy Loam	1-5%	Gravels	N	-
		2	30-40	5YR 4/6	yellowish red	Clay	-	-	N	Terminated at basal clay.
NA	MCC214	1	0-20	5YR 4/6	yellowish red	Clay	-	-	N	Terminated at basal clay.
NA	MCC215	1	0-45	7.5YR 4/6	strong brown	Sandy Loam	-	-	N	-
		2	45-50	5YR 4/6	yellowish red	Clay	-	-	N	Terminated at basal clay.
41BU123	MCC216	1	0-30	7.5YR 5/6	strong brown	Sandy Clay	-	-	N	Terminated at basal clay.
NA	MCC217	1	0-100	10YR 4/3	brown	Sandy Loam	-	-	N	Terminated at depth.
NA	MCC218	1	0-30	10YR 4/3	brown	Sandy Loam	-	-	N	-
		2	30-40	7.5YR 5/6	strong brown	Clay	-	-	N	Terminated at basal clay.
NA	MCC219	1	0-100	10YR 4/3	brown	Sandy Loam	-	-	N	Terminated at depth.
NA	MCC220	1	0-60	10YR 4/1	dark gray	Sandy Clay Loam	-	-	N	Terminated at water table.
NA	MCC221	1	0-50	7.5YR 4/3	brown	Sandy Loam	-	-	N	-
		2	50-60	2.5YR 4/8	red	Sandy Clay	-	-	N	Terminated at basal clay.
NA	MCC222	1	0-30	10YR 4/2	dark grayish brown	Sandy Loam	-	-	N	-
		2	30-40	7.5YR 5/8	strong brown	Clay	-	-	N	Terminated at basal clay.
NA	MCC223	1	0-35	10YR 4/1	dark gray	Clay Loam	-	-	N	-
		2	35-45	7.5YR 5/8	strong brown	Clay	-	-	N	Terminated at basal clay.
NA	MCC224	1	0-35	10YR 4/1	dark gray	Clay Loam	-	-	N	-
		2	35-45	7.5YR 5/8	strong brown	Clay	-	-	N	Terminated at basal clay.
NA	MCC225	1	0-35	10YR 4/1	dark gray	Clay Loam	-	-	N	-
		2	35-45	7.5YR 5/8	strong brown	Clay	-	-	N	Terminated at basal clay.
NA	MCC226	1	0-35	10YR 4/1	dark gray	Clay Loam	-	-	N	-
		2	35-45	7.5YR 5/8	strong brown	Clay	-	-	N	Terminated at basal clay.
NA	MCC227	1	0-35	10YR 4/1	dark gray	Clay Loam	-	-	N	-
		2	35-45	7.5YR 5/8	strong brown	Clay	-	-	N	Terminated at basal clay.
NA	MCC228	1	0-35	10YR 4/1	dark gray	Clay Loam	-	-	N	-
		2	35-45	7.5YR 5/8	strong brown	Clay	-	-	N	Terminated at basal clay.
NA	MCC229	1	0-20	10YR 4/1	dark gray	Clay Loam	-	-	N	-
		2	20-25	7.5YR 5/8	strong brown	Clay	-	-	N	Terminated at basal clay.
NA	MCC230	1	0-30	7.5YR 4/6	strong brown	Sandy Loam	-	-	N	-
		2	30-40	2.5YR 4/6	red	Clay	-	-	N	Terminated at basal clay.
NA	MCC230	1	0-80	10YR 5/6	yellowish brown	Sandy Loam	-	-	N	-
		2	80-100	10YR 6/6	brownish yellow	Sandy Loam	-	-	N	Terminated at depth.
NA	MCC231	1	0-35	7.5YR 6/8	reddish yellow	Clay	-	-	N	Terminated at basal clay.
NA	MCC231	1	0-40	10YR 4/3	brown	Sandy Loam	-	-	N	-
		2	40-50	7.5YR 5/8	strong brown	Sandy Clay	-	-	N	Terminated at basal clay.
NA	MCC232	1	0-40	10YR 3/1	very dark gray	Clay Loam	-	-	N	-
		2	40-50	7.5YR 5/8	strong brown	Clay	-	-	N	Terminated at basal clay.
NA	MCC232	1	0-40	10YR 4/3	brown	Sandy Loam	-	-	N	-
		2	40-50	7.5YR 5/8	strong brown	Sandy Clay	-	-	N	Terminated at basal clay.
NA	MCC233	1	0-55	7.5YR 5/4	brown	Sandy Loam	-	-	N	-
		2	55-65	7.5YR 5/8	strong brown	Clay Loam	-	-	N	Terminated at wet hydric soil.
NA	MCC233	1	0-40	10YR 4/3	brown	Sandy Loam	-	-	N	-
		2	40-50	7.5YR 5/8	strong brown	Sandy Clay	-	-	N	Terminated at basal clay.
NA	MCC234	1	0-60	7.5YR 4/2	brown	Sandy Loam	-	-	N	Terminated at water table.
NA	MCC234	1	0-45	10YR 5/3	brown	Sandy Loam	-	-	N	-
		2	45-60	10YR 5/6	yellowish brown	Sandy Loam	-	-	N	-
		3	60-65	7.5YR 5/8	strong brown	Sandy Clay	-	-	N	Terminated at basal clay.
NA	MCC235	1	0-20	7.5YR 4/2	brown	Sandy Loam	-	-	N	-
		2	20-30	7.5YR 5/8	strong brown	Clay	-	-	N	Terminated at basal clay.
NA	MCC235	1	0-25	10YR 3/1	very dark gray	Clay	>20%	Cobbles, Gravels	N	Terminated at construction phase disturbances..
NA	MCC236	1	0-50	7.5YR 5/4	brown	Sandy Loam	-	-	N	Terminated at water table.
NA	MCC236	1	0-45	10YR 3/1	very dark gray	Clay Loam	-	-	N	Terminated at compact soil.
NA	MCC237	1	0-50	7.5YR 5/4	brown	Sandy Loam	-	-	N	Terminated at water table.
NA	MCC237	1	0-45	10YR 3/1	very dark gray	Clay Loam	-	-	N	Terminated at compact soil.
NA	MCC238	1	0-70	7.5YR 5/4	brown	Sandy Loam	-	-	N	-
		2	70-80	7.5YR 5/8	strong brown	Sandy Clay	-	-	N	Terminated at basal clay.
NA	MCC238	1	0-45	10YR 3/1	very dark gray	Clay Loam	-	-	N	Terminated at compact soil.
NA	MCC239	1	0-45	7.5YR 5/4	brown	Sandy Loam	-	-	N	-
		2	45-55	7.5YR 5/8	strong brown	Sandy Clay	-	-	N	Terminated at basal clay.
NA	MCC239	1	0-45	10YR 3/1	very dark gray	Clay Loam	5-10%	Cobbles, Gravels	N	Terminated at compact soil.
NA	MCC240	1	0-70	7.5YR 5/4	brown	Sandy Loam	-	-	N	-
		2	70-80	7.5YR 5/8	strong brown	Sandy Clay	-	-	N	Terminated at basal clay.
NA	MCC241	1	0-50	7.5YR 4/6	strong brown	Sandy Loam	-	-	N	Terminated at impassable rock layer.
NA	MCC242	1	0-60	7.5YR 5/4	brown	Sandy Loam	-	-	N	-
		2	60-70	7.5YR 5/8	strong brown	Sandy Clay	-	-	N	Terminated at basal clay.
NA	MCC243	1	0-55	7.5YR 5/4	brown	Sandy Loam	-	-	N	-
		2	55-65	7.5YR 5/8	strong brown	Sandy Clay	-	-	N	Terminated at basal clay.
NA	MCC244	1	0-60	7.5YR 5/4	brown	Sandy Loam	-	-	N	-
		2	60-70	7.5YR 5/8	strong brown	Sandy Clay	-	-	N	Terminated at basal clay.
NA	MCC245	1	0-55	7.5YR 5/4	brown	Sandy Loam	-	-	N	-
		2	55-65	7.5YR 5/8	strong brown	Sandy Clay	-	-	N	Terminated at basal clay.
NA	MCC246	1	0-55	7.5YR 5/4	brown	Sandy Loam	-	-	N	-
		2	55-65	7.5YR 5/8	strong brown	Sandy Clay	-	-	N	Terminated at basal clay.

Appendix B. Shovel Test Data

Site No.	Shovel Test No.	Level	Depth (cmbs)	Munsell Soil value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Positive (P) or Negative (N)	Comments/ Reason for Termination
41BU124	MCC247	1	0-70	7.5YR 4/4	brown	Sandy Loam	10-20%	Charcoal chunks likely from recent burning events	N	–
		2	70-100	7.5YR 5/4	brown	Sandy Loam	–	–	Y	1: Flake (secondary) [Secondary flake observed b/w 70-80 cmbs.] Terminated at depth.
41BU124	MCC248	1	0-60	7.5YR 5/4	brown	Sandy Loam	–	–	N	–
		2	60-70	10YR 6/3	pale brown	Sandy Loam	–	–	N	Terminated at water table.
41BP959	MCC250	1	0-45	7.5YR 5/4	brown	Sandy Loam	–	–	N	–
		2	45-55	7.5YR 5/8	strong brown	Sandy Clay	>20%	Mottles	N	Terminated at basal clay.
41BP959	MCC251	1	0-35	7.5YR 5/4	brown	Sandy Loam	–	–	Y	1: Flake (secondary), Flake (tertiary)
		2	35-45	7.5YR 5/8	strong brown	Sandy Clay	>20%	Mottles	N	Terminated at compact soil.
41BP959	MCC252	1	0-30	10YR 5/3	brown	Clay Loam	–	–	N	–
		2	30-40	7.5YR 5/8	strong brown	Clay	–	–	N	Terminated at basal clay.
NA	MCC253	1	0-45	10YR 4/2	dark grayish brown	Clay Loam	–	–	N	–
		2	40-50	7.5YR 5/8	strong brown	Clay	–	–	N	Terminated at basal clay.
NA	MCC500	1	0-15	10YR 5/2	grayish brown	Silt Loam	1-5%	Cobbles, Gravels, Mottles	N	Terminated at compact soil.
NA	MCC501	1	0-30	10YR 3/1	very dark gray	Clay	1-5%	Cobbles, Gravels	N	Terminated at compact soil.
NA	MCC502	1	0-30	10YR 3/1	very dark gray	Clay	1-5%	Cobbles, Gravels	N	Terminated at compact soil.
NA	MCC503	1	0-30	10YR 3/1	very dark gray	Clay	1-5%	Cobbles, Gravels	N	Terminated at compact soil.
NA	MCC504	1	0-10	10YR 5/2	grayish brown	Silt	>20%	Cobbles, Gravels, Pebbles	N	Terminated at thick gravels..
NA	MCC505	1	0-10	10YR 5/2	grayish brown	Silt	>20%	Cobbles, Gravels, Pebbles	N	Terminated at thick gravels..
NA	MCC506	1	0-10	10YR 5/2	grayish brown	Silt	>20%	Cobbles, Gravels, Pebbles	N	Terminated at thick gravels..
NA	MCC507	1	0-10	10YR 5/2	grayish brown	Silt	>20%	Cobbles, Gravels, Pebbles	N	Terminated at thick gravels..
NA	MCC508	1	0-10	10YR 3/1	very dark gray	Clay	>20%	Cobbles, Gravels	N	Terminated at compact soil & thick gravels..
NA	MCC509	1	0-10	10YR 3/1	very dark gray	Clay	>20%	Cobbles, Gravels	N	Terminated at compact soil & thick gravels..
NA	MCC510	1	0-10	10YR 3/1	very dark gray	Clay	>20%	Cobbles, Gravels	N	Terminated at compact soil & thick gravels..
NA	MCC511	1	0-30	10YR 4/1	dark gray	Clay Loam	5-10%	Cobbles, Gravels	N	–
		2	30-35	10YR 3/1	very dark gray	Clay	–	–	N	Terminated at compact soil.
NA	MCC512	1	0-10	10YR 3/1	very dark gray	Clay	>20%	Cobbles, Gravels	N	Terminated at compact soil & thick gravels..
NA	MCC513	1	0-5	10YR 5/2	grayish brown	Silt	>20%	Cobbles, Gravels, Pebbles	N	Terminated at compact soil & thick gravels..
NA	MCC514	1	0-5	10YR 5/2	grayish brown	Silt	>20%	Cobbles, Gravels, Pebbles	N	Terminated at compact soil & thick gravels..
NA	MCC515	1	0-5	10YR 5/2	grayish brown	Silt	>20%	Cobbles, Gravels, Pebbles	N	Terminated at compact soil & thick gravels..
41BP959	MCC516	1	0-25	10YR 5/4	yellowish brown	Silt Loam	–	–	N	–
		2	25-30	7.5YR 4/6	strong brown	Clay	–	–	N	Terminated at basal clay.
41BP959	MCC517	1	0-80	10YR 7/3	very pale brown	Sand	–	–	Y	3: Flake (secondary), Other Prehistoric [Burned rock 20-40 cmbs & secondary flakes 60-80cmbs.]
		2	80-85	7.5YR 5/8	strong brown	Sandy Clay	–	–	N	Terminated at basal clay.
41BP959	MCC518	1	0-80	10YR 7/3	very pale brown	Sand	–	–	Y	4: Flake (tertiary) [2 tertiary flakes 20-40 cmbs & 2 tertiary flakes 60-80 cmbs.]
		2	80-85	7.5YR 5/8	strong brown	Sandy Clay	–	–	N	Terminated at basal clay.
NA	MCC519	1	0-5	10YR 4/3	brown	Silt Loam	–	–	N	–
		2	5-10	7.5YR 5/8	strong brown	Clay	–	–	N	Terminated at basal clay.
41BP959	MCC520	1	0-10	10YR 5/2	grayish brown	Sandy Loam	10-20%	Mottles	N	Terminated at compact soil.
41BP959	MCC521	1	0-25	10YR 5/2	grayish brown	Sand	–	–	Y	1: Other Prehistoric
		2	25-30	7.5YR 5/8	strong brown	Clay	–	–	N	Terminated at basal clay.
41BP959	MCC522	1	0-35	10YR 5/2	grayish brown	Sand	–	–	Y	3: Flake (primary), Flake (secondary), Flake (tertiary)
		2	35-40	7.5YR 5/8	strong brown	Sandy Clay	–	–	N	Terminated at basal clay.
NA	MCC523	1	0-25	10YR 3/1	very dark gray	Clay	>20%	Cobbles, Gravels, Pebbles	N	Terminated at compact soil & thick gravels..
NA	MCC524	1	0-25	10YR 3/1	very dark gray	Clay	>20%	Cobbles, Gravels, Pebbles	N	Terminated at compact soil & thick gravels..
NA	MCC525	1	0-25	10YR 3/1	very dark gray	Clay	>20%	Cobbles, Gravels, Pebbles	N	Terminated at compact soil & thick gravels..
NA	MCC526	1	0-35	10YR 3/1	very dark gray	Clay	>20%	Cobbles, Gravels, Pebbles	N	Terminated at compact soil & thick gravels..
NA	MCC527	1	0-30	2.5Y 5/6	light olive brown	Clay	>20%	Mottles	N	Terminated at compact soil.
NA	MCC528	1	0-30	10YR 5/3	brown	Silt Loam	>20%	Cobbles, Gravels, Pebbles	N	Terminated at thick gravels..
NA	MCC530	1	0-35	10YR 3/2	very dark grayish brown	Silty Clay Loam	1-5%	Snail Shell	N	–
		2	35-55	10YR 4/2	dark grayish brown	Clay Loam	1-5%	Snail Shell	N	Terminated at compact soil.
NA	MCC531	1	0-35	10YR 3/2	very dark grayish brown	Silty Clay Loam	1-5%	Snail Shell	N	–
		2	35-55	10YR 4/2	dark grayish brown	Clay Loam	1-5%	Snail Shell	N	Terminated at compact soil.
NA	MCC532	1	0-30	10YR 3/2	very dark grayish brown	Silty Clay Loam	1-5%	Snail Shell	N	–
		2	30-50	10YR 4/2	dark grayish brown	Clay Loam	1-5%	Snail Shell	N	Terminated at compact soil.
NA	MCC533	1	0-40	10YR 4/2	dark grayish brown	Sandy Loam	–	–	N	–
		2	50-55	10YR 4/4	dark yellowish brown	Sandy Clay Loam	–	–	N	–
		3	55-60	10YR 3/2	very dark grayish brown	Sandy Clay	–	–	N	Terminated at compact soil.
NA	MCC534	1	0-40	2.5Y 3/2	very dark grayish brown	Clay	–	–	N	Terminated at compact soil.
NA	MCC535	1	0-30	2.5Y 2.5/1	black	Clay Loam	–	–	N	–
		2	30-35	2.5Y 2.5/1	black	Clay	–	–	N	Terminated at compact soil.

Appendix B. Shovel Test Data

Site No.	Shovel Test No.	Level	Depth (cmbs)	Munsell Soil value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Positive (P) or Negative (N)	Comments/ Reason for Termination
NA	MCC536	1	0-40	2.5Y 3/2	very dark grayish brown	Clay	–	–	N	Terminated at compact soil.
NA	MCC537	1	0-35	10YR 4/2	dark grayish brown	Silty Clay Loam	–	–	N	–
		2	35-40	10YR 4/2	dark grayish brown	Clay	–	–	N	Terminated at compact soil.
NA	MCC538	1	0-40	10YR 4/2	dark grayish brown	Silty Clay Loam	–	–	N	–
		2	40-45	10YR 4/2	dark grayish brown	Clay	–	–	N	Terminated at compact soil.
NA	MCC540	1	0-60	10YR 5/6	yellowish brown	Sandy Loam	–	–	N	–
		2	60-65	7.5YR 5/8	strong brown	Sandy Clay	–	–	N	Terminated at basal clay.
NA	MCC541	1	0-85	10YR 6/3	pale brown	Sandy Loam	–	–	N	–
		2	85-100	10YR 5/8	yellowish brown	Sandy Clay	–	–	N	Terminated at depth.
NA	MCC542	1	0-85	10YR 6/3	pale brown	Sandy Loam	–	–	N	–
		2	85-100	10YR 5/8	yellowish brown	Sandy Clay	–	–	N	Terminated at depth.
41CM401	MCC543	1	0-20	10YR 6/6	brownish yellow	Clay	>20%	Gravels, Mottles	N	Terminated at bedrock.
41CM401	MCC544	1	0-10	10YR 6/6	brownish yellow	Clay	>20%	Gravels, Mottles	N	–
		2	10-30	10YR 3/2	very dark grayish brown	Silty Clay Loam	>20%	Gravels	N	Terminated at bedrock.
41CM401	MCC545	1	0-15	10YR 4/2	dark grayish brown	Clay	10-20%	Gravels	N	–
		2	15-25	5YR 5/6	yellowish red	Clay	–	–	N	Terminated at basal clay.
41CM401	MCC546	1	0-20	10YR 3/2	very dark grayish brown	Silt Loam	>20%	Gravels	N	Terminated at bedrock.
41CM401	MCC547	1	0-20	10YR 4/2	dark grayish brown	Silty Clay Loam	>20%	Gravels	Y	1: Flake (primary), Flake (secondary) Terminated at thick gravels..
41CM401	MCC548	1	0-40	10YR 4/2	dark grayish brown	Silty Clay Loam	10-20%	Gravels	N	–
		2	40-50	7.5YR 5/6	strong brown	Clay	–	–	N	Terminated at basal clay.
NA	MCC549	1	0-40	10YR 3/1	very dark gray	Clay	>20%	Gravels	N	Terminated at compact soil.
NA	MCC550	1	0-45	10YR 3/1	very dark gray	Clay	10-20%	Gravels	N	Terminated at compact soil.
NA	MCC551	1	0-50	10YR 5/6	yellowish brown	Sandy Loam	–	–	N	–
		2	50-60	10YR 5/2	grayish brown	Sandy Clay Loam	>20%	Mottles	N	Terminated at compact soil.
NA	MCC552	1	0-10	10YR 4/3	brown	Sandy Loam	1-5%	Pebbles	N	–
		2	10-60	10YR 5/4	yellowish brown	Sandy Loam	1-5%	Pebbles	N	–
		3	60-85	10YR 7/3	very pale brown	Sandy Loam	1-5%	Pebbles	N	–
		4	85-100	10YR 5/6	yellowish brown	Sandy Clay Loam	10-20%	Mottles	N	Terminated at depth.
NA	MCC553	1	0-10	10YR 3/3	dark brown	Sandy Loam	–	–	N	–
		2	10-35	10YR 5/3	brown	Sandy Loam	–	–	N	–
		3	25-35	7.5YR 5/6	strong brown	Clay	–	–	N	Terminated at basal clay.
41GU200	MCC554	1	0-60	10YR 4/2	dark grayish brown	Silt Loam	1-5%	Snail Shell	N	–
		2	60-85	10YR 5/4	yellowish brown	Silt Loam	1-5%	Snail Shell	N	–
		3	85-100	10YR 6/4	light yellowish brown	Sandy Clay Loam	1-5%	Snail Shell	N	Terminated at depth.
41GU200	MCC555	1	0-60	10YR 4/2	dark grayish brown	Silt Loam	1-5%	Pebbles, Snail Shell	N	–
		2	60-85	10YR 5/4	yellowish brown	Sandy Loam	1-5%	Pebbles, Snail Shell	N	–
		3	85-100	10YR 6/4	light yellowish brown	Sandy Clay Loam	–	–	N	Terminated at depth.
NA	MCC556	1	0-10	10YR 4/2	dark grayish brown	Sandy Loam	1-5%	Pebbles	N	–
		2	10-45	10YR 6/4	light yellowish brown	Sandy Loam	1-5%	Pebbles	N	–
		3	45-100	10YR 7/4	very pale brown	Sandy Loam	1-5%	Pebbles	N	Terminated at depth.
NA	MCC557	1	0-40	5YR 4/4	reddish brown	Sandy Loam	5-10%	Gravels	N	–
		2	40-50	5YR 5/8	yellowish red	Sandy Clay	–	–	N	Terminated at basal clay.
NA	MCC558	1	0-40	5YR 4/4	reddish brown	Sandy Loam	5-10%	Gravels	N	–
		2	40-50	5YR 5/8	yellowish red	Sandy Clay	–	–	N	Terminated at basal clay.
NA	MCC575	1	0-40	10YR 4/2	dark grayish brown	Clay	–	–	N	Terminated at compact soil.
NA	MCC576	1	0-45	10YR 4/2	dark grayish brown	Silty Clay Loam	1-5%	Gravels, Pebbles	N	–
		2	45-55	7.5YR 6/8	reddish yellow	Clay	–	–	N	Terminated at basal clay.
NA	MCC577	1	0-45	10YR 4/2	dark grayish brown	Silty Clay Loam	1-5%	Gravels, Pebbles	N	–
		2	45-55	7.5YR 6/8	reddish yellow	Clay	–	–	N	Terminated at basal clay.
NA	MCC578	1	0-55	10YR 4/2	dark grayish brown	Silty Clay Loam	1-5%	Gravels, Pebbles	N	–
		2	55-60	7.5YR 6/8	reddish yellow	Clay	–	–	N	Terminated at basal clay.
NA	MCC579	1	0-10	5YR 4/6	yellowish red	Clay	–	–	N	Terminated at basal clay.
NA	MCC580	1	0-10	10YR 3/1	very dark gray	Sandy Clay Loam	–	–	N	–
		2	10-50	10YR 4/3	brown	Sandy Clay Loam	–	–	N	–
		3	50-60	10YR 6/6	brownish yellow	Clay	–	–	N	Terminated at compact soil.
NA	MCC581	1	0-25	10YR 2/1	black	Clay	>20%	Gravels	N	Terminated at thick gravels..
NA	MCC582	1	0-40	10YR 3/1	very dark gray	Silty Clay Loam	10-20%	Gravels	N	Terminated at compact soil.
NA	MCC583	1	0-40	10YR 3/1	very dark gray	Silty Clay Loam	5-10%	Gravels	N	Terminated at compact soil.
NA	MCC584	1	0-30	10YR 3/1	very dark gray	Silty Clay Loam	5-10%	Gravels	N	Terminated at compact soil.
NA	MCC585	1	0-40	10YR 3/3	dark brown	Clay Loam	>20%	Cobbles, Large Rock Fragments, Mottles	N	Terminated at disturbed to 50cmbs.
NA	MCC586	1	0-35	2.5Y 4/2	dark grayish brown	Clay	1-5%	Gravels	N	Terminated at compact soil.
NA	MCC587	1	0-25	10YR 3/1	very dark gray	Clay	5-10%	Gravels	N	Terminated at compact soil.
41CM394 Extension	MCC588	1	0-25	10YR 3/3	dark brown	Silty Clay Loam	10-20%	Gravels	N	Terminated at bedrock.
NA	MCC589	1	0-20	10YR 3/2	very dark grayish brown	Silty Clay Loam	>20%	Gravels	N	Terminated at thick gravels..

Appendix B. Shovel Test Data

Site No.	Shovel Test No.	Level	Depth (cmbs)	Munsell Soil value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Positive (P) or Negative (N)	Comments/ Reason for Termination
NA	MCC590	1	0-15	10YR 3/2	very dark grayish brown	Silty Clay Loam	>20%	Gravels	N	Terminated at thick gravels..
NA	MCC591	1	0-50	10YR 5/6	yellowish brown	Sandy Loam	—	—	N	—
		2	50-60	5YR 5/8	yellowish red	Sandy Clay	—	—	N	Terminated at basal clay.
NA	MCC592	1	0-50	10YR 5/4	yellowish brown	Sandy Loam	—	—	N	—
		2	50-60	10YR 5/8	yellowish brown	Sandy Clay	—	—	N	Terminated at basal clay.
NA	MCC593	1	0-35	10YR 5/6	yellowish brown	Sandy Loam	—	—	N	—
		2	35-45	5YR 5/8	yellowish red	Sandy Clay	—	—	N	Terminated at basal clay.
NA	MCC594	1	0-30	10YR 5/6	yellowish brown	Sandy Loam	—	—	N	—
		2	30-40	5YR 5/8	yellowish red	Sandy Clay	—	—	N	Terminated at basal clay.
NA	MCC595	1	0-50	10YR 5/6	yellowish brown	Sandy Loam	—	—	N	—
		2	50-60	5YR 5/8	yellowish red	Sandy Clay	—	—	N	Terminated at basal clay.
NA	MFR01	1	0-25	10YR 4/3	brown	Silt Loam	1-5%	Gravels, Large Rock Frags	N	—
		2	25-35	7.5YR 5/6	strong brown	Silty Clay	5-10%	Gravels, Large Rock Frags	N	Terminated at basal clay.
NA	MFR01	1	0-20	10YR 5/2	grayish brown	Clay Loam	>20%	Gravels, Large Rock Frags	N	Terminated at large impassable gravels.
NA	MFR02	1	0-20	10YR 5/2	grayish brown	Clay Loam	>20%	Gravels, Large Rock Frags	N	Terminated at large impassable gravels.
NA	MFR03	1	0-20	10YR 5/2	grayish brown	Clay Loam	>20%	Gravels, Large Rock Frags	N	Terminated at large impassable gravels.
NA	MFR04	1	0-30	10YR 5/2	grayish brown	Clay Loam	>20%	Gravels, Large Rock Frags	N	Terminated at large impassable gravels.
NA	MFR05	1	0-20	10YR 5/2	grayish brown	Clay Loam	>20%	Gravels, Large Rock Frags	N	Terminated at large impassable gravels.
IF10	MFR06	1	0-10	10YR 5/2	grayish brown	Silty Clay Loam	>20%	Cobbles, Gravels, Large Rock Frags	Y	1: Flake (tertiary), Other Prehistoric
		2	10-30	10YR 5/2	grayish brown	Silty Clay Loam	>20%	Cobbles, Gravels, Large Rock Frags	N	Terminated at impassable dense gravels.
NA	MFR07	1	0-20	10YR 5/2	grayish brown	Clay Loam	>20%	Gravels, Large Rock Frags	N	Terminated at large impassable gravels.
NA	MFR08	1	0-20	10YR 5/2	grayish brown	Clay Loam	>20%	Gravels, Large Rock Frags	N	Terminated at large impassable gravels.
NA	MFR09	1	0-20	10YR 5/2	grayish brown	Clay Loam	>20%	Gravels, Large Rock Frags	N	Terminated at large impassable gravels.
NA	MFR10	1	0-20	10YR 5/2	grayish brown	Clay Loam	>20%	Gravels, Large Rock Frags	N	Terminated at large impassable gravels.
NA	MFR11	1	0-50	10YR 2/1	black	Clay Loam	—	—	N	Terminated at compact soil.
NA	MFR12	1	0-20	10YR 5/2	grayish brown	Clay Loam	>20%	Gravels, Large Rock Frags	N	Terminated at large impassable gravels.
NA	MFR13	1	0-20	10YR 5/2	grayish brown	Clay Loam	>20%	Gravels, Large Rock Frags	N	Terminated at large impassable gravels.
41CM401	MFV01	1	0-6	2.5YR 5/4	reddish brown	Clay	>20%	Cobbles, Gravels, Large Rock Frags, Mottles, Pebbles	N	—
		2	6-45	2.5YR 3/2	dusky red	Clay	5-10%	Cobbles, Pebbles	Y	2: Flake (primary) [Flakes found about 40 cmbs] Terminated at bedrock.
41CM401	MFV02	1	0-15	2.5YR 5/4	reddish brown	Clay	>20%	Cobbles, Gravels, Large Rock Frags, Mottles, Pebbles	N	—
		2	15-22	2.5YR 3/1	dark reddish gray	Clay	5-10%	Cobbles, Large Rock Frags, Pebbles	Y	1: Flake (tertiary) [Terminated at 22cmbs due to large rock/bedrock] Terminated at bedrock.
41CM401	MFV03	1	0-7	2.5YR 5/8	red	Clay	10-20%	Calcium Carbonate, Cobbles, Gravels, Large Rock Frags, Mottles, Pebbles	N	—
		2	7-15	2.5YR 3/1	dark reddish gray	Clay	10-20%	Cobbles, Gravels, Large Rock Frags, Pebbles	Y	1: Other Prehistoric [One worm seen in soil] Terminated at large boulder and large tree root running through shovel test.
41CM401	MFV04	1	0-15	2.5YR 3/1	dark reddish gray	Clay Loam	>20%	Cobbles, Gravels, Large Rock Frags, Pebbles	Y	1: Flake (tertiary) [Disturbed ground at area of ST] Terminated at impenetrable cobbles.
41CM401	MFV05	1	0-40	2.5YR 3/1	dark reddish gray	Clay	1-5%	Gravels, Pebbles	N	Terminated at compact soil.
NA	MFV06	1	0-45	10YR 2/1	black	Clay	10-20%	Cobbles, Gravels, Large Rock Frags, Pebbles, Earthworms	N	Terminated at compact soil.
NA	MFV07	1	0-45	10YR 2/1	black	Clay	10-20%	Cobbles, Gravels, Large Rock Frags, Pebbles, Earthworms	N	Terminated at compact soil.
NA	MFV08	1	0-30	10YR 4/3	brown	Sand	5-10%	Gravels, Pebbles	N	—
		2	30-50	10YR 5/2	grayish brown	Sandy Clay	5-10%	Calcium Carbonate, Gravels, Mottles, Pebbles	N	Terminated at compact disturbed clay.
NA	MFV09	1	0-5	10YR 4/2	dark grayish brown	Sand	1-5%	Gravels, Pebbles, Roots and rootlets	N	—
		2	5-90	10YR 6/6	brownish yellow	Sand	1-5%	Cobbles, Gravels, Pebbles	N	Terminated at depth.
NA	MFV10	1	1-10	10YR 4/6	dark yellowish brown	Sand	1-5%	Gravels, Pebbles	N	—
		2	10-60	10YR 5/6	yellowish brown	Sand	1-5%	Gravels, Mottles, Pebbles	N	Terminated at depth.
NA	MFV11	1	0-5	10YR 3/1	very dark gray	Sand	10-20%	Pebbles, Common roots and rootlets many large	N	—
		2	5-55	10YR 5/4	yellowish brown	Sand	>20%	Pebbles, Roots	N	—
		3	55-60	10YR 6/4	light yellowish brown	Sand	>20%	Pebbles, Roots	N	Terminated at hydric soil- feels very wet.

Appendix B. Shovel Test Data

Site No.	Shovel Test No.	Level	Depth (cmbs)	Munsell Soil value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Positive (P) or Negative (N)	Comments/ Reason for Termination
41GU200	MFV12	1	0-50	10YR 3/3	dark brown	Silt Loam	10-20%	Gravels, Pebbles, Snail Shell, Common roots and rootlets in both levels. Worms from 0-30 cmbs	N	-
		2	50-60	10YR 3/6	dark yellowish brown	Silt Loam	10-20%	Gravels, Pebbles, Snail Shell, Common roots	N	Terminated at large root at 60.
41GU200	MFV13	1	0-40	10YR 3/3	dark brown	Silty Clay	10-20%	Gravels, Pebbles, Snail Shell, Roots and worms	N	-
		2	40-70	10YR 4/3	brown	Silty Clay	10-20%	Gravels, Pebbles, Snail Shell, Roots. Many larger as levels increased	N	Terminated at impenetrable root.
NA	MFV14	1	1-30	10YR 4/3	brown	Sandy Loam	5-10%	Cobbles, Gravels, Snail Shell	N	-
		2	30-80	10YR 4/4	dark yellowish brown	Sandy Loam	10-20%	Gravels, Pebbles, Snail Shell, Roots	N	-
		3	80-100	10YR 5/4	yellowish brown	Sandy Loam	5-10%	Gravels, Pebbles, Roots which increase with size	N	Terminated at depth.
NA	MN06	1	0-50	10YR 2/1	black	Clay Loam	>20%	Cobbles, Gravels	N	Terminated at bedrock.
NA	MR01	1	0-30	10YR 5/2	grayish brown	Silty Clay	-	-	N	-
		2	30-40	10YR 5/3	brown	Clay Loam	-	-	N	Terminated at basal clay.
NA	MR02	1	0-50	10YR 6/4	light yellowish brown	Sandy Loam	-	-	N	-
		2	50-60	10YR 5/6	yellowish brown	Sandy Clay	10-20%	Mottles	N	Terminated at basal clay.
NA	MR03	1	0-50	10YR 6/4	light yellowish brown	Sandy Loam	-	-	N	-
		2	50-60	10YR 5/6	yellowish brown	Sandy Clay	10-20%	Mottles	N	Terminated at basal clay.
NA	MR04	1	0-50	10YR 6/4	light yellowish brown	Sandy Loam	-	-	N	-
		2	50-60	10YR 5/6	yellowish brown	Sandy Clay	10-20%	Mottles	N	Terminated at basal clay.
NA	MR05	1	0-40	10YR 5/3	brown	Loamy Sand	-	-	N	Terminated at water table.
NA	MR06	1	0-40	10YR 5/3	brown	Loamy Sand	-	-	N	Terminated at water table.
NA	MR07	1	0-40	10YR 5/3	brown	Loamy Sand	-	-	N	Terminated at water table.
NA	MR08	1	0-100	10YR 5/3	brown	Sand	-	-	N	Terminated at depth.
NA	MR09	1	0-100	10YR 6/4	light yellowish brown	Sandy Loam	-	-	N	Terminated at depth.
NA	MR10	1	0-100	10YR 6/4	light yellowish brown	Sandy Loam	-	-	N	Terminated at depth.
NA	MR11	1	0-100	10YR 6/4	light yellowish brown	Sandy Loam	-	-	N	Terminated at depth.
NA	MR13	1	0-100	10YR 6/4	light yellowish brown	Sandy Loam	-	-	N	Terminated at depth.
NA	MR14	1	0-10	7.5YR 5/6	strong brown	Sandy Loam	-	-	N	-
		2	10-30	2.5YR 4/8	red	Sandy Clay	-	-	N	Terminated at basal clay.
NA	MR15	1	0-10	7.5YR 5/6	strong brown	Sandy Loam	-	-	N	-
		2	10-30	2.5YR 4/8	red	Sandy Clay	-	-	N	Terminated at basal clay.
NA	MR600	1	0-20	10YR 4/4	dark yellowish brown	Silty Clay Loam	-	-	N	-
		2	20-50	7.5YR 5/4	brown	Sandy Clay	10-20%	Gravels, Pebbles	N	Terminated at basal clay.
NA	MR601	1	0-30	10YR 5/2	grayish brown	Sandy Clay	-	-	N	-
		2	30-50	10YR 4/4	dark yellowish brown	Clay Loam	1-5%	Calcium Carbonate	N	Terminated at compact soil.
NA	MR602	1	0-50	10YR 5/2	grayish brown	Clay Loam	10-20%	Calcium Carbonate, Cobbles, Gravels, Pebbles	N	Terminated at compact soil.
41CW173	MRC100	1	0-10	10YR 2/2	very dark brown	Clay	>20%	Gravels	N	Terminated at disturbance. dense introduced gravels.
41CW173	MRC101	1	0-10	10YR 2/2	very dark brown	Clay	>20%	Gravels	N	Terminated at disturbance. dense introduced gravels.
41CW173	MRC102	1	0-10	10YR 2/2	very dark brown	Clay	>20%	Gravels	N	Terminated at disturbance. dense introduced gravels.
41CW173	MRC103	1	0-10	10YR 2/2	very dark brown	Clay	>20%	Gravels	N	Terminated at disturbance. dense introduced gravels.
41CW173	MRC104	1	0-10	10YR 2/2	very dark brown	Clay	>20%	Gravels	N	Terminated at disturbance. dense introduced gravels.
41CW173	MRC105	1	0-10	10YR 2/2	very dark brown	Clay	>20%	Gravels	N	Terminated at disturbance. dense introduced gravels.
NA	MRC106	1	0-50	10YR 3/4	dark yellowish brown	Clay Loam	1-5%	Cobbles, Gravels	N	Terminated at compact soil.
NA	MRC107	1	0-45	10YR 2/2	very dark brown	Clay	1-5%	Cobbles, Gravels, Pebbles	N	Terminated at gravel bed.
NA	MXR01	1	0-50	10YR 2/1	black	Clay Loam	-	-	N	Terminated at compact soil.
NA	MXR02	1	0-40	10YR 4/2	dark grayish brown	Silty Clay	-	-	N	-
		2	40-60	10YR 5/8	yellowish brown	Clay Loam	-	-	N	Terminated at basal clay.
NA	MXR03	1	0-40	10YR 4/2	dark grayish brown	Silty Clay	-	-	N	-
		2	40-60	10YR 5/8	yellowish brown	Clay Loam	-	-	N	Terminated at basal clay.
NA	MXR04	1	0-100	10YR 5/4	yellowish brown	Loamy Sand	-	-	N	Terminated at depth.
NA	MXR05	1	0-30	10YR 5/4	yellowish brown	Silt Loam	-	-	N	-
		2	30-40	7.5YR 5/6	strong brown	Clay Loam	-	-	N	Terminated at basal clay.
NA	MXR06	1	0-40	10YR 4/2	dark grayish brown	Silty Clay	-	-	N	-
		2	40-60	10YR 5/8	yellowish brown	Clay Loam	-	-	N	Terminated at basal clay.
NA	MXR07	1	0-40	10YR 4/2	dark grayish brown	Silty Clay	-	-	N	-
		2	40-60	10YR 5/8	yellowish brown	Clay Loam	-	-	N	Terminated at basal clay.

Appendix B. Shovel Test Data

Site No.	Shovel Test No.	Level	Depth (cmbs)	Munsell Soil value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Positive (P) or Negative (N)	Comments/ Reason for Termination
NA	MXR08	1	0-20	10YR 4/4	dark yellowish brown	Silty Clay Loam	–	–	N	–
		2	20-30	10YR 5/8	yellowish brown	Clay Loam	–	–	N	Terminated at basal clay.
NA	MXR09	1	0-40	10YR 2/1	black	Clay Loam	–	–	N	Terminated at dense gravels.
NA	MXR10	1	0-10	10YR 4/4	dark yellowish brown	Silty Clay Loam	–	–	N	Terminated at dense gravels.
NA	MXR11	1	0-40	10YR 2/1	black	Clay Loam	–	–	N	Terminated at dense gravels.
NA	MXR12	1	0-45	10YR 6/4	light yellowish brown	Sandy Loam	–	–	N	Terminated at depth.
NA	MXR13	1	0-50	10YR 2/1	black	Clay Loam	–	–	N	Terminated at dense gravels.
NA	MXR14	1	0-100	10YR 6/4	light yellowish brown	Sandy Loam	–	–	N	Terminated at depth.
NA	MXR15	1	0-50	10YR 3/3	dark brown	Clay Loam	>20%	Cobbles, Large Rock Frags, Mottles	N	Terminated at disturbed to 50cmbs.
NA	MXR16	1	0-100	10YR 6/4	light yellowish brown	Sandy Loam	–	–	N	Terminated at depth.
NA	MXR17	1	0-40	10YR 2/1	black	Clay Loam	–	–	N	Terminated at dense gravels.
NA	MXR18	1	0-40	10YR 2/1	black	Clay Loam	–	–	N	Terminated at dense gravels.
NA	MXR19	1	0-40	10YR 2/1	black	Clay Loam	–	–	N	Terminated at dense gravels.
NA	MXR20	1	0-40	10YR 2/1	black	Clay Loam	–	–	N	Terminated at dense gravels.
NA	MXR21	1	0-40	10YR 2/1	black	Clay Loam	–	–	N	Terminated at dense gravels.
NA	NMG01	1	0-20	10YR 3/4	dark yellowish brown	Silty Clay Loam	1-5%	Rootless, snail	N	–
		2	20-40	10YR 3/2	very dark grayish brown	Silty Clay Loam	5-10%	Root, rootlets, snail	N	–
		3	40-60	10YR 3/4	dark yellowish brown	Silty Clay Loam	1-5%	Mottles, Roots, snail	N	–
		4	60-80	10YR 4/4	dark yellowish brown	Silty Clay Loam	1-5%	Roots	N	–
		5	80-100	10YR 5/4	yellowish brown	Silty Clay Loam	1-5%	Mottles, Small roots	N	Terminated at depth.
NA	NMG02	1	0-20	10YR 4/2	dark grayish brown	Silty Clay Loam	1-5%	Roots, rootlets, leaf litter, snail	N	–
		2	20-75	10YR 3/2	very dark grayish brown	Silty Clay Loam	5-10%	Roots, snails	N	–
		3	75-100	10YR 5/4	yellowish brown	Silty Clay Loam	1-5%	Snail Shell	N	Terminated at depth.
NA	NMG03	1	0-50	10YR 3/4	dark yellowish brown	Silty Clay Loam	5-10%	Cobbles, Pebbles	N	–
		2	50+	10YR 5/2	grayish brown	Silty Clay Loam	5-10%	Calcium Carbonate, Pebbles	N	Terminated at basal clay.
NA	NMG04	1	0-50	10YR 3/4	dark yellowish brown	Silty Clay Loam	5-10%	Cobbles, Pebbles	N	–
		2	50+	10YR 5/2	grayish brown	Silty Clay Loam	5-10%	Calcium Carbonate, Pebbles	N	Terminated at basal clay.
NA	NMG05	1	0-40	10YR 3/4	dark yellowish brown	Silty Clay Loam	5-10%	Cobbles, Pebbles	N	–
		2	40-50+	10YR 5/2	grayish brown	Silty Clay Loam	5-10%	Calcium Carbonate, Pebbles	N	Terminated at basal clay.
NA	NMG06	1	0-40	10YR 3/4	dark yellowish brown	Silty Clay Loam	5-10%	Cobbles, Pebbles	N	–
		2	40-50+	10YR 5/2	grayish brown	Silty Clay Loam	5-10%	Calcium Carbonate, Pebbles	N	Terminated at basal clay.
NA	NMG07	1	0-40	10YR 3/4	dark yellowish brown	Sandy Loam	>20%	Cobbles, Gravels, Pebbles, Snail Shell	N	Terminated at bedrock.
NA	NMG08	1	0-20	10YR 4/2	dark grayish brown	Clay Loam	5-10%	Cobbles, Gravels, Pebbles, Snail Shell	N	–
		2	20-50	10YR 3/1	very dark gray	Clay	1-5%	Cobbles, Snail Shell	N	Terminated at compact soil.
NA	NMG09	1	0-25	10YR 4/4	dark yellowish brown	Sandy Clay Loam	10-20%	Cobbles, Gravels, Pebbles	N	–
		2	25-45	10YR 3/2	very dark grayish brown	Clay Loam	5-10%	Cobbles, Gravels, Mottles, Pebbles	N	–
		3	45-60	10YR 3/2	very dark grayish brown	Clay Loam	5-10%	Calcium Carbonate, Cobbles, Mottles	N	Terminated at basal clay.
41BP961	NMG10	1	0-20	10YR 5/4	yellowish brown	Sandy Loam	>20%	Calcium Carbonate, Cobbles, Gravels, Large Rock Frags, Mottles, Pebbles, Snail Shell	N	Terminated at heavy disturbance.
NA	NMG11	1	0-25	10YR 4/4	dark yellowish brown	Sandy Clay Loam	10-20%	Cobbles, Gravels, Pebbles	N	–
		2	25-45	10YR 3/2	very dark grayish brown	Clay Loam	5-10%	Cobbles, Gravels, Mottles, Pebbles	N	–
		3	45-60	10YR 3/2	very dark grayish brown	Clay Loam	5-10%	Calcium Carbonate, Cobbles, Mottles	N	Terminated at basal clay.
NA	NMG12	1	0-20	10YR 4/4	dark yellowish brown	Sandy Loam	>20%	Cobbles, Large Rock Frags, Pebbles, Rootlets, leaf litter	N	–
		2	20-40	10YR 3/2	very dark grayish brown	Sandy Clay Loam	>20%	Cobbles, Large Rock Frags, Pebbles	N	Terminated at bedrock.
NA	NMG13	1	0-15	10YR 4/4	dark yellowish brown	Sandy Clay Loam	>20%	Cobbles, Large Rock Frags, Pebbles	N	Terminated at bedrock or dense large cobbles.
NA	NMG14	1	0-20	10YR 4/2	dark grayish brown	Sandy Clay Loam	>20%	Cobbles, Large Rock Frags, Pebbles, Snail Shell	N	–
		2	20-30	10YR 3/1	very dark gray	Clay Loam	5-10%	Cobbles, Mottles, Pebbles	N	–
		3	30-60	10YR 3/1	very dark gray	Clay	1-5%	Calcium Carbonate, Gravels	N	Terminated at basal clay.
NA	NMG15	1	0-15	10YR 4/4	dark yellowish brown	Sandy Clay Loam	5-10%	Cobbles, Large Rock Frags, Pebbles	N	Terminated at bedrock or dense large cobbles.
NA	NMG16	1	0-15	10YR 4/4	dark yellowish brown	Sandy Clay Loam	5-10%	Cobbles, Large Rock Frags, Pebbles	N	Terminated at bedrock or dense large cobbles.

Appendix B. Shovel Test Data

Site No.	Shovel Test No.	Level	Depth (cmbs)	Munsell Soil value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Positive (P) or Negative (N)	Comments/ Reason for Termination
NA	NMG17	1	0-50	10YR 5/2	grayish brown	Sandy Loam	10-20%	Snail Shell, Decaying wood	N	-
		2	50-70	10YR 4/2	dark grayish brown	Sandy Clay Loam	1-5%	Mottles, Decaying wood	N	Terminated at compact soil.
NA	NMG18	1	0-20	10YR 4/2	dark grayish brown	Silty Clay Loam	>20%	Cobbles, Gravels, Pebbles, Decaying roots, rootlets	N	-
		2	20-50	10YR 5/4	yellowish brown	Silty Clay Loam	10-20%	Calcium Carbonate, Gravels, Mottles, Pebbles, Snail Shell	N	Terminated at basal clay.
NA	NMG19	1	0-20	10YR 4/2	dark grayish brown	Silty Clay Loam	>20%	Cobbles, Gravels, Pebbles, Decaying roots, rootlets	N	-
		2	20-50	10YR 5/4	yellowish brown	Silty Clay Loam	10-20%	Calcium Carbonate, Gravels, Mottles, Pebbles, Snail Shell	N	Terminated at basal clay.
NA	NMG20	1	0-15	10YR 4/4	dark yellowish brown	Sandy Clay Loam	10-20%	Cobbles, Large Rock Frags, Pebbles	N	Terminated at bedrock or dense large cobbles.
NA	NMG21	1	0-20	10YR 4/2	dark grayish brown	Sandy Clay Loam	>20%	Cobbles, Gravels, Pebbles, Snail Shell	N	-
		2	20-60	10YR 4/1	dark gray	Clay Loam	>20%	Calcium Carbonate, Cobbles, Gravels, Pebbles, Roots	N	Terminated at basal clay.
NA	RW950	1	0-30	10YR 2/1	black	Clay Loam	1-5%	Gravels	N	-
		2	30-35	10YR 2/1	black	Clay	10-20%	Gravels, Cobbles	N	Terminated at gravel impasse.
NA	RW951	1	0-30	10YR 2/1	black	Clay	-	-	N	Terminated at compact soil.
NA	RW952	1	0-30	10YR 2/1	black	Clay	1-5%	Gravels	N	Terminated at compact soil.
NA	RW953	1	0-30	10YR 2/1	black	Clay	1-5%	Gravels	N	Terminated at compact soil.
NA	RW1000	1	0-10	10YR 3/1	very dark gray	Clay Loam	-	-	N	Terminated at bedrock.
NA	RW1001	1	0-20	7.5YR 3/3	dark brown	Clay Loam	1-5%	Gravels	N	Terminated at caliche.
NA	RW1002	1	0-15	7.5YR 3/3	dark brown	Clay Loam	1-5%	Gravels	N	Terminated at caliche.
NA	RW1003	1	0-10	10YR 2/2	very dark brown	Clay Loam	-	-	N	Terminated at bedrock.
NA	RW1004	1	0-10	10YR 3/3	dark brown	Clay Loam	-	-	N	-
		2	10-30	7.5YR 2.5/3	very dark brown	Clay	-	-	N	Terminated at sterile soil.
NA	RW1005	1	0-10	10YR 3/3	dark brown	Clay Loam	1-5%	Calcium Carbonate	N	Terminated at bedrock.
NA	RW2500	1	0-10	10YR 3/1	very dark gray	Clay Loam	-	-	N	Terminated at bedrock.
NA	RW2501	1	0-20	7.5YR 3/3	dark brown	Clay Loam	1-5%	Gravels	N	Terminated at caliche.
NA	RW2502	1	0-15	7.5YR 3/3	dark brown	Clay Loam	1-5%	Gravels	N	Terminated at caliche.
NA	RW2503	1	0-10	10YR 2/2	very dark brown	Clay Loam	-	-	N	Terminated at bedrock.
NA	RW2504	1	0-10	10YR 3/3	dark brown	Clay Loam	-	-	N	-
		2	10-30	7.5YR 2.5/3	very dark brown	Clay	-	-	N	Terminated at sterile soil.
NA	RW2505	1	0-10	10YR 3/3	dark brown	Clay Loam	1-5%	Calcium Carbonate	N	Terminated at bedrock.
NA	RW2506	1	0-30	7.5YR 2.5/3	very dark brown	Clay Loam	>20%	Gravels	N	Terminated at bedrock.
NA	RW2507	1	0-20	7.5YR 2.5/3	very dark brown	Clay	>20%	Gravels	N	-
		2	20-30	2.5YR 3/3	dark reddish brown	Clay	-	-	N	Terminated at bedrock.
NA	RW2508	1	0-20	7.5YR 2.5/3	very dark brown	Clay	>20%	Gravels	N	-
		2	20-30	2.5YR 3/3	dark reddish brown	Clay	-	-	N	Terminated at bedrock.
NA	RW2509	1	0-20	7.5YR 2.5/3	very dark brown	Clay	>20%	Gravels	N	-
		2	20-30	2.5YR 3/3	dark reddish brown	Clay	-	-	N	Terminated at bedrock.
NA	RW2510	1	0-20	7.5YR 2.5/3	very dark brown	Clay	>20%	Gravels	N	-
		2	20-30	2.5YR 3/3	dark reddish brown	Clay	-	-	N	Terminated at bedrock.
IF11	RW2511	1	0-10	10YR 3/3	dark brown	Clay Loam	>20%	Cobbles	N	Terminated at bedrock.
IF11	RW2512	1	0-10	10YR 3/3	dark brown	Clay Loam	>20%	Cobbles	N	Terminated at bedrock.
IF11	RW2513	1	0-10	10YR 3/3	dark brown	Clay Loam	>20%	Cobbles	N	Terminated at bedrock.
IF11	RW2514	1	0-10	10YR 3/3	dark brown	Clay Loam	>20%	Cobbles	N	Terminated at bedrock.
IF11	RW2515	1	0-10	10YR 3/3	dark brown	Clay Loam	>20%	Cobbles	N	Terminated at bedrock.
NA	RW2517	1	0-10	10YR 3/3	dark brown	Clay Loam	>20%	Cobbles	N	Terminated at bedrock.
NA	RW2518	1	0-5	10YR 3/3	dark brown	Clay Loam	>20%	Cobbles	N	Terminated at bedrock.
NA	RW2519	1	0-10	10YR 3/3	dark brown	Clay Loam	>20%	Cobbles	N	Terminated at bedrock.
41CM404	RW2520	1	0-30	10YR 3/3	dark brown	Clay Loam	>20%	Cobbles	N	-
		2	30-35	10YR 3/3	dark brown	Clay Loam	>20%	Cobbles	N	Terminated at caliche.
NA	RW2521	1	0-10	10YR 3/3	dark brown	Clay Loam	>20%	Cobbles	N	Terminated at bedrock.
NA	SS01	1	0-35	10YR 5/3	brown	Silty Clay Loam	>20%	Gravels	N	Terminated at bedrock.
NA	SS02	1	0-30	10YR 3/2	very dark grayish brown	Silty Clay Loam	1-5%	Gravels	N	Terminated at bedrock.
NA	SS03	1	0-45	10YR 3/2	very dark grayish brown	Silty Clay Loam	1-5%	Gravels	N	Terminated at bedrock.
NA	SS04	1	0-5	10YR 5/3	brown	Silty Clay Loam	>20%	Gravels	N	Terminated at bedrock.
NA	SS05	1	0-20	10YR 5/3	brown	Silty Clay Loam	>20%	Cobbles	N	Terminated at bedrock.
NA	SS06	1	0-10	7.5YR 2.5/2	very dark brown	Silty Clay Loam	10-20%	Cobbles	N	Terminated at bedrock.
NA	SS07	1	0-30	7.5YR 2.5/2	very dark brown	Silty Clay Loam	>20%	Cobbles	N	Terminated at bedrock.
NA	SS08	1	0-16	7.5YR 2.5/2	very dark brown	Silty Clay Loam	>20%	Cobbles	N	Terminated at bedrock.
NA	SS09	1	0-5	7.5YR 2.5/2	very dark brown	Silty Clay Loam	>20%	Cobbles	N	Terminated at bedrock.
NA	SS10	1	0-30	10YR 2/2	very dark brown	Silty Clay	>20%	Cobbles	N	Terminated at bedrock.
NA	SS11	1	0-25	10YR 2/2	very dark brown	Silty Clay	>20%	Cobbles, Pebbles	N	Terminated at bedrock.
IF11	SS12	1	0-10	10YR 2/2	very dark brown	Silty Clay Loam	>20%	Cobbles, Pebbles	N	Terminated at bedrock.
NA	SS13	1	0-5	10YR 4/3	brown	Silty Clay Loam	10-20%	Cobbles, Gravels	N	Terminated at bedrock.

Appendix B. Shovel Test Data

Site No.	Shovel Test No.	Level	Depth (cmbs)	Munsell Soil value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Positive (P) or Negative (N)	Comments/ Reason for Termination
NA	SS14	1	0-10	10YR 3/3	dark brown	Silty Clay Loam	>20%	Cobbles, Gravels	N	Terminated at bedrock.
NA	SS15	1	0-35	10YR 4/2	dark grayish brown	Silty Clay Loam	>20%	Cobbles, Gravels, Mottles	N	Terminated at bedrock.
NA	TM01	1	0-30	7.5YR 5/6	strong brown	Sandy Loam	–	–	N	–
		2	30-65	7.5YR 5/6	strong brown	Sandy Clay Loam	5-10%	Mottles	N	Terminated at compact soil.
NA	TM02	1	0-40	7.5YR 4/4	brown	Sandy Clay Loam	–	–	N	Terminated at water table.
NA	TM03	1	0-30	7.5YR 3/4	dark brown	Sandy Clay Loam	–	–	N	Terminated at water table.
NA	TM04	1	0-30	7.5YR 3/4	dark brown	Sandy Clay Loam	–	–	N	Terminated at water table.
NA	TM05	1	0-35	7.5YR 3/4	dark brown	Sandy Clay Loam	–	–	N	Terminated at water table.
NA	TM06	1	0-50	10YR 2/2	very dark brown	Sandy Clay Loam	–	–	N	Terminated at water table.
NA	TM07	1	0-30	7.5YR 3/3	dark brown	Clay Loam	–	–	N	–
		2	30-35	7.5YR 5/6	strong brown	Clay Loam	–	–	N	Terminated at basil clay.
NA	TM08	1	0-35	10YR 3/1	very dark gray	Clay Loam	–	–	N	Terminated at root impasse.
NA	TM09	1	0-35	7.5YR 3/3	dark brown	Clay Loam	–	–	N	Terminated at water table.
NA	TM10	1	0-40	10YR 4/1	dark gray	Clay Loam	–	–	N	Terminated at compact soil.
NA	TM11	1	0-35	10YR 4/4	dark yellowish brown	Sandy Clay Loam	–	–	N	Terminated at water table.
NA	TM12	1	0-30	7.5YR 5/4	brown	Sandy Loam	1-5%	Large Rock Frags, Pebbles	N	–
		2	30-55	7.5YR 5/8	strong brown	Sandy Clay Loam	–	–	N	Terminated at hydric soil.
NA	TM13	1	0-10	7.5YR 4/4	brown	Sandy Loam	1-5%	Gravels, Pebbles	N	–
		2	10-15	7.5YR 5/8	strong brown	Clay	–	–	N	Terminated at basal clay.
NA	TM14	1	0-30	7.5YR 4/1	dark gray	Loamy Sand	–	–	N	–
		2	30-35	7.5YR 5/8	strong brown	Clay	–	–	N	Terminated at basal clay.
NA	TM15	1	0-40	7.5YR 4/4	brown	Sandy Loam	1-5%	Gravels, Pebbles	N	–
		2	40-45	7.5YR 5/8	strong brown	Clay	–	–	N	Terminated at basal clay.
NA	TM16	1	0-40	10YR 5/1	gray	Sandy Loam	–	–	N	–
		2	40-45	10YR 6/1	gray	Sandy Clay Loam	–	–	N	Terminated at water table.
NA	TM17	1	0-50	7.5YR 4/4	brown	Sandy Loam	1-5%	Gravels, Pebbles	N	Terminated at water table.
NA	TM18	1	0-30	7.5YR 5/6	strong brown	Sand	1-5%	Pebbles	N	–
		2	30-65	7.5YR 5/8	strong brown	Sandy Loam	1-5%	Pebbles	N	–
		3	65-75	7.5YR 6/8	reddish yellow	Sandy Loam	1-5%	Pebbles	N	Terminated at water table.
NA	TM19	1	0-15	7.5YR 5/8	strong brown	Sandy Loam	1-5%	Pebbles	N	–
		2	15-30	7.5YR 6/6	reddish yellow	Sandy Clay Loam	1-5%	Pebbles	N	–
		3	30-40	7.5YR 6/8	reddish yellow	Clay	–	–	N	Terminated at hydric soil.
NA	TM20	1	0-35	5YR 4/6	yellowish red	Sandy Loam	5-10%	Cobbles, Gravels, Large Rock Frags, Pebbles	N	Terminated at large rock frag impasse.
NA	TM21	1	0-30	7.5YR 4/4	brown	Sandy Loam	1-5%	Pebbles	N	–
		2	30-50	7.5YR 5/6	strong brown	Sandy Loam	1-5%	Pebbles	N	–
		3	50-60	7.5YR 5/8	strong brown	Sandy Clay Loam	1-5%	Pebbles	N	Terminated at hydric soil.
NA	TM22	1	0-20	7.5YR 4/4	brown	Sandy Loam	–	–	N	Terminated at hit asphalt.
NA	TM23	1	0-30	7.5YR 4/4	brown	Sandy Loam	1-5%	–	N	–
		2	30-45	7.5YR 5/6	strong brown	Sandy Loam	1-5%	Pebbles	N	–
		3	45-50	7.5YR 5/8	strong brown	Sandy Clay Loam	1-5%	Pebbles	N	Terminated at hydric soil.
NA	TN01	1	0-5	10YR 3/1	very dark gray	Silt Loam	1-5%	Gravels	N	Terminated at compact soil.
NA	TN02	1	0-30	10YR 3/1	very dark gray	Silty Clay Loam	–	–	N	Terminated at compact soil.
NA	TN03	1	0-10	10YR 3/1	very dark gray	Silty Clay Loam	10-20%	Gravels	N	Terminated at dense gravel lens.
NA	TN04	1	0-20	10YR 3/2	very dark grayish brown	Silty Clay Loam	5-10%	Gravels, Mottles	N	Terminated at basal clay.
NA	TN05	1	0-30	10YR 3/1	very dark gray	Silty Clay Loam	–	–	N	Terminated at compact soil.
NA	TN500	1	0-5	10YR 3/1	very dark gray	Silt Loam	1-5%	Gravels	N	Terminated at compact soil.
NA	TN501	1	0-30	10YR 3/1	very dark gray	Silty Clay Loam	–	–	N	Terminated at compact soil.
NA	TN502	1	0-10	10YR 3/1	very dark gray	Silty Clay Loam	10-20%	Gravels	N	Terminated at dense gravel lens.
NA	TN503	1	0-20	10YR 3/2	very dark grayish brown	Silty Clay Loam	5-10%	Gravels, Mottles	N	Terminated at basal clay.
NA	TN504	1	0-20	10YR 3/2	very dark grayish brown	Silty Clay Loam	5-10%	Gravels, Mottles	N	Terminated at basal clay.
NA	TN505	1	0-2	10YR 3/2	very dark grayish brown	Silty Clay Loam	5-10%	Gravels, Mottles	N	Terminated at basal clay.
NA	TN506	1	0-5	10YR 3/2	very dark grayish brown	Silty Clay Loam	5-10%	Gravels, Mottles	N	Terminated at basal clay.
NA	TN507	1	0-15	10YR 2/1	black	Silty Clay Loam	10-20%	Gravels	N	Terminated at compact gravel lens.
NA	TN508	1	0-15	10YR 2/1	black	Silty Clay Loam	10-20%	Gravels	N	Terminated at compact gravel lens.
NA	TN509	1	0-15	10YR 2/1	black	Silty Clay Loam	10-20%	Gravels	N	Terminated at compact gravel lens.
NA	TN510	1	0-15	10YR 3/2	very dark grayish brown	Silty Clay Loam	1-5%	Gravels, Mottles	N	Terminated at basal clay.
NA	TN511	1	0-15	10YR 3/2	very dark grayish brown	Silty Clay Loam	1-5%	Gravels, Mottles	N	Terminated at basal clay.
NA	TN512	1	0-5	10YR 4/2	dark grayish brown	Silty Clay Loam	>20%	Gravels	N	Terminated at compact soil.
NA	TN513	1	0-5	10YR 4/2	dark grayish brown	Silty Clay Loam	>20%	Gravels	N	Terminated at compact soil.
NA	TN514	1	0-5	10YR 4/2	dark grayish brown	Silty Clay Loam	>20%	Gravels	N	Terminated at compact soil.
NA	TN515	1	0-30	10YR 5/4	yellowish brown	Silt Loam	1-5%	Pebbles	N	–
		2	30-40	5YR 4/6	yellowish red	Silty Clay Loam	1-5%	Pebbles, Manganese nodules	N	Terminated at basal clay.

Appendix B. Shovel Test Data

Site No.	Shovel Test No.	Level	Depth (cmbs)	Munsell Soil value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Positive (P) or Negative (N)	Comments/ Reason for Termination
41BP959	TN516	1	0-50	10YR 5/3	brown	Sandy Loam	1-5%	Pebbles	Y	5: Flake (secondary), Flake (tertiary), Other Prehistoric
		2	50-55	7.5YR 5/8	strong brown	Sandy Clay Loam	5-10%	Sandstone and manganese	N	Terminated at basal clay.
41BP959	TN517	1	0-50	10YR 5/4	yellowish brown	Silt Loam	1-5%	Pebbles	N	-
		2	50-60	5YR 4/6	yellowish red	Silty Clay Loam	1-5%	Pebbles, Manganese nodules	N	Terminated at basal clay.
41BP959	TN518	1	0-50	10YR 5/4	yellowish brown	Silt Loam	1-5%	Pebbles	N	-
		2	50-60	5YR 4/6	yellowish red	Silty Clay Loam	1-5%	Pebbles, Manganese nodules	N	Terminated at basal clay.
41BP959	TN519	1	0-30	10YR 5/4	yellowish brown	Silt Loam	1-5%	Pebbles	N	-
		2	30-40	5YR 4/6	yellowish red	Silty Clay Loam	1-5%	Pebbles, Manganese nodules	N	Terminated at basal clay.
NA	TN520	1	0-15	10YR 2/1	black	Silty Clay Loam	-	-	N	Terminated at compact soil.
NA	TN521	1	0-25	10YR 2/1	black	Silty Clay Loam	-	-	N	Terminated at compact soil.
41BP959	TN522	1	0-10	10YR 6/3	pale brown	Silty Clay Loam	>20%	Mottles	N	Terminated at basal clay.
41BP959	TN523	1	0-75	10YR 6/3	pale brown	Sandy Loam	1-5%	Pebbles	Y	2: Flake (tertiary), Other Prehistoric Terminated at basal clay.
		1	75-80	10YR 5/8	yellowish brown	Sandy Clay Loam	5-10%	Gravels, Pebbles	N	Terminated at basal clay.
NA	TN524	1	0-5	10YR 4/2	dark grayish brown	Silt Loam	10-20%	Gravels	N	Terminated at compact soil.
NA	TN525	1	0-15	10YR 3/1	very dark gray	Silty Clay Loam	10-20%	Gravels	N	Terminated at compact soil.
NA	TN526	1	0-35	10YR 3/1	very dark gray	Silty Clay Loam	10-20%	Gravels	N	Terminated at compact soil.
NA	TN527	1	0-5	10YR 3/1	very dark gray	Silt Loam	10-20%	Cobbles, Gravels	N	Terminated at compact soil.
NA	TN528	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	Not excavated due to stock pond disturbance
NA	TN529	1	0-20	10YR 3/1	very dark gray	Silt Loam	10-20%	Cobbles, Gravels	N	Terminated at compact soil.
41CM401	VM01	1	0-7	2.5YR 3/2	dusky red	Clay	>20%	Gravels, Mottles, Pebbles, Sand and organic material like leaves	N	-
		2	7-30	10YR 2/2	very dark brown	Clay Loam	5-10%	Cobbles, Large Rock Frags, Snail Shell	N	-
		3	30-40	7.5YR 2.5/1	black	Clay Loam	5-10%	Pebbles	N	Terminated at bedrock.
41CM401	VM02	1	0-10	2.5YR 4/6	red	Clay	>20%	Gravels, Mottles, Pebbles	N	-
		2	10-30	10YR 2/2	very dark brown	Clay Loam	>20%	Large Rock Frags, Pebbles	N	Terminated at bedrock.
41CM401	VM03	1	0-17	5YR 5/3	reddish brown	Clay	>20%	Cobbles, Gravels, Mottles, Pebbles	N	-
		2	17-25	10YR 2/2	very dark brown	Clay Loam	>20%	Cobbles, Large Rock Frags	Y	4: Biface, Other Prehistoric Terminated at bedrock.
41CM401	VM04	1	0-70	10YR 2/2	very dark brown	Clay Loam	>20%	Pebbles, Snail Shell	N	Terminated at impassable cobbles at 70 cmbs.
41CM401	VM05	1	0-20	10YR 2/2	very dark brown	Clay Loam	>20%	Cobbles, Gravels, Pebbles, Snail Shell	Y	1: Flake (primary), Glass
		2	20-50	10YR 2/2	very dark brown	Clay Loam	>20%	Cobbles, Gravels, Pebbles, Snail Shell	N	-
		3	50-60	10YR 2/2	very dark brown	Clay Loam	>20%	Cobbles, Gravels, Pebbles	Y	1: Core, Core, Flake (secondary) Terminated at depth.
NA	VM06	1	0-30	10YR 2/2	very dark brown	Clay	1-5%	Cobbles, Pebbles	N	-
		2	30-40	10YR 3/1	very dark gray	Clay	1-5%	Gravels, Pebbles	N	Terminated at basal clay.
NA	VM07	1	0-30	10YR 2/2	very dark brown	Clay	1-5%	Cobbles, Pebbles	N	-
		2	30-40	10YR 3/1	very dark gray	Clay	1-5%	Gravels, Pebbles	N	Terminated at basal clay.
NA	VM08	1	0-70	10YR 5/6	yellowish brown	Sandy Loam	5-10%	Pebbles	N	-
		2	70-80	10YR 7/1	light gray	Sandy Clay	10-20%	Mottles, Pebbles	N	Terminated at depth.
IF13	VM09	1	0-55	10YR 5/3	brown	Sandy Clay	1-5%	Pebbles	Y	2: Flake (tertiary) [Flakes from 30-40 cmbs]
		2	55-60	10YR 5/3	brown	Sandy Loam	10-20%	Mottles, Pebbles	N	Terminated at basal clay.
NA	VM10	1	0-80	10YR 5/3	brown	Sandy Loam	1-5%	Pebbles	N	-
		2	80-85	10YR 5/3	brown	Sandy Clay	1-5%	Mottles, Pebbles	N	Terminated at basal clay.
NA	VM11	1	0-15	10YR 5/3	brown	Sandy Loam	1-5%	Pebbles	N	-
		2	15-65	10YR 5/3	brown	Sandy Clay Loam	1-5%	Pebbles	N	-
		3	65-80	10YR 7/1	light gray	Sandy Clay	10-20%	Mottles	N	Terminated at depth.
41GU200	VM12	1	0-55	10YR 3/2	very dark grayish brown	Sandy Loam	1-5%	Snail Shell	N	-
		2	55-100	10YR 5/4	yellowish brown	Sandy Clay Loam	1-5%	Pebbles, Snail Shell	N	Terminated at depth.
41GU200	VM13	1	0-20	10YR 3/3	dark brown	Sandy Loam	1-5%	Pebbles, Snail Shell	N	-
		2	20-95	10YR 5/3	brown	Sandy Clay Loam	1-5%	Pebbles, Snail Shell	N	-
		3	95-100	10YR 7/1	light gray	Sandy Clay Loam	1-5%	Pebbles	N	Terminated at depth.
41GU200	VM14	1	0-55	10YR 3/2	very dark grayish brown	Sandy Loam	1-5%	Snail Shell	N	-
		2	55-100	10YR 5/4	yellowish brown	Sandy Clay Loam	1-5%	Pebbles, Snail Shell	N	Terminated at depth.
NA	VM15	1	0-60	10YR 4/4	dark yellowish brown	Sandy Clay Loam	5-10%	Pebbles	N	-
		2	60-75	10YR 5/6	yellowish brown	Sandy Clay Loam	1-5%	Mottles, Pebbles	N	Terminated at basal clay.
NA	VM16	1	0-20	10YR 4/3	brown	Sandy Loam	1-5%	Pebbles	N	-
		2	20-100	10YR 6/4	light yellowish brown	Sandy Loam	1-5%	Pebbles	N	Terminated at depth.
NA	VM17	1	0-20	10YR 4/3	brown	Sandy Loam	1-5%	Pebbles	N	-
		2	20-100	10YR 6/4	light yellowish brown	Sandy Loam	1-5%	Pebbles	N	Terminated at depth.

Appendix B. Shovel Test Data

Site No.	Shovel Test No.	Level	Depth (cmbs)	Munsell Soil value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Positive (P) or Negative (N)	Comments/ Reason for Termination
NA	XAE01	1	0-20	7.5YR 2.5/2	very dark brown	Clay Loam	–	–	N	–
		2	20-50	7.5YR 3/4	dark brown	Sandy Loam	–	–	N	–
		3	50-80	7.5YR 5/4	brown	Sand	–	–	N	Terminated at dense roots.
NA	XAE02	1	0-50	5YR 4/6	yellowish red	Loamy Sand	1-5%	Gravels, Pebbles	N	–
		2	50-60	2.5YR 4/6	red	Sandy Clay	–	–	N	Terminated at compact soil.
NA	XAE03	1	0-30	7.5YR 4/4	brown	Loamy Sand	–	–	N	–
		2	30-50	7.5YR 5/6	strong brown	Sand	–	–	N	Terminated at compact soil.
NA	XAE04	1	0-50	5YR 4/6	yellowish red	Loamy Sand	1-5%	Gravels, Pebbles	N	–
		2	50-60	2.5YR 4/6	red	Sandy Clay	–	–	N	Terminated at compact soil.
41LE348	XBAD01	1	0-20	10YR 4/4	dark yellowish brown	Sand	–	–	Y	3: Flake (secondary), Flake (tertiary)
		2	20-40	10YR 4/4	dark yellowish brown	Sand	–	–	Y	2: Flake (tertiary)
		3	40-60	10YR 4/4	dark yellowish brown	Sand	–	–	Y	1: Flake (secondary), Flake (tertiary)
		4	60-80	10YR 4/4	dark yellowish brown	Sand	–	–	N	–
		5	80-100	10YR 4/4	dark yellowish brown	Sand	–	–	Y	1: Flake (secondary) Terminated at depth.
41LE348	XBAD02	1	0-20	10YR 4/4	dark yellowish brown	Sand	–	–	Y	1: Flake (tertiary)
		2	20-40	10YR 4/4	dark yellowish brown	Sand	–	–	N	–
		3	40-60	10YR 5/4	yellowish brown	Sand	–	–	N	–
		4	60-80	10YR 5/4	yellowish brown	Sand	–	–	Y	1: Flake (tertiary)
		5	80-90	5YR 5/4	reddish brown	Sandy Clay	–	–	N	Terminated at basal clay.
41LE348	XBAD03	1	0-60	10YR 4/4	dark yellowish brown	Sand	–	–	N	–
		2	60-70	10YR 4/4	dark yellowish brown	Sandy Clay	10-20%	Mottles	N	Terminated at basal clay.
41LE348	XBAD04	1	0-20	10YR 4/4	dark yellowish brown	Sand	–	–	N	–
		2	20-50	10YR 5/6	yellowish brown	Sand	>20%	Mottles	N	Terminated at hydric soils.
41LE348	XBAD05	1	0-40	10YR 4/4	dark yellowish brown	Sandy Clay	10-20%	Mottles	N	Terminated at basal clay.
NA	XBAD06	1	0-100	10YR 6/2	light brownish gray	Sand	–	–	N	Terminated at depth.
NA	XBAD07	1	0-100	10YR 5/8	yellowish brown	Sand	–	–	N	Terminated at depth.
41LE349	XBAD08	1	0-100	10YR 4/4	dark yellowish brown	Sand	–	–	N	Terminated at depth.
41LE349	XBAD09	1	0-100	10YR 4/4	dark yellowish brown	Sand	–	–	N	Terminated at depth.
41LE349	XBAD10	1	0-100	10YR 4/4	dark yellowish brown	Sand	–	–	N	Terminated at depth.
41LE349	XBAD11	1	0-100	10YR 4/4	dark yellowish brown	Sand	–	–	N	Terminated at depth.
41LE349	XBAD12	1	0-20	10YR 4/4	dark yellowish brown	Sand	1-5%	Pebbles	N	–
		2	20-40	10YR 4/4	dark yellowish brown	Sand	1-5%	Pebbles	Y	2: Flake (primary)
		3	40-60	10YR 4/4	dark yellowish brown	Sand	1-5%	Pebbles	N	–
		4	60-80	10YR 4/4	dark yellowish brown	Sand	1-5%	Pebbles	Y	2: Flake (tertiary)
		5	80-100	10YR 4/4	dark yellowish brown	Sand	1-5%	Pebbles	N	Terminated at depth.
41LE349	XBAD13	1	0-20	10YR 4/4	dark yellowish brown	Sand	–	–	N	–
		2	20-40	10YR 4/4	dark yellowish brown	Sand	–	–	Y	1: Flake (secondary), Flake (tertiary)
		3	40-60	10YR 4/4	dark yellowish brown	Sand	–	–	N	–
		4	60-80	10YR 4/4	dark yellowish brown	Sand	–	–	Y	1: Flake (tertiary)
		5	80-100	10YR 4/4	dark yellowish brown	Sand	–	–	N	Terminated at depth.
41LE349	XBAD14	1	0-90	10YR 3/6	dark yellowish brown	Sand	–	–	N	–
		2	90-100	10YR 3/6	dark yellowish brown	Sand	5-10%	Pebbles	N	Terminated at depth.
NA	XBAD15	1	0-40	10YR 5/3	brown	Sandy Clay	>20%	Mottles	N	Terminated at hydric soils.
NA	XBAD16	1	0-40	10YR 5/3	brown	Sandy Clay	>20%	Mottles	N	Terminated at hydric soils.
NA	XBAD17	1	0-30	10YR 3/1	very dark gray	Silty Clay	5-10%	Mottles	N	–
		2	30-65	7.5YR 4/4	brown	Sandy Clay	1-5%	Mottles	N	Terminated at compact soil.
NA	XBAD18	1	0-30	10YR 5/3	brown	Sandy Clay Loam	–	–	N	–
		2	30-50	5YR 4/4	reddish brown	Sandy Clay	–	–	N	Terminated at basal clay.
NA	XBAD19	1	0-30	10YR 4/2	dark grayish brown	Sandy Loam	1-5%	Sandstone pebbles	N	–
		2	30-40	10YR 5/4	yellowish brown	Sandy Loam	1-5%	Pebbles	N	–
		3	40+	5YR 4/4	reddish brown	Clay	–	–	N	Terminated at basal clay.
NA	XBAD20	1	0-30	10YR 4/2	dark grayish brown	Sandy Loam	1-5%	Sandstone pebbles	N	–
		2	30-40	10YR 5/4	yellowish brown	Sandy Loam	1-5%	Pebbles	N	–
		3	40+	5YR 4/4	reddish brown	Clay	–	–	N	Terminated at basal clay.
NA	XBAD21	1	0-30	10YR 4/2	dark grayish brown	Sandy Loam	1-5%	Sandstone pebbles	N	–
		2	30-80	10YR 5/4	yellowish brown	Sandy Loam	1-5%	Pebbles	N	–
		3	80+	5YR 4/4	reddish brown	Clay	–	–	N	Terminated at basal clay.

Appendix B. Shovel Test Data

Site No.	Shovel Test No.	Level	Depth (cmbs)	Munsell Soil value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Positive (P) or Negative (N)	Comments/ Reason for Termination
NA	XBAD22	1	0-20	10YR 4/2	dark grayish brown	Sandy Loam	–	–	N	–
		2	20+	5YR 5/2	reddish gray	Clay	–	–	N	Terminated at basal clay.
NA	XBAD23	1	0-65	10YR 4/4	dark yellowish brown	Sandy Clay	1-5%	Pebbles	N	–
		2	65-80	5YR 4/4	reddish brown	Sandy Clay	–	–	N	Terminated at basal clay.
NA	XBAD24	1	0-20	10YR 5/4	yellowish brown	Silty Clay	1-5%	Rootlets	N	–
		2	20-60	10YR 5/4	yellowish brown	Sandy Clay	10-20%	Mottles	N	Terminated at basal clay.
NA	XBAD25	1	0-50	10R 5/3	weak red	Sandy Clay	–	–	N	Terminated at basal clay.
NA	XDR01	1	0-50	10YR 5/4	yellowish brown	Silt Loam	–	–	N	Terminated at compact soil.
NA	XDR01	1	0-50	10YR 6/6	brownish yellow	Sandy Loam	1-5%	Pebbles	N	–
		2	50-100	10YR 7/1	light gray	Sandy Loam	1-5%	Pebbles, Manganese mottles	N	Terminated at depth.
NA	XDR02	1	0-30	10YR 5/4	yellowish brown	Sandy Loam	–	–	N	–
		2	30-40	5YR 5/8	yellowish red	Clay Loam	–	–	N	Terminated at basal clay.
NA	XDR02	1	0-10	7.5YR 5/4	brown	Sandy Clay Loam	–	–	N	–
		2	10-30	2.5YR 6/8	light red	Clay	–	–	N	Terminated at basal clay.
NA	XDR03	1	0-50	10YR 5/4	yellowish brown	Sandy Loam	–	–	N	–
		2	50-60	5YR 5/8	yellowish red	Clay Loam	–	–	N	Terminated at basal clay.
NA	XDR03	1	0-40	7.5YR 5/4	brown	Sandy Clay Loam	–	–	N	–
		2	40-50	2.5YR 6/8	light red	Clay	–	–	N	Terminated at basal clay.
NA	XDR04	1	0-65	10YR 5/4	yellowish brown	Silt Loam	–	–	N	Terminated at compact soil.
NA	XDR04	1	0-40	7.5YR 5/4	brown	Sandy Clay Loam	–	–	N	–
		2	40-50	2.5YR 6/8	light red	Clay	–	–	N	Terminated at basal clay.
41LE348	XMC01	1	0-25	10YR 6/3	pale brown	Sandy Loam	>20%	Clay subsoil nodules	N	–
		2	25-30	5YR 5/3	reddish brown	Sandy Clay	–	–	N	Terminated at basal clay.
41LE348	XMC02	1	0-20	10YR 5/3	brown	Sand	1-5%	Gravels	Y	2: Flake (tertiary)
		2	20-40	10YR 5/3	brown	Sand	1-5%	Gravels	Y	2: Flake (secondary), Flake (tertiary)
		3	40-60	10YR 5/3	brown	Sand	1-5%	Gravels	N	–
		4	60+	5YR 4/2	dark reddish gray	Sandy Clay	–	–	N	Terminated at basal clay.
41LE348	XMC03	1	0-30	10YR 4/1	dark gray	Sand	5-10%	Redox staining	N	Terminated at water table.
41LE348	XMC04	1	0-20	10YR 5/4	yellowish brown	Sand	>20%	Pebbles	Y	6: Flake (tertiary) [Likely disturbed by existing water line]
		2	20-40	10YR 5/4	yellowish brown	Sand	>20%	Pebbles	Y	4: Flake (secondary), Flake (tertiary) [Likely disturbed by existing water line]
		3	40-60	10YR 5/4	yellowish brown	Sand	5-10%	Pebbles	Y	2: Flake (tertiary) [Likely disturbed by existing water line]
		4	60-100	10YR 5/4	yellowish brown	Sand	5-10%	Pebbles	N	Terminated at depth.
41LE348	XMC05	1	0-20	7.5YR 5/4	brown	Sand	1-5%	Pebbles	N	–
		2	20-40	7.5YR 5/4	brown	Sand	1-5%	Pebbles	Y	1: Flake (tertiary)
		3	40-80	10YR 5/2	grayish brown	Sand	1-5%	Organics (decayed root)	N	Terminated at water table.
NA	XMC06	1	0-60	7.5YR 5/4	brown	Sand	10-20%	Clay subsoil nodules	N	Terminated at basal clay.
NA	XMC07	1	0-100	7.5YR 6/6	reddish yellow	Sand	10-20%	Recent organics	N	Terminated at depth.
NA	XMC08	1	0-40	7.5YR 5/6	strong brown	Sand	–	–	N	–
		2	40-60	7.5YR 5/6	strong brown	Sand	–	–	Y	1: Flake (tertiary)
		3	60-80	7.5YR 5/6	strong brown	Sand	–	–	Y	1: Flake (tertiary)
		4	80-100	7.5YR 5/6	strong brown	Sand	–	–	N	Terminated at depth.
41LE349	XMC09	1	0-40	7.5YR 5/6	strong brown	Sand	–	–	N	–
		2	40-60	7.5YR 5/6	strong brown	Sand	–	–	Y	2: Flake (tertiary)
		3	60-100	7.5YR 5/6	strong brown	Sand	–	–	N	Terminated at depth.
41LE349	XMC10	1	0-100	7.5YR 5/6	strong brown	Sand	5-10%	Pebbles	N	Terminated at depth.
41LE349	XMC11	1	0-40	7.5YR 5/6	strong brown	Sand	–	–	N	–
		2	40-60	7.5YR 5/6	strong brown	Sand	–	–	Y	1: Flake (tertiary)
		3	60-80	7.5YR 5/6	strong brown	Sand	–	–	Y	1: Other Prehistoric Terminated at depth.
41LE349	XMC12	1	0-90	7.5YR 5/6	strong brown	Sand	–	–	N	–
		2	90-100	7.5YR 5/6	strong brown	Sand	–	–	Y	1: Flake (primary) Terminated at depth.
41LE349	XMC13	1	0-20	5YR 4/4	reddish brown	Sandy Clay	–	–	N	Terminated at basal clay.
NA	XMC14	1	0-30	10YR 4/2	dark grayish brown	Clay	10-20%	Redox staining	N	Terminated at hydric clay.
NA	XMC15	1	0-30	10YR 4/2	dark grayish brown	Clay	10-20%	Redox staining	N	Terminated at hydric clay.
NA	XMC16	1	0-30	10YR 4/2	dark grayish brown	Clay	10-20%	Redox staining	N	Terminated at hydric clay.
NA	XMC17	1	0-30	10YR 4/2	dark grayish brown	Clay	10-20%	Redox staining	N	Terminated at hydric clay.
NA	XMC18	1	0-50	10YR 7/3	very pale brown	Sandy Loam	10-20%	Clay subsoil	N	–
		2	50+	7.5YR 6/4	light brown	Sandy Clay	–	–	N	Terminated at basal clay.
NA	XMC19	1	0-50	10YR 7/3	very pale brown	Sandy Loam	10-20%	Clay subsoil	N	–
		2	50+	7.5YR 6/4	light brown	Sandy Clay	–	–	N	Terminated at basal clay.
NA	XMC20	1	0-50	10YR 7/3	very pale brown	Sandy Loam	10-20%	Clay subsoil	N	–
		2	50+	7.5YR 6/4	light brown	Sandy Clay	–	–	N	Terminated at basal clay.
NA	XMC21	1	0-40	7.5YR 4/3	brown	Clay Loam	>20%	Mottles	N	Terminated at basal clay.
NA	XMC22	1	0-40	7.5YR 4/3	brown	Clay Loam	>20%	Mottles	N	Terminated at basal clay.
NA	XTN01	1	0-15	5YR 4/6	yellowish red	Clay Loam	5-10%	Mottles	N	Terminated at basal clay.
NA	XTN02	1	0-50	7.5YR 4/4	brown	Sandy Loam	5-10%	Mottles	N	–
		2	50-60	7.5YR 4/6	strong brown	Sandy Clay Loam	>20%	Gravels, Mottles	N	Terminated at basal clay.
NA	XTN03	1	0-10	10YR 4/4	dark yellowish brown	Sandy Loam	–	–	N	–
		2	10-35	7.5YR 4/4	brown	Sandy Loam	>20%	Cobbles, Mottles	N	Terminated at large sandstone cobbles at base.
41BP920	YBAD01	1	0-30	10YR 5/6	yellowish brown	Sandy Clay Loam	–	–	Y	1: Core, Flake (secondary), Flake (tertiary)
		2	30-35	10YR 5/8	yellowish brown	Clay Loam	–	–	N	Terminated at basal clay.
41BP920	YBAD02	1	0-30	10YR 5/6	yellowish brown	Sandy Clay Loam	–	–	Y	3: Flake (tertiary), Other Prehistoric
		2	30-40	10YR 6/8	brownish yellow	Clay Loam	–	–	N	Terminated at basal clay.

Appendix B. Shovel Test Data

Site No.	Shovel Test No.	Level	Depth (cmbs)	Munsell Soil value	Munsell Soil Color	Soil Texture	Inclusion Percentage	Inclusion Type	Positive (P) or Negative (N)	Comments/ Reason for Termination
41BP920	YBAD03	1	0-30	10YR 5/6	yellowish brown	Clay Loam	–	–	Y	6: Biface, Flake (secondary), Flake (tertiary), Other Prehistoric
		2	30-40	10YR 6/8	brownish yellow	Clay Loam	–	–	N	Terminated at basal clay.

APPENDIX C. AUGER PROBE, BACKHOE TRENCH, AND COLUMN SAMPLE DATA

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Site No.	Auger Probe Number	Level	Depth	Munsell Value	Munsell Description	Soil Texture	Inclusion (%)	Inclusion Type	Cultural Material (P/N)	Comments
NA	ATJFA01	1	0-200	7.5YR 6/4	light brown	Sandy Clay Loam	1-5%	Pebbles	N	Terminated at depth.
NA	ATJFA02	1	0-110	10YR 3/2	very dark grayish brown	Silty Clay Loam	1-5%	Snail Shell	N	-
		2	110-150	10YR 4/2	dark grayish brown	Silty Clay Loam	1-5%	Snail Shell	N	-
		3	150-200	10YR 6/4	light yellowish brown	Sandy Clay Loam	1-5%	Snail Shell	N	Terminated at depth.
NA	ATJFA03	1	0-110	10YR 3/2	very dark grayish brown	Silty Clay Loam	1-5%	Snail Shell	N	-
		2	110-150	10YR 4/2	dark grayish brown	Silty Clay Loam	1-5%	Snail Shell	N	-
		3	150-200	10YR 6/4	light yellowish brown	Sandy Clay Loam	1-5%	Snail Shell	N	Terminated at depth.
NA	ATJFA04	1	0-110	10YR 3/2	very dark grayish brown	Silty Clay Loam	1-5%	Snail Shell	N	-
		2	110-150	10YR 4/2	dark grayish brown	Silty Clay Loam	1-5%	Snail Shell	N	-
		3	150-200	10YR 6/4	light yellowish brown	Sandy Clay Loam	1-5%	Snail Shell	N	Terminated at depth.
NA	ATJFA05	1	0-110	10YR 3/2	very dark grayish brown	Silty Clay Loam	1-5%	Snail Shell	N	-
		2	110-150	10YR 4/2	dark grayish brown	Silty Clay Loam	1-5%	Snail Shell	N	-
		3	150-200	10YR 6/4	light yellowish brown	Sandy Clay Loam	1-5%	Snail Shell	N	Terminated at depth.
NA	ATJIS01	1	0-200	10YR 7/4	very pale brown	Sand	1-5%	Snail Shell	N	Terminated at depth.
NA	ATJIS02	1	0-5	10YR 4/3	brown	Sandy Loam	1-5%	Snail Shell	N	-
		2	5-50	10YR 3/2	very dark grayish brown	Sandy Clay Loam	-	-	N	-
		3	50-110	10YR 4/3	brown	Sandy Loam	-	-	N	-
		4	110-210	10YR 6/4	light yellowish brown	Sand	1-5%	Gravels	N	Terminated at depth.
41GU200	ATJIS03	1	0-55	10YR 2/2	very dark brown	Silt Loam	-	-	N	-
		2	55-110	10YR 5/3	brown	Sandy Loam	-	-	N	-
		3	110-210	10R 7/4	pale red	Sand	1-5%	Pebbles, Snail Shell	Y	1: Flake (tertiary) [One tertiary flake approximately 180-190 cmbs] Terminated at depth.
NA	ATJIS04	1	0-45	10YR 4/2	dark grayish brown	Silt Loam	-	-	N	-
		2	45-210	10YR 6/4	light yellowish brown	Loamy Sand	1-5%	Pebbles, Snail Shell	N	Terminated at depth.
NA	ATJIS05	1	0-90	10YR 4/2	dark grayish brown	Clay Loam	1-5%	Snail Shell	N	Terminated at impenetrable river cobbles.
41GU200	ATJIS06	1	0-30	10YR 4/3	brown	Silt Loam	-	-	N	-
		2	30-50	10YR 5/3	brown	Sandy Loam	-	-	N	-
		3	50-210	10YR 6/4	light yellowish brown	Sand	1-5%	Pebbles	Y	1: Flake (tertiary) [One tertiary flake observed approximately 60 cmbs] Terminated at depth.
NA	ATMCC01	1	0-70	10YR 4/3	brown	Sandy Loam	1-5%	Snail Shell	N	-
		2	70-180	10YR 6/4	light yellowish brown	Sandy Clay Loam	5-10%	Snail Shell	N	-
		3	180-200	10YR 6/4	light yellowish brown	Sandy Clay	5-10%	Snail Shell	N	Terminated at depth.
41GU200	ATMCC02	1	0-80	10YR 4/2	dark grayish brown	Silt Loam	1-5%	Snail Shell	N	-
		2	80-200	10YR 6/4	light yellowish brown	Sandy Clay Loam	1-5%	Snail Shell	N	Terminated at depth.
NA	ATMCC03	1	0-70	10YR 4/3	brown	Sandy Loam	1-5%	Snail Shell	N	-
		2	70-180	10YR 6/4	light yellowish brown	Sandy Clay Loam	5-10%	Snail Shell	N	-
		3	180-200	10YR 6/4	light yellowish brown	Sandy Clay	5-10%	Snail Shell	N	Terminated at depth.
NA	ATMFV01	1	0-60	10YR 4/3	brown	Sandy Loam	1-5%	Snail Shell	N	-
		2	60-205	10YR 6/4	light yellowish brown	Sandy Loam	1-5%	Snail Shell	N	Terminated at depth.
NA	ATMFV02	1	0-100	10YR 4/2	dark grayish brown	Silt Loam	1-5%	Calcium Carbonate, Snail Shell	N	-
		2	100-200	10YR 6/4	light yellowish brown	Silt Loam	1-5%	Calcium Carbonate	N	Terminated at depth.
41GU200	ATMFV03	1	0-80	10YR 2/2	very dark brown	Silt Loam	1-5%	Snail Shell, Common roots and rootlets	N	-
		2	80-100	10YR 3/3	dark brown	Silt Loam	1-5%	Snail Shell, Common roots and rootlets	N	-
		3	100-200	10YR 6/6	brownish yellow	Silt Loam	1-5%	Snail Shell, Common roots and rootlets	N	Terminated at depth.
41GU200	ATMFV04	1	0-60	2.5YR 4/3	reddish brown	Silt Loam	5-10%	Snail Shell, Common roots and worms	Y	1: Flake (tertiary) [Flake at 30 cmbs]
		2	60-200	2.5YR 7/6	light red	Silt Loam	1-5%	Snail Shell, Roots	N	Terminated at depth.
NA	ATMFV05	1	0-80	2.5YR 4/3	reddish brown	Silt Loam	1-5%	Rootlets	N	-
		2	80-200	2.5YR 7/6	light red	Silt Loam	1-5%	Rootlets	N	Terminated at depth.
NA	ATVM01	1	0-60	10YR 4/3	brown	Sandy Loam	1-5%	Snail Shell	N	-
		2	60-180	10YR 6/4	light yellowish brown	Silt	1-5%	Snail Shell	N	-
		3	180-210	10YR 6/4	light yellowish brown	Silty Clay Loam	1-5%	Snail Shell	N	Terminated at depth.
41GU200	ATVM02	1	0-60	10YR 4/3	brown	Silty Clay Loam	1-5%	Snail Shell	Y	2: Flake (tertiary) [2 tertiary flakes documented between 30-40 cmbs (see photos)]
		2	60-210	10YR 7/4	very pale brown	Sandy Clay Loam	1-5%	Snail Shell	N	Terminated at depth.
NA	ATVM03	1	0-60	10YR 7/4	brown	Sandy Loam	1-5%	Snail Shell	N	-
		2	60-180	10YR 6/4	light yellowish brown	Silt	1-5%	Snail Shell	N	-
		3	180-210	10YR 6/4	light yellowish brown	Silty Clay Loam	1-5%	Snail Shell	N	Terminated at depth.
NA	ATVM04	1	0-80	10YR 4/3	brown	Silty Clay Loam	1-5%	Snail Shell	N	-
		2	80-200	10YR 7/4	very pale brown	Silty Clay Loam	1-5%	Snail Shell	N	Terminated at depth.
NA	AU01	1	0-20	10YR 4/4	dark yellowish brown	Loam	-	-	N	-
		2	20-55	10YR 6/4	light yellowish brown	Sandy Clay Loam	-	-	N	-
		3	55-80	10YR 4/3	brown	Silt Loam	-	-	N	-
		4	80-120	10YR 5/4	yellowish brown	Silty Clay Loam	-	-	N	-
		5	120-170	10YR 5/6	yellowish brown	Silty Clay Loam	-	-	N	-
		6	170-200	10YR 5/2	grayish brown	Clay Loam	-	-	N	Terminated at depth.

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NA	AU02	1	0-20	10YR 4/4	dark yellowish brown	Loam	—	—	N	—
		2	20-65	10YR 6/4	light yellowish brown	Sandy Clay Loam	—	—	N	—
		3	65-85	10YR 4/3	brown	Silt Loam	—	—	N	—
		4	85-100	10YR 5/4	yellowish brown	Silty Clay Loam	—	—	N	—
		5	100-140	10YR 5/6	yellowish brown	Silty Clay Loam	—	—	N	—
		6	140-200	10YR 5/2	grayish brown	Clay Loam	—	—	N	Terminated at depth.
NA	AU03	1	0-120	10YR 5/4	yellowish brown	Silty Clay	1-5%	Manganese mottles	N	—
		2	120-200	10YR 3/4	dark yellowish brown	Silty Clay	—	—	N	Terminated at depth.
NA	AU04	1	0-130	10YR 5/4	yellowish brown	Silty Clay Loam	—	—	N	—
		2	130-200	10YR 4/4	dark yellowish brown	Clay Loam	—	—	N	Terminated at depth.
41BP961	AU05	1	0-140	10YR 5/2	grayish brown	Clay Loam	—	—	N	—
		2	140-170	10YR 5/6	yellowish brown	Clay Loam	10-20%	Calcium Carbonate, Gravels, Pebbles, Iron concretions	N	Terminated at depth.
41BP961	AU06	1	0-40	10YR 5/2	grayish brown	Clay Loam	—	—	N	—
		2	40-110	10YR 5/6	yellowish brown	Clay Loam	10-20%	Calcium Carbonate, Gravels, Pebbles, Iron concretions	N	Terminated at depth.
41BP961	AU07	1	0-140	10YR 5/2	grayish brown	Clay Loam	—	—	N	—
		2	140-160	10YR 5/6	yellowish brown	Clay Loam	10-20%	Calcium Carbonate, Gravels, Pebbles, Iron concretions	N	Terminated at depth.
41BP961	AU08	1	0-40	10YR 4/4	dark yellowish brown	Silt Loam	—	—	N	—
		2	40-120	10YR 5/6	yellowish brown	Silt Loam	—	—	N	—
		3	120-170	10YR 6/4	light yellowish brown	Sandy Loam	1-5%	Calcium Carbonate, White fungus or calcium	N	—
		4	170-200	10YR 6/3	pale brown	Silty Clay Loam	1-5%	Calcium Carbonate	N	Terminated at depth.
41BP960	AU09	1	0-30	10YR 4/4	dark yellowish brown	Silt Loam	—	—	N	—
		2	30-160	10YR 5/6	yellowish brown	Silt Loam	—	—	N	—
		3	160-170	10YR 6/4	light yellowish brown	Sandy Loam	1-5%	Calcium Carbonate, White fungus or calcium	N	—
		4	170-200	10YR 6/3	pale brown	Silty Clay Loam	1-5%	Calcium Carbonate	N	Terminated at depth.
41BP960	AU10	1	0-65	10YR 4/4	dark yellowish brown	Silt Loam	—	—	N	—
		2	65-150	10YR 6/4	light yellowish brown	Silt Loam	—	—	N	—
		3	165-200	10YR 3/4	dark yellowish brown	Silty Clay	—	—	N	Terminated at depth.
41BP960	AU11	1	0-40	10YR 4/4	dark yellowish brown	Silt Loam	—	—	N	—
		2	40-180	10YR 6/4	light yellowish brown	Silt Loam	—	—	N	—
		3	180-200	10YR 3/4	dark yellowish brown	Silty Clay	—	—	N	Terminated at depth.
41BP960	AU12	1	0-40	10YR 4/4	dark yellowish brown	Silt Loam	—	—	N	—
		2	40-150	10YR 5/6	yellowish brown	Silt Loam	—	—	N	—
		3	150-200	10YR 6/4	light yellowish brown	Sandy Loam	1-5%	Calcium Carbonate, White fungus or calcium	N	Terminated at depth.
41BP960	AU13	1	0-40	10YR 4/4	dark yellowish brown	Loam	—	—	N	—
		2	0-150	10YR 5/4	yellowish brown	Silty Clay Loam	—	—	N	—
		3	150-200	10YR 6/4	light yellowish brown	Silty Clay Loam	1-5%	Calcium Carbonate	N	Terminated at depth.
41BP960	AU14	1	0-80	10YR 4/2	dark grayish brown	Clay Loam	—	—	N	—
		2	80-120	10YR 4/1	dark gray	Clay Loam	1-5%	Snail Shell	P	1: Ceramic (prehistoric) [Positive for shell tempered pottery where, burnished on outside at 90-100cms]
		3	120-180	10YR 5/2	grayish brown	Silt Loam	1-5%	Calcium Carbonate	N	Terminated at depth.
41BP960	AU15	1	0-30	10YR 4/3	brown	Clay Loam	—	—	N	—
		2	30-80	10YR 5/2	grayish brown	Clay Loam	—	—	N	—
		3	80-120	10YR 4/2	dark grayish brown	Clay Loam	1-5%	Snail Shell	P	1: Ceramic (prehistoric)
		4	120-180	10YR 5/4	yellowish brown	Silt Loam	1-5%	Calcium Carbonate	N	Terminated at depth.
41BP960	AU16	1	30	10YR 4/1	dark gray	Clay Loam	1-5%	Roots	N	—
		2	30-80	10YR 5/2	grayish brown	Clay Loam	1-5%	None	N	—
		3	80-120	10YR 4/1	dark gray	Clay Loam	1-5%	None	N	—
		4	120-165	10YR 5/3	brown	Silty Clay Loam	1-5%	Calcium Carbonate	N	Terminated at depth.
41BP960	AU17	1	0-30	10YR 4/2	dark grayish brown	Clay Loam	—	—	N	—
		2	30-120	10YR 5/2	grayish brown	Clay Loam	—	—	N	—
		3	120-150	10YR 5/3	brown	Silty Clay Loam	1-5%	Calcium Carbonate	N	Terminated at depth.

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NA	AU18	1	0-30	10YR 4/2	dark grayish brown	Clay Loam	–	–	N	–
		2	30-100	10YR 5/2	grayish brown	Clay Loam	–	–	N	–
		3	100-140	10YR 4/1	dark gray	Clay Loam	–	–	N	–
		4	140-160	10YR 5/3	brown	Silty Clay Loam	1-5%	Calcium Carbonate	N	Terminated at depth.
NA	AU19	1	0-30	10YR 4/2	dark grayish brown	Clay Loam	–	–	N	–
		2	30-160	10YR 5/2	grayish brown	Clay Loam	–	–	N	–
		3	160-190	10YR 4/1	dark gray	Clay Loam	–	–	N	–
		4	190-200	10YR 5/3	brown	Silty Clay Loam	1-5%	Calcium Carbonate	N	Terminated at depth.
NA	AU20	1	0-50	10YR 4/2	dark grayish brown	Clay Loam	–	–	N	–
		2	50-110	10YR 5/3	brown	Clay	1-5%	Calcium Carbonate, Mottles	N	–
		3	110-120	10YR 5/3	brown	Clay	1-5%	Calcium Carbonate	N	Terminated at depth.
NA	AU21	1	0-40	10YR 4/2	dark grayish brown	Clay Loam	–	–	N	–
		2	40-70	10YR 5/2	grayish brown	Clay Loam	–	–	N	–
		3	70-100	10YR 4/1	dark gray	Clay Loam	–	–	N	–
		4	100-150	10YR 5/3	brown	Silty Clay Loam	1-5%	Calcium Carbonate	N	Terminated at depth.
NA	AU22	1	0-150	10YR 4/1	dark gray	Clay	1-5%	Calcium Carbonate	N	–
		2	150-170	10YR 4/2	dark grayish brown	Clay	1-5%	Calcium Carbonate	N	Terminated at depth.
NA	AU23	1	0-40	10YR 4/2	dark grayish brown	Clay Loam	–	–	N	–
		2	40-100	10YR 5/2	grayish brown	Clay Loam	–	–	N	–
		3	100-140	10YR 4/1	dark gray	Clay Loam	–	–	N	–
		4	140-180	10YR 5/3	brown	Silty Clay Loam	1-5%	Calcium Carbonate	N	Terminated at depth.
NA	AU24	1	0-60	10YR 4/2	dark grayish brown	Clay Loam	–	–	N	–
		2	60-120	10YR 5/2	grayish brown	Clay Loam	–	–	N	–
		3	120-150	10YR 4/1	dark gray	Clay Loam	–	–	N	–
		4	150-170	10YR 5/3	brown	Silty Clay Loam	1-5%	Calcium Carbonate	N	Terminated at depth.
NA	AU25	1	0-85	10YR 4/2	dark grayish brown	Clay Loam	–	–	N	–
		2	85-140	10YR 5/2	grayish brown	Clay Loam	–	–	N	–
		3	140-170	10YR 4/1	dark gray	Clay Loam	–	–	N	–
		4	170-180	10YR 5/3	brown	Silty Clay Loam	1-5%	Calcium Carbonate	N	Terminated at depth.
NA	AU26	1	0-60	10YR 4/2	dark grayish brown	Clay Loam	–	–	N	–
		2	60-100	10YR 5/2	grayish brown	Clay Loam	–	–	N	–
		3	100-110	10YR 4/1	dark gray	Clay Loam	–	–	N	–
		4	110-140	10YR 5/3	brown	Silty Clay Loam	1-5%	Calcium Carbonate	N	Terminated at depth.
NA	AU27	1	0-40	10YR 4/2	dark grayish brown	Silty Clay	–	–	N	–
		2	40-90	10YR 5/2	grayish brown	Silty Clay Loam	–	–	N	–
		3	90-120	10YR 5/3	brown	Silt Loam	1-5%	Calcium Carbonate	N	Terminated at depth.
NA	AU28	1	0-50	10YR 4/2	dark grayish brown	Silty Clay	–	–	N	–
		2	50-90	10YR 5/2	grayish brown	Silty Clay Loam	–	–	N	–
		3	90-110	10YR 5/3	brown	Silt Loam	–	–	N	–
		4	110-140	10YR 6/3	pale brown	Silt Loam	1-5%	Calcium Carbonate	N	Terminated at depth.
NA	AU29	1	0-40	10YR 4/2	dark grayish brown	Silty Clay	–	–	N	–
		2	40-90	10YR 5/2	grayish brown	Silty Clay Loam	–	–	N	–
		3	90-120	10YR 5/3	brown	Silt Loam	–	–	N	–
		4	120-140	10YR 6/3	pale brown	Silt Loam	1-5%	Calcium Carbonate	N	Terminated at depth.
NA	AU30	1	0-40	10YR 4/2	dark grayish brown	Silty Clay	–	–	N	–
		2	40-100	10YR 5/2	grayish brown	Silty Clay Loam	–	–	N	–
		2	100-120	10YR 5/2	grayish brown	Silty Clay Loam	–	–	N	–
		4	120-140	10YR 6/3	pale brown	Silt Loam	1-5%	Calcium Carbonate	N	Terminated at depth.
NA	AU31	1	0-50	10YR 4/2	dark grayish brown	Silty Clay	–	–	N	–
		2	50-90	10YR 5/2	grayish brown	Silty Clay Loam	–	–	N	–
		3	90-110	10YR 5/3	brown	Silt Loam	–	–	N	–
		4	110-140	10YR 6/3	pale brown	Silt Loam	1-5%	Calcium Carbonate	N	Terminated at depth.
NA	AU32	1	0-40	10YR 4/2	dark grayish brown	Silty Clay	–	–	N	–
		2	40-110	10YR 5/2	grayish brown	Silty Clay Loam	–	–	N	–
		3	110-160	10YR 5/2	grayish brown	Silty Clay Loam	1-5%	Calcium Carbonate	N	Terminated at depth.
41BP960	AU33	1	0-35	10YR 4/2	dark grayish brown	Silty Clay	–	–	N	–
		2	35-110	10YR 5/2	grayish brown	Silty Clay Loam	–	–	N	–
		3	110-200	10YR 5/3	brown	Silt Loam	1-5%	Calcium Carbonate	N	Terminated at depth.

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41BP960	AU34	1	0-35	10YR 4/2	dark grayish brown	Silty Clay	—	—	N	—
		2	35-120	10YR 5/2	grayish brown	Silty Clay Loam	—	—	N	—
		3	120-150	10YR 5/3	brown	Silt Loam	1-5%	Calcium Carbonate	N	—
		4	150-200	10YR 4/1	dark gray	Silty Clay Loam	5-10%	Calcium Carbonate	N	Terminated at depth.
41BP961	AU35	1	0-40	10YR 4/2	dark grayish brown	Silty Clay	—	—	N	—
		2	40-90	10YR 5/2	grayish brown	Silty Clay Loam	—	—	N	—
		3	90-120	10YR 4/1	dark gray	Silty Clay Loam	—	—	P	1: Other Prehistoric [FCC found at 110cms]
		4	120-160	10YR 5/3	brown	Silt Loam	1-5%	Calcium Carbonate	N	Terminated at depth.
41BP961	AU36	1	0-40	10YR 4/2	dark grayish brown	Silty Clay	—	—	N	—
		2	40-90	10YR 5/2	grayish brown	Silty Clay Loam	—	—	N	—
		3	90-165	10YR 5/3	brown	Silty Clay Loam	1-5%	Calcium Carbonate	N	Terminated at depth.
41BP961	AU37	1	0-60	10YR 4/1	dark gray	Silty Clay	—	—	N	—
		2	40-90	10YR 5/2	grayish brown	Silty Clay Loam	—	—	N	—
		3	90-140	10YR 4/1	dark gray	Silty Clay	—	—	N	—
		4	140-180	10YR 4/1	dark gray	Silty Clay	1-5%	Calcium Carbonate	P	1: Flake (tertiary) at 160-170 cmbs
		5	180-200	10YR 5/3	brown	Silty Clay Loam	5-10%	Calcium Carbonate	N	Terminated at depth.
41BP961	AU38	1	0-50	10YR 4/2	dark grayish brown	Silty Clay	—	—	P	1: Flake (secondary)
		2	50-100	10YR 5/2	grayish brown	Silty Clay Loam	—	—	N	—
		3	100-150	10YR 5/3	brown	Silty Clay Loam	5-10%	Calcium Carbonate	N	Terminated at depth.
41BP961	AU39	1	0-40	10YR 4/1	dark gray	Silty Clay	—	—	N	—
		2	40-100	10YR 5/2	grayish brown	Silty Clay Loam	—	—	N	—
		3	100-140	10YR 4/1	dark gray	Loam	—	—	N	—
		4	140-200	10YR 5/3	brown	Silt Loam	—	—	N	Terminated at depth.
NA	AU40	1	0-50	10YR 4/2	dark grayish brown	Silty Clay	—	—	N	—
		2	50-100	10YR 5/2	grayish brown	Silty Clay Loam	—	—	N	—
		3	100-160	10YR 4/1	dark gray	Silty Clay	—	—	N	—
		4	160-200	10YR 5/2	grayish brown	Silty Clay Loam	1-5%	Calcium Carbonate	N	Terminated at depth.
NA	AU41	1	0-15	10YR 4/2	dark grayish brown	Silty Clay Loam	—	—	N	—
		2	15-100	10YR 6/3	pale brown	Sandy Loam	—	—	N	—
		3	100-150	10YR 4/1	dark gray	Sandy Clay Loam	—	—	N	—
		4	140-200	10YR 5/3	brown	Sandy Clay Loam	—	—	N	Terminated at depth.
NA	AU42	1	0-15	10YR 4/1	dark gray	Silty Clay Loam	—	—	N	—
		2	15-190	10YR 6/4	light yellowish brown	Sandy Clay Loam	—	—	N	—
		3	190-200	10YR 5/3	strong brown	Sandy Clay	—	—	N	Terminated at depth.
NA	AUG DR01	1	0-40	10YR 4/4	dark yellowish brown	Sandy Clay Loam	5-10%	Gravels, Pebbles	N	Terminated at bedrock.
NA	AUG DR02	1	0-30	10YR 3/4	dark yellowish brown	Silty Clay Loam	1-5%	Pebbles	N	—
		2	30-110	10YR 2/2	very dark brown	Clay Loam	1-5%	Gravels, Pebbles	N	Terminated at bedrock or compact gravels.
NA	AUG DR03	1	0-50	10YR 3/2	very dark grayish brown	Silty Clay Loam	1-5%	Pebbles	N	—
		2	50-90	10YR 4/1	dark gray	Silty Clay	1-5%	Gravels, Pebbles	N	—
		3	90-110	10YR 5/2	grayish brown	Sandy Clay Loam	5-10%	Calcium Carbonate, Gravels	N	Terminated at bedrock or dense gravels.
NA	AUG DR04	1	0-60	10YR 4/4	dark yellowish brown	Sandy Clay Loam	5-10%	Gravels, Pebbles	N	—
		2	60-70	10YR 2/2	very dark brown	Clay Loam	1-5%	Gravels, Pebbles	N	Terminated at bedrock or dense cobbles.
NA	AUG DR05	1	0-67	10YR 5/1	gray	Silty Clay Loam	1-5%	Gravels, Pebbles	N	Terminated at bedrock or dense cobbles.
NA	AUG DR06	1	0-50	10YR 5/2	grayish brown	Sandy Loam	10-20%	Snail Shell, Decaying wood	N	—
		2	50-80	10YR 4/2	dark grayish brown	Sandy Clay Loam	1-5%	Mottles, Decaying wood	N	Terminated at compact soil.
NA	AUG DR07a	1	0-90	10YR 5/1	gray	Silty Clay	1-5%	Cobbles, Pebbles	N	—
		2	90-110	10YR 5/1	gray	Clay	1-5%	Calcium Carbonate, Gravels, Pebbles	N	Terminated at compact soil.
NA	AUG DR07b	1	0-75	10YR 5/2	grayish brown	Silty Clay Loam	1-5%	Pebbles	N	—
		2	75-90	10YR 5/3	brown	Silty Clay	1-5%	Pebbles	N	—
		3	90-115	10YR 7/3	very pale brown	Silty Clay	1-5%	Pebbles	N	—
		4	115-150	10YR 6/1	gray	Silt	—	—	N	Terminated at depth.
NA	AUG DR08	1	0-80	10YR 4/4	dark yellowish brown	Silty Clay Loam	—	—	N	—
		2	80-110	10YR 5/3	brown	Silty Clay Loam	1-5%	Pebbles	N	—
		3	110-230	10YR 7/3	very pale brown	Silt Loam	1-5%	Calcium Carbonate, Pebbles	N	—
		4	230-240	10YR 5/1	gray	Silty Clay Loam	—	—	N	Terminated at depth.
NA	AUG DR09	1	0-150	10YR 5/2	grayish brown	Silty Clay	1-5%	Pebbles	N	Terminated at depth.
NA	AUG DR10	1	50-115	10YR 3/2	very dark grayish brown	Silty Clay Loam	>20%	Calcium Carbonate, Gravels, Pebbles	N	Terminated at compact soil.

Appendix C

Auger Probe Data

Site No.	Auger Probe Number	Level	Depth	Munsell Value	Munsell Description	Soil Texture	Inclusion (%)	Inclusion Type	Cultural Material (P/N)	Comments
NA	CSMC01	1	0-81	10YR 3/1	very dark gray	Clay	1-5%	Snail Shell	N	-
		2	81-180	10YR 5/4	yellowish brown	Clay Loam	10-20%	Calcium Carbonate, Snail Shell	N	-
		3	180-200	7.5YR 4/6	strong brown	Clay Loam	10-20%	Calcium Carbonate, Snail Shell	N	Terminated at depth.
NA	CSMC02	1	0-110	10YR 3/1	very dark gray	Clay	1-5%	Snail Shell	N	-
		2	110-160	10YR 5/4	yellowish brown	Clay Loam	10-20%	Calcium Carbonate, Snail Shell	N	-
		3	160-200	7.5YR 4/6	strong brown	Clay Loam	10-20%	Calcium Carbonate, Snail Shell	N	Terminated at depth.
NA	CSMC03	1	0-51	10YR 3/1	very dark gray	Clay	1-5%	Snail Shell	N	-
		2	51-110	10YR 5/4	yellowish brown	Clay Loam	10-20%	Calcium Carbonate, Snail Shell	N	-
		3	110-200	7.5YR 4/6	strong brown	Clay Loam	10-20%	Calcium Carbonate, Snail Shell	N	Terminated at depth.
NA	CSMC04	1	0-95	10YR 3/1	very dark gray	Clay	1-5%	Calcium Carbonate	N	-
		2	95-110	10YR 5/4	yellowish brown	Clay Loam	>20%	Gravels	N	Terminated at bedrock.
NA	CSMC05	1	0-53	10YR 3/2	very dark grayish brown	Clay Loam	1-5%	Snail Shell	N	-
		2	53-133	7.5YR 4/6	strong brown	Clay Loam	10-20%	Calcium Carbonate, Snail Shell	N	-
		3	133-200	7.5YR 6/6	reddish yellow	Clay Loam	10-20%	Calcium Carbonate, Gravels, Snail Shell	N	Terminated at depth.
NA	CSMC06	1	0-53	10YR 3/2	very dark grayish brown	Clay Loam	1-5%	Snail Shell	N	-
		2	53-167	7.5YR 4/6	strong brown	Clay Loam	10-20%	Calcium Carbonate, Snail Shell	N	-
		3	167-179	7.5YR 5/6	strong brown	Clay Loam	10-20%	Calcium Carbonate, Snail Shell	N	Terminated at bedrock.
NA	CSMC07	1	0-100	10YR 3/2	very dark grayish brown	Clay	5-10%	Snail Shell	N	-
		2	100-155	10YR 4/2	dark grayish brown	Clay Loam	10-20%	Calcium Carbonate	N	-
		3	155-200	7.5YR 4/4	brown	Clay	10-20%	Calcium Carbonate	N	Terminated at depth.
NA	CSMC08	1	0-77	10YR 3/2	very dark grayish brown	Clay	5-10%	Snail Shell	N	-
		2	77-155	10YR 4/2	dark grayish brown	Clay Loam	10-20%	Calcium Carbonate	N	-
		3	155-200	10YR 3/2	very dark grayish brown	Clay	5-10%	Snail Shell	N	Terminated at depth.
NA	CSMC09	1	0-140	10YR 3/2	very dark grayish brown	Loam	5-10%	Snail Shell	N	-
		2	140-175	10YR 4/2	dark grayish brown	Clay Loam	5-10%	Snail Shell	N	-
		3	175-200	7.5YR 4/4	brown	Clay	-	-	N	Terminated at depth.
NA	CSMC10	1	0-140	2.5Y 3/2	very dark grayish brown	Clay	5-10%	Calcium Carbonate	N	-
		2	140-200	10YR 5/4	yellowish brown	Clay Loam	10-20%	Calcium Carbonate, Snail Shell	N	Terminated at depth.
NA	CSMC11	1	0-20	2.5Y 3/2	very dark grayish brown	Clay Loam	>20%	Roots	N	Terminated at impassable roots.
NA	CSMR01	1	0-61	10YR 6/2	light brownish gray	Clay Loam	-	-	N	-
		2	61-98	10YR 6/2	light brownish gray	Silty Clay Loam	-	-	N	Terminated at root.
NA	CSMR02	1	0-64	10YR 4/2	dark grayish brown	Clay Loam	-	-	N	-
		2	64-200	10YR 6/2	light brownish gray	Silty Clay Loam	-	-	N	Terminated at depth.
NA	CSMR03	1	0-64	10YR 4/2	dark grayish brown	Clay Loam	-	-	N	-
		2	64-200	10YR 6/2	light brownish gray	Silty Clay Loam	-	-	N	Terminated at depth.
NA	CSMR04	1	0-61	10YR 6/2	light brownish gray	Clay Loam	-	-	N	-
		2	61-98	10YR 6/2	light brownish gray	Silty Clay Loam	-	-	N	Terminated at root.
NA	CSMR05	1	0-200	10YR 4/6	dark yellowish brown	Clay Loam	-	-	N	Terminated at depth.
NA	CSMR06	1	0-200	10YR 4/6	dark yellowish brown	Clay Loam	-	-	N	Terminated at depth.
NA	CSMR07	1	0-200	10YR 4/6	dark yellowish brown	Clay Loam	-	-	N	Terminated at depth.
NA	CSMR08	1	0-200	10YR 4/6	dark yellowish brown	Clay Loam	-	-	N	Terminated at depth.

BHT	County	Parcel	Depth (cmbs)	Munsell*	Soil Color*	Soil Texture	Consistency	Structure Type	Grade	Inclusions	Lower Boundary	Comment
GU01- Guadalupe River	Guadalupe	50341	0-58	10YR3/2	very dark grayish brown	silt loam	Friable	Subangular Blocky to Angular Blocky	Weak to moderate	roots-rootlets 15-20%, few snail shell (Heliodiscus), 30% pin holes, 5% worm burrows, 5% snail fragments	Gradual and Smooth	Root zone 0-9cmbs
			58-99	10YR4/3	brown	Loam	Friable	Subangular Blocky	Weak to moderate	5-10% rootlets, 30% pin holes, 5% worm burrows, 1% snail fragments	Gradual and Smooth	Transitional
			99-183	10YR5/4	yellowish brown	Silt Loam	Friable	Subangular Blocky	Moderate	3-5% rootlets, 30% pin holes, 5% worm burrows, 10% snail - Rabdotus, 1% snail fragments	Clear and smooth	
			183-326	10YR5/6 to 10YR6/6	yellowish brown to brownish yellow	Clay loam	Friable	Angular Blocky	Moderate	1% rootlets, 5-10% pin holes, 1% white filament (1mm), 20-30% snail - heliodiscus and rabdotus, 10% snail fragments	Unobserved	CaCo3 filaments increase with depth 3-4mm (5%) ~280cmbs, clay content increases with depth
GU02- Guadalupe River	Guadalupe	50341	0-41	10YR3/2	very dark grayish brown	silt loam	Friable	Subangular Blocky to Angular Blocky	Weak to moderate	roots-rootlets 15-20%, few snail shell (Heliodiscus), 30% pin holes, 5% worm burrows, 5% snail fragments	Gradual and Smooth	Root zone 0-9cmbs
			41-93	10YR4/3	brown	Loam	Friable	Subangular Blocky	Weak to moderate	5-10% rootlets, 30% pin holes, 5% worm burrows, 1% snail fragments	Gradual to clear and slightly wavy	Transitional
			93-196	10YR5/4	yellowish brown	Silt Loam	Friable	Subangular Blocky	Moderate	3-5% rootlets, 30% pin holes, 5% worm burrows, 10% snail - Rabdotus, 1% snail fragments, pockets of snail - rabdotus, indeterminate burrow - 6mm - 1%	Clear and smooth	
			196-306	10YR5/6 to 10YR6/6	yellowish brown to brownish yellow	Clay loam	Friable	Angular Blocky	Moderate	1% rootlets, 3% pin holes, 1% white filament (1cm), 20-30% snail - heliodiscus and rabdotus, 10% snail fragments, large insect burrows	Unobserved	CaCo3 filaments increase with depth 3-4mm (5%) ~280cmbs, clay content increases with depth
GU03- Guadalupe River	Guadalupe	50341	0-34	10YR3/2	very dark grayish brown	silt loam	Friable	Subangular Blocky to Angular Blocky	Weak to moderate	roots-rootlets 15-20%, few snail shell (Heliodiscus), 30% pin holes, 5% worm burrows, 5% snail fragments, couple of rare subangular gravels in root zone	Gradual and Smooth	Root zone 0-8cmbs
			34-74	10YR4/3	brown	Loam	Friable	Subangular Blocky	Weak to moderate	5-10% rootlets, 30% pin holes, 5% worm burrows, 1% snail fragments	Gradual to clear and slightly wavy	Transitional
			74-133	10YR5/4	yellowish brown	Silt Loam	Friable	Subangular Blocky	Moderate	3-5% rootlets, 30% pin holes, 2-3% worm burrows, 10% snail - Rabdotus, 1% snail fragments, pockets of snail - rabdotus, indeterminate burrow - 6mm - 1%, white filament -1mm- 15%	Clear and smooth	Subrounded gravel - 80-90cmbs
			133-311	10YR5/6 to 10YR6/6	yellowish brown to brownish yellow	Clay loam	Friable	Angular Blocky	Moderate	1% rootlets, 3% pin holes, 1% white filament (1cm), 20-30% snail - heliodiscus and rabdotus, 10% snail fragments, large insect burrows	Unobserved	CaCo3 filaments increase with depth 3-4mm (5%) ~280cmbs, clay content increases with depth, subrounded gravel at 170 cmbs
GU04- Guadalupe River	Guadalupe	50335	0-63	10YR3/2	very dark grayish brown	silty clay loam	Firm	Subangular Blocky to Angular Blocky	Weak to moderate	roots-rootlets 30%, few snail shell (Heliodiscus), 30% pin holes, 5% worm burrows, 3-5% snail fragments, couple of rare subangular gravels in root zone	Gradual and Smooth	Root zone 0-13cmbs
			63-164	10YR4/3	brown	silty clay loam	Firm	Subangular Blocky	Weak to moderate	10% rootlets, 20% pin holes, 3% worm burrows, snail - small rabdotus 1%, 30% snail fragments	Gradual to clear and slightly wavy	Transitional
			164-197	10YR5/4	yellowish brown	Silt Loam	Firm	Subangular Blocky	Moderate	3-5% rootlets, 30% pin holes, 2-3% worm burrows, 10% snail - Rabdotus, 1% snail fragments, pockets of snail - rabdotus, indeterminate burrow - 6mm - 1%, white filament -2mm- 5%	Clear and smooth	Subrounded gravel - 80-90cmbs
			197-253	10YR6/6	brownish yellow	Clay loam	Firm to Friable	Angular Blocky	Moderate	1% rootlets, 3% pin holes, 1% white filament (1cm), 20-30% snail - heliodiscus and rabdotus, 10% snail fragments, large insect burrows	Unobserved	CaCo3 filaments increase with depth 3-4mm (5%) ~280cmbs, clay content increases with depth, more clay content than previous trenches
GU05- Guadalupe River	Guadalupe	50335	0-51	10YR3/2	very dark grayish brown	silty clay loam	Firm	Subangular Blocky to Angular Blocky	Weak to moderate	roots-rootlets 30%, few snail shell (Heliodiscus), 40% pin holes, 5% worm burrows, 15% snail fragments, couple of rare subangular gravels in root zone, insect burrows 10%, contains strat II matrix	Gradual and Smooth	Root zone 0-13cmbs
			51-83	10YR4/3	brown	silty clay loam	Firm	Subangular Blocky	Weak to moderate	10% rootlets, 20-30% pin holes, 10-15% worm burrows, snail - small rabdotus 1%, 30% snail fragments, insect burrows 10%, contains strat III matrix	Gradual to clear and slightly wavy	Transitional
			83-212	10YR5/4	yellowish brown	Silt Loam	Firm	Subangular Blocky	Moderate	3-5% rootlets, 30% pin holes, 2-3% worm burrows, 10% snail - Rabdotus, 1% snail fragments, pockets of snail - rabdotus, indeterminate burrow - 6mm - 1%, white filament -2mm- 5%	Clear and smooth	Subrounded gravel - 80-90cmbs
			212-306	10YR6/6	brownish yellow	Clay loam	Firm to Friable	Angular Blocky	Moderate	1% rootlets, 3% pin holes, 1% white filament (1cm), 20-30% snail - heliodiscus and rabdotus, 10% snail fragments, large insect burrows	Unobserved	CaCo3 filaments increase with depth 3-4mm (5%) ~280cmbs, clay content increases with depth, more clay content than previous trenches
GU06- Guadalupe River	Guadalupe	50335	0-66	10YR4/3	brown	silt loam	Friable	Subangular Blocky to Angular Blocky	Weak to moderate	roots-rootlets 20%, few snail shell (rabdotus) 15%, 20% pin holes, 5% worm burrows, 15% snail fragments, couple of rare subangular gravels in root zone, insect burrows 10%, contains strat II matrix	Gradual and Smooth	Root zone 0-14cmbs, soil matrix is vertically laminated
			66-162	10YR5/6	yellowish brown	silt loam	Friable	Subangular Blocky	weak to moderate	20% rootlets, 20% pin holes, 10-15% worm burrows, snail - rabdotus 5-10%, 15% snail fragments, insect burrows 10%, contains strat III matrix, white filaments 1mm 1%	Gradual and smooth	
			162-181	10YR5/5 to 10YR5/8	yellowish brown	Silt Loam	Friable	Subangular Blocky	Weak	5-10% rootlets, 15% pin holes, 2-3% worm burrows, 15% small snail - Rabdotus, 5% snail fragments, pockets of snail - rabdotus, indeterminate burrow - 6mm - 1%, white filament - 1mm- 1%	Gradual and Smooth	may have some heliodiscus snail (couldn't verify)
			181-305	10YR6/6	brownish yellow	Clay loam	Friable	Subangular Blocky	Moderate	1% rootlets, 3% pin holes, 2-3% white filament (3-5mm), 20-30% snail - heliodiscus and rabdotus, 10% snail fragments, large insect burrows	Unobserved	Very similar to above but more clay content and more white filament

BHT	County	Parcel	Depth (cmbs)	Munsell*	Soil Color*	Soil Texture	Consistency	Structure Type	Grade	Inclusions	Lower Boundary	Comment
BHT01 (Colorado)	Bastrop	30345	0-76	10YR 4/3	brown	Sandy clay loam	Loose	Subangular Blocky	Moderate	rootlets (20%) at 0-8 cmbs and (2%) at 8-76 cmbs, pinhole burrows (1%), snail (1% heliodiscus), roots (1%), mussel shell (1%)	Abrupt and wavy	Root zone 0-8 cmbs
			76-83	10YR 4/6	dark yellowish brown	Sand	Loose	Granular	Weak	rootlets (1%), pebbles (2% <1 cm)	Abrupt and broken	Flood deposit, coarse grained sand, does not continue across the profile.
			83-92	10YR 4/3	brown	Sandy clay	Loose to Friable	Subangular Blocky	Moderate	rootlets (1%)	Clear and smooth	Couplet with strat IV
			92-111	7.5YR 4/4	brown	Sandy loam	Loose	Structureless to Subangular Blocky	Weak	-	Clear and smooth	-
			111-200	10YR 6/4	light yellowish brown	Sand	Loose	Structureless	N/A	rootlets (1%), Large insect burrows (1cm).	Unobserved	Observed only from above after 134 cmbs.
			200-260	10YR 6/6	brownish yellow	Sand	Loose	Granular	Weak	rootlets present	Unobserved	Large river cobbles and pebbles. Sand is coarse-grained. Cobbles are subrounded to subangular and reach sizes over 10 cm.
			260-290+	7.5YR 5/6	strong brown	Sand	Loose	Granular	Weak	rootlets present	Unobserved	Slight clay content
BHT02 (Colorado)	Bastrop	30345	0-9	10YR 3/3 to 10YR 3/4	dark brown to dark yellowish brown	Silt loam	Friable	Subangular Blocky	Weak	roots and rootlets (20%), insect burrows (3%), and snail fragments (<1%)	Clear and smooth	Root zone and plow zone
			9-69	10YR 3/3 to 10YR 3/4	dark brown to dark yellowish brown	Silt loam	Friable	Subangular Blocky	Weak	roots and rootlets (5-10%), snail fragments (<1%), pinhole insect burrows (3%)	Gradual and smooth	Apparent tree trunk cast ~40 cm diameter ; slight clay content
			69-94	10YR 4/3	brown	Sandy loam (fine-grained sand)	Friable	Subangular Blocky	Weak	rootlets (4%), pinhole insect burrows (10%)	Clear and irregular	Very similar to strat II. Tree cast with decomposing veg at 86-96 cmbs.
			94-126	7.5YR 6/4	light brown	Sand (fine)	Loose	Granular	Weak	rootlets (4%), insect burrows (4%) and root burrows present	Clear to diffuse and irregular	Tree cast present.
			126-148	7.5YR 4/3	brown	Sandy loam	Friable	Subangular Blocky	Weak	rootlets (1%), snail shell fragments (1%)	Unobserved	
			148-230	7.5YR 5/4	brown	Sand (fine)	Loose	Structureless	N/A	-		Observed only from above after 148 cmbs.
			230-278+	7.5YR 6/4	light brown	Sand (medium)	-	-	-	-		Rare, subangular pebbles
BHT03 (Colorado)	Bastrop	30345	0-11	10YR 3/3	dark brown	Silty loam	Friable	Subangular Blocky	Weak	rootlets (20%), roots (2%), worm burrows (3%)	Clear and smooth	Root zone
			11-86	10YR 5/4 to 10YR 5/6	yellowish brown	Silty clay loam	Friable	Subangular Blocky	Weak	rootlets (5%), worm burrows (10%), insect burrows (5%)	Abrupt and wavy to irregular	Scapula #1 at 42 to 46 cmbs (collected), scapula #2 at 38 to 42 cmbs (collected); roots seem
			86-127	10YR 5/4	yellowish brown	Sand (fine)	Loose to Friable	Granular	Weak	rootlets (1%), insect burrows filled with matrix from strat II (5%)	Abrupt and sloping	Microbands throughout 1-2 mm-discontinuous.
			127-134	10YR 6/4	light yellowish brown	clay	Friable	Subangular Blocky	Weak	rootlets (1%),	Abrupt and sloping	Clay band, fine matrix, top of couplet. Thicker at the lowest and thins as layer rises. Channel
			134-210	10YR 6/4 to 10YR 7/4	light yellowish brown to very pale brown	Sand (medium)	Loose	Granular	Weak	micro bands 2-4 mm, sloping, 10YR5/8 (8 to 20 cm in section). Similar to strat IV above.	Unobserved	Bottom of couplet. Observed from above after 158 cmbs.
			210-250+	7.5YR 5/4	brown	Sand	Loose	Structureless	-	-	Unobserved	-
BHT04 (Colorado)	Bastrop	30345	0-13	10YR 4/2 to 10YR 3/2	dark grayish brown to brown	Silty clay loam	Friable	Subangular Blocky	Weak	roots and rootlets (20%), insect and worm burrows (10%)	Clear and smooth	Root zone
			13-29	10YR 4/2 to 10YR 4/3	dark grayish brown to brown	Clay loam (high clay content)	Friable	Subangular Blocky	Weak	rootlets (5%), insect and worm burrows (15%)	Clear and smooth	Similar to strat I
			29-146	10YR 4/3	brown	Silty clay loam	Friable	Subangular Blocky	Moderate	slickensides (subtle, 5%, 1-2 cm), rootlets (2%) insect and worm burrows (10%)	Clear and smooth	-
			146-230	7.5YR 5/4	brown	Silty clay loam	Friable	Subangular Blocky	Weak	rootlets (10%), pinhole insect burrows (10%)	Unobserved	Observed from above after 154 cmbs
			230-297+	10YR 6/4	yellowish brown	Sand (powder)	Loose	Granular	Weak	-	Unobserved	-
BHT05 (Colorado)	Bastrop	30345	0-9	10YR 3/3	dark brown	Silty clay loam	Loose	Subangular Blocky	Moderate	rootlets (20%), worm burrows (2%), snail frags (1% heliodiscus)	Clear and smooth	Root layer
			9-36	10YR 3/3	dark brown	Silty clay loam	Loose	Subangular Blocky	Weak	rootlets (1%), worm burrows (2%), pinhole insect burrows (1%)	Clear and smooth	Higher clay content than horizon above
			36-72	10YR 4/3	brown	Silt loam	Loose	Subangular Blocky	Weak	pinhole insect burrows (1%), snail fragments (<1%), mussel fragments (<1%)	Clear and smooth	Slight clay content
			72-225	10YR 5/4	yellowish brown	Silt loam	Loose	Subangular Blocky	Weak	pinhole insect burrows (<1%)	Unobserved	Similar to strat IV in BHT 4; slight clay content
			225-273+	10YR 6/4	light yellowish brown	Sand (fine)	Loose	Granular	Weak	-	Unobserved	Same as strat V in BHT 4.
BHT06 (Colorado)	Bastrop	30345	0-9	10YR 3/3	dark brown	Silty clay loam	Loose	Subangular Blocky	Moderate	rootlets (20%), worm burrows (2%), snail frags (1% heliodiscus)	Clear and smooth	Root layer. Same as BHT 05 level I
			9-29	10YR 3/3	dark brown	Silty clay loam	Loose	Subangular Blocky	Weak	rootlets (1%), worm burrows (2%), pinhole insect burrows (1%)	Clear and smooth	Same as BHT 05 level II; higher clay content than above
			29-71	10YR 4/3	brown	Silt loam	Loose	Subangular Blocky	Weak	pinhole insect burrows (1%), snail fragments (<1%), mussel fragments (<1%) Heliodiscus and Raddotus. Cervid remains.	Clear and smooth	Same as BHT 05 level III; slight clay content
			71-94	10YR 5/4	yellowish brown	Silt loam	Loose	Subangular Blocky	Weak	pinhole insect burrows (<1%)	Clear	Same as BHT 05 level IV; slight clay content
			94-150+	10YR 5/4 to 6/4	yellowish brown to light yellowish brown	Silty clay loam	Friable	Subangular Blocky	Weak	-	Unobserved	-

BHT	County	Parcel	Depth (cmbs)	Munsell*	Soil Color*	Soil Texture	Consistency	Structure Type	Grade	Inclusions	Lower Boundary	Comment
BHT07 (Colorado)	Bastrop	30345	0-13	10YR 3/3	dark brown	Silty clay loam	Friable	Subangular Blocky to Platy	Weak	roots and rootlets (10%), worm burrows (10%)	Abrupt and smooth	North section compressed looking
			13-36	10YR 4/3	brown	Clay loam	Friable	Subangular Blocky	Weak	rootlets (5%), worm burrows (20%), very subtle slickensides (5%, 1 mm), insect galleries common	Gradual and smooth	-
			36-96	10YR 4/3 to 10YR 4/4	brown to dark yellowish brown	Clay loam	Friable	Subangular Blocky	Moderate	insect burrows (2%), worm burrows (5%), rootlets (5%), subtle slickensides (5%, 2-4 mm)	Clear and sloping (southward)	One whiteware sherd at 82 cmbs (collected). Becomes more clayey with depth.
			96-121+	10YR 5/4	yellowish brown	Silt loam	Friable	Angular Blocky	Weak to moderate	rootlets (2%), rabdotus (3%), snail fragments (5%)	Unobserved	-
BHT08 (Colorado)	Bastrop	30345	0-19	7.5YR 3/2	dark brown	Clay loam	Friable	Subangular Blocky	Moderate	roots and rootlets (20%), insect and worm burrows (5%)	Gradual and wavy	Root layer
			19-65	10YR 3/2	very dark grayish brown	Clay loam	Firm	Subangular Blocky	Strong	roots and rootlets (5%), insect and worm burrows (2%), snail fragments (1%)	Gradual and smooth	-
			65-88	7.5YR 4/2	brown	Clay loam	Firm	Angular Blocky to Subangular Blocky	Moderate	roots and rootlets (2%), calcium carbonate filaments (10%)	Clear and wavy	-
			88-116	7.5YR 4/3	brown	Silty clay loam	Friable to Firm	Subangular Blocky	Moderate to Strong	roots and rootlets (5%), and calcium carbonate filaments (10%)	Gradual and smooth	-
			116-237	5YR 4/4	reddish brown	Clay loam	Friable to Firm	Granular to Subangular Blocky	Moderate	calcium carbonate filaments (12%), rootlets (5%), insect and worm burrows (1%)	Unobserved	Observed from above after 162 cmbs
			237-280+	7.5YR 4/6	strong brown	Silty clay loam	Friable	Subangular Blocky	Moderate	calcium carbonate filaments (30%), rootlets (2%), pinhole insect burrows (15%), Heliodiscus snail (1-2%)	Unobserved	-
BHT09 (Colorado)	Bastrop	30345	0-22	10YR 3/3	dark brown	Sandy clay loam (fine)	Friable	Subangular Blocky	Moderate	Friable, subangular blocky, medium size and moderate grade; rootlets (20%), worm burrows (10%), snail fragments (2%)	Clear and smooth	-
			22-63	10YR 3/2	very dark gray brown	Sandy clay loam (fine)	Friable to Firm	Subangular Blocky	Moderate	rootlets (1%), worm and insect burrows (1%), snail fragments (1%)	Gradual and slightly wavy to smooth	-
			63-108	7.5YR 4/3 to 7.5YR 4/4	brown	Silty clay loam	Friable	Subangular Blocky	Moderate	worm and insect burrows (1-5%), snail shell (1% rabdotus and heliodiscus), calcium carbonate filaments (2-4%)	Gradual to diffuse and smooth	-
			108-230	5YR 4/4	reddish brown	Silty clay loam	Friable	Subangular Blocky	Moderate	insect and worm burrows (1%), rootlets (1%), calcium carbonate filaments (2-4% slightly smaller than level above).	Unobserved	Observed from above after 140 cmbs
			230-304+	5YR 4/4	reddish brown	Clay loam	Firm	Angular Blocky	Moderate	insect and worm burrows (2%), calcium carbonate filaments (15-20%).	Unobserved	-
BHT10 (Colorado)	Bastrop	30345	0-14	10YR 3/2 to 10YR 3/3	very dark grayish brown to dark brown	Sandy clay loam (fine)	Friable	Subangular Blocky	Weak to Moderate	roots and rootlets (15-20%), insect and worm burrows (20%), snail fragments (3%)	Clear and smooth	Trench is very similar to BHT 9. Root layer
			14-64	10YR 3/2	very dark grayish brown	Sandy clay loam (fine)	Friable	Subangular Blocky to Angular Blocky	Moderate	rootlets (10%), pinhole insect burrows (10%), snail fragments (1% heliodiscus), calcium carbonate (5%)	Gradual and smooth	-
			64-102	7.5YR 3/3 to 7.5YR 4/3	dark brown to brown	Silty clay loam	Friable	Angular Blocky	Moderate	pinhole insect burrows (15%), snail shell (1% rabdotus), calcium carbonate filaments (20%)	Clear and smooth	-
			102-140+	7.5YR 4/4 to 7.5YR 5/4	brown	Silty clay loam	Friable	Angular Blocky to Subangular Blocky	Moderate	pinhole insect burrows (5-10%), and calcium carbonate filaments (20%)	Unobserved	-
BHT11 (Colorado)	Bastrop	30345	0-17	10YR 4/2 to 10YR 4/3	dark grayish brown to brown	Loam	Loose to Friable	Crumb to Subangular Blocky	Weak	roots and rootlets (20%), worm burrows (15%), snail fragments (5%)	Clear and smooth	Root zone (not quite plow zone, but disturbed layer). slight clay content
			17-123	10YR 4/3	brown	Clay loam	Friable	Angular Blocky	Moderate	roots and rootlets (10%), snail fragments (3-5%), rabdotus, insect burrows (3%), white filaments (3%).	Clear and smooth	-
			123-200	10YR 4/3 to 10YR 5/3	brown	Clay loam	Friable	Angular Blocky	Weak to Moderate	pinhole insect burrows (5%), snail shell (5-10%, rabdotus and heliodiscus), snail fragments (10%), rare white filaments (1%)	Unobserved	Observed from above after 160 cmbs
			200-280+	10YR 5/4 to 10YR 5/6	yellowish brown	Clay loam	Friable	Subangular Blocky	Moderate	calcium carbonate (3%), snail (1%, rabdotus), pinhole insect burrows (20%)	Unobserved	-
BHT12 (Colorado)	Bastrop	30345	0-51	10YR 4/3	brown	Clay loam	Friable	Angular Blocky to Subangular Blocky	Moderate	roots and rootlets (10%), pinhole insect burrows (1%), snail shell (1%, rabdotus), snail fragments (3%)	Clear and smooth	Root layer from 0 to 9 cmbs
			51-84	10YR 3/2	very dark grayish brown	Clay loam	Friable to Firm	Subangular Blocky	Moderate	rootlets (1%), fine white filaments (5%), pinhole insect burrows (1%), snail fragments (1%).	Clear and smooth	Higher clay content than level 1.
			84-140+	10YR 3/3	dark brown	Clay loam	Firm	Subangular Blocky	Moderate to Strong	fine white filaments (2%), snail shell (1%, rabdotus)	Unobserved	-
BHT13 (Colorado)	Bastrop	30345	0-26	10YR 2/2	Very dark brown	Clay loam	Friable to Firm	Crumb to Subangular Blocky	Weak	roots and rootlets (20%), worm burrows (3%), snail fragments (5%), pinhole insect burrow (5%), slickensides (4%, 2-4 mm subtle).	Clear and smooth	Plow zone (disturbed) with localized platy zones.
			26-56	10YR 3/3 to 10YR 3/4	dark brown to dark yellowish brown	Clay loam	Friable to Firm	Angular Blocky	Moderate	rootlets (3%), worm burrows (3%), snail fragments (3%, heliodiscus).	Clear and smooth	-
			56-119	7.5YR 4/4 to 7.5YR 4/6	brown to strong brown	Clay loam	Firm	Angular Blocky	Moderate	rootlets (1%), snail fragments (3-4%), snail (1%, heliodiscus), vertical cracks (2%, 22cm), slickensides (5%, 0.5 to 1 cm subtle).	Clear and smooth	-
			119-144+	7.5YR 5/3	brown	Clay	Extremely Firm	Massive	N/A	snail fragments (<1%), pinhole insect burrows (<1%), rootlets (<1%).	Unobserved	-

BHT	County	Parcel	Depth (cmbs)	Munsell*	Soil Color*	Soil Texture	Consistency	Structure Type	Grade	Inclusions	Lower Boundary	Comment
BHT14 (Colorado)	Bastrop	30345	0-24	5YR 4/6	yellowish red	Sandy clay loam	Loose	Granular	Weak	roots and rootlets (5%), cobbles (10%), gravels (30%), pebbles (40%).	Abrupt and irregular to wavy	Fill layer (matrix supported) with sub-rounded gravels, pebbles, and cobbles.
			24-44	5YR 4/2 to 5YR 4/3	dark reddish gray to reddish brown	Clay loam	Firm	Subangular Blocky to Angular Blocky	Weak to Moderate	rootlets (5%), snail fragments (3%), pinhole insect burrows (10%), fine pebbles (5%, in small pockets).	Clear and smooth	South end of the profile is thicker than the north end with variable thickness in between. Possibly truncated.
			44-76	7.5YR 4/3	brown	Clay loam	Friable	Subangular Blocky	Weak	rootlets (1%), snail fragments (1-2%), slickensides (10%, <1mm and subtle).	Gradual and smooth	-
			76-111	7.5YR 4/4 to 7.5YR 4/6	brown to strong brown	Sandy clay loam	Friable to Firm	Angular Blocky	Moderate	rootlets (1%), insect burrows (3%), snail fragments (1-2%), slickensides (10%, 1-2 mm and subtle).	Gradual and smooth	Increasing clay content with depth
			111-135+	7.5YR 5/6	strong brown	Clay loam (high clay content)	Firm	Angular Blocky	Moderate	rootlets (1%), white filaments (5%), small nodules (10% 8mm possibly calcium carbonate).	Unobserved	Nodules are similar to an irregular shaped pebble.
BHT15 (Colorado)	Bastrop	30345	0-22	5YR 4/6	yellowish red	Sandy clay loam	Loose	Granular	Weak	roots and rootlets (5%), cobbles (10%), gravels (30%), pebbles (40%).	Abrupt and irregular to wavy	Trench is similar to BHT 14. Fill layer (matrix supported) with sub rounded gravels, pebbles, and
			22-29	5YR 4/2 to 5YR 4/3	dark reddish gray to reddish brown	Clay loam	Firm	Subangular Blocky to Angular Blocky	Weak to Moderate	rootlets (5%), snail fragments (3%), pinhole insect burrows (10%), fine pebbles (5%, in small pockets).	Clear and smooth	South end of the profile is thicker than the north end with variable thickness in between. Possibly truncated.
			29-66	7.5YR 4/3	brown	Clay loam	Friable	Subangular Blocky	Weak	rootlets (5%), snail shell (<1%, Rabdotus), slickensides (10%, 2-3mm and subtle), worm burrows (3%).	Gradual and smooth	-
			66-127	7.5YR 4/4 to 7.5YR 4/6	brown to strong brown	Sandy clay loam	Friable to Firm	Angular Blocky	Moderate	rootlets (1%), insect burrows (3%), snail fragments (1-2%), slickensides (10%, 1-2 mm and subtle).	Gradual and smooth	Increasing clay content with depth
			127-158+	7.5YR 5/6	strong brown	Clay loam (high clay content)	Firm	Angular Blocky	Moderate	rootlets (1%), white filaments (5%), small nodules (1% 2mm possibly calcium carbonate).	Unobserved	Nodules are similar to an irregular shaped pebble.
BHT16 (Colorado)	Bastrop	30345	0-33	5YR 4/6	yellowish red	Sandy clay loam	Loose	Granular	Weak	roots and rootlets (5%), cobbles (10%), gravels (30%), pebbles (40%).	Abrupt and sloping to the east	Trench is similar to BHT 14. Fill layer (matrix supported) with sub rounded gravels, pebbles, and
			33-44	5YR 4/2 to 5YR 4/3	dark reddish gray to reddish brown	Clay loam	Firm	Subangular Blocky to Angular Blocky	Weak to Moderate	rootlets (5%), snail fragments (3%), pinhole insect burrows (10%), fine pebbles (5%, in small pockets).	Clear and smooth	Truncated
			44-74	7.5YR 4/3	brown	Clay loam	Friable	Subangular Blocky	Weak	rootlets (1%), snail fragments (1-2%), slickensides (10%, <1mm and subtle), Mottles similar to level I (3%), vertical cracks (1%, ~15cm).	Gradual and smooth	-
			74-139+	7.5YR 4/4 to 7.5YR 4/6	brown to strong brown	Sandy clay loam	Friable to Firm	Angular Blocky	Moderate	rootlets (1%), insect burrows (3%), snail fragments (3%), slickensides (10%, 1-2 mm and subtle), mottles same as level V (20%).	Gradual and smooth	Increasing clay content with depth. Mottles are possibly caused by insect burrows.
			139-181+	7.5YR 5/6	strong brown	Clay loam (high clay content)	Firm	Angular Blocky	Moderate	rootlets (1%), white filaments (5%), small nodules (5%, 0.5-1cm, possibly calcium carbonate).	Unobserved	Nodules are similar to an irregular shaped pebble. Sample of nodules was collected.
BHT17 (Colorado)	Bastrop	30345	0-22	5YR 4/6	yellowish red	Sandy clay loam	Loose	Granular	Weak	roots and rootlets (5%), cobbles (10%), gravels (30%), pebbles (40%).	Abrupt and irregular to wavy	Trench is similar to BHT 14. However, BHT 14, level II is not present. Fill layer (matrix supported) with sub-rounded gravels, pebbles, and cobbles.
			22-45	7.5YR 4/3	brown	Clay loam	Friable	Subangular Blocky	Weak	rootlets (1%), snail fragments (1-2%), slickensides (10%, <1mm and subtle).	Gradual and smooth	-
			45-104	7.5YR 4/4 to 7.5YR 4/6	brown to strong brown	Sandy clay loam	Friable to Firm	Angular Blocky	Moderate	rootlets (1%), insect burrows (3%), snail fragments (1-2%), slickensides (10%, 1-2 mm and subtle).	Gradual and smooth	Increasing clay content with depth
			104-113+	7.5YR 5/6	strong brown	Clay loam (high clay content)	Firm	Angular Blocky	Moderate	snail fragments (<1%), rootlets (1%), white filaments (5%), pebbles (1%, subangular, up to 1cm).	Unobserved	-
BHT18 (Colorado)	Bastrop	30345	0-34	5YR 4/6	yellowish red	Sandy clay loam	Loose	Granular	Weak	roots and rootlets (5%), cobbles (10%), gravels (30%), pebbles (40%).	Abrupt and irregular to wavy	Fill layer (matrix supported) with sub-rounded gravels, pebbles, and cobbles.
			34-128	10YR 3/1	very dark gray	Clay loam (high clay content)	Firm	Angular Blocky to Massive	Moderate	small sand grains (1%), subtle slickensides (15-20%, 1-3cm), subrounded pebbles (1%), snail fragments (5%), vertical cracks (3%, 15-20cm), pinhole insect burrows (3%), rootlets (1%).	Clear and smooth	-
			128-151+	10YR 3/1 to 10YR 2/1	very dark gray to black	Clay	Extremely Firm	Massive	N/A	calcium carbonate nodules (5%, 3-5mm), prominent slickensides (20%), large sand grains (5%).	Unobserved	No observed vertical cracks, though their presence should be expected.
BHT19 (Colorado)	Bastrop	30345	0-22	7.5YR 4/3	brown	Sandy loam	Friable	Crumb to Subangular Blocky	Weak	roots and rootlets (20%), pinhole insect burrows (5%), rodent burrows (5%), subrounded gravel (1%).	Clear and smooth	Root zone between 0 and 6 cmbs
			22-113	5YR 5/4 to 5YR 5/6	brown to strong brown	Sandy clay loam	Firm	Angular Blocky	Moderate	distinct mottling (40-50%, 7.5 4/3), rootlets (1-3%), iron oxide streaks and nodules (2%, 1-2mm).	Gradual and smooth	Heavy mottled with sediment from level above. Iron oxide streaks and nodules increase with depth
			113-142+	5YR 5/8	strong brown	Sandy clay loam	Firm	Angular Blocky	Moderate	distinct mottling (4-5%, 7.5 4/3), rootlets (1-3%), iron oxide streaks and nodules (2%, 1-2mm).	Unobserved	Very similar to level II. Mottling is less distinct than above.
BHT20 (Colorado)	Bastrop	30345	0-7	7.5YR 4/3	brown	Sandy loam	Friable	Crumb to Subangular Blocky	Weak	roots and rootlets (20%), pinhole insect burrows (5%), rodent burrows (5%), subrounded gravel (1%).	Clear and smooth	Trench is similar to BHT 19. Level I is disturbed fill layer.
			7-50	5YR 5/4 to 5YR 5/6	brown to strong brown	Sandy clay loam	Firm	Angular Blocky	Moderate	distinct mottling (40-50%, 7.5 4/3), rootlets (1-3%), iron oxide streaks and nodules (2%, 1-2mm), subrounded pebbles (10%).	Gradual and smooth	Heavy mottled with sediment from level above. Iron oxide streaks and nodules increase with depth
			50-119+	5YR 5/8	strong brown	Sandy clay loam	Firm	Angular Blocky	Moderate	distinct mottling (4-5%, 7.5 4/3), rootlets (1-3%), iron oxide streaks and nodules (2%, 1-2mm).	Unobserved	Very similar to level II. Mottling is less distinct than above.

BHT	County	Parcel	Depth (cmb)	Munsell*	Soil Color*	Soil Texture	Consistency	Structure Type	Grade	Inclusions	Lower Boundary	Comment
BHT21 (Colorado)	Bastrop	30345	0-17	7.5YR 3/2	dark brown	Clay loam	Friable	Subangular Blocky	Moderate	roots and rootlets (20%), insect and worm burrows (5%)	Clear and smooth	Trench is very similar to BHT 8.
			17-61	10YR 3/2	very dark grayish brown	Clay loam	Friable	Subangular Blocky	Strong	roots and rootlets (5%), pinhole insect burrows (15%), worm burrows (5%), snail shells (1%, Heliodiscus)	Gradual and smooth	-
			61-84	7.5YR 4/2 to 7.5YR 4/3	dark grayish brown to brown	Clay loam	Firm	Angular Blocky to Subangular Blocky	Moderate	roots and rootlets (2%), calcium carbonate filaments (10%)	Clear and smooth	-
			84-170	7.5YR 4/3	brown	Silty clay loam	Friable to Firm	Subangular Blocky	Moderate to Strong	roots and rootlets (5%), and calcium carbonate filaments (5%), snail fragments (1-2%).	Gradual and smooth	Observed from above after 136 cmb
			170-240	7.5YR 5/4 to 7.5YR 5/6	yellowish brown	Clay loam	Friable to Firm	Angular Blocky to Subangular Blocky	Moderate	calcium carbonate filaments (12%), rootlets (5%), insect and worm burrows (1%)	Unobserved	-
			240-310	7.5YR 5/6	yellowish brown	Clay loam	Friable	Angular Blocky to Subangular Blocky	Moderate	calcium carbonate filaments (7-10%), rootlets (2%), pinhole insect burrows (15%), Heliodiscus snail (1-2%)	Unobserved	Higher clay content than level VII.
			310-430	7.5YR 5/8	yellowish brown	Clay loam	Friable	Subangular Blocky	Moderate	rootlets (1%) and sand grains (1%).	Unobserved	Clay content increases with depth.
BHT01	Bastrop	30345	0-20	10YR 4/2	Dark Grayish Brown	Clay Loam	Firm	Subangular Blocky	Moderate	roots 2-5%, rootlets 15%, snail shell 1%, worm casts 2%	Gradual, horizontal	
			20-70	10YR 5/2	Grayish Brown	Sandy Clay Loam	Firm	Subangular Blocky	Strong	rootlets 10%, pin holes 1-2%, worm casts 2%, snail shells 1%	Clear, horizontal	
			70-101	10YR 4/2	Dark Grayish Brown	Clay Loam	Firm	Crumb to Subangular Blocky	Moderate	rootlets 7%, pinhole 5%, snail shell 1-2%	Clear, smooth	
			101-142	10YR 5/3	Brown	Sandy Clay Loam	Firm	Subangular Blocky to Platy	Moderate to Strong	rootlets 1-2%, pinholes 5%, worm casts 1%	Gradual, smooth	
			142-195	10YR 6/4	Light Yellowish Brown	Sandy Clay Loam	Loose to Friable	Crumb to Subangular Blocky	Weak	multiple lamina of sand and calcium carbonate (2cm long) 5%	Clear, smooth	
			195-300	10YR 2/2	Very Dark Brown	Clay Loam	Extremely Firm	Blocky to Massive	Strong	calcium carbonate 1-5mm (1-5%), some iron and manganese mottles 5%	Unobserved	
BHT02	Bastrop	30345	0-30	10YR 4/2	Dark Grayish Brown	Clay Loam	Firm	Subangular Blocky	Moderate	roots 2-5%, rootlets 15%, snail shell 1%, worm casts 2%	Gradual, horizontal	
			30-81	10YR 5/2	Grayish Brown	Sandy Clay Loam	Firm	Subangular Blocky	Strong	10%, pin holes 1-2%, worm casts 2%, snail shells 1%	Clear, horizontal	Between 52-65 cmb there are numerous sand lenses
			81-99	10YR 4/2	Dark Grayish Brown	Clay Loam	Firm	Crumb to Subangular Blocky	Moderate	rootlets 7%, pinhole 5%, snail shell 1-2%	Slightly sloping down to NE	
			99-147	10YR 5/3	Brown	Sandy Clay Loam	Firm	Subangular Blocky to Platy	Moderate to Strong	rootlets 1-2%, pinholes 5%, worm casts 1%	Gradual, smooth	
			147-205	10YR 6/4	Light Yellowish Brown	Sandy Clay Loam	Loose to Friable	Crumb to Subangular Blocky	Weak	multiple lamina of sand and calcium carbonate (2cm long) 5%	Clear, smooth	
			205-290	10YR 4/1	Dark Gray	Clay Loam	Extremely Firm	Blocky to Massive	Strong	calcium carbonate 1-5mm (5-10%), some iron and manganese mottles 5%	Unobserved	
BHT03	Bastrop	30345	0-27	10YR 4/2	Dark Grayish Brown	Clay Loam	Firm	Subangular Blocky	Moderate	roots 2-5%, rootlets 15%, snail shell 1%, worm casts 2%	Gradual, horizontal	
			27-116	10YR 5/2	Grayish Brown	Sandy Clay Loam	Firm	Subangular Blocky	Strong	roots 10%, rootlets 10%, pin holes 1-2%, worm casts 2%, snail shells 1%	Clear, horizontal	Between 48-64 and 81-116 cmb there are numerous sand lenses, which are more numerous toward the bottom of the layer
			116-137	10YR 4/2	Dark Grayish Brown	Clay Loam	Firm	Crumb to Subangular Blocky	Moderate	rootlets 7%, pinhole 5%, snail shell 1-2%	Slightly sloping down to NE	
			137-170	10YR 5/3	Brown	Sandy Clay Loam	Firm	Subangular Blocky to Platy	Moderate to Strong	rootlets 1-2%, pinholes 5%, worm casts 1%	Gradual, smooth	
			170-230	10YR 6/4	Light Yellowish Brown	Sandy Clay Loam	Loose to Friable	Crumb to Subangular Blocky	Weak	multiple lamina of sand and calcium carbonate (2cm long) 5%	Clear, smooth	
			230-300	10YR 4/1	Dark Gray	Clay Loam	Extremely Firm	Blocky to Massive	Strong	calcium carbonate 1-5mm (5-10%), some iron and manganese mottles 5%	Unobserved	
BHT04	Bastrop	30345	0-45	10YR 4/2	Dark Grayish Brown	Clay Loam	Firm	Subangular Blocky	Moderate	roots 2-5%, rootlets 15%, snail shell 1%, worm casts 2%	Gradual, horizontal	
			45-77	10YR 5/2	Grayish Brown	Sandy Clay Loam	Firm	Subangular Blocky	Strong	rootlets 10%, pin holes 1-2%, worm casts 2%, snail shells 1%	Clear, horizontal	
			77-132	10YR 4/2	Dark Grayish Brown	Clay Loam	Firm	Crumb to Subangular Blocky	Moderate	rootlets 7%, pinhole 5%, snail shell 1-2%	Clear, smooth	Tertiary flake at 83 cmb, fire-cracked chert at 79 and 85 cmb. Column sample located tertiary flake at 80-90 and 90-100 cmb. Backhoe scoops were positive for tertiary flakes from approximately 140-150 cmb.
			132-193	10YR 4/2	Dark Grayish Brown	Clay Loam	Firm	Angular Blocky	Moderate	prominent slickensides, calcium carbonate (2-5mm) 3-5%	Clear, horizontal	
			193-300	10YR 6/4	Light Yellowish Brown	Sandy Clay Loam	Firm	Subangular Blocky	Strong	calcium carbonate 1 cm (2%), prominent slickensides	Unobserved	
BHT05	Bastrop	30345	0-21	10YR 4/2	Dark Grayish Brown	Loamy Clay Loam	Friable	Subangular Blocky	Moderate	roots 10%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (1%)	Clear, Slightly Wavy	
			21-42	10YR 4/3	Brown	Loam to Clay Loam	Friable	Crumb to Subangular Blocky	Weak	roots 5%, rootlets 15%, pin holes 15%, worm casts 5%, snail fragments 5%, whole snail, 1% (Heliodiscus)	Gradual, smooth	
			42-81	10YR 5/3	Brown	Sandy Clay Loam	Friable	Angular Blocky	Moderate	roots 1-3%, rootlets 1-5%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (Heliodiscus)	Abrupt, smooth	
			81-109	10YR 4/1-4/2	Dark Gray to Dark Grayish Brown	Clay Loam	Friable to Firm	Angular Blocky	Moderate to Strong	rootlets 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (lip tooth)	Clear, smooth	Matrix from insect burrows (5%) bring down strat III, possible buried soil
			109-141	10YR 5/3-6/3	Brown to Pale Brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Gradual, smooth	
			141-253	10YR 6/3-6/4	Pale Brown to Light Yellowish Brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pinholes 5%, worm casts 2%, white filaments (2-3mm), no snail shell	Abrupt, smooth	beds of fine sand
			253-290+	10YR 3/1	Very Dark Gray	Loamy Clay	Firm	Angular Blocky to Massive	Moderate	rootlets 2%, pin holes 1%, worm casts 2%, white nodules (5-10mm) 10%	Unobserved	Possible buried soil

BHT	County	Parcel	Depth (cmbs)	Munsell*	Soil Color*	Soil Texture	Consistency	Structure Type	Grade	Inclusions	Lower Boundary	Comment
BHT06	Bastrop	30345	0-15	10YR 4/2	Dark Grayish Brown	Loamy Clay Loam	Friable	Subangular Blocky	Moderate	roots 10%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (1%)	Clear, Slightly Wavy	
			15-43	10YR 5/3	Brown	Sandy Clay Loam	Friable	Angular Blocky	Moderate	roots 1-3%, rootlets 1-5%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (Heliodiscus)	Abrupt, smooth	
			43-62	10YR 4/1-4/2	Dark Gray to Dark Grayish Brown	Clay Loam	Friable to Firm	Angular Blocky	Moderate to Strong	rootlets 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (lip tooth)	Clear, smooth	Slightly higher clay content than BHT05
			62-89	10YR 5/3-6/3	Brown to Pale Brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Gradual, smooth	Slightly higher clay content than BHT05
			89-254	10YR 6/3-6/4	Pale Brown to Light Yellowish Brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pinholes 5%, worm casts 2%, white filaments (2-3mm), no snail shell	Abrupt, smooth	
			254-290	10YR 3/1	Very Dark Gray	Loamy Clay	Firm	Angular Blocky	Moderate	rootlets 2%, pin holes 1%, worm casts 2%, white nodules (5-10mm) 10%	Unobserved	Possible buried soil
BHT07	Bastrop	30345	0-19	10YR 4/2	Dark Grayish Brown	Loamy Clay Loam	Friable	Subangular Blocky	Moderate	roots 15%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (5%)	Clear, Slightly Wavy	
			19-44	10YR 5/3	Brown	Sandy Clay Loam	Friable	Angular Blocky	Moderate	roots 5-10%, rootlets 20%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (Heliodiscus)	Abrupt, smooth	
			44-84	10YR 4/1-4/2	Dark Gray to Dark Grayish Brown	Clay Loam	Firm	Angular Blocky	Moderate to Strong	rootlets 5-10%, roots 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (lip tooth)	Clear, smooth	
			84-119	10YR 5/3-6/3	Brown to Pale Brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Gradual, smooth	In sidewall: tertiary flake at 93 cmbs, possible fired quartzite at 105 cmbs, tertiary flakes at 92, 83, 91, and 90 cmbs.
			119-137	10YR 3/1	Very Dark Gray	Loamy Clay	Firm	Angular Blocky to Massive	Moderate	rootlets 2%, pin holes 1%, worm casts 2%, white filaments (2-3mm) 5%	Unobserved	
BHT08	Bastrop	30345	0-16	10YR 4/2	Dark Grayish Brown	Loamy Clay Loam	Friable	Subangular Blocky	Moderate	roots 10%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (1%)	Clear, Slightly Wavy	
			16-31	10YR 4/3	Brown	Loam to Clay Loam	Friable	Crumb to Subangular Blocky	Weak	roots 5%, rootlets 15%, pin holes 15%, worm casts 5%, snail fragments 5%, whole snail, 1% (rabbodus)	Gradual, smooth	
			31-52	10YR 5/3	Brown	Sandy Clay Loam	Friable	Angular Blocky	Moderate	roots 1-3%, rootlets 1-5%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (Heliodiscus)	Abrupt, smooth	
			52-72	10YR 4/1-4/2	Dark Gray to Dark Grayish Brown	Clay Loam	Friable to Firm	Angular Blocky	Moderate to Strong	rootlets 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (lip tooth)	Clear, smooth	Possible buried soil
			72-116	10YR 5/3-6/3	Brown to Pale Brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	Friable, angular, medium to coarse size, moderate grade, rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Gradual, smooth	Tan pockets of 10YR 7/3-7/4 silt (6-10 mm thick) 89-90 and 104-105 cmbs, discontinuous, possibly flood drape
			116-178	10YR 6/3-6/4	Pale Brown to Light Yellowish Brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pinholes 5%, worm casts 2%, white filaments (2-3mm), no snail shell	Abrupt, smooth	
			178-247	10YR 3/1	Very Dark Gray	Loamy Clay	Firm	Angular Blocky to Massive	Moderate	rootlets 2%, pin holes 1%, worm casts 2%, white nodules (5-10mm) 10%	Gradual, smooth	Mussel shell at 186 cmbs, possibly a buried soil
			247-305	10YR 4/2-4/3	Dark Grayish Brown to Brown	Loamy Clay	Firm	Angular Blocky to Prismatic	Moderate to Strong	white nodules (5-8 mm/15%), iron staining (1-2 mm/1%), iron nodules, snail fragments 1%, insect burrows 2-3%	Gradual, smooth	
			305-336	10YR 5/3	Brown	Silty Clay Loam	Friable	Prismatic	Moderate	rootlets 1%, slickensides 2-3 cm (2%), white nodules (5-15 mm/10-15%), snail fragments 1%, iron pebbles (2-4mm) <1%	Unobserved	Shrink swell
BHT09	Bastrop	30345	0-16	10YR 4/2	Dark Grayish Brown	Loamy Clay Loam	Friable	Subangular Blocky	Moderate	roots 10%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (1%)	Clear, Slightly Wavy	
			16-37	10YR 5/3	Brown	Sandy Clay Loam	Friable	Angular Blocky	Moderate	roots 1-3%, rootlets 1-5%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (Heliodiscus)	Abrupt, smooth	
			37-84	10YR 4/1-4/2	Dark Gray to Dark Grayish Brown	Clay Loam	Friable to Firm	Angular Blocky	Moderate to Strong	rootlets 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (lip tooth)	Clear, smooth	Tan lenses (discontinuities) 10YR 7/4, silt loam (65-66, 72-73, 61-62 cmbs)
			84-114	10YR 5/3-6/3	Brown to Pale Brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Gradual, smooth	Possible buried soil, bone fragments at 101 and 92 cmbs, primary flake at 97 cmbs, secondary flakes at 91 and 98 cmbs, tertiary flakes at 89-103 (n=17), burned shatter at 89 cmbs, burned chert at 88 cmbs
			114-139	10YR 6/3-6/4	Pale Brown to Light Yellowish Brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pinholes 5%, worm casts 2%, white filaments (2-3mm), no snail shell	Abrupt, smooth	
			139-165	10YR 3/1	Very Dark Gray	Loamy Clay	Firm	Angular Blocky to Massive	Moderate	rootlets 2%, pin holes 1%, worm casts 2%, white nodules (5-10mm) 10%	Unobserved	

BHT	County	Parcel	Depth (cmbs)	Munsell*	Soil Color*	Soil Texture	Consistency	Structure Type	Grade	Inclusions	Lower Boundary	Comment
BHT10	Bastrop	30345	0-16	10YR 4/2	Dark Grayish Brown	Loamy Clay Loam	Friable	Subangular Blocky	Moderate	roots 10%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (1%)	Clear, Slightly Wavy	
			16-44	10YR 4/3	Brown	Loam to Clay Loam	Friable	Crumb to Subangular Blocky	Weak	roots 5%, rootlets 15%, pin holes 15%, worm casts 5%, snail fragments 2%, whole snail, 1% (Heliodiscus)	Gradual, smooth	Some charcoal and burned clay
			44-74	10YR 5/3	Brown	Sandy Clay Loam	Friable	Angular Blocky	Moderate	roots 3%, rootlets 1-5%, pin holes 5-10%, worm casts 2%, snail fragments 2%, whole snail 1% (Heliodiscus)	Abrupt, smooth	
			74-101	10YR 4/1-4/2	Dark Gray to Dark Grayish Brown	Clay Loam	Friable to Firm	Angular Blocky	Moderate to Strong	rootlets 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (lip tooth)	Clear, smooth	Burned rock fragment at 90 cmbs
			101-151	10YR 5/3-6/3	Brown to Pale Brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Gradual, smooth	
			151-205	10YR 6/3-6/4	Pale Brown to Light Yellowish Brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pinholes 5%, worm casts 2%, white filaments (2-3mm), no snail shell	Abrupt, smooth	
			205-305	10YR 3/1	Very Dark Gray	Loamy Clay	Firm	Angular Blocky to Massive	Moderate	rootlets 2%, pin holes 1%, worm casts 2%, white nodules (5-10mm) 10%	Unobserved	
BHT11	Bastrop	30345	0-10	10YR 4/2	Dark Grayish Brown	Loamy Clay Loam	Friable	Subangular Blocky	Moderate	roots 15%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (5%)	Clear, Slightly Wavy	Ground surface slightly sloping toward the west
			10-23	10YR 5/3	Brown	Sandy Clay Loam	Friable	Angular Blocky	Moderate	roots 5-10%, rootlets 20%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (Heliodiscus)	Irregular, wavy	
			23-41	10YR 4/1-4/2	Dark Gray to Dark Grayish Brown	Clay Loam	Firm	Angular Blocky	Moderate to Strong	rootlets 5-10%, roots 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (lip tooth)	Abrupt, wavy	
			41-82	10YR 5/3-6/3	Brown to Pale Brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Clear, wavy	Possible graver at 63 cmbs, primary flake at 82 cmbs, two tertiary flakes at 78 and 79 cmbs respectively
			82-146	10YR 3/1	Very Dark Gray	Loamy Clay	Firm	Angular Blocky to Massive	Moderate	rootlets 2%, pin holes 1%, worm casts 2%, white filaments (10-30mm) 3-5%	Unobserved	
BHT12	Bastrop	30345	0-20	10YR 4/2	Dark Grayish Brown	Loamy Clay Loam	Friable	Subangular Blocky	Moderate	roots 15%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (5%)	Clear, Slightly sloping west	
			20-42	10YR 5/3	Brown	Sandy Clay Loam	Friable	Angular Blocky	Moderate	roots 5-10%, rootlets 20%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (Heliodiscus)	Gradual, wavy	
			42-101	10YR 4/1-4/2	Dark Gray to Dark Grayish Brown	Loamy Clay	Firm	Subangular Blocky	Moderate	less than 1% snail shell, roots 5%, rootlets 5%, pin holes 5%, worm casts 1%	Clear, horizontal	Tertiary flakes at 62 and 74 cmbs, fire-cracked chert at 62 and 83 cmbs.
			101-154	10YR 3/1	Very Dark Gray	Loamy Clay	Firm	Angular Blocky to Massive	Moderate	rootlets 2%, pin holes 1%, worm casts 2%, white filaments (10-30mm) 3-5%	Unobserved	
BHT13	Bastrop	30345	0-18	10YR 4/2	Dark Grayish Brown	Loamy Clay Loam	Friable	Subangular Blocky	Moderate	roots 10%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (1%)	Clear, Slightly Wavy	
			18-37	10YR 4/3	Brown	Loam to Clay Loam	Friable	Crumb to Subangular Blocky	Weak	roots 5%, rootlets 15%, pin holes 15%, worm casts 5%, snail fragments 5%, whole snail, 1% (Heliodiscus)	Gradual, smooth	
			37-51	10YR 5/3	Brown	Sandy Clay Loam	Friable	Angular Blocky	Moderate	roots 1-3%, rootlets 1-5%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (Heliodiscus)	Gradual, smooth	Lower boundaries are very gradual
			51-74	10YR 4/1-4/2	Dark Gray to Dark Grayish Brown	Clay Loam	Friable to Firm	Angular Blocky	Moderate to Strong	rootlets 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (lip tooth)	Gradual, smooth	Tertiary flakes at 63, 69, and 50 cmbs, lower boundaries are very gradual
			74-147	10YR 5/3-6/3	Brown to Pale Brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Unobserved	
BHT14	Bastrop	30345	0-15	10YR 4/2	Dark Grayish Brown	Loamy Clay Loam	Friable	Subangular Blocky	Moderate	roots 10%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (1%)	Clear, Slightly Wavy	
			15-38	10YR 4/3	Brown	Loam to Clay Loam	Friable	Crumb to Subangular Blocky	Weak	roots 5%, rootlets 15%, pin holes 15%, worm casts 5%, snail fragments 5%, whole snail, 1% (Heliodiscus)	Gradual, smooth	
			38-50	10YR 5/3	Brown	Sandy Clay Loam	Friable	Angular Blocky	Moderate	roots 1-3%, rootlets 1-5%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (Heliodiscus)	Gradual, smooth	
			50-93	10YR 4/1-4/2	Dark Gray to Dark Grayish Brown	Clay Loam	Friable to Firm	Angular Blocky	Moderate to Strong	rootlets 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (lip tooth)	Gradual, smooth	
			93-140	10YR 5/3-6/3	Brown to Pale Brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Unobserved	Tertiary flakes at 90 and 95 cmbs, secondary flake at 97 cmbs, fire-cracked chert at 96 and 98 cmbs
BHT15	Bastrop	30345	0-15	10YR 4/2	Dark Grayish Brown	Loamy Clay Loam	Friable	Subangular Blocky	Moderate	roots 10%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (1%)	Clear, Slightly Wavy	
			15-28	10YR 4/3	Brown	Loam to Clay Loam	Friable	Crumb to Subangular Blocky	Weak	roots 5%, rootlets 15%, pin holes 15%, worm casts 5%, snail fragments 5%, whole snail, 1% (Heliodiscus)	Gradual, smooth	
			28-55	10YR 5/3	Brown	Sandy Clay Loam	Friable	Angular Blocky	Moderate	Friable, angular, medium to coarse size, moderate grade, roots 1-3%, rootlets 1-5%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (Heliodiscus)	Abrupt, smooth	
			55-79	10YR 4/1-4/2	Dark Gray to Dark Grayish Brown	Clay Loam	Friable to Firm	Angular Blocky	Moderate to Strong	rootlets 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (lip tooth)	Clear, smooth	
			79-121	10YR 5/3-6/3	Brown to Pale Brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Clear, smooth	
			121-210	10YR 3/1	Very Dark Gray	Loamy Clay	Firm	Angular Blocky to Massive	Moderate	rootlets 2%, pin holes 1%, worm casts 2%, white nodules (5-10mm) 10%	Abrupt, smooth	
			210-330	10YR 5/3	Brown	Silty Clay Loam	Friable	Prismatic	Moderate	rootlets 1%, slickensides 2-3 cm (2%), white nodules (5-15 mm/10-15%), snail fragments 1%, iron pebbles (2-4mm) <1%	Unobserved	

BHT	County	Parcel	Depth (cmbs)	Munsell*	Soil Color*	Soil Texture	Consistency	Structure Type	Grade	Inclusions	Lower Boundary	Comment
A	Bastrop	30365	0-17	10YR5/3	Brown	Sandy Loam	Loose to Friable	Crumbly to Subangular Blocky	Weak	roots and rootlets 30%, pin hole burrows 15-20%, worms 10%	Clear and Slightly Wavy	No cultural material
			17-49	10YR4/2	Dark Grayish Brown	Sandy Loam to Clay Loam	Friable	Subangular Blocky	Weak	roots 3-5%, rootlets 20%, snail fragments 5%, pin hole burrows 15%, worms 5%	Gradual and Smooth	Slight mottling with Strat I matrix, no cultural material
			49-113	10YR4/2 to 10YR3/2	Dark Grayish Brown to Brown	Sandy Loam to Clay Loam	Friable	Subangular Blocky	Weak to Moderate	rootlets 10%, pin hole burrows 10%, worms 3-5%, subtle slickensides 10% (1-2mm), snail fragments 2-5%	Gradual and Smooth	No cultural material
			133-229	10YR3/2 to 10YR3/3	Brown to Dark Brown	Clay Loam to Clay	Friable to Firm	Subangular Blocky to Angular Blocky	Moderate	rootlets 5%, pin hole burrows 2-5%, white nodules of possible CaCO ₃ 3% (5-15mm) and increasing with depth	Clear and Smooth	Observed from surface below 153 cmbs, no cultural material
			229-271	10YR5/6 to 10YR6/6	Yellowish Brown to Brownish Yellow	Clay Loam to Clay	Firm	Angular Blocky	Moderate	white nodules 15% (5-20mm), manganese 2% (1mm)	Gradual to Diffuse and Smooth	No cultural material
			271-300	10YR5/8	Yellowish Brown	Clay Loam	Firm	Angular Blocky	Moderate	white nodules 15% (5-20mm), manganese 2% (1mm)	Unobserved	Increased sand and moisture, water seeping from wall, no cultural material
			300-334	7.5YR5/6 to 7.5YR5/8	Strong Brown	Clay Loam	Firm	Angular Blocky	Moderate	white nodules 3-5% (20-30mm), snail fragments 3%	Unobserved	No cultural material
B	Bastrop	30365	0-17	10YR5/3	Brown	Sandy Loam	Loose to Friable	Crumbly to Subangular Blocky	Weak	rootlets 25-30%, roots 10%, pin hole burrows 10%, worm casts 5-6%	Clear and Slightly Wavy	No cultural material
			17-49	10YR4/2	Dark Grayish Brown	Sandy Loam to Clay Loam	Friable	Subangular Blocky	Weak	rootlets 30%, pin hole burrows 15-20%, worm casts 5-10%, snail shell fragments <1%	Gradual and Smooth	Slight mottling with Strat I matrix, no cultural material
			49-96	10YR4/2 to 10YR3/2	Dark Grayish Brown to Brown	Sandy Loam to Clay Loam	Friable	Subangular Blocky	Weak to Moderate	rootlets 15%, pin hole burrows 10-15%, worm casts 5%, subtle slickensides 10% (5-15mm), snail shell fragments 1%	Gradual and Smooth	No cultural material
			96-214	10YR3/2 to 10YR3/3	Brown to Dark Brown	Clay Loam to Clay	Friable to Firm	Subangular Blocky to Angular Blocky	Moderate	white nodules 5-10% (10-15mm) and increasing with depth, rootlets 3%, pin hole burrows 5%, slickensides 15% (20-30mm)	Clear and Smooth	Observed from surface below 141 cmbs, no cultural material
			214-273	10YR5/6 to 10YR6/6	Yellowish Brown to Brownish Yellow	Clay Loam to Clay	Firm	Angular Blocky	Moderate	white nodules 15% (5-20mm), manganese 2% (1mm)	Gradual to Diffuse and Smooth	No cultural material
			273-321	10YR5/8	Yellowish Brown	Clay Loam	Firm	Angular Blocky	Moderate	white nodules 10-20% (30-40mm), manganese 2% (1mm)	Unobserved	Increased sand and moisture, water seeping from wall, no cultural material
			321-332	7.5YR5/6 to 7.5YR5/8	Strong Brown	Clay Loam	Firm	Angular Blocky	Moderate	white nodules 3-5% (20-30mm), snail fragments 3%	Unobserved	No cultural material
C	Bastrop	30365	0-19	10YR4/2 to 10YR4/3	Dark Grayish Brown to Brown	Sandy Loam	Friable	Crumbly to Subangular Blocky	Weak	roots 5%, rootlets 30%, pin hole burrows 10-15%, worms 5%	Clear and Slightly Wavy	No cultural material
			19-96	10YR3/2 to 10YR2/2	Brown to Very Dark Brown	Sandy Loam	Friable	Subangular Blocky	Moderate	rootlets 20%, pin hole burrows 20%, worms 5%, mottling due to insect burrows 3%	Gradual and Smooth	Slight mottling with Strat I matrix, no cultural material
			96-226	10YR4/3 to 10YR4/4	Brown to Dark Yellowish Brown	Clay Loam to Clay	Firm	Angular Blocky	Moderate	rootlets 3-5%, white filaments and small nodules 1% (1mm)	Clear and Smooth	Observed from surface below 148 cmbs, no cultural material
			226-300	10YR3/2 to 10YR3/3	Brown to Dark Brown	Clay Loam to Clay	Friable to Firm	Subangular Blocky to Angular Blocky	Moderate	white nodules 5-10% (10-15mm) and increasing with depth, rootlets 3%, pin hole burrows 5%, slickensides 15% (20-30mm)	Clear and Smooth	No cultural material
			300-326	10YR5/6 to 10YR6/6	Yellowish Brown to Brownish Yellow	Clay Loam to Clay	Firm	Angular Blocky	Moderate	white nodules 15% (5-20mm), manganese 2% (1mm)	Gradual to Diffuse and Smooth	No cultural material
D	Bastrop	30365	0-23	10YR4/2 to 10YR4/3	Dark Grayish Brown to Brown	Sandy Loam	Loose to Friable	Crumbly to Subangular Blocky	Weak	roots 5%, rootlets 30%, pin hole burrows 10-15%, worms 5%	Clear and Slightly Wavy	No cultural material
			23-61	10YR3/2 to 10YR2/2	Brown to Very Dark Brown	Sandy Loam	Friable	Subangular Blocky	Moderate	rootlets 20%, pin hole burrows 20%, worms 5%, mottling due to insect burrows 3%	Gradual and Smooth	Slight mottling with Strat I matrix, no cultural material
			61-218	10YR4/3 to 10YR4/4	Brown to Dark Yellowish Brown	Sandy Loam to Clay Loam	Friable	Subangular Blocky to Angular Blocky	Moderate	two subrounded gravel (one located at top of level and one in the middle)	Clear and Smooth	Horizon is less dense than previously, observed from surface from 148 cmbs
			218-294	10YR4/3 to 10YR3/3	Brown to Dark Brown	Clay Loam	Firm	Angular Blocky	Moderate	rootlets 3%, prominent slickensides (10cm), CaCO ₃ filaments 10% and nodules 5% (.5-1mm)	Clear and Smooth	No cultural material
			294-304	7.5YR5/4 to 7.5YR5/6	Brown to Strong Brown	Clay Loam	Firm	Angular Blocky	Moderate	white nodules 5% (20-30mm)	Gradual to Diffuse and Smooth	No cultural material
E	Bastrop	30365	0-18	10YR4/2 to 10YR4/3	Dark Grayish Brown to Brown	Sandy Loam	Loose to Friable	Crumbly to Subangular Blocky	Weak	roots 10%, rootlets 15-20%, pin hole burrows 10%, worm casts 5%	Clear and Slightly Wavy	No cultural material
			18-98	10YR3/2 to 10YR2/2	Brown to Very Dark Brown	Sandy Loam	Friable	Subangular Blocky	Moderate	rootlets 15-20%, pin hole burrows 15%, worm 5-10%, mottling due to insect burrows with strat I matrix 3-4%	Gradual and Smooth	Slight mottling with Strat I matrix, no cultural material, transitional horizon at 73 cmbs
			98-263	10YR4/3 to 10YR4/4	Brown to Dark Yellowish Brown	Sandy Loam to Clay Loam	Friable	Subangular Blocky to Angular Blocky	Moderate	rootlets 2%, pin hole burrows <1%, subrounded gravel <1% at top of horizon, no white filaments	Gradual and Smooth	Horizon is less dense than previously, observed from surface from 144 cmbs
			263-294	10YR6/4 to 10YR6/6	Light Yellowish Brown and Brownish Yellow	Clay Loam to Clay	Friable to Firm	Angular Blocky	Moderate to Prismatic	Prominent slickensides (10cm)	Gradual and Smooth	No cultural material
			294-301	10YR6/4 to 10YR6/6	Light Yellowish Brown and Brownish Yellow	Clay Loam to Clay	Firm	Angular Blocky	Moderate	Prominent slickensides (10cm), CaCO ₃ 10% (1cm) and 5% (2-3cm)	Unobserved	No cultural material

BHT	County	Parcel	Depth (cmbs)	Munsell*	Soil Color*	Soil Texture	Consistency	Structure Type	Grade	Inclusions	Lower Boundary	Comment
F	Bastrop	30365	0-11	10YR4/2 to 10YR4/3	Dark Grayish Brown to Brown	Sandy Loam	Friable	Crumbly to Subangular Blocky	Weak	rootlets 25%, roots 5-10%, pin hole burrows 5-10%, worm casts 5%	Clear and Slightly Wavy	No cultural material
			11-48	10YR3/2 to 10YR2/2	Brown to Very Dark Brown	Sandy Loam	Friable	Subangular Blocky	Moderate	rootlets 10%, pin hole burrows 15%, worm casts 10%	Gradual and Smooth	Slight mottling with Strat I matrix, no cultural material, transitional horizon at 73 cmbs
			48-134	10YR6/4 to 10YR6/6	Light Yellowish Brown and Brownish Yellow	Clay Loam to Clay	Firm	Subangular Blocky to Angular Blocky	Moderate	cracks infilled with strat II 2-5%, rootlets 5%	Gradual and Smooth	Horizon is less dense than previously, no cultural material
			134-205	10YR6/4 to 10YR6/6	Light Yellowish Brown and Brownish Yellow	Clay Loam to Clay	Friable to Firm	Angular Blocky	Moderate to Prismatic	Prominent slickensides (10cm)	Gradual and Smooth	More friable than strat III due to moisture, observed from surface from 145 cmbs, no cultural material
			205-301	10YR6/4 to 10YR6/6	Light Yellowish Brown and Brownish Yellow	Clay Loam to Clay	Firm	Angular Blocky	Moderate	CaCO3 nodules 5-10% (2-3cm)	Unobserved	No cultural material
G	Bastrop	30365	0-12	10YR4/2 to 10YR3/2	Dark Grayish Brown to Brown	Sandy Loam	Loose to Friable	Crumbly to Subangular Blocky	Weak	roots 5%, rootlets 20%, pin hole burrows 5%, worm casts 5%	Clear and Slightly Wavy	No cultural material
			12-66	10YR4/2	Dark Grayish Brown	Sandy Loam	Friable	Subangular Blocky	Moderate	rootlets 10%, pin hole burrows 15-20%, worm casts 5-10%	Gradual to Diffuse and Smooth	No cultural material, transitional horizon at 44 cmbs
			66-124	10YR6/3 to 10YR6/4	Pale Brown to Light Yellowish Brown	Sandy Clay Loam	Extra Firm	Angular Blocky	Moderate	rootlets 3-5%, white nodules 20% (.5-15mm) and increasing with depth	Unobserved	Horizon is less dense than previously, no cultural material
H	Bastrop	30365	0-13	10YR4/2 to 10YR3/2	Dark Grayish Brown to Brown	Sandy Loam	Loose to Friable	Crumbly to Subangular Blocky	Weak	roots 5%, rootlets 25%, pin hole burrow 10%, worm casts 10%	Clear and Slightly Wavy	No cultural material
			13-85	10YR4/2	Dark Grayish Brown	Sandy Loam	Friable	Subangular Blocky	Moderate	rootlets 10%, pin hole burrows 15-20%, worm casts 5-10%	Gradual and Smooth	No cultural material, transitional horizon at 55 cmbs
			85-146	10YR6/3 to 10YR6/4	Pale Brown to Light Yellowish Brown	Sandy Clay Loam	Very Dense	Angular Blocky	Moderate	White nodules 10-15% (10-30cm) and increasing	Unobserved	Almost massive, no cultural material
I	Bastrop	30365	0-13	10YR2/1 to 10YR2/2	Black to Very Dark Brown	Clay Loam	Friable	Subangular Block	Weak	roots 5%, rootlets 35%, pin hole burrows 15%, worm casts 5%, no slickensides	Gradual and Smooth	No cultural material
			13-69	10YR2/2	Very Dark Brown	Clay Loam to Clay	Firm to Extra Firm	Angular Blocky	Moderate	rootlets 15%, pin hole burrows 5%, worm casts <5%	Gradual and Smooth	Approaching massive with vertical cracking, no cultural material
			69-211	10YR2/2	Very Dark Brown	Clay Loam to Clay	Extra Firm	Angular Blocky	Moderate	pin hole burrows 5%, no worms, white nodules 10% (.5-3mm) increasing with depth	Gradual and Smooth	Approaching massive with vertical cracking, no cultural material
			211-293	10YR5/4 to 10YR5/6	Yellowish Brown	Clay Loam to Clay	Extra Firm	Angular Blocky	Moderate	white nodules 20-25% (1-3cm) increasing with depth, structure approaching massive	Unobserved	No cultural material
J	Bastrop	30365	0-13	10YR2/1 to 10YR2/2	Black to Very Dark Brown	Clay Loam	Friable	Subangular Block	Weak	roots 20%, rootlets 20%	Gradual and Smooth	No cultural material
			13-87	10YR2/2	Very Dark Brown	Clay Loam to Clay	Firm to Extra Firm	Angular Blocky	Moderate	roots 10%, rootlets 15%, prominent slickensides	Gradual and Smooth	Approaching massive with vertical cracking, no cultural material
			87-170	10YR2/2	Very Dark Brown	Clay Loam to Clay	Extra Firm	Angular Blocky	Moderate	rootlets 5%, white nodules 5-10% (1-10mm)	Gradual and Smooth	Approaching massive with vertical cracking, observed visually from 122 cmbs, no cultural material
			170-231	10YR5/4 to 10YR5/6	Yellowish Brown	Clay Loam to Clay	Extra Firm	Angular Blocky	Moderate	infilled cracks with strat III matrix	Unobserved	No cultural material
A	Guadalupe	50330	0-25	10YR4/2	Dark Grayish Brown	Loam	Loose to Friable	Crumbly to Subangular Blocky	Weak	roots 10%, rootlets 15-20%, snail fragments 5-10%, pin hole burrows 10%, worm casts 3-5%	Gradual and Smooth	Root zone 7cm thick, no cultural material
			25-55	10YR4/2 to 10YR4/4	Dark Grayish Brown to Dark Yellowish Brown	Sandy Loam	Friable	Crumbly to Subangular Blocky	Weak	rootlets 10-15%, rabdotus snail shell 3-5%, other snail shell 15-20%, pin hole burrows 10%, worm casts 5%, mottling due to insect burrows with strat III 5%	Gradual and Smooth	Lens of snail cluster at 45cmbs, no cultural material
			55-145	10YR5/4	Yellowish Brown	Sandy Loam	Friable	Subangular Blocky	Weak	rootlets 5-10%, pin hole burrows 10%, krotovina with strat II matrix 2% (10 cm), rabdotus 3%, other snail fragments 5%	Clear and Smooth	Linear horizon of krotovina at 70cmbs, increase in more complete snail fragments compared to above strat, lens of snail fragments at 114cm
			145-212	10YR7/4	Very Pale Brown	Sandy Loam	Friable	Subangular Blocky	Weak to Moderate	rabdotus 5-10%, pin hole burrows 10-15%, rootlets 1-2%, white flecking 1% (.5mm)	Gradual and Smooth	Observed from surface below 156cmbs, no cultural material
			212-301	10YR5/6	Yellowish Brown	Sandy Loam	Friable	Subangular Blocky	Moderate	rabdotus 20%, other snail fragments 10-15%, worm casts 5%, pin hole burrow 5%, rootlets 1-2%, white filaments 1-3% (1mm)	Unobserved	No cultural material
B	Guadalupe	50330	0-32	10YR4/2	Dark Grayish Brown	Loam	Loose to Friable	Crumbly to Subangular Blocky	Weak	roots 10%, rootlets 20%, pin hole burrow 5%, worm casts 5%, snail fragments 5%	Gradual and Smooth	Root zone 5cm thick, no cultural material
			32-62	10YR4/2 to 10YR4/4	Dark Grayish Brown to Dark Yellowish Brown	Sandy Loam	Friable	Crumbly to Subangular Blocky	Weak	rabdotus 3-5%, snail fragments 10%, pin hole burrows 5-10%, worm casts 5%, rootlets 10%	Gradual and Smooth	No cultural material
			62-167	10YR5/4	Yellowish Brown	Sandy Loam	Friable	Subangular Blocky	Weak	rootlets 5-10%, snail fragments 10%, rabdotus 3-5%, pin hole burrows 5%, worm casts <1%	Clear and Smooth	Increase in more complete snail fragments compared to above strat, observed from surface below 141cmbs, no cultural material
			167-220	10YR7/4	Very Pale Brown	Sandy Loam	Friable	Subangular Blocky	Weak to Moderate	rabdotus 5-10%, pin hole burrows 10-15%, rootlets 1-2%, white flecking 1% (.5mm)	Gradual and Smooth	Mottled with strat III matrix possibly from bioturbation 10%, no cultural material
			220-307	10YR5/6	Yellowish Brown	Sandy Loam	Friable	Subangular Blocky	Moderate	rabdotus 20%, other snail fragments 10-15%, worm casts 5%, pin hole burrow 5%, rootlets 1-2%, white filaments 1-3% (1mm)	Unobserved	No cultural material

BHT	County	Parcel	Depth (cmbs)	Munsell*	Soil Color*	Soil Texture	Consistency	Structure Type	Grade	Inclusions	Lower Boundary	Comment
C	Guadalupe	50330	0-23	10YR4/2	Dark Grayish Brown	Loam	Loose to Friable	Crumbly to Subangular Blocky	Weak	subangular pebbles 1%	Gradual and Smooth	Root zone 5cm thick, no cultural material
			23-92	10YR4/2 to 10YR4/4	Dark Grayish Brown to Dark Yellowish Brown	Sandy Loam	Friable	Crumbly to Subangular Blocky	Weak	snail fragments 15%, worm casts 5%	Gradual and Smooth	No cultural material
			92-224	10YR5/4	Yellowish Brown	Sandy Loam	Friable	Subangular Blocky	Weak	pinholes 20%, rabdotus 10%, white filaments 5-10% (.5mm), snail fragments 15-20%	Clear and Smooth	Increase in more complete snail fragments compared to above strat, observed from surface below 156cmbs, no cultural material
			224-312	10YR5/6	Yellowish Brown	Sandy Loam	Friable	Subangular Blocky	Moderate	rabdotus 20%, other snail fragments 10-15%, worm casts 5%, pin hole burrow 5%, rootlets 1-2%, white filaments 1-3% (1mm)	Unobserved	No cultural material
D	Guadalupe	50330	0-15	10YR4/2	Dark Grayish Brown	Loam	Loose to Friable	Crumbly to Subangular Blocky	Weak	roots 5%, snail fragments 10-15%	Gradual and Smooth	Root zone 8cm thick, no cultural material
			15-69	10YR4/2 to 10YR4/4	Dark Grayish Brown to Dark Yellowish Brown	Sandy Loam	Friable	Crumbly to Subangular Blocky	Weak	rabdotus 5%, other snail fragments 15%, worm casts 5-7%	Gradual and Smooth	No cultural material
			69-121	10YR5/4	Yellowish Brown	Sandy Loam	Friable	Subangular Blocky	Weak	rootlets 10%, krotovina <1% and 10cm thick, rabdotus 5%, snail fragments 5-10%	Clear and Smooth	Increase in more complete snail fragments compared to above strat, observed from surface below 141cmbs, no cultural material
			121-172	10YR7/4	Very Pale Brown	Sandy Loam	Friable	Subangular Blocky	Weak to Moderate	rabdotus 5-10%, pin hole burrows 15-20%	Gradual and Smooth	Mottled with strat III matrix possibly from bioturbation 10%, no cultural material
			172-316	10YR5/6	Yellowish Brown	Sandy Loam	Friable	Subangular Blocky	Moderate	white filaments 15-20% (1-3mm)	Unobserved	Subrounded gravels begin at 275 cmbs 3-5%, no cultural material
E	Guadalupe	50330	0-19	10YR4/2	Dark Grayish Brown	Loam	Loose to Friable	Crumbly to Subangular Blocky	Weak	worm casts 5-10%	Gradual and Smooth	Root zone 8cm thick, no cultural material
			19-84	10YR4/2 to 10YR4/4	Dark Grayish Brown to Dark Yellowish Brown	Sandy Loam	Friable	Crumbly to Subangular Blocky	Weak	rootlets 15%, snail shell fragments 10-15%, rabdotus 5%, pin hole burrows 20%, mottling due to insect burrows from strat III matrix 15-20%	Gradual and Smooth	No cultural material
			84-193	10YR5/4	Yellowish Brown	Sandy Loam	Friable	Subangular Blocky	Weak	rootlets 3-5%, snail fragments 10%, rabdotus 5%, krotovina 3% and 10-25cm in diameter with matrix from strat II	Clear and Smooth	Increase in more complete snail fragments compared to above strat, observed from surface below 148cmbs, no cultural material
			193-204	10YR7/4	Very Pale Brown	Sandy Loam	Friable	Subangular Blocky	Weak to Moderate	rabdotus 5-10%, pin hole burrows 15-20%	Gradual and Smooth	Mottled with strat III matrix possibly from bioturbation 10%, no cultural material
			204-311	10YR5/6	Yellowish Brown	Sandy Loam	Friable	Subangular Blocky	Moderate	white filaments 15-20% (1-3mm)	Unobserved	No cultural material
BHT01	Bastrop	30310	0-20	10YR 4/2	Dark grayish brown	Clay Loam	Firm	Subangular Blocky	Moderate	roots 2-5%, rootlets 15%, snail shell 1%, worm casts 2%	Gradual, horizontal	
			20-70	10YR 5/2	Grayish brown	Sandy Clay Loam	Firm	Subangular Blocky	Strong	rootlets 10%, pin holes 1-2%, worm casts 2%, snail shells 1%	Clear, horizontal	
			70-101	10YR 4/2	Dark grayish brown	Clay Loam	Firm	Crumbly to Subangular Blocky	Moderate	rootlets 7%, pinhole 5%, snail shell 1-2%	Clear, smooth	
			101-142	10YR 5/3	Brown	Sandy Clay Loam	Firm	Subangular to Platy	Moderate to Strong	rootlets 1-2%, pinholes 5%, worm casts 1%	Gradual, smooth	
			142-195	10YR 6/4	Light Yellowish Brown	Sandy Clay Loam	Loose to Friable	Crumb to Subangular Blocky	Weak	multiple lamina of sand and calcium carbonate (2cm long) 5%	Clear, smooth	
			195-300	10YR 2/2	Very dark brown	Clay Loam	Extremely Firm	Blocky to Massive	Strong	Extremely firm, blocky almost massive, coarse size, strong grade, calcium carbonate 1-5mm (1-5%), some iron and manganese mottles 5%	Unobserved	
BHT02	Bastrop	30310	0-30	10YR 4/2	Dark grayish brown	Clay Loam	Firm	Subangular Blocky	Moderate	roots 2-5%, rootlets 15%, snail shell 1%, worm casts 2%	Gradual, horizontal	
			30-81	10YR 5/2	Grayish brown	Sandy Clay Loam	Firm	Subangular Blocky	Strong	rootlets 10%, pin holes 1-2%, worm casts 2%, snail shells 1%	Clear, horizontal	Between 52-65 cmbs there are numerous sand lenses
			81-99	10YR 4/2	Dark grayish brown	Clay Loam	Firm	Crumb to Subangular Blocky	Moderate	rootlets 7%, pinhole 5%, snail shell 1-2%	Slightly sloping down to NE	
			99-147	10YR 5/3	Brown	Sandy Clay Loam	Firm	Subangular Blocky to Platy	Strong	rootlets 1-2%, pinholes 5%, worm casts 1%	Gradual, smooth	
			147-205	10YR 6/4	Light Yellowish Brown	Sandy Clay Loam	Loose to Friable	Crumb to Subangular Blocky	Weak	multiple lamina of sand and calcium carbonate (2cm long) 5%	Clear, smooth	
			205-290	10YR 4/1	Dark grayish brown	Clay Loam	Extremely Firm	Blocky to Massive	Strong	calcium carbonate 1-5mm (5-10%), some iron and manganese mottles 5%	Unobserved	
BHT03	Bastrop	30310	0-27	10YR 4/2	Dark grayish brown	Clay Loam	Firm	Subangular Blocky	Moderate	roots 2-5%, rootlets 15%, snail shell 1%, worm casts 2%	Gradual, horizontal	
			27-116	10YR 5/2	Grayish brown	Sandy Clay Loam	Firm	Subangular Blocky	Strong	roots 10%, rootlets 10%, pin holes 1-2%, worm casts 2%, snail shells 1%	Clear, horizontal	Between 48-64 and 81-116 cmbs there are numerous sand lenses, which are more numerous toward the bottom of the layer
			116-137	10YR 4/2	Dark grayish brown	Clay Loam	Firm	Crumb to Subangular Blocky	Moderate	rootlets 7%, pinhole 5%, snail shell 1-2%	Slightly sloping down to NE	
			137-170	10YR 5/3	Brown	Sandy Clay Loam	Firm	Subangular Blocky to Platy	Strong	rootlets 1-2%, pinholes 5%, worm casts 1%	Gradual, smooth	
			170-230	10YR 6/4	Light Yellowish Brown	Sandy Clay Loam	Loose to Friable	Crumb to Subangular Blocky	Weak	multiple lamina of sand and calcium carbonate (2cm long) 5%	Clear, smooth	
			230-300	10YR 4/1	Dark gray	Clay Loam	Extremely Firm	Blocky to Massive	Strong	calcium carbonate 1-5mm (5-10%), some iron and manganese mottles 5%	Unobserved	

BHT	County	Parcel	Depth (cmbs)	Munsell*	Soil Color*	Soil Texture	Consistency	Structure Type	Grade	Inclusions	Lower Boundary	Comment
BHT04	Bastrop	30305	0-45	10YR 4/2	Dark grayish brown	Clay Loam	Firm	Subangular Blocky	Moderate	roots 2-5%, rootlets 15%, snail shell 1%, worm casts 2%	Gradual, horizontal	
			45-77	10YR 5/2	Grayish brown	Sandy Clay Loam	Firm	Subangular Blocky	Strong	rootlets 10%, pin holes 1-2%, worm casts 2%, snail shells 1%	Clear, horizontal	
			77-132	10YR 4/2	Dark grayish brown	Clay Loam	Firm	Crumb to Subangular Blocky	Moderate	rootlets 7%, pinhole 5%, snail shell 1-2%	Clear, smooth	9 tertiary flakes were identified in the backhoe spoil pile during excavation and came from a depth of between 140 to 150 cmbs. Additionally: 1 secondary flake and 7 pieces of thermal shatter were collected from an unknown depth.
			132-193	10YR 4/2	Dark grayish brown	Clay Loam	Firm	Angular Blocky	Moderate	prominent slickensides, calcium carbonate (2-5mm) 3-5%	Clear, horizontal	
			193-300	10YR 6/4	Light Yellowish Brown	Sandy Clay Loam	Firm	Subangular Blocky	Strong	calcium carbonate 1 cm (2%), prominent slickensides	Unobserved	
BHT05	Bastrop	30310	0-21	10YR 4/2	Dark grayish brown	Loamy Clay Loam	Friable	Subangular Blocky	Moderate	roots 10%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (1%)	Clear, Slightly Wavy	
			21-42	10YR 4/3	Brown	Loam to Clay Loam	Friable	Crumb to Subangular Blocky	Weak	roots 5%, rootlets 15%, pin holes 15%, worm casts 5%, snail fragments 5%, whole snail, 1% (Heliodiscus)	Gradual, smooth	
			42-81	10YR 5/3	Brown	Sandy Clay Loam	Friable	Angular Blocky	Moderate	roots 1-3%, rootlets 1-5%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (Heliodiscus)	Abrupt, smooth	
			81-109	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	Friable to Firm	Angular Blocky	Moderate to Strong	Friable to slightly firm, angular, medium to coarse size, moderate to strong grade, rootlets 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (liptooth)	Clear, smooth	Matrix from insect burrows (5%) bring down strat III, possible buried soil
			109-141	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Gradual, smooth	
			141-253	10YR 6/3-6/4	Pale brown to light yellowish brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pinholes 5%, worm casts 2%, white filaments (2-3mm), no snail shell	Abrupt, smooth	beds of fine sand
			253-290+	10YR 3/1	Very dark gray	Loamy Clay	Firm	Angular Blocky to Massive	Moderate	rootlets 2%, pin holes 1%, worm casts 2%, white nodules (5-10mm) 10%	Unobserved	Possible buried soil
BHT06	Bastrop	30310	0-15	10YR 4/2	Dark grayish brown	Loamy Clay Loam	Friable	Subangular Blocky	Moderate	roots 10%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (1%)	Clear, Slightly Wavy	
			15-43	10YR 5/3	Brown	Sandy Clay Loam	Friable	Angular Blocky	Moderate	roots 1-3%, rootlets 1-5%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (Heliodiscus)	Abrupt, smooth	
			43-62	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	Friable to Firm	Angular Blocky	Moderate to Strong	Friable to slightly firm, angular, medium to coarse size, moderate to strong grade, rootlets 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (liptooth)	Clear, smooth	Slightly higher clay content than BHT05
			62-89	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Gradual, smooth	Slightly higher clay content than BHT05
			89-254	10YR 6/3-6/4	Pale brown to light yellowish brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pinholes 5%, worm casts 2%, white filaments (2-3mm), no snail shell	Abrupt, smooth	
			254-290	10YR 3/1	Very dark gray	Loamy Clay	Firm	Angular Blocky to Massive	Moderate	rootlets 2%, pin holes 1%, worm casts 2%, white nodules (5-10mm) 10%	Unobserved	Possible buried soil
BHT07	Bastrop	30310	0-19	10YR 4/2	Dark grayish brown	Loamy Clay Loam	Friable	Subangular Blocky	Moderate	roots 15%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (5%)	Clear, Slightly Wavy	
			19-44	10YR 5/3	Brown	Sandy Clay Loam	Friable	Angular Blocky	Moderate	roots 5-10%, rootlets 20%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (Heliodiscus)	Abrupt, smooth	
			44-84	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	Firm	Angular Blocky	Moderate to Strong	rootlets 5-10%, roots 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (liptooth)	Clear, smooth	
			84-119	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Gradual, smooth	Between 83 to 105 cmbs: 1 projectile point distal tip, 2 modified flakes, 2 scrapers, 1 biface, 2 primary flakes, 9 secondary flakes, 9 tertiary flakes, and nine unidentified bones.
			119-137	10YR 3/1	Very dark gray	Loamy Clay	Firm	Angular Blocky to Massive	Moderate	rootlets 2%, pin holes 1%, worm casts 2%, white filaments (2-3mm) 5%	Unobserved	

BHT	County	Parcel	Depth (cmbs)	Munsell*	Soil Color*	Soil Texture	Consistency	Structure Type	Grade	Inclusions	Lower Boundary	Comment
BHT08	Bastrop	30310	0-16	10YR 4/2	Dark grayish brown	Loamy Clay Loam	Friable	Subangular Blocky	Moderate	roots 10%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (1%)	Clear, Slightly Wavy	
			16-31	10YR 4/3	Brown	Loam to Clay Loam	Friable	Crumb to Subangular Blocky	Weak	roots 5%, rootlets 15%, pin holes 15%, worm casts 5%, snail fragments 5%, whole snail, 1% (rabdotus)	Gradual, smooth	
			31-52	10YR 5/3	Brown	Sandy Clay Loam	Friable	Angular Blocky	Moderate	roots 1-3%, rootlets 1-5%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (Heliodiscus)	Abrupt, smooth	
			52-72	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	Friable to Firm	Angular Blocky	Moderate to Strong	rootlets 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (lipetooth)	Clear, smooth	Possible buried soil
			72-116	10YR 6/3-6/3	Brown to pale brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Gradual, smooth	Tan pockets of 10YR 7/3-7/4 silt (6-10 mm thick) 89-90 and 104-105 cmbs, discontinuous, possibly flood drape
			116-178	10YR 6/3-6/4	Pale brown to light yellowish brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pinholes 5%, worm casts 2%, white filaments (2-3mm), no snail shell	Abrupt, smooth	
			178-247	10YR 3/1	Very dark gray	Loamy Clay	Firm	Angular Blocky to Massive	Moderate	rootlets 2%, pin holes 1%, worm casts 2%, white nodules (5-10mm) 10%	Gradual, smooth	Mussel shell at 186 cmbs, possibly a buried soil
			247-305	10YR 4/2-4/3	Dark gray to dark grayish brown	Loamy Clay	Firm	Angular Blocky to Prismatic	Moderate to Strong	white nodules (5-8 mm/15%), iron staining (1-2 mm/1%), iron nodules, snail fragments 1%, insect burrows 2-3%	Gradual, smooth	
			305-336	10YR 5/3	Brown	Silty Clay Loam	Friable	Prismatic	Moderate	rootlets 1%, slickensides 2-3 cm (2%), white nodules (5-15 mm/10-15%), snail fragments 1%, iron pebbles (2-4mm) <1%	Unobserved	Shrink swell
BHT09	Bastrop	30310	0-16	10YR 4/2	Dark grayish brown	Loamy Clay Loam	Friable	Subangular Blocky	Moderate	roots 10%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (1%)	Clear, Slightly Wavy	
			16-37	10YR 5/3	Brown	Sandy Clay Loam	Friable	Angular Blocky	Moderate	roots 1-3%, rootlets 1-5%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (Heliodiscus)	Abrupt, smooth	
			37-84	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	Friable to Firm	Angular Blocky	Moderate to Strong	rootlets 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (lipetooth)	Clear, smooth	Tan lenses (discontinuities, 10YR 7/4, silt loam (65-66, 72-73, 61-62 cmbs)
			84-114	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Gradual, smooth	Possible buried soil with: 2 unidentified bone fragments, 1 modified flake, 3 primary flakes, 16 secondary flakes, 17 tertiary flakes, and 1 scraper from 100 to 110 cmbs. Additionally: 7 ceramic sherds, 3 primary flakes, 7 secondary flakes, and 14 tertiary flakes were encountered in the trench with no depth recorded.
			114-139	10YR 6/3-6/4	Pale brown to light yellowish brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pinholes 5%, worm casts 2%, white filaments (2-3mm), no snail shell	Abrupt, smooth	
			139-165	10YR 3/1	Very dark gray	Loamy Clay	Firm	Angular Blocky to Massive	Moderate	rootlets 2%, pin holes 1%, worm casts 2%, white nodules (5-10mm) 10%	Unobserved	
BHT10	Bastrop	30305	0-16	10YR 4/2	Dark grayish brown	Loamy Clay Loam	Friable	Subangular Blocky	Moderate	roots 10%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (1%)	Clear, Slightly Wavy	
			16-44	10YR 4/3	Brown	Loam to Clay Loam	Friable	Crumb to Subangular Blocky	Weak	roots 5%, rootlets 15%, pin holes 15%, worm casts 5%, snail fragments 2%, whole snail, 1% (Heliodiscus)	Gradual, smooth	Some charcoal and burned clay material was not collected and exact quantity is not known.
			44-74	10YR 5/3	Brown	Sandy Clay Loam	Friable	Angular Blocky	Moderate	roots 3%, rootlets 1-5%, pin holes 5-10%, worm casts 2%, snail fragments 2%, whole snail 1% (Heliodiscus)	Abrupt, smooth	
			74-101	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	Friable to Firm	Angular Blocky	Moderate to Strong	rootlets 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (lipetooth)	Clear, smooth	Burned rock fragment at 90 cmbs - material was not collected.
			101-151	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Gradual, smooth	
			151-205	10YR 6/3-6/4	Pale brown to light yellowish brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pinholes 5%, worm casts 2%, white filaments (2-3mm), no snail shell	Abrupt, smooth	
			205-305	10YR 3/1	Very dark gray	Loamy Clay	Firm	Angular Blocky to Massive	Moderate	rootlets 2%, pin holes 1%, worm casts 2%, white nodules (5-10mm) 10%	Unobserved	
BHT11	Bastrop	30305	0-10	10YR 4/2	Dark grayish brown	Loamy Clay Loam	Friable	Subangular Blocky	Moderate	roots 15%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (5%)	Clear, Slightly Wavy	Ground surface slightly sloping toward the west
			10-23	10YR 5/3	Brown	Sandy Clay Loam	Friable	Angular Blocky	Moderate	roots 5-10%, rootlets 20%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (Heliodiscus)	Irregular, wavy	
			23-41	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	Firm	Angular Blocky	Moderate to Strong	rootlets 5-10%, roots 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (lipetooth)	Abrupt, wavy	
			41-82	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Clear, wavy	Possible graver at 63 cmbs, two tertiary flakes at 78 and 79 cmbs, and a primary flake at 82 cmbs.
			82-146	10YR 3/1	Very dark gray	Loamy Clay	Firm	Angular Blocky to Massive	Moderate	rootlets 2%, pin holes 1%, worm casts 2%, white filaments (10-30mm) 3-5%	Unobserved	
BHT12	Bastrop	30305	0-20	10YR 4/2	Dark grayish brown	Loamy Clay Loam	Friable	Subangular Blocky	Moderate	roots 15%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (5%)	Clear, Slightly sloping west	
			20-42	10YR 5/3	Brown	Sandy Clay Loam	Friable	Angular Blocky	Moderate	roots 5-10%, rootlets 20%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (Heliodiscus)	Gradual, wavy	
			42-101	10YR 4/1-4/2	Dark gray to dark grayish brown	Loamy Clay	Firm	Subangular Blocky	Moderate	less than 1% snail shell, roots 5%, rootlets 5%, pin holes 5%, worm casts 1%	Clear, horizontal	A secondary flake and piece of thermal shatter at 62 cmbs, a tertiary flake at 74 cmbs, and a piece of thermal shatter at 83 cmbs.
			101-154	10YR 3/1	Very dark gray	Loamy Clay	Firm	Angular Blocky to Massive	Moderate	rootlets 2%, pin holes 1%, worm casts 2%, white filaments (10-30mm) 3-5%	Unobserved	

BHT	County	Parcel	Depth (cmbs)	Munsell*	Soil Color*	Soil Texture	Consistency	Structure Type	Grade	Inclusions	Lower Boundary	Comment
BHT13	Bastrop	30305	0-18	10YR 4/2	Dark grayish brown	Loamy Clay Loam	Friable	Subangular Blocky	Moderate	roots 10%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (1%)	Clear, Slightly Wavy	
			18-37	10YR 4/3	Brown	Loam to Clay Loam	Friable	Crumb to Subangular Blocky	Weak	roots 5%, rootlets 15%, pin holes 15%, worm casts 5%, snail fragments 5%, whole snail, 1% (Heliodiscus)	Gradual, smooth	
			37-51	10YR 5/3	Brown	Sandy Clay Loam	Friable	Angular Blocky	Moderate	roots 1-3%, rootlets 1-5%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (Heliodiscus)	Gradual, smooth	Lower boundaries are very gradual
			51-74	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	Friable to Slightly Firm	Angular Blocky	Moderate to Strong	rootlets 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (lip tooth)	Gradual, smooth	A single tertiary flake at 50, 63, and 69cmbs. Additionally, a secondary flake and five tertiary flakes were identified in the backhoe spoil pile with no known depths of origin. Lower boundaries are very gradual
			74-147	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Unobserved	
BHT14	Bastrop	30305	0-15	10YR 4/2	Dark grayish brown	Loamy Clay Loam	Friable	Subangular Blocky	Moderate	roots 10%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (1%)	Clear, Slightly Wavy	
			15-38	10YR 4/3	Brown	Loam to Clay Loam	Friable	Crumb to Subangular Blocky	Weak	roots 5%, rootlets 15%, pin holes 15%, worm casts 5%, snail fragments 5%, whole snail, 1% (Heliodiscus)	Gradual, smooth	
			38-50	10YR 5/3	Brown	Sandy Clay Loam	Friable	Angular Blocky	Moderate	roots 1-3%, rootlets 1-5%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (Heliodiscus)	Gradual, smooth	
			50-93	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	Friable to Slightly Firm	Angular Blocky	Moderate to Strong	rootlets 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (lip tooth)	Gradual, smooth	Single tertiary flake at 90 cmbs.
			93-140	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Unobserved	Single tertiary flake at 95 cmbs, one piece of thermal shatter at 96 cmbs, and one piece of thermal shatter at 98 cmbs. Within the backhoe spoil pile one tertiary flake and one piece of FCR was collected. Additionally, two tertiary flakes were collected from an unknown depth.
BHT15	Bastrop	30305	0-15	10YR 4/2	Dark grayish brown	Loamy Clay Loam	Friable	Subangular Blocky	Moderate	roots 10%, rootlets 25%, pin holes 10%, worm casts 5-10%, snail fragments (3%), decomposing organics (1%)	Clear, Slightly Wavy	
			15-28	10YR 4/3	Brown	Loam to Clay Loam	Friable	Crumb to Subangular Blocky	Weak	roots 5%, rootlets 15%, pin holes 15%, worm casts 5%, snail fragments 5%, whole snail, 1% (Heliodiscus)	Gradual, smooth	
			28-55	10YR 5/3	Brown	Sandy Clay Loam	Friable	Angular Blocky	Moderate	roots 1-3%, rootlets 1-5%, pin holes 5-10%, worm casts 1%, snail fragments 5%, whole snail 1% (Heliodiscus)	Abrupt, smooth	
			55-79	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	Friable to Slightly Firm	Angular Blocky	Moderate to Strong	rootlets 5-10%, pin holes 5%, worm casts 1%, slickensides 1-3mm (5%), shrink-swell, snail fragments 1%, whole snail 1% (lip tooth)	Clear, smooth	
			79-121	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	Friable	Angular Blocky	Moderate	rootlets 3%, pin holes 5%, worm casts 1%, insect burrows with strat IV matrix 3%, white filaments (1mm/3-5%) and increasing with depth	Clear, smooth	
			121-210	10YR 3/1	Very dark gray	Loamy Clay	Firm	Subangular to Massive	Moderate	rootlets 2%, pin holes 1%, worm casts 2%, white nodules (5-10mm) 10%	Abrupt, smooth	
			210-330	10YR 5/3	Brown	Silty Clay Loam	Friable	Prismatic	Moderate	rootlets 1%, slickensides 2-3 cm (2%), white nodules (5-15 mm/10-15%), snail fragments 1%, iron pebbles (2-4mm) <1%	Unobserved	
BHT16	Bastrop	30305	0-17	10YR 5/4	Yellowish Brown	Sandy Loam	Friable	Subangular Blocky	Moderate	roots 5%, rootlets 5%, pinholes 5%, worm casts 3%, insect burrows 3%, mottles (7.5YR 4/6) 10%	Clear, smooth	
			17-53	10YR 4/4	Dark Yellowish Brown	Sandy Loam	Friable	Subangular Blocky	Weak	roots 2%, rootlets 10%, pinholes 10%, worm casts 1%	Abrupt, Slightly Wavy	Mottled clay pocket 10YR 4/2
			53-73	10YR 3/2	Very Dark Grayish Brown	Clay Loam	Friable	Angular Blocky	Moderate	roots 1%, rootlets 3%, pinholes 5%, insect burrows 1%	Clear, smooth	sandy loam pockets from previous strat
			73-89	10YR 4/4	Dark Yellowish Brown	Sandy Clay Loam	Friable	Subangular Blocky	Weak to Moderate	roots <1%, rootlets <1%, pinholes 3%	Clear, smooth	
			89-183	10YR 3/3	Dark Brown	Sandy Clay Loam	Friable to Firm	Angular Blocky	Moderate	roots <1%, rootlets <1%, pinholes 2%	Unobserved	Pockets of previous strat
			183+	10YR 4/2	Dark Grayish Brown	-	-	-	-	Mottles (7.5YR 5/8) 40%	Unobserved	
BHT17	Bastrop	30305	0-24	10YR 5/4	Yellowish Brown	Sandy Clay Loam	Friable to Firm	Subangular Blocky	Strong	roots 2%, rootlets 5%, pinholes 5%, worm casts 3%, insect burrows 3%, mottles (7.5YR 4/6) 5%	Clear, smooth	
			24-49	10YR 4/4	Dark Yellowish Brown	Sandy Clay Loam	Friable to Firm	Subangular Blocky	Weak	roots <1%, rootlets 2%, pinholes 10%, worm casts 1%	Abrupt, smooth	
			49-66	10YR 3/2	Very Dark Grayish Brown	Clay Loam	Firm	Angular Blocky	Weak	roots 1%, rootlets 3%, pinholes 5%	Clear, smooth	sandy loam pockets from previous strat
			66-102	10YR 4/4	Dark Yellowish Brown	Clay	Firm	Subangular Blocky	Weak to Moderate	rootlets <1%, pinholes <1%	Clear, smooth	
			102-240	10YR 2/1	Black	Clay	Friable to Firm	Angular Blocky	Moderate to Strong	rootlets <1%, pinholes <1%, white filaments (1-2 mm) 1%	Unobserved	Pockets of 10YR 5/6 sandy loam
			240+	10YR 4/2	Dark Grayish Brown	-	-	-	-	Mottles (7.5YR 5/8) 30%	Unobserved	
BHT18	Bastrop	30305	0-31	10YR 3/2	Very Dark Grayish Brown	Clay to Clay Loam	Firm	Angular Blocky	Weak	roots 5%, rootlets 15%, worm casts 3%, insect burrows 3%, pinholes 5-8%	Clear, Smooth	West wall 40 x 30 cm ant gallery
			31-54	10YR 3/3	Dark Brown	Clay Loam	Friable to Firm	Subangular Blocky	Weak to Moderate	roots <1%, rootlets 5%, pinholes 5%, worm casts 1%, insect burrows 1%, mottles (10YR 4/4) 10%	Gradual, smooth	
			54-102	10YR 3/3	Dark Brown	Clay to Clay Loam	Firm to Extremely Firm	Subangular Blocky	Weak	rootlets <1%, pinholes 5%, insect burrows <1%	Abrupt, Smooth	
			102-143	10YR 4/3	Brown	Clay	Firm	Massive	N/A	rootlets <1%, pinholes 1%, calcium carbonate nodules (2-3 mm) 10-15%	Unobserved	

BHT	County	Parcel	Depth (cmbs)	Munsell*	Soil Color*	Soil Texture	Consistency	Structure Type	Grade	Inclusions	Lower Boundary	Comment
BHT19	Bastrop	30305	0-36	10YR 2/2	Very Dark Brown	Clay to Clay Loam	Friable to Firm	Subangular Blocky	Weak	roots 3%, rootlets 15%, pinholes 5%, insect burrows 2%, vertical cracking	Gradual, Smooth	Column sample excavated on west wall across from profile, NCM, excavated to 130 cmbs
			36-75	10YR 4/2	Dark Grayish Brown	Clay	Firm	Subangular Blocky	Weak	rootlets 5%, pinholes 2%, mottles (10YR 5/4) 5%, white nodules (2-4 mm) 3%	Gradual, Smooth	
			75-116	10YR 4/3	Brown	Clay	Firm	Subangular Blocky	Weak	rootlets <1%, pebbles (1-3 mm) 1%, mottles (10YR 5/4) 15%, white nodules (2-4 mm) 1%	Clear, Smooth	
			116-240	10YR 4/4	Dark Yellowish Brown	Clay	Firm	Subangular Blocky	Weak	rootlets <1%, pebbles (1-7 mm) 1%, pinholes <1%, white nodules (3-7 mm) <1%	Unobserved	
			240+	10YR 4/2	Dark Grayish Brown	-	-	-	-	Mottles (7.5YR 5/8) 30%	Unobserved	
BHT20	Bastrop	30310	0-37	10YR 3/2	Very Dark Grayish Brown	Clay Loam	Firm to Extremely Firm	Subangular Blocky	Weak to Moderate	roots 5%, rootlets 20%, insect burrows 5%, worm casts 3%, pinholes 5%, vertical cracking 5%	Clear, Slightly Wavy	
			37-114	10YR 3/1	Dark Gray	Clay to Clay Loam	Extremely Firm	Subangular Blocky	Strong	rootlets 2%, insect burrows 1%, snail shell fragments <1%, pinholes 2%, white nodules (1-3 mm) 1%, subrounded pebbles (1-3 mm) <1%	Gradual to Diffuse, Smooth	White nodules are more prominent 70-114 cmbs
			114-200	10YR 4/3	Brown	Clay	Extremely Firm	Massive	N/A	mottles (10YR 6/8) 5-10%, white nodules _ 1-3 mm) 5%, pebbles (1-3 mm) 5%	Unobserved	
			200+	2.5Y 5/3	Light Olive Brown	-	-	-	-	-	Unobserved	
BHT21	Bastrop	30310	0-37	10YR 3/2	Very Dark Grayish Brown	Clay Loam	Firm to Extremely Firm	Subangular Blocky	Weak	roots 10%, rootlets 15%, snail shell fragments 2%, pinholes 5%, insect burrows 5%	Clear, Slightly Wavy	Column sample excavated on west wall down to 70 cmbs
			37-71	10YR 3/2	Very Dark Grayish Brown	Clay to Clay Loam	Firm to Extremely Firm	Subangular Blocky	Moderate	roots 3%, rootlets 1%, mottles (10YR 5/2) 20%, snail shell fragments 2%, insect burrows 1%, pinholes 5%	Clear, Smooth	Charcoal lens 54-63 cmbs, possible root burns; decomposing organics
			71-128	10YR 3/2	Very Dark Grayish Brown	Clay	Extremely Firm	Massive	N/A	rootlets <1%, snail shell fragments <1%, pinholes 2%, white nodules (1-3 mm) 5%	Gradual, Smooth	
			128-148	2.5Y 4/3	Olive Brown	Clay	Extremely Firm	Massive	N/A	rootlets <1%, pinholes 1%, white nodules (5-10 mm) 10%	Unobserved	
BHT22	Bastrop	30310	0-21	10YR 3/2	Very Dark Grayish Brown	Clay Loam	Firm to Extremely Firm	Subangular Blocky	Weak	roots 10%, rootlets 15%, snail shell fragments 2%, pinholes 5%, insect burrows 5%	Clear, Slightly Wavy	
			21-111	10YR 3/2	Very Dark Grayish Brown	Clay	Extremely Firm	Massive	N/A	rootlets <1%, snail shell fragments <1%, pinholes 2%, white nodules (1-3 mm) 5%	Gradual, Smooth	
			111-140	2.5Y 4/3	Olive Brown	Clay	Extremely Firm	Massive	N/A	rootlets <1%, pinholes 1%, white nodules (5-10 mm) 10%, worm casts <1%	Unobserved	
BHT23	Bastrop	30310	0-50	10YR 3/2	Very Dark Grayish Brown	Clay Loam	Firm to Extremely Firm	Subangular Blocky	Weak	roots 10%, rootlets 15%, snail shell fragments 2%, pinholes 5%, insect burrows 5%	Clear, Slightly Wavy	
			50-89	2.5Y 4/3	Olive Brown	Clay	Extremely Firm	Massive	N/A	rootlets <1%, pinholes 1%, white nodules (1-3 mm) 2%	Gradual, Smooth	
			89-155	10YR 3/1	Very Dark Gray	Clay	Extremely Firm	Massive	N/A	rootlets <1%, snail shell fragments <1%, pinholes 2%, white nodules (1-3 mm) 5%	Unobserved	
BHT24	Bastrop	30310	0-38	10YR 3/2	Very Dark Grayish Brown	Clay Loam	Firm to Extremely Firm	Subangular Blocky	Weak	roots 10%, rootlets 15%, snail shell fragments 2%, pinholes 5%, insect burrows 5%	Clear, Slightly Wavy	
			38-84	10YR 3/2	Very Dark Grayish Brown	Clay	Extremely Firm	Massive	N/A	rootlets <1%, snail shell fragments <1%, pinholes 2%, white nodules (1-3 mm) 5%	Diffuse, Smooth	
			84-146	2.5Y 4/2	Dark Grayish Brown	Clay	Extremely Firm	Massive	N/A	rootlets <1%, pinholes 1%, white nodules (5-10 mm) 10%, worm casts <1%	Unobserved	
BHT25	Bastrop	30310	0-35	10YR 3/2	Very Dark Grayish Brown	Clay Loam	Firm to Extremely Firm	Subangular Blocky	Weak	roots 10%, rootlets 15%, snail shell fragments 2%, pinholes 5%, insect burrows 5%	Clear, Slightly Wavy	
			35-98	10YR 3/2	Very Dark Grayish Brown	Clay	Extremely Firm	Massive	N/A	rootlets <1%, snail shell fragments <1%, pinholes 2%, white nodules (1-3 mm) 5%	Diffuse, Smooth	
			98-150	2.5Y 4/2	Dark Grayish Brown	Clay	Extremely Firm	Massive	N/A	rootlets <1%, pinholes 1%, white nodules (5-10 mm) 10%, worm casts <1%	Clear, Smooth	
			150-161	10YR 4/4	Dark Yellowish Brown	Clay	Extremely Firm	Massive	N/A	iron redox 20%, mottles (10YR 7/2) 5%, mottles (10YR 4/1) 3%, white nodules (1-3 mm) 3%	Unobserved	
BHT26	Bastrop	30310	0-60	10YR 3/2	Very Dark Grayish Brown	Clay Loam	Firm to Extremely Firm	Subangular Blocky	Weak	roots 10%, rootlets 15%, snail shell fragments 2%, pinholes 5%, insect burrows 5%	Clear, Slightly Wavy	
			60-146	10YR 3/2	Very Dark Grayish Brown	Clay	Extremely Firm	Massive	N/A	rootlets <1%, snail shell fragments <1%, pinholes 2%, white nodules (1-3 mm) 5%	Unobserved	
BHT01	Lee	20265	0-56	7.5YR 4/2	Brown	Sandy Clay Loam	Friable	Subangular Blocky	Moderate	rootlets 5-20%, iron oxide (>.5 cm) 2%, insect burrows 1%, pinholes 5%	Clear - Gradual, Smooth - Wavy	Rootzone 0-10 cm, sand pockets (1-4 cm) 1% 10YR 5/4
			56-88	10YR 4/3	Brown	Clay Loam	Firm	Angular Blocky	Moderate to Strong	rootlets 2%, pinholes 2%	Diffuse, Wavy	
			88-156	10YR 5/4	Yellowish Brown	Sandy Clay	Loose	Granular	Unobserved	Mottles (10YR 5/1; 1-5 cm) 15-20%, rootlets 5%	Unobserved	Saturated, water seeping in from walls at top of level, standing water at bottom of trench
BHT02	Lee	20265	0-41	7.5YR 2.5/2	Very Dark Brown	Sandy Clay Loam	Friable	Subangular Blocky	Moderate	rounded pebbles (<2% limestone) 5%, cobbles <1%, roots 15%, rootlets 20%, sand pockets (7.5YR 5/4) >5%, pebbles 5%, insect burrows 5%	Clear, Wavy	Root zone 0-5 cm
			41-89	7.5YR 4/3	Brown	Sandy Clay Loam	Friable	Subangular Blocky	Moderate	rounded to subrounded gravels <5%, rootlets 5%, insect burrows <5%, pinholes <5%, iron oxide (1-2 mm) 10%	Gradual, smooth	granular sand, sand lenses after 70 cm
			89-104	7.5YR 4/4	Brown	Sandy Loam	Friable	Granular	Unobserved	iron oxide (2-5 cm) 15-20%, gray mottles (10YR 5/2-5/1) 30-40%	Clear, smooth	Saturated
			104-126	2.5YR 4/8	Red	Sandy Clay	Friable	Angular Blocky	Moderate	gray mottle (10YR 5/2-5/1) 20-30%	Unobserved	

Site No.	Temp Site No.	Backhoe Trench No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Positive (P) or Negative (N)	Comments/ Cultural Materials
41BP960	FS63	BHT07	1	0-10	10YR 4/2	Dark grayish brown	Loamy Clay Loam	N	–
			2	10-20	10YR 4/2	Dark grayish brown	Loamy Clay Loam	N	–
			3	20-30	10YR 5/3	Brown	Sandy Clay Loam	N	–
			4	30-40	10YR 5/3	Brown	Sandy Clay Loam	N	–
			5	40-50	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	N	–
			6	50-60	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	N	–
			7	60-70	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	N	–
			8	70-80	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	N	–
			9	80-90	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	P	1 tertiary flake at 83 cmbs.
			10	90-100	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	P	4 tertiary flakes at 90, 91, 92, and 93 cmbs.
			11	100-110	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	P	Possible fired quartzite at 105 cmbs.
			12	110-120	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	N	–
			13	120-130	10YR 3/1	Very dark gray	Loamy Clay	N	–
41BP960	FS63	BHT09	1	0-10	10YR 4/2	Dark grayish brown	Loamy Clay Loam	N	–
			2	10-20	10YR 4/2	Dark grayish brown	Loamy Clay Loam	N	–
			3	20-30	10YR 5/3	Brown	Sandy Clay Loam	N	–
			4	30-40	10YR 5/3	Brown	Sandy Clay Loam	N	–
			5	40-50	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	N	–
			6	50-60	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	N	–
			7	60-70	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	N	–
			8	70-80	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	N	–
			9	80-90	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	P	17 tertiary flakes from 89 to 103 cmbs.
			10	90-100	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	P	1 secondary flake at 91 cmbs, 1 unidentified bone at 92 cmbs, 1 ceramic sherd and 1 primary flake at 97 cmbs, and 1 secondary flake at 98 cmbs.
			11	100-110	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	P	1 unidentified bone at 101 cmbs.
			12	110-120	10YR 6/3-6/4	Pale brown to light yellowish brown	Silty Clay Loam	N	–
			13	120-130	10YR 6/3-6/4	Pale brown to light yellowish brown	Silty Clay Loam	N	–
41BP961	FS64	BHT04	1	0-10	10YR 4/2	Dark grayish brown	Clay Loam	N	–
			2	10-20	10YR 4/2	Dark grayish brown	Clay Loam	N	–
			3	20-30	10YR 4/2	Dark grayish brown	Clay Loam	N	–
			4	30-40	10YR 4/2	Dark grayish brown	Clay Loam	N	–
			5	40-50	10YR 5/2	Grayish brown	Sandy Clay Loam	N	–
			6	50-60	10YR 5/2	Grayish brown	Sandy Clay Loam	N	–
			7	60-70	10YR 5/2	Grayish brown	Sandy Clay Loam	N	–
			8	70-80	10YR 5/2	Grayish brown	Sandy Clay Loam	P	1 piece of thermal shatter at 79 cmbs.
			9	80-90	10YR 4/2	Dark grayish brown	Clay Loam	P	1 tertiary flake at 83 cmbs, 1 piece of thermal shatter at 85 cmbs, and 1 tertiary flake from 80 to 90 cmbs.
			10	90-100	10YR 4/2	Dark grayish brown	Clay Loam	P	1 tertiary flake from 90 to 100 cmbs.
			11	100-110	10YR 4/2	Dark grayish brown	Clay Loam	N	–
			12	110-120	10YR 4/2	Dark grayish brown	Clay Loam	N	–
			13	120-130	10YR 4/2	Dark grayish brown	Clay Loam	N	–
			14	130-140	10YR 4/2	Dark grayish brown	Clay Loam	N	–
			15	140-150	10YR 4/2	Dark grayish brown	Clay Loam	N	–
			16	150-160	10YR 4/2	Dark grayish brown	Clay Loam	N	–
			17	160-170	10YR 4/2	Dark grayish brown	Clay Loam	N	–
			18	170-180	10YR 4/2	Dark grayish brown	Clay Loam	N	–
			19	180-190	10YR 4/2	Dark grayish brown	Clay Loam	N	–
			20	190-200	10YR 6/4	Light Yellowish Brown	Sandy Clay Loam	N	–
			21	200-210	10YR 6/4	Light Yellowish Brown	Sandy Clay Loam	N	–
			22	210-220	10YR 6/4	Light Yellowish Brown	Sandy Clay Loam	N	–
			23	220-230	10YR 6/4	Light Yellowish Brown	Sandy Clay Loam	N	–
			24	230-240	10YR 6/4	Light Yellowish Brown	Sandy Clay Loam	N	–
			25	240-250	10YR 6/4	Light Yellowish Brown	Sandy Clay Loam	N	–
			26	250-260	10YR 6/4	Light Yellowish Brown	Sandy Clay Loam	N	–
			27	260-270	10YR 6/4	Light Yellowish Brown	Sandy Clay Loam	N	–
			28	270-280	10YR 6/4	Light Yellowish Brown	Sandy Clay Loam	N	–
			29	280-290	10YR 6/4	Light Yellowish Brown	Sandy Clay Loam	N	–
			30	290-300	10YR 6/4	Light Yellowish Brown	Sandy Clay Loam	N	–

Appendix C

Column Sample Data

Site No.	Temp Site No.	Backhoe Trench No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Positive (P) or Negative (N)	Comments/ Cultural Materials
41BP961	FS64	BHT10	1	0-10	10YR 4/2	Dark grayish brown	Loamy Clay Loam	N	—
			2	10-20	10YR 4/2	Dark grayish brown	Loamy Clay Loam	N	—
			3	20-30	10YR 4/3	Brown	Loam to Clay Loam	N	—
			4	30-40	10YR 4/3	Brown	Loam to Clay Loam	N	—
			5	40-50	10YR 5/3	Brown	Sandy Clay Loam	N	—
			6	50-60	10YR 5/3	Brown	Sandy Clay Loam	N	—
			7	60-70	10YR 5/3	Brown	Sandy Clay Loam	N	—
			8	70-80	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	N	—
			9	80-90	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	N	—
			10	90-100	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	N	—
			11	100-110	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	N	—
			12	110-120	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	N	—
			13	120-130	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	N	—
			14	130-140	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	N	—
			15	140-150	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	N	—
			16	150-160	10YR 6/3-6/4	Pale brown to light yellowish brown	Silty Clay Loam	N	—
			17	160-170	10YR 6/3-6/4	Pale brown to light yellowish brown	Silty Clay Loam	N	—
			18	170-180	10YR 6/3-6/4	Pale brown to light yellowish brown	Silty Clay Loam	N	—
			19	180-190	10YR 6/3-6/4	Pale brown to light yellowish brown	Silty Clay Loam	N	—
			20	190-200	10YR 6/3-6/4	Pale brown to light yellowish brown	Silty Clay Loam	N	—
			21	200-210	10YR 3/1	Very dark gray	Loamy Clay	N	—
			22	210-220	10YR 3/1	Very dark gray	Loamy Clay	N	—
			23	220-230	10YR 3/1	Very dark gray	Loamy Clay	N	—
			24	230-240	10YR 3/1	Very dark gray	Loamy Clay	N	—
			25	240-250	10YR 3/1	Very dark gray	Loamy Clay	N	—
			26	250-260	10YR 3/1	Very dark gray	Loamy Clay	N	—
			27	260-270	10YR 3/1	Very dark gray	Loamy Clay	N	—
			28	270-280	10YR 3/1	Very dark gray	Loamy Clay	N	—
			29	280-290	10YR 3/1	Very dark gray	Loamy Clay	N	—
			30	290-305	10YR 3/1	Very dark gray	Loamy Clay	N	—
41BP961	FS64	BHT11	1	0-10	10YR 4/2	Dark grayish brown	Loamy Clay Loam	N	—
			2	10-20	10YR 5/3	Brown	Sandy Clay Loam	N	—
			3	20-30	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	N	—
			4	30-40	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	N	—
			5	40-50	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	N	—
			6	50-60	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	N	—
			7	60-70	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	N	—
			8	70-80	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	N	—
			9	80-90	10YR 3/1	Very dark gray	Loamy Clay	N	—
			10	90-100	10YR 3/1	Very dark gray	Loamy Clay	N	—
			11	100-110	10YR 3/1	Very dark gray	Loamy Clay	N	—
			12	110-120	10YR 3/1	Very dark gray	Loamy Clay	N	—
			13	120-130	10YR 3/1	Very dark gray	Loamy Clay	N	—
			14	130-140	10YR 3/1	Very dark gray	Loamy Clay	N	—

Appendix C

Column Sample Data

Site No.	Temp Site No.	Backhoe Trench No.	Level	Depth (cmbs)	Munsell Soil Value	Munsell Soil Color	Soil Texture	Positive (P) or Negative (N)	Comments/ Cultural Materials
41BP961	FS64	BHT12	1	0-10	10YR 4/2	Dark grayish brown	Loamy Clay Loam	N	—
			2	10-20	10YR 4/2	Dark grayish brown	Loamy Clay Loam	N	—
			3	20-30	10YR 5/3	Brown	Sandy Clay Loam	N	—
			4	30-40	10YR 5/3	Brown	Sandy Clay Loam	N	—
			5	40-50	10YR 4/1-4/2	Dark gray to dark grayish brown	Loamy Clay	N	—
			6	50-60	10YR 4/1-4/2	Dark gray to dark grayish brown	Loamy Clay	N	—
			7	60-70	10YR 4/1-4/2	Dark gray to dark grayish brown	Loamy Clay	N	—
			8	70-80	10YR 4/1-4/2	Dark gray to dark grayish brown	Loamy Clay	N	—
			9	80-90	10YR 4/1-4/2	Dark gray to dark grayish brown	Loamy Clay	N	—
			10	90-100	10YR 4/1-4/2	Dark gray to dark grayish brown	Loamy Clay	N	—
			11	100-110	10YR 3/1	Very dark gray	Loamy Clay	N	—
			12	110-120	10YR 3/1	Very dark gray	Loamy Clay	N	—
			13	120-130	10YR 3/1	Very dark gray	Loamy Clay	N	—
			14	130-140	10YR 3/1	Very dark gray	Loamy Clay	N	—
			15	140-150	10YR 3/1	Very dark gray	Loamy Clay	N	—
41BP961	FS64	BHT13	1	0-10	10YR 4/2	Dark grayish brown	Loamy Clay Loam	N	—
			2	10-20	10YR 4/2	Dark grayish brown	Loamy Clay Loam	N	—
			3	20-30	10YR 4/3	Brown	Loam to Clay Loam	N	—
			4	30-40	10YR 4/3	Brown	Loam to Clay Loam	N	—
			5	40-50	10YR 5/3	Brown	Sandy Clay Loam	N	—
			6	50-60	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	N	—
			7	60-70	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	N	—
			8	70-80	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	N	—
			9	80-90	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	N	—
			10	90-100	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	N	—
			11	100-110	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	N	—
			12	110-120	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	N	—
			13	120-130	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	N	—
			14	130-140	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	N	—
			15	140-150	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	N	—
41BP961	FS64	BHT14	1	0-10	10YR 4/2	Dark grayish brown	Loamy Clay Loam	N	—
			2	10-20	10YR 4/2	Dark grayish brown	Loamy Clay Loam	N	—
			3	20-30	10YR 4/3	Brown	Loam to Clay Loam	N	—
			4	30-40	10YR 4/3	Brown	Loam to Clay Loam	N	—
			5	40-50	10YR 5/3	Brown	Sandy Clay Loam	N	—
			6	50-60	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	N	—
			7	60-70	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	N	—
			8	70-80	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	N	—
			9	80-90	10YR 4/1-4/2	Dark gray to dark grayish brown	Clay Loam	N	—
			10	90-100	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	P	A single secondary flake at 97 cmbs.
			11	100-110	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	N	—
			12	110-120	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	N	—
			13	120-130	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	N	—
			14	130-140	10YR 5/3-6/3	Brown to pale brown	Silty Clay Loam	N	—

APPENDIX D. 41GU177 INTERIM TESTING REPORT AND RESEARCH DESIGN

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**Interim Report:
Archaeological Investigations at
41GU177 on the Guadalupe
River, Guadalupe County, Texas**

Texas Antiquities Permit No. 7295

November 2017

SUBMITTED TO:

VRRSP Consultants, LLC.

SUBMITTED BY:

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4407 Monterey Oaks Boulevard
Building 1, Suite 110
Austin, Texas 78749

**INTERIM REPORT:
ARCHAEOLOGICAL INVESTIGATIONS
AT 41GU177 ON THE GUADALUPE RIVER,
GUADALUPE COUNTY, TEXAS**

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SWCA Project No. 31410

November 2, 2017

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INTRODUCTION

On behalf of VRRSP Consultants, LLC and the Central Texas Regional Water Supply Corporation (CTRWSC), SWCA Environmental Consultants (SWCA) has prepared this interim report to present the findings of SWCA's ongoing investigations at prehistoric site 41GU177 on project parcel 50360 (Guadalupe County) and the implications of these investigations regarding potential site preservation and/or data recovery excavations at the site. It is the professional opinion of SWCA that the site warrants State Antiquities Landmark (SAL) designation, based on the density and quality of data recovered from the site to date, as well as the overall integrity of the site's natural and cultural stratigraphy. These investigations are one component of the larger overarching cultural resources investigations for the proposed Vista Ridge Regional Water Supply (Vista Ridge) Project. The project will involve installation of a 140-mile-long, 60-inch-diameter water pipeline from north-central San Antonio, Bexar County to Deanville, Burleson County, Texas (Figure 1). The project will also include three pump station locations in Guadalupe, Bastrop, and Burleson Counties. Most of the alignment will follow existing utilities and traverse undeveloped, agricultural parcels in rural settings. The area of potential effects (APE) will consist of the proposed centerline alignment and a 100-foot corridor (50 feet on either side of centerline) for temporary and permanent construction easements. Between June 2015 and the present, the cultural resources inventory has identified 69 cultural resources, including 61 archaeological sites and eight isolated finds. All investigations described in this interim report were conducted under Texas Antiquities Permit No. 7295 issued to Principal Investigator Brandon S. Young. All work has been and will continue to be conducted in accordance with the Antiquities Code of Texas (ACT).

SITE 41GU177

This report presents the results of a series of investigations at prehistoric site 41GU177 in Guadalupe County (Figure 2). Site 41GU177 is a prehistoric campsite on forested rangeland in northwestern Guadalupe County (Figure 3). The site is on the western high bank of the Guadalupe River with a 30- to 40-foot vertical drop to the river bottom to the east and gently sloping (2–5 percent slope) terrain to the west. Vegetation consists of mixed hardwood trees, large live oak trees, and moderately dense shrub undergrowth (Figure 4). Ground surface visibility ranges from 0 to 20 percent with limestone gravels and cobbles at ground surface. The Guadalupe River is the nearest natural water source, forming the eastern boundary of the site. Soils of the site consist of very dark grayish brown to brown silt loams with 1 to 5 percent inclusions. Inclusions vary with depth, but include limestone cobbles, gravels, *Rabdotus* snail shell, a variety of other snail shell, and calcium carbonates. Previous impacts to the site area include natural erosion, vegetation clearing, grading, fence lines, and residential house and drive construction.

Certain potential adverse impacts have been proposed (i.e., an approximately 300×8×10-foot construction trench, a 65×200-foot temporary workspace, a 20- to 25-foot-wide haul road for construction activities, vegetation/tree clearing, and a horizontal directional drill [HDD] bore pit) to those portions of the site within the 85-foot-wide pipeline easement (see Figure 3). These impacts will result from work areas needed to tunnel the pipeline beneath the adjacent Guadalupe River and install the 60-inch diameter pipeline. Preliminary survey-level investigations indicated potential for intact, subsurface cultural components. As described in this interim report, SWCA conducted a series of phased survey investigations to fully assess the significance and potential eligibility of site 41GU177 for listing as a SAL.

Restricted Information
Not for Public Disclosure

Figure 1. Project location.

Restricted Information
Not for Public Disclosure

Figure 2. Project area.

Restricted Information
Not for Public Disclosure

Figure 3. Site area.

Figure 4. Typical site conditions.

SUMMARY OF INVESTIGATIONS

Site 41GU177 measures 137 meters (m) northeast/southwest by 30 m northwest/southeast; however, the site likely extends to the northwest and southeast beyond the project boundaries (see Figure 3). The site was originally discovered on August 31, 2015, during SWCA's initial Phase I pedestrian survey of the proposed water pipeline alignment. Site boundaries were determined by shovel testing for subsurface cultural deposits within project area boundaries during survey efforts. SWCA initially excavated five shovel tests across the site; however, based upon the nature and depth of the soils identified at the site and the assemblage of artifacts noted during shovel testing, a second phase of survey-level investigations consisting of systematic backhoe trenching occurred at the site on October 16, 2015. Those initial backhoe excavations were limited due to landowner access and clearing restrictions (i.e., no trees could be removed or damaged); as such, the excavation of three backhoe trenches (BHT01–BHT03) occurred only where access was practical. BHT01 and BHT03 contained no cultural materials; however, BHT02, near the northeastern end of the site, contained a partially intact burned rock feature and a moderate density of chipped-stone debitage and faunal remains. Ultimately, the 2015 investigations revealed intact prehistoric subsurface cultural materials and a buried cultural feature in the northeastern/eastern portion of the site.

Given the apparent integrity of the cultural deposit and the depth of observed artifacts, SWCA recommended that a phase additional work was warranted to better explore the cultural deposits through hand excavations and to determine if the cultural deposits retained sufficient integrity to warrant SAL designation. This phase occurred on October 12–14, 2016, until work was halted at the request of the landowner. Investigations involved reopening BHT02 (and extending it for several meters), the excavation of BHT04 that intersected at a right angle with BHT02, and the hand excavation of four, 1×1-m units (Test Units [TUs] 1–4) off BHT02 and BHT04. Due to the recovery of a possible human bone from TU03 on October 13, excavations were halted to contact the Guadalupe County Sheriff's office. Ultimately, the bone was determined to be not human; however, the landowner halted all activity on the site.

Following negotiations with the landowner, the proposed easement on parcel 50360 was purchased for the project and access was again made available to the site beginning in June 2017. SWCA returned to site 41GU177 on June 28, 2017, to complete the excavation units originally established in 2016, as well as excavate two additional backhoe trenches (BHT05 and BHT06) at the location of a proposed bore pit for a planned HDD that could impact parts of the site. During the excavation of BHT05 and BHT06, *in situ* cultural materials (including a very large chipped-stone axe and burned rock) were observed in the trench profiles and SWCA excavated a fifth hand excavation unit (TU05) at the intersection of BHT05 and BHT06 to explore the artifact and burned rock feature. Following completion of the limited excavations on July 6, 2017, there was sufficient evidence to recommend that portions of the site warranted SAL designation and potentially a phase of data recovery excavations. However, due to the previous landowner access restrictions, the remaining portions of the site still needed systematic examination to determine the integrity and potential significance of those areas. To accomplish this, in August 2017, SWCA proposed a program of close interval shovel testing and additional backhoe trenching across the remaining site area.

In September and October 2017, SWCA conducted a program of close interval shovel testing followed by additional backhoe trenching at the site to better determine the nature, depth, and extent of its cultural deposits (i.e., was there more than one temporal component represented) and to ultimately refine the proposed data recovery areas. SWCA performed the close interval shovel testing to determine the presence/absence and depth of cultural materials in parts of the site that were not previously subject to intensive examination. SWCA initiated the close interval shovel testing the week of September 10, 2017, and that was completed the following week. The hand excavations involved 53 shovel tests on an approximate 10×10 m grid. One of the primary goals of the shovel testing was to excavate all shovel tests to a depth of at least 100 centimeters (cm) below ground surface (cmbs), based on the known depth of artifacts determined from previous work on the site. As artifacts were also discovered to extend to depths of 160 cmbs during the previous investigations, every fifth shovel test was extended to a depth of 200 cmbs via a hand auger, to test for more deeply buried cultural materials. The results of the close interval shovel testing and augering indicate that artifacts extend from ground surface to a maximum depth of 140 cmbs. All artifacts from the shovel tests were collected and have been processed, washed and analyzed; these artifacts will be curated with the artifacts recovered from the prior investigations, as well as the artifacts that may be collected during any potential future data recovery excavations.

Following completion of the close interval shovel testing, SWCA was scheduled to complete additional mechanical trenching on the site the week of September 24, 2017; due to heavy rains and thunderstorms, those investigations were rescheduled and completed on October 4–5, 2017. The locations of the backhoe trenches were determined by the results of the close interval shovel testing (i.e., areas where shovel testing revealed potentially deeply buried artifacts and possible cultural features). Seven additional trenches (i.e., BHT07– BHT13) were excavated across the site. These deeper excavations revealed similar stratigraphy and artifact densities to those observed during the close interval shovel testing; however, several artifacts were noted at significantly deeper depths (i.e., close to 200 cmbs) than those in the shovel tests.

Based on the results of the phased investigations at the site, SWCA has refined the location and extent of any proposed data recovery effort, focusing efforts on the more significant and intact parts of the site that may be impacted by construction-related activities. The primary objective for the proposed undertaking is to collect data that complements and expands on what is already known about the site from SWCA's prior investigations between 2015 and 2017. Following is a detailed synopsis of SWCA's phased investigations on 41GU177 between August 2015 and October 2017.

SITE SETTING

The site is located approximately 4.7 kilometers (km) (2.9 miles) north of McQueeney in Guadalupe Counties, Texas. Site 41GU177 is on the western high bank of the Guadalupe River, with a 30- to 40-foot

vertical drop to the river bottom to the east and gently sloping (2–5 percent slope) terrain to the west. SWCA's investigations were confined to the portion of the site within the project area; however, SWCA suspects the site continues beyond the limits of the project area to the east and west.

Site 41GU177 is located within forested rangeland with mixed hardwood trees, large live oak trees, and moderately dense shrub undergrowth. Ground surface visibility ranges from 0 to 20 percent, with limestone gravels and cobbles exposed on the ground surface. Vegetation clearing and grading, fence line construction, and natural erosion have impacted site integrity to varying degrees. One property fence and private cemetery borders the northwestern site boundary, and natural erosion from the high bank of the Guadalupe River has impacted the northeastern site boundary.

OVERVIEW OF GEOMORPHOLOGY

SWCA reviewed the local geology and soils as mapped by the Bureau of Economic Geology and the U.S. Department of Agriculture's Soil Conservation Service, as well as local U.S. Geological Survey (USGS) topographic maps, aerial photographs, and excavation and site profiles, which provided the basis for the general geomorphology of site 41GU177. The site is located on the right bank (west side) of the Guadalupe River, situated roughly 30 to 35 feet above the river.

The surface geology for this area indicates that the project alignment crosses Pleistocene-age terrace deposits (Barnes 1983). These deposits are characterized as gravel, sand, silt, and clay largely derived from the Edwards Plateau situated a few miles upstream (Barnes 1983). These deposits in local areas have calcium carbonate-cemented quartz sand, silt, clay, and gravel intermixed and interbedded in terraces along streams. Low terraces of major rivers are capped by 2 to 4 m of clayey sand and silt. Sandy gravel on higher terraces varies somewhat in composition from river to river.

The soils at 41GU177 are mapped as Sunev loam (1 to 5 percent slopes) (Natural Resources Conservation Service 2017; Ramsey and Bade 1977). Briefly, the Sunev loams are occasionally identified as Venus loams (Sunev spelled backward) in older soil surveys (Ramsey and Bade 1977; Taylor et al. 1991). These are characterized as occurring on terraces or alluvial fans of rivers and large streams and composed of calcareous brown-dark brown loams and clay loams (Ramsey and Bade 1977; Taylor et al. 1991).

At 41GU177, the Guadalupe River is a competent drainage with an approximately 43-m-wide (142-foot) base and a slow southeast flowing channel. The Guadalupe River, as it winds past the site, has a high sinuosity ratio of 1.4 indicating that it is a sinuous waterway, which is apparent from the New Braunfels East and McQueeney 7.5-minute USGS topographic quadrangle maps (Charlton 2008:138–139). This sinuosity suggests a partially dynamic depositional history where the channel has moved laterally. In this type of setting, the lateral movement can significantly erode the deposits of outside meander bends and, in contrast, deposit significant amounts of sediment upon interior meanders (Charlton 2008). Site 41GU177 is situated on an exterior bend of a meander. Not surprisingly, the right bank of the river, below 41GU177, does not contain broad alluvial landforms.

At this location, the Guadalupe River valley is an unpaired, stair-stepped terrace system consisting of a series of alluvial terraces that bracket the drainage created by various episodes of overbank deposition (Waters 1992:149–151). The left bank (east side) of the Guadalupe River exhibits three terrace landforms that from youngest (closest to the channel) to oldest consist of the T₀, T₁, and T₂ terraces. In contrast, the right bank, containing 41GU177, has one apparent alluvial terrace landform (T₂).

On the right bank, the T₂ landform abruptly rises about 9.5 to 11 m (31 to 36 feet) above the Guadalupe River. The T₂ landform on both banks is broad (roughly 1 km) and gradually grades into the valley margins aligning the drainage valley. Another landform occurs upon the T₂ terrace near site 41GU177, which could

be part of the T₂ landform or remnants of an older alluvial landform (i.e., T₃). This landform parallels the Guadalupe River and is situated at roughly 580 to 585 feet above mean sea level (amsl) and about 1.5 m (5 feet) above the T₂ terrace that surrounds it. Site 41GU177 is primarily situated on the T₂ terrace between 575 to 580 feet amsl.

RESULTS

2015 INVESTIGATIONS

SWCA discovered 41GU177 on August 31, 2015, as part of the intensive pedestrian survey of the Vista Ridge project area. The site was initially identified by a scatter of surface artifacts (Figure 5). SWCA excavated five shovel tests (KS139–KS141 and RW342–RW343), with three (KS139 and RW342–RW343) being positive for cultural materials (Appendix A). Subsurface materials ranged from the ground surface to beyond 80 cmbs and consisted primarily of tertiary flakes with a few secondary flakes and cultural shatter also observed. Materials observed during the ground surface inspection consisted of: two fragmented untyped projectile points (not collected), five to 10 scrapers, two to four choppers, 50 to 80 primary flakes, 100 to 200 secondary flakes, and 100 to 200 pieces of lithic shatter. All lithic materials observed were composed of chert raw material types. SWCA also observed fragments of iridescent water mussel shells during shovel testing. No diagnostic materials or cultural features were observed during these initial shovel test excavations.

Due to the potential for deeply buried cultural deposits, backhoe trench investigations were then conducted at the site on October 16, 2015. A total of three backhoe trenches (BHT01– BHT03) were excavated; BHT01 and BHT02 were excavated within the site boundary and BHT03 was excavated approximately 40 m southwest of the site (see Figure 5). Due to landowner restrictions (i.e., no damage to oak trees) and the forested terrain, the placement of backhoe trenches was constrained. BHT01 and BHT03 encountered friable brown (10YR 5/3) silt loam overlying light yellowish brown (10YR 6/4) to very pale brown (10YR 7/4) silt loam with increasing gravel and pebble inclusions (Appendix B). In contrast, BHT02 encountered friable very dark grayish brown (10YR 3/2) to brown (10YR 4/3) silt loam horizons containing cultural materials separated by a sterile loose brown (10YR 4/3) silt loam horizon (see Appendix B). Artifacts in BHT02, including numerous lithic flakes and three burned rocks, which were initially observed in the trench wall profile between 0 and 60 cmbs. A second cultural horizon, containing lithic flakes and a blade, was observed from 90 to 120 cmbs.

To investigate the nature of the burned rock and determine if a cultural feature was present, a column sample was excavated off the north wall of BHT02. A total of 10 flakes, two animal bone fragments, one small piece of charcoal, and two burned rocks were recovered from the column sample between 0 and 55 cmbs (Appendix A). In addition, SWCA encountered four small- to medium-sized burned rocks (one 0–5 cm diameter and three 5–10 cm diameter) in a cluster at the base of the column sample. The feature was truncated on the south side by the backhoe; however, a large burned rock appears to continue into the column sample wall, suggesting portions of the feature may remain intact. After documentation was complete, the feature and associated artifacts were covered with soil and the trench was backfilled.

Figure 5. 2015 investigations at 41GU177.

2016 INVESTIGATIONS

SWCA revisited site 41GU177 between October 12–14, 2016, to further evaluate the site's significance and potential for deeply buried deposits through further mechanical trenching and hand excavations. SWCA reopened one of the original survey trenches (BHT02) from 2015 and excavated BHT04, which intersected BHT02 (Figure 6). These two trenches bisect each other in a cruciform formation in the eastern-most portion of the site, surrounded by the positive shovel tests and the densest amount of cultural materials observed. The trenches revealed moderately dense cultural materials and one cultural burned rock feature.

BHT02 was originally roughly 5 m long and excavated to a depth of approximately 180 cmbs during survey investigations (Appendix B). The trench was reopened and extended to the east to a total length of roughly 9 m long and approximately 122 cmbs. Most of the cultural materials were identified along the north wall profile in two cultural zones identified from 0 to 60 cmbs and 90 to 120 cmbs during survey efforts; SWCA observed a similar range and density of artifacts during the subsequent reopening of BHT02. One of the goals of reopening the trench was to locate the previously excavated column sample and truncated partial feature from previous survey investigations and to then establish a 1×1-m excavation unit over it, which was accomplished. BHT04, placed in the southwestern portion of the designated test area, was 8 m long and excavated to a depth of approximately 120 cmbs (see Figure 6). BHT04 served as an expansion of the trenching area, which allowed for the placement of test units off the east wall. Investigations in October 2016 involved the excavation of four hand excavated 1×1-m test units (i.e., TU01–TU04); SWCA excavated TU01 and TU02 along the north wall of BHT02, and excavated TU03 and TU04 along the east wall of BHT04 (see Figure 6). SWCA excavated the test units to varying depths before the landowner revoked land access on October 14, 2016.

TEST UNIT 1

TU01 was hand excavated to a depth of 150 cmbs (98.5 cm below datum [cmbd]). TU01 was located on the north wall of BHT02, west of TU02 (see Figure 6). Lithic artifacts include 80 primary lithic flakes, 128 secondary flakes, 574 tertiary flakes, a mano (ground stone artifact) fragment, two utilized flakes, an early-stage biface, a lithic core, a tested cobble, and three projectile points, as well as 75 faunal bones. The projectile points and point fragments consist of two untyped arrow point fragments (Figure 7, Specimens e and k) and one corner-notched, broad stem Scallorn arrow point variant (see Figure 7, Specimen a) (Appendix C). Other artifacts include burned rock between 20 and 90 cmbs, a burned nut shell at 70 to 80 cmbs, two fragments of burned seed at 140 to 150 cmbs, and freshwater mussel shell throughout.

TEST UNIT 2

TU02 was hand excavated to a depth of 140 cmbs (98.6 cmbd). TU02 was also located on the north wall of BHT02, east of TU01 (see Figure 6). Lithic artifacts include 129 primary lithic flakes, 217 secondary flakes, 873 tertiary flakes, two blades, one core, two utilized flakes, one hammerstone, one bifacial distal tip, and two projectile points. The projectile points and point fragments include one corner-notched, broad stem Scallorn arrow point variant (see Figure 7, Specimen b), an untyped arrow point preform that may be a Scallorn preform (see Figure 7, Specimen d), and the distal tip of an untyped arrow point (see Figure 7, Specimen i). Other artifacts include 10 animal bone fragments, a probable shell bead fragment (Figure 8), and burned rock at approximately 60 to 70 cmbs (Appendix C)

Figure 6. 2016 investigations at 41GU177.

Figure 7. Arrow points and arrow point fragments recovered from 41GU177: a–c. corner-notched, broad stem variant Scallorn arrow points; d. Scallorn preform; e. untyped arrow point fragment; f. untyped arrow point fragment; g. untyped arrow point (possible Sabinal specimen); h. Untyped arrow point preform; i–j. distal tips of an untyped arrow points; k. untyped arrow point fragment; and l. untyped arrow point fragment

TEST UNIT 3

TU03 was excavated to a depth of 40 cmbs (99.6 cmbd). The unit was located on the east wall of BHT04, just north of the intersection of BHT02 and BHT04 (see Figure 6). Lithic artifacts include nine primary flakes, 21 secondary flakes, 84 tertiary flakes, a utilized flake, several burned rocks, and one large bone initially thought to have the potential to be human (Appendix C).

Figure 8. Fresh water mussel shell bead fragment.

Following recovery of the large bone on October 13, 2017, SWCA contacted the Guadalupe County Sheriff's Office and the landowner to inform them of the bone. The Guadalupe County Sheriff's Office assumed custody of the bone to determine if it was human and if the excavation area represented a crime scene. At this point, the landowner revoked access to the site and a 6-week process to definitively identify the bone as human or non-human began. As such, TU03 was only minimally investigated before access to the site was revoked. SWCA's osteologist initially identified the bone as potentially human based on examination of photographs; however, once the Guadalupe County Sheriff's department assumed custody of the bone, they sent photographs to an osteologist at Texas State University, who indicated the bone was not human and probably belonged to a deer. Given that there were two conflicting opinions as to whether the bone was human or not, a third opinion was solicited from osteologist Dr. Michelle D. Hamilton of Texas State University. Following her examination of the bone, Dr. Hamilton indicated that the specimen was non-human and is likely from a bovid/ungulate (i.e., cow, bison, etc.). Given that two of the three osteologists agreed that the specimen was non-human, the bone is not considered a human remain.

TEST UNIT 4

TU04 was excavated to a depth of 30 cmbs (99.7 cmbd). The unit was located on the east wall of BHT04, just south of the intersection of BHT02 and BHT04 (see Figure 6). Lithic artifacts include 27 primary flakes, 15 secondary flakes, 171 tertiary flakes, and one unifacial scraper (Appendix C). The majority of tertiary flakes came from Level 3, 20 to 30 cmbs, with a total of 145 tertiary flakes recovered. As with TU03, this unit was minimally excavated before access to the site was revoked.

SUMMARY

The phase of site assessment occurred on October 12–14, 2016, until work was halted at the request of the landowner. Due to the recovery of a possible human bone from TU03 on October 13, excavations were stopped to contact the Guadalupe County Sheriff's office. Ultimately, the bone was determined not to be human; however, the landowner had additional concerns and would not allow any further investigations.

2017 INVESTIGATIONS

SWCA returned to site 41GU177 from June 28–July 6, 2017 (following VRRSP’s purchase of the easement from the private landowner), to complete the hand excavation units started in 2016 and continue to assess the site and its potential for deeply buried deposits. SWCA cleaned the four excavation units that had been left open from the prior year and continued the excavations to a maximum depth of 180 cmbs. In addition to completing the open units, investigators excavated two more trenches (BHT05 and BHT06) in a cruciform pattern to the northwest of the open excavation area, in and adjacent to the proposed bore pit for the HDD. This phase of investigations also excavated a fifth test unit (TU05) based on those results (Figure 9). After hand excavations were complete, SWCA’s geoarchaeologist, Ken Lawrence (MA), conducted geoarchaeological analyses of the soil consisting of soil and stratigraphic documentation and magnetic susceptibility testing.

Following completion of hand excavations on July 6, 2017, SWCA determined that additional data from across the site was warranted to further test the site and narrow down the potential data recovery areas. SWCA returned to the site in late September and from October 4–5, 2017, to conduct systematic close interval shovel testing on a 10×10-m grid across the site to further test the depth, nature, and extent of the cultural deposits (Figure 10). During the late September 2017 mobilization, 53 shovel tests were systematically excavated across the site and, based on the results, SWCA created an artifact density plot map to illustrate where artifacts were recovered (Figure 11; Appendix A). Based on that data, additional backhoe trenches (BHT07–BHT13) were then excavated on October 4–5, 2017, to explore the site further (see Figure 10; Appendix B). SWCA also conducted additional magnetic susceptibility testing during this later phase.

As Figure 11 illustrates, there is an area of high to moderate artifact density in the north-central part of the site. The portion of the site within the high and moderate density areas appears to contain intact archaeological deposits that could be impacted during construction-related activities associated with right-of-way clearing, bore hole excavation, haul road construction and use, and machinery and equipment laydown. Based on the density of cultural materials recovered, and the degree of preservation observed in the high and moderate density areas, it is SWCA’s professional opinion that the parts of 41GU177 within those areas may warrant designation as a SAL. The following provides a summary of the completed test unit excavations and additional backhoe trenching results from the 2017 investigations.

TEST UNIT 1 CONTINUED

TU01 was extended from a depth of 150 cmbs to a maximum depth of 170 cmbs (98.3 cmbd). These lower levels contained one secondary lithic flake, six tertiary lithic flakes, and five bone fragments (Appendix C). Due to the sparse number of artifacts within the lower levels, it was determined that the unit was below any occupation level and those artifacts within were likely from a secondary context, possibly due to artifact migration and/or bioturbation.

TEST UNIT 2 CONTINUED

TU02 was extended from a depth of 140 cmbs to a maximum depth of 160 cmbs (98.4 cmbd). These lower levels contained four secondary lithic flakes and three tertiary lithic flakes (see Appendix C). Like TU01, the lower excavation levels were determined to be below any occupation level, due to the paucity of artifacts, and the unit was terminated.

Figure 9. 2017 additional excavations in the proposed bore pit and adjacent work area.

Figure 10. 2017 close interval shovel test and additional backhoe trench plots.

Figure 11. Artifact density plot generated from close interval shovel testing data, backhoe trench excavations, and hand excavated units.

TEST UNIT 3 CONTINUED

TU03 was continued from a depth of 40 cmbs to a maximum depth of 180 cmbs (98.2 cmbd). The prehistoric artifact assemblage of the continued levels includes 37 primary lithic flakes, 134 secondary flakes, 553 tertiary flakes, two ground stone fragments, one bifacial tool fragment, two modified flakes, one core, and three projectile points; two untyped arrow point fragments (see Figure 7, Specimens f and j) and an untyped dart point that is possibly a Frio or Ensor specimen (see Figure 12, Specimen b). Additional artifacts include 34 bone fragments and two fresh water mussel shell (Appendix C). The mussel shell was observed between 40 to 50 cmbs and 60 to 70 cmbs, while faunal bone fragments were collected throughout the levels. Like TU01 and TU02, the lower excavation levels were determined to be below any occupation level, due to the paucity of recovered artifacts and the unit was terminated.

TEST UNIT 4 CONTINUED

TU04 was continued from a depth of 30 cmbs to a maximum depth of 160 cmbs (98.4 cmbd). The prehistoric artifact assemblage of the continued levels includes 51 primary lithic flakes, 148 secondary flakes, 466 tertiary flakes, five bifacial fragments, one bifacial blank, six ground stone fragments, one utilized flake, two lithic choppers, and one untyped arrow point preform (see Figure 7, Specimen h and Appendix C). Additional artifacts include 114 bone fragments, 11 freshwater mussel shell fragments, and eight pieces of burned clay (Appendix C). The mussel shell fragments and burned clay were observed above 90 cmbs, whereas bone fragments were observed throughout the unit. Most of the unit below 50 cmbs has been heavily bioturbated by rodent burrowing activities. Excavations encountered a hollow rodent den between 50 and 60 cmbs, with numerous infilled tunnels above and below the den. Due to the heavy bioturbation and paucity of cultural material in the lower levels, excavations in TU04 was terminated.

TEST UNIT 5

TU05 was excavated at the northeastern corner of the intersection of BHT05 and BHT06. The unit was placed to investigate a small cluster of burned rocks exposed in the corner of the trenches. TU05 was excavated from surface to a depth of 110 cmbs (98.9 cmbd). The prehistoric artifact assemblage includes 15 primary lithic flakes, 29 secondary flakes, 122 tertiary flakes, one lithic core, four bone fragments, and one fresh water mussel shell fragment (Appendix C). Additionally, during excavation of BHT06, a lithic unifacial axe was uncovered on the E wall near the intersection of BHT05 and BHT06 at a depth of 65 to 70 cmbs (Figure 13). Prehistoric artifacts within the unit become sparse below 70 cmbs, and the unit was terminated at the depth of BHT05 (i.e., 150 cmbs).

CLOSE INTERVAL SHOVEL TEST DATA

During the close interval shovel testing program conducted on September 15 and 20–22, 2017, SWCA excavated a total of 53 additional shovel tests on a 10×10-m grid to further refine the subsurface data and provide a guide for the backhoe trenching that followed on October 4–5, 2017. Due to variations in the underlying eroded limestone bedrock, the 53 shovel tests ranged in depth from surficial bedrock to as deep as 250 cmbs with the aid of a hand auger. Archaeologists observed cultural material within the shovel tests on surface to a depth of 200 cmbs, with most of material located between 20 and 100 cmbs. Stratigraphy observed during the shovel testing generally correlated with the strata recorded during the previous phases of investigations (see Natural Strata discussion, below).

Figure 12. Dart point fragments recovered from 41GU177: a. Montell dart point base; b. Possible Frio or Ensor dart point fragment; and c. untyped dart point distal tip.

Figure 13. Unifacial axe recovered from TU05 excavations

Artifactual recovery from the 53 additional shovel tests consist of a total 1,027 pieces of lithic debitage, which included 47 primary flakes, 162 secondary flakes, 758 tertiary flakes, and 60 pieces of lithic shatter. Within the shovel tests of 41GU177, SWCA also recovered five projectile point fragments, one lithic core, one modified flake, two ground stone fragments, seven pieces of faunal remains, and 108 pieces of burned rock. The projectile points recovered from these shovel tests include the base of a Montell dart point (see Figure 12, Specimen a); the distal tip of a dart point (see Figure 12, Specimen c); one corner-notched, broad stem Scallorn arrow point variant (see Figure 7, Specimen c); one translucent untyped arrow point that may be a Sabinal specimen (see Figure 7, Specimen g); and one medial section of an untyped arrow point (see Figure 7, Specimen k).

NATURAL STRATA

As previously indicated, 58 shovel tests, 13 backhoe trenches (BHT01–BHT13) and five test units (TU01–TU05) have been excavated at 41GU177 (see Figure 10). The stratigraphy is distinctly different across the site depending on topography and proximity to the Guadalupe River. Specifically, the backhoe trenches on the western end of the site (BHTs 1, 3, 9, and 13) suggest an older deposition than those trenches on the eastern portions of the site (BHTs 2, 4, 5–8, 10–12). The western trenches are situated on a landform roughly 580 to 585 feet amsl and about 1.5 m (5 feet) above the eastern trenches. These trenches contain relatively shallow CaCO₃ filaments and nodules beginning around 30 to 40 cmbs, which appear to be Pleistocene terrace deposits. The eastern trenches coincide with the T₂ terrace landform at 575 to 580 feet amsl (discussed above), whereas the western trenches are situated on the adjacent landform that could be part of the T₂ landform or remnants of an older alluvial landform (i.e., T₃). The stratigraphy in the eastern trenches have deep alluvial deposits that appear younger in age (Holocene) than the western trenches on the adjacent landform. The discussion below summarizes the western and eastern trenches on the two landforms.

EASTERN TRENCHES (T₂ TERRACE)

Overall, SWCA observed six strata in the excavations on the T₂ terrace (BHTs 2, 4, 5–8, 10–12) (see Figure 10) at 41GU177 extending to 330 cmbs. Below the 6-cm-thick root zone, the upper two horizons (Strata I and II) extending to roughly 52 cmbs are dark gray brown to brown (10YR 4/2–4/3) fine silt loam with a subangular blocky structure, friable consistency, common roots-rootlets (20–30 percent), and *Heliodiscus singleyanus* snail shell (10 percent). The second horizon (Stratum II) contains some white filaments that are interpreted to be michoryzal fungi (1 percent) and *Heliodiscus singleyanus* and *Rabdotus mooreanus* snail shell (10 percent). The lower boundary of Stratum I was clear and slightly wavy, while Stratum II was clear and smooth. Notably, the lower boundary in BHT04 was abrupt and smooth, reflecting the disturbances in the area (e.g., vegetation clearing and earth movement) that likely truncated a portion of Stratum III.

The roughly 35- to 50-cm-thick third horizon (Stratum III) begins at roughly 50 to 75 cmbs and exhibits grayish brown (10YR 5/2) silt loam with a subangular blocky structure, friable consistency; with common roots-rootlets (15 to 20 percent), common insect and worm burrows (10 to 15 percent), and white filaments that are interpreted to be michoryzal fungi (<1 percent), and *Heliodiscus singleyanus* (1 to 5 percent) and *Rabdotus mooreanus* (1 to 3 percent) snail shell. SWCA observed rare (<1 percent) subrounded cobbles at the top and bottom of this horizon. The lower boundary of Stratum III was gradual and smooth.

The roughly 50- to 70-cm thick Stratum IV begins at 75 to 85 cmbs and is brown to pale brown (10YR 5/3–6/3) silt loam with a friable consistency, a subangular blocky structure; with roots-rootlets (5 to 15 percent), insect and worm burrows (5 to 10 percent), and white filaments that are interpreted to be michoryzal fungi (<1 percent), and *Heliodiscus singleyanus* (10 percent) and *Rabdotus mooreanus* (2 percent) snail shell. The lower boundary of Stratum IV was gradual and smooth.

Stratum V generally begins at 151 cmbs and is a light yellowish brown (10YR 6/4) silt loam with a friable-loose consistency and a subangular blocky structure parting to crumb structure; with rootlets (15 percent), insect and worm burrows (5 percent), and *Heliodiscus singleyanus* (3 percent). This horizon was observed to extend to roughly 230 cmbs and had a gradual and smooth lower boundary.

The last observed stratum (VI) was observed only in BHT06 and BHT07. This horizon typically begins at roughly 230 cmbs and is a light yellowish brown to very pale brown (10YR 6/4–7/4) fine to very fine silt loam. This horizon has a friable consistency, a crumb parting to subangular blocky structure, insect burrows (10 percent), *Heliodiscus singleyanus* (<2 percent) and *Rabdotus mooreanus* (<5 percent) snail shell, and calcium carbonate (CaCO₃) filaments (3–5 percent). The lower boundary of this horizon was unobserved.

WESTERN TRENCHES (T₃ TERRACE?)

In general, SWCA observed five strata in the western excavations (BHTs 1, 3, 9, and 13) (see Figure 10) at 41GU177 extending to 253 cmbs. Notably, the upper three horizons are similar to that observed in the eastern trenches (BHTs 2, 4, 5–8, 10–12), but are thinner and shallower than the stratigraphy observed down slope.

The fourth horizon (Stratum IV) typically begins at roughly 40 to 50 cmbs and exhibits brown to light yellowish brown (10YR 5/4–6/4) silt loam with a crumb to subangular blocky structure, friable consistency; with roots-rootlets (3 to 10 percent), common (5 percent) infilled burrows containing Strat II matrix, small (3 to 4 millimeters) diameter CaCO₃ nodules (2 percent), and a gradual and smooth lower boundary.

The fifth horizon (Stratum V) begins around 80 cmbs and contains a light yellowish brown to very pale brown (10YR 6/4–7/6) silt loam with a subangular blocky structure, friable to firm consistency, rootlets (5 percent), CaCO₃ nodules (2 to 3 cm) diameter (3 to 5 percent) that increase in size and prevalence with depth. The lower boundary of this stratum was unobserved, extending to at least 253 cmbs. Notably, the horizon appeared to lighten in color toward a very pale brown to yellow (10YR 8/4–8/6) beginning around 140 cmbs.

SUMMARY OF NATURAL STRATA

In summary, the natural strata (I–VI) observed at 41GU177 suggests some disturbances localized at or near the ground surface. The disturbances are primarily associated with extensive tree root growth, possible earth movement, and erosion. The vertical extent of evident disturbance across the site varied. The excavation areas amongst extensive trees (i.e., BHT05 and BHT06) had moderate, localized disturbance to approximately 75 cmbs. In contrast, the excavation areas in proximity to existing roads and previously cleared areas (i.e., BHT02 and BHT04) displayed evidence related to vegetation clearing and earth movement. These disturbances, suggested by the abrupt lower boundary of Stratum II, were shallower (32 cmbs), but more extensive, and may have truncated the upper horizon of Stratum III. The underlying strata (Strata III–VI) across 41GU177 appears generally intact with some disturbance from tree roots and small burrows.

MAGNETIC SUSCEPTIBILITY

Magnetic susceptibility (MS) analyses of soils have been utilized in archaeological investigations for several decades, and have largely been directed toward surveys (e.g., Crowther and Barker 1995; Dalan 1996, 2008; Rosendahl et al. 2014; Van Leusen et al. 2014; Wiewel and Kvamme 2014). More recently, these investigations have focused on archaeological site formation and associated depositional processes (Dalan 2006, 2008). These analyses have assisted in identifying buried or thermally altered soils associated with cultural activities, as well as identifying the horizontal extent of cultural features (e.g., Dalan and

Banerjee 1998; Dalan and Bevan 2002; Ellwood et al. 1995; Frederick 2010; Jones and Leffler 2003; Nickels 2010; Peters and Thompson 1999; Mauldin and Figueroa 2006; Rivers et al. 2004).

Extensive reviews of the processes of environmental magnetism and particularly the application of MS have been produced (e.g., Dearing 1999a, 1999b; Gale and Hoare 1991:201–229; Maher et al. 1999; Thompson and Oldfield 1986; Verosub and Roberts 1995). Briefly, magnetic minerals are prevalent in the natural environment and are sensitive to environmental changes (Gale and Hoare 1991:202). The measurement of MS χ (Chi) is a quantification of the ‘magnetisability’ of the material (Dalan 2008; Dalan and Banerjee 1998; Dearing 1999b:5; Gale and Hoare 1991:202–204). The mineralogy, the size and shape of the grains, internal stress, and other factors can initially influence the susceptibility value (Dearing 1999a, 1999b; Gale and Hoare 1991:204). However, of relevance to this discussion, factors including organic content, pedogenesis, thermal alteration, and cultural activities (e.g., ash-charcoal and refuse) can subsequently alter (usually increase) the susceptibility values. The implications of using MS for archaeological research is that when examining either vertical or horizontal areas, the susceptibility values can assist in identifying cultural activities areas that may otherwise be blurred at a macro level. Horizontally, the application of MS analysis has been used to define the limits of cultural features and living spaces in excavation blocks (e.g., Mauldin and Figueroa 2006; Wiewel and Kvamme 2014). Vertically, the MS results have been applied to recognizing and delineating cultural horizons (e.g., Frederick 2010, 2012; Lawrence et al. 2013).

Notably, this form of *in situ* analysis of MS is unable to differentiate between low (χ_{lf}) and high (χ_{hf}) frequency (470 to 4700 Hz, respectively) and does not examine mass-specific susceptibility. Rather, the *in situ* analysis examines the volume susceptibility of a specific radius around the probe. Although not as accurate, these analyses are beneficial in that the data can be quickly collected and analyzed in real-time. Although the data derived with this type of analysis (*in situ* MS) within this setting may not provide definitive identification of cultural versus natural influences, the analysis can be informative regarding integrity of the deposits and the presence of high or low MS values. Specifically, elevated values of MS can suggest an influence by factors including organic content, pedogenesis, thermal alteration, and cultural activities (e.g., ash-charcoal and refuse). Typically, the upper horizons closer to the ground surface will have higher values of MS from the presence of organic matter. Conversely, a stable, intact profile typically has steadily decreasing MS values. Further, “wiggles” are expected in these analyses, but dramatic, sustained changes (increase or decrease) in values may suggest cultural activities or disturbance. This is particularly applicable at recognized horizon boundaries.

MS analysis of four vertical columns were conducted at 41GU177 using either *in situ* analysis or matrix analysis in the lab. The *in situ* MS analyses were conducted using a Bartington MS2F probe that collected two readings of data in 2- to 5-cm intervals down profile for each backhoe trench. Briefly, the MS2F probe is 1.5 cm in diameter and is inserted 2 cm deep into an exposed profile to collect MS readings. The MS analyses were collected down profile (ground surface to base of exposed profile) at the high sensitivity (0.1) setting at three locations (BHT4 in TU03, BHT5 near TU05, and in BHT10). Due to Occupational Safety and Health Administration (OSHA) safety requirements, these recordings were only able to examine the *in situ* profile down to a maximum depth of 180 cmbs (6 feet). In contrast, the MS analyses in the fourth column consisted of collecting matrix in 4 to 5 cm in the western profile of BHT11 (n=33).

MS RESULTS

BHT04 (TU03)

Regarding the vertical MS results in BHT4/TU03 area, the *in situ* MS values had several apparent spikes and trends (Figure 14). Examining the MS data down profile, Strata I and II exhibit dynamic fluctuations supporting the interpretation that it is disturbed from recent landform modification. The underlying

Stratum III exhibits values ranging from 30 to 40 throughout the horizon. The Stratum III results do exhibit two prominent spikes between 70 and 83 cmbs that may coincide with cultural activities. At the transition of Strata III/IV, there is a dramatic drop in values until roughly 103 cmbs. At this depth, the values spike until 130 cmbs where the values gradually decrease and transition into Stratum V. The Stratum IV elevated values between 103 and 130 cmbs is likely attributed to cultural activities. Within the underlying Stratum V, a very subtle increase in values occurs around 155 to 170 cmbs. Although intriguing, this increase in MS value is inconclusive as to whether this could be attributed to cultural activity or something else with the present data.

Figure 14. Magnetic susceptibility results from BHT04.

BHT05

Regarding the vertical MS results in the BHT05 area, the *in situ* MS values are similar to that exhibited in BHT04 (Figure 15). Interestingly, in Strata I and II (where tree roots and bioturbation were the most extensive) the values are high, but do not have dramatic fluctuations that may indicate a highly organic and homogenous mix. The underlying Stratum III exhibits two prominent spikes. One spike is between 27 and 46 cmbs, while the second spike is between 59 and 74 cmbs. Since these two “plateaus” are derived from several contiguous readings and separated by consistent decreases, one or both plateaus may indicate distinct cultural zones. Similar to the trends observed in BHT4, the transition between Strata III/IV exhibits a drop-in value from above 48 to below 30 and gradually decreases in values with depth. The underlying Stratum IV does have an increase in values between 81 and 92 cmbs. This plateau is like that observed in

Stratum IV of BHT04 (between 103 and 130 cmbs), as it has several contiguous readings of higher values and could suggest the presence of cultural activities. Below this slight increase and continuing into Stratum V, no evident values are present to suggest extensive cultural activities in this area. However, the beginnings of an increase in values is evident in Stratum V between 132 and 136 cmbs. This increase in MS value is inconclusive as to whether this could be attributed to cultural activity or something else with the present data.

Figure 15. Magnetic susceptibility results from BHT05.

BHT10

Regarding the vertical MS results in the BHT10 area, the *in situ* MS values are similar to that exhibited in BHT04 and BHT05 (Figure 16). The upper Strata I and II (where tree roots and bioturbation were again the most extensive) have MS values exhibiting dramatic fluctuations. This likely indicates a highly organic and disturbed mix with cultural activities present. Specifically, a fragment of fire-cracked rock was observed in Stratum II at 39 to 42 cmbs that seems to coincide with the prominent spike in MS values in the horizon (see Figure 16). The underlying Stratum III contains several prominent spikes. One spike is between 65 and 80 cmbs, while the second spike is between 95 and 115 cmbs. SWCA observed individual fragments of fire-cracked rock in Stratum III at 76 cmbs and at 103 cmbs, respectively, which coincides with these two spikes in MS value. Interestingly, there is a gradual decrease in values between Stratum III and Stratum IV, but then the MS values increase. Stratum IV has one very prominent spike in value between 135 and 145 cmbs (see Figure 16). Not surprisingly, a fragment of fire-cracked rock was observed at 139 cmbs that

coincides with the prominent spike in MS values for the horizon. Below the spike, the values steadily decrease and transition into Stratum V. This base horizon, Stratum V, contains a very subtle increase in values around 160 to 170 cmbs. Although intriguing, this increase in MS value is inconclusive as to whether this could be attributed to cultural activity or something else with the present data.

Figure 16. Magnetic susceptibility results from BHT10.

BHT11

As mentioned above, the MS analysis in BHT11 was conducted differently from the other vertical column analyses that used *in situ* analysis. The MS analysis in BHT11 utilized collected matrix from the profile that were subsequently examined in the lab. The results of the MS analysis exhibited several notable items (Figure 17). The upper Strata I and II (where tree roots and bioturbation were the most extensive) have MS values that were relatively stable with no dramatic fluctuations. These data suggest a relatively homogenous matrix. The underlying Stratum III exhibited a gradual decrease in values until 45 to 50 cmbs, where a slight increase is present. Below that, the gradual decrease in MS values continues into Stratum IV to roughly 55 to 70 cmbs, where another spike in value occurs. Below that spike in Stratum IV, the MS values steadily decrease until 120 to 125 cmbs, where a prominent spike in value occurs. At this depth in BHT11, SWCA observed a discontinuous and sloping lens of dark matrix (Figure 18). The lens (also observed in BHT12) is interpreted to be a thin cultural zone, a thin buried soil, or both. Because the lens contained at least one fragment of fire-cracked rock, it is more likely interpreted as a cultural horizon. Below the lens, the MS values decrease until 135 to 160 cmbs, where another prominent spike in MS values is evident.

Most notable about these MS value spikes is that SWCA observed scattered fragments of fire-cracked rock throughout the trench that coincided with most of these spikes. The one exception is the prominent MS value spike in Stratum V at 135 to 160 cmbs (Figure 19), where no fire-cracked rock fragments were observed in BHT11 at this depth.

Figure 17. Magnetic susceptibility results from BHT11.

SUMMARY MS RESULTS

The results of the MS analyses at four different locations across the site provide some interesting data. When the strata and MS results of each vertical column are compared against each other, the data suggests similar factors affecting all the deposits. Specifically, in Stratum II there is an increase in MS values exhibited in BHT04, BHT10, and possibly BHT05 (see Figures 14–16). In Stratum III across all four vertical columns there is at least one plateau exhibited around 70 to 80 cmbs; conversely, this occurs at 45 to 50 cmbs in BHT11. Similarly, in Stratum IV, a consistent increase in values is exhibited at roughly 100 to 130 in BHT04, BHT05, and BHT10, while a similar spike is represented from 55 to 70 cmbs in BHT11 (see Figures 14–17). Finally, in Stratum V, an increase in MS is evident in BHT04, BHT10, and BHT11 at roughly 130 to 160 cmbs (see Figures 14–17). Although BHT05 did not extend this deep, there is the beginnings of an increase in MS values between 132 and 136 cmbs. Of note, the increase in Stratum V MS values across all trenches was not directly associated with cultural materials. This increase in MS value in Stratum V is inconclusive as to whether this could be attributed to cultural activity or something else with the present data.

Figure 18. BHT11 profile.

Figure 19. BHT11 overview. The zip-ties in the trench walls are marking artifacts.

Overall, the data from the MS analyses suggests that although some disturbances from bioturbation and landform modification have disturbed portions of 41GU177, there does appear to be several well-defined, stratified cultural zones present.

SUMMARY SITE DISCUSSION

From the data collected to date, several data realms have been preliminarily addressed, which in turn have implications for more detailed research questions and concerns. The phased investigations have allowed preliminary determinations of the general integrity of the cultural deposits, site chronology, and potential data yield.

Based on the site's natural stratigraphy and tentatively identified cultural zones, the cultural deposits at 41GU177 are relatively intact, with some disturbances from tree roots and krotovina observed. The natural stratigraphy (Strata I–VI) observed at 41GU177 suggests some localized disturbances at or near the ground surface from previous vegetation clearing, extensive tree root growth, possible earth movement, and erosion. The vertical extent of evident disturbance across the site varies. The excavation areas amongst extensive trees (i.e., BHT05 and BHT06) exhibited moderate, localized disturbance to approximately 75 cmbs. In contrast, the excavation areas in proximity to existing roads and previously cleared areas (i.e., BHT02 and BHT04) had evidence that may be related to vegetation clearing and earth movement. These disturbances, suggested by the abrupt lower boundary of Strata II, were shallower (32 cmbs), but more extensive and may have truncated the upper horizon of Strat III. The underlying strata (III–VI) across 41GU177 appear generally intact, with some minor disturbance from tree roots and small burrows.

Investigations to date have yielded a relatively dense assemblage of cultural materials, given that only approximately 7.8 cubic meters have been hand excavated from 1×1-m test units and 3.9 cubic meters from the close interval shovel testing (for a total of 11.7 cubic meters). The total assemblage encompasses 5,406 artifacts and floral/faunal specimens, including abundant chipped-stone debitage, formal and informal chipped-stone tools (i.e., projectile points, one chipped-stone axe, utilized flakes, bifaces, etc.), ground stone specimens (i.e., mano fragments), and the well-preserved faunal and floral specimens mentioned below (Appendix C). The artifact assemblage is predominately (91 percent) debitage, with a total of 3,897 debitage specimens recovered to date from TU01–TU05 and 1,043 from the shovel testing.

As Appendix C indicates, the majority (n=4,469 [83 percent]) of the debitage assemblage reflects middle to late reduction activities, with secondary and tertiary flakes, and decorticate chips and chunks representing the bulk of the specimens. This suggests that much of the initial reduction of lithic raw materials was occurring off site at raw material source locations, which appear, based on cortex analysis, to include both fluvial gravels (i.e., corticate specimens exhibit smooth water-worn cortex) and *in situ* outcrops (i.e., corticate specimens exhibiting coarse and/or weathered cortex). Incomplete and complete bifaces (other than projectile points) are poorly represented in the assemblage. Given the preponderance of later-stage reduction debitage (particularly tertiary specimens that represent 67 percent of the debitage assemblage) and the general lack of complete and incomplete bifaces (except occasional broken preforms and the finished and broken projectile points), biface and projectile point manufacturing was a common activity on site, with the completed bifaces (complete projectile points, preforms, and Stage IV bifaces) leaving the site.

In terms of site chronology, temporally diagnostic artifacts recovered from the site to date indicate a general Late Prehistoric use of the site, including a probable Austin Phase (ca. A.D. 600–1200) occupation and hints of an earlier Transitional Archaic (ca. 200 BC to AD 600) occupation. A total of 15 projectile points or point fragments were recovered during the phased investigations. The majority (n=10) are identified as untyped arrow point fragments, whereas three specimens are typed as corner-notched, broad stemmed Scallorn arrow point variants associated with Austin phase occupations. Additional recovered arrow points,

due to missing bases or reworked bases and stems, are untyped but indicate general Late Prehistoric (ca. A.D. 600–1700) occupations. Traces of earlier site use is potentially evident in the recovery of a dart point fragment identified as belonging to the Montell type that dates to the Late Archaic (ca. 800–400 B.C.), as well as an untyped dart point fragment that may represent a Frio or Ensor type projectile point (Transitional Archaic, ca. 200 B.C. – A.D. 600).

The temporally diagnostic data, when considered in conjunction with the stratigraphic analyses and MS data, suggests site 41GU177 contains evidence for at least two stratified cultural zones with hints of possibly two additional, deeper stratified cultural zones. In the upper reaches of the deposits from roughly 45 to 80 cmbs there are several Scallorn arrow points, suggesting a probable Austin phase occupation that contains some stratigraphic disturbances as previously described. Additionally, a possible trace of an underlying Transitional Archaic occupation is marked by the presence of a possible Frio or Ensor dart point fragment, burned rock, and a spike in the MS data at a depth of approximately 60 to 80 cmbs. At this juncture, given the variable depth and thickness of the site stratigraphy and cultural zones due to undulations, data recovery would clarify the actual number of stratified cultural zones, as there is also some evidence of two possible deeper occupations, based on the presence of burned rock and spikes and dips in the MS data from roughly 120 to 150 cmbs.

Within the strata, floral and faunal preservation is good, with a total of 274 recovered faunal remains (262 bones and bone fragments, and 12 mussel shells and shell fragments) recovered from approximately 11.7 cubic meters of hand excavated sediments. TU01 yielded a burned nut shell from 70 to 80 cmbs in the upper possible Austin phase occupation, as well as two burned seed fragments from a depth of 140 to 150 cmbs in the deeper, suggest a possible Transitional Archaic occupation. The recovery of those well-preserved faunal and floral specimens suggests that additional charred macrobotanical remains are present on site that can be recovered and analyzed to help build a picture of site use and foraging strategies.

A total of 574 burned rock fragments, weighing approximately 27.1 kilograms, were recovered within the five excavation units. All the test units show a rise in burned rock count and weight at approximately 60 cmbs. In addition, TU01 and TU04 display an increase in burned rock counts and weights at approximately 90 to 100 cmbs, with TU01 and TU02 indicating a third spike in burned rock weights at 120 to 140 cmbs. Although the charred floral remains and the scattered burned rocks and burned rock fragments recovered during excavations suggest that burned rock features (i.e., hearths) were utilized on site, the densities of burned and fire-cracked rock from various excavation contexts has thus far been relatively low and specimens were typically not clustered. This may suggest some degree of disturbance, but the presence of several clustered burned rocks in BHT02 and TU01 also shows that some feature integrity remains and that additional features and/or feature remnants are anticipated. Investigations to date have not identified any evidence for large thermal features, such as a burned rock midden or slab-lined hearths, not uncommon in similar Late Archaic to Transitional Archaic and Late Prehistoric period camp sites.

Following completion of the hand excavations and additional trenching, SWCA proposes that, horizontally, the core of the site/densest cultural materials are concentrated in the area around BHT11, and extending to the east-southeast to BHT02 (TU01 and TU02) and BHT04 (TU03), with TU04 containing compromised data from extensive bioturbation stemming from rodent activities (see Figure 11). The TU05 area exhibits a significantly lower artifact density than the BHT02, BHT04, and TU01–TU03 areas; however, excavations there were halted at 110 cmbs, due to time constraints. Similarly, the excavation of close-interval shovel tests and BHT07–BHT10 to the south and west of BHT11 did not identify a high density of cultural materials. Vertically, cultural materials in the upper 50 to 75 cm (0 to 75 cmbs) exhibit some disturbance from tree roots, rodents, and, in some areas, mechanical impacts from prior vegetation clearing. Below 75 cmbs, the natural stratigraphy and cultural materials appear relatively intact and have a potential to contain significant intact cultural deposits when considered in conjunction with the stratigraphic,

artifactual, and MS data collected from the site to date. Based on these data, it is the opinion of SWCA that the site warrants listing as a SAL.

To reiterate, construction impacts to 41GU177 would include the excavation and use of the 50×50-ft bore pit area for tunneling the adjacent Guadalupe River, open cut trenching, a 65×200-ft temporary work space, and a temporary haul road for construction activities. Based on the recovered data, the north-central portions of the site, in SWCA's opinion, represent the core of the potentially significant cultural deposits. In contrast, the parts of the site west-southwest of STs 1-08, 2-08, 3-07, and 4-06 are low artifact density areas with poor preservation and few cultural materials that, in the opinion of SWCA, do not contribute to the site's overall potential SAL eligibility; as a result, SWCA recommends no further investigations are warranted for the southern two-thirds of the site.

Understanding the sensitive nature of the cultural deposits at 41GU177, VRRSP have developed two construction options to minimize construction impacts to the core of the site considered potentially significant by SWCA; Figure 20 was prepared by VRRSP to illustrate those options. As Figure 20 displays, VRRSP has arbitrarily labeled the moderate to high density artifact concentration areas within the existing easement and proposed temporary workspace as Area A. In addition, Area B on the figure denotes portions of the planned construction centerline and associated impact area, while Area C represents a small area that VRRSP proposes does not need additional work as it would be outside of any surface (i.e., haul road) and subsurface construction impacts, and has been previously investigated. The two construction options (1 and 2) and their respective steps are presented below:

Option 1—Open Cut Trenching Through the Site

1. Vegetation would be mechanically cleared in Areas A and B using a rubber-tired grinder (feller-buncher) to not disturb the ground surface and subsurface.
2. Area A would be covered with geotechnical fabric to establish a boundary between the existing ground surface and a 1-foot-thick cap of fill would be placed over the geotechnical fabric to avoid subsurface impacts. An archaeological monitor would be present; the contractor would be responsible for ensuring there would be no impacts to the ground surface and subsurface.
3. Bore pit excavation would proceed, as well as installation of pipe via the open trench in Area B; all areas would then be backfilled upon completion.
4. The protective cap of fill and geotechnical fabric would be carefully removed from Area A with an archaeological monitor present; the contractor would be responsible for ensuring there would be no impacts to the ground surface and subsurface.

Option 2—Tunneling and Limited Open Cut Trenching:

1. Vegetation would be mechanically cleared in Areas A and B using a rubber-tired grinder (feller-buncher) to not disturb the ground surface and subsurface.
2. Areas A and B would be covered with geotechnical fabric to establish a boundary between the existing ground surface and a 1-foot-thick cap of fill to be placed over the geotechnical fabric to avoid subsurface impacts.
3. Contractor excavates bore pit, installs tunnel, installs pipe via open trench to the southwest of the delineated sensitive site area, and backfills all areas. The top of the tunnel casing pipe will be at least 6.5 feet below the existing ground surface to avoid disruption to the lower cultural deposits. Potentially significant cultural deposits along the centerline within Area B are therefore avoided.
4. The protective cap of fill and geotechnical fabric would be carefully removed from Area A with an archaeological monitor present; the contractor would be responsible for ensuring there would be no impacts to the ground surface and subsurface.

Figure 20. Construction options for 41GU177.

Given the silty soils on the site, the option to cap the site with fill must consider the potential effects of soil compaction on those cultural materials buried close to the surface. Site capping or burial involves carefully covering an archaeological site with fill to allow project construction or other activities to proceed unimpeded over the site. However, site capping is only an appropriate mitigative measure when it can be demonstrated that important site data will not be lost through soil compaction, accelerated decomposition, horizontal displacement of cultural materials, or changes in soil chemistry. Investigations to date on 41GU177 suggest that approximately the upper 75 centimeters of the site have experienced some localized impacts from bioturbation (i.e., tree roots and burrowing animals) and mechanical impacts during vegetation clearing; however, the extent of the impacts appear moderate and there remain partially intact cultural deposits that should be protected, if the site is capped with fill.

RECOMMENDATIONS

Given the chronological data currently available from the site, the relative degree of intactness of the natural stratigraphy and cultural deposits, good macrobotanical preservation, and the types and densities of cultural materials recovered during the phased investigations, site 41GU177 appears to have the potential to yield new or important data regarding the Late Prehistoric period from the eastern margins of the Balcones Escarpment. Additionally, the deeper cultural occupation(s) may represent a Transitional Archaic use of the site and may provide valuable information concerning the shift from the Transitional Archaic to the Late Prehistoric period. Based on these data, it is the opinion of SWCA that the site is eligible for listing as a SAL and therefore warrants data recovery in the areas described above, if construction impacts cannot be avoided.

Complete avoidance of the site is currently not possible. The parts of the site west-southwest of STs 1-08, 2-08, 3-07, and 4-06 are low artifact density areas with poor preservation and few cultural materials that, in SWCA's opinion, do not contribute to the site's overall potential SAL eligibility; as a result, no further investigations are recommended for this area. In contrast, the north-central portions of site 41GU177 exhibit a much higher density of cultural materials and good stratigraphic integrity and faunal and floral preservation; this area is associated with tunneling of the Guadalupe River (adjacent to the site) and, in SWCA's opinion, additional investigations are warranted in the bore pit, associated temporary work space, and a proposed haul road.

Although the bore pit area exhibits a relatively lower artifact density, only one controlled hand unit was excavated to a depth of 110 cmbs within the bore pit area; BHTs 5 and 6 were excavated for exploratory purposes. The presence of the unusual unifacial, large chipped-stone axe and potentially associated burned and fire-cracked rocks from TU05 suggests an entirely different activity from the other site activity areas (i.e., tool manufacture and possible mussel shell work areas) may have occurred in the bore pit area. Data recovery here would provide a sample from outside the presumed concentrated core of the site (where multiple living surfaces may be compressed), providing access to potentially more discrete activities and isolable components. Initial MS data collected from BHT 5 also suggests that there is a potential for deeper cultural deposits in this area. As there was a time limitation influencing the work in the bore pit area, we do not feel it has been adequately sampled, considering the potential for the complete destruction of this 50×50-foot area due to the bore excavation. Including portions of this area for data recovery would allow a further sample of the location; if initial data recovery excavations there determined the location to not be as productive, or the activity areas poorly defined, investigations would then be halted for lack of data.

Based on all the available data collected to date, it is the opinion of SWCA that the cultural deposits at 41GU177 within the identified high and moderate density area in the north-central part of the site (including the bore pit area) is eligible for SAL designation and warrants some level of data recovery investigations and/or measures to minimize site impacts prior to the potential construction impacts. Successful solutions for the treatment of 41GU177 will require discussions amongst VRRSP, SWCA, and THC to ensure a

balance between construction needs and schedule, and regulatory compliance. For both construction options, technical discussions will be necessary with THC to address the proposed temporary capping of the site with fill to ensure an appropriate process and suitable materials are used to preserve portions of the site in place, should that be determined a feasible option.

REFERENCES

- Ashman, M. R. and G. Puri
2002 *Essential Soil Science: A Clear and Concise Introduction to Soil Science*. Blackwell Publishing, Malden, MA.
- Barnes, V. E.
1983 *Geologic Atlas of Texas: San Antonio Sheet*. Robert Hamilton Cuyler Memorial Edition, Bureau of Economic Geology, University of Texas, Austin.
- Charlton, R.
2008 *Fundamentals of Fluvial Geomorphology*. Routledge, London and New York.
- Crowther, J., and P. Barker
1995 Magnetic Susceptibility: Distinguishing Anthropogenic Effects from the Natural. *Archaeological Prospection* 2:207–215.
- Dalan, R. A.
1996 Soil Magnetism, An Approach for Examining Archaeological Landscapes. *Geophysical Research Letters* 23(2): 185–188.

2006 Magnetic Susceptibility. In *Remote Sensing in Archaeology: An Explicitly North American Perspective*. J. Johnson, M. Giardano, and K. Kvamme (editors), pp. 161–203. University of Alabama Press, Tuscaloosa, Alabama.

2008 A Review of the Role of Magnetic Susceptibility in Archaeogeophysical Studies in the USA: Recent Developments and Prospects. *Archaeological Prospection* 15: 1–31.
- Dalan, Rinita A. and Subir K. Banerjee
1998 Solving Archaeological Problems Using Techniques of Soil Magnetism. *Geoarchaeology: An International Journal* 13: 3–36.
- Dalan, R. A. and B. W. Bevan
2002 Geophysical Indicators of Culturally Embraced Soils and Sediments. *Geoarchaeology: An International Journal* 17 (8): 779–810.
- Dearing, J.
1999a Magnetic Susceptibility. In *Environmental Magnetism: A Practical Guide*. J. Walden, F. Oldfield, and J. Smith (editors), pp. 35–62. Technical Guide No. 6. Quaternary Research Association, London.

1999b *Environmental Magnetic Susceptibility Using the Bartington MS2 System*. Available at: http://www.gmw.com/magnetic_properties/MS2_support.html. Accessed 10/20/17.
- Ellwood, B. B., D. E. Peter, W. Balsam, and J. Schieber.
1995 Magnetic and Geochemical Variations as Indicators of Palaeoclimate and Archaeological Site Evolution: Examples from 41TR68, Fort Worth, Texas. *Journal of Archaeological Science* 22: 409–415.
- Frederick, Charles D
2010 Geoarchaeological Investigations. In *Archaeological Data Recovery on Three Sites Along the San Antonio River, Bexar County, Texas*, by Antonio E. Padilla and David L. Nickels, pp. 449–462. Ecological Communications, Corporation, Austin, Texas.

- 2012 *Site Formation Processes and Implications for Archeology in the South Fork of the San Gabriel*. In *The Siren Site (41WM1126) and the Long Transition from Archaic to Late Prehistoric Life-ways on the Eastern Edwards Plateau, Williamson County, Texas*, by Steve Carpenter, Kevin A. Miller, Brett Houk, Mary Jo Galindo, Charles Frederick, John Lowe, Ken Lawrence, Kevin Hanselka, and Abby Peyton, pp. 8-1–8-24. SWCA Environmental Consultants, Austin, Texas.
- Gale, S. J. and P. G. Hoare
1991 *Quaternary Sediments: Petrographic Methods for the Study of Unlithified Rocks*. Bellhaven Press and Halsted, Press, New York and Toronto.
- Jones, R. S., and J. J. Leffler
2003 *Phase I and II Archaeological Investigations on Camp Mabry, Travis County, Texas*, Archaeological Studies Report No. 2. Center for Archaeological Studies, Texas State University-San Marcos, Texas.
- Lawrence, Ken, J. Kevin Hanselka, John D. Lowe, Christina Nielsen, and Kevin A. Miller
2013 *Results of Archaeological Significance Testing at the Turkey Terrace Site (41FR70), Frio County, Texas*. SWCA Environmental Consultants, Archaeological Report 12-518 Austin, Texas.
- Maher, Barbara A., Roy Thompson, and Mark W. Hounslow
1999 Introduction. In *Quaternary Climates, Environments, and Magnetism*. B.A. Maher and R. Thompson (editors), pp. 1–48. Cambridge University Press. Cambridge.
- Mauldin, R. P., and A. L. Figueroa
2006 *Data Recovery Excavations at 41PR44, Fort Wolters, Parker County, Texas, Archaeological Report*, No. 369, Center for Archaeological Research, University of Texas at San Antonio, San Antonio, Texas.
- Natural Resources Conservation Service (NRCS)
2017 Web Soil Survey 2.1. National Cooperative Soil Survey. Available at: <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>, Accessed July 2017.
- Nickels, D. L.
2010 Stratigraphy, Chronology, and Site Formation Processes. In *Archaeological Testing at the San Marcos Springs (41HY160) for the Texas River Center, Hays County, Texas*, by David L. Nickels and C. Britt Bousman, pp. 61–82. Archaeological Studies Report No. 13. Center for Archaeological Studies, Texas State University-San Marcos, Texas.
- Peters, Clare, and Roy Thompson
1999 Supermagnetic Enhancement, Superparamagnetism, and Archaeological Soils. *Geoarchaeology: An International Journal* 14 (5): 401–413.
- Ramsey, R.N. and N. P. Bade
1977 *Soil Survey of Guadalupe County, Texas*. United States Department of Agriculture, Washington, D.C.
- Rivers, J.M., J.E. Nyquist, Y. Roh, D.O. Terry Jr., and W.E. Doll
2004 Investigation into the Origin of Magnetic Soils on the Oak Ridge Reservation, Tennessee. *Soil Science of America Journal* 68(5): 1772–1779.
- Rosendahl, Daniel, Kelsey M. Lowe, Lynley A. Wallis, and Sean Ulm
2014 Integrating Geoarchaeology and Magnetic Susceptibility at Three Shell Mounds: A Pilot Study from Mornington Island, Gulf of Carpentaria, Australia. *Journal of Archaeological Science* 49:21–32.

Taylor, F. B., R. B. Hailey, and D. L. Richmond

1991 *Soil Survey of Bexar County, Texas*. United States Department of Agriculture, Washington, D.C.

Thompson, R. and F. Oldfield

1986 *Environmental Magnetism*. Allen & Unwin Press. London, Boston, and Sydney.

Van Leusen, P. M., A. Kattenberg, and K. Armstrong

2014 Magnetic Susceptibility Detection of Small Protohistoric Sites in the Raganello Basin, Calabria (Italy). *Archaeological Prospection* (in press).

Verosub, K. L. and A. P. Roberts

1995 Environmental Magnetism: Past, Present, and Future. *Journal of Geophysical Research* 100(B2): 2175–2192.

Waters, Michael R.

1992 *Principles of Geoarchaeology: A North American Perspective*. University of Arizona Press, Tucson.

Wiewel, Adam S., and Kenneth L. Kvamme

2014 Magnetic Investigations of Nomadic Group Encampments at Fort Clark State Historic Site, North Dakota. *Plains Anthropologist* 59(231):261–278.

APPENDIX A

SHOVEL TEST RESULTS

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ST	Level	Depth (cmbs)	Artifact Type	Artifact Description	Material	Artifact No.	Weight (g)	Recorders	Date	Comments
1-1	1	0-10	Debitage	Tertiary	Lithic	1	1.94	JU	9/18/2017	
1-1	3	20-30	Debitage	Primary	Lithic	2	3.03	JU	9/18/2017	
1-1	3	20-30	Debitage	Secondary	Lithic	1	3.37	JU	9/18/2017	
1-1	3	20-30	Debitage	Tertiary	Lithic	3	1.52	JU	9/18/2017	3 bifacial thinning flakes
1-1	4	30-40	Debitage	Secondary	Lithic	1	0.37	JU	9/18/2017	1 bifacial thinning flake
1-1	4	30-40	Debitage	Tertiary	Lithic	5	1.38	JU	9/18/2017	4 bifacial thinning flakes
1-1	5	40-50	Debitage	Secondary	Lithic	1	0.77	JU	9/18/2017	
1-1	5	40-50	Debitage	Tertiary	Lithic	5	1.71	JU	9/18/2017	4 bifacial thinning flakes
1-1	6	50-60	Debitage	Tertiary	Lithic	4	0.94	JU	9/18/2017	4 bifacial thinning flakes
1-2	2	10-20	Debitage	Secondary	Lithic	1	5.16	JU	9/18/2017	1 bifacial thinning flake
1-2	2	10-20	Debitage	Tertiary	Lithic	1	0.17	JU	9/18/2017	1 bifacial thinning flake
1-2	5	40-50	Debitage	Tertiary	Lithic	2	0.91	JU	9/18/2017	1 bifacial thinning flake
1-2	6	50-60	Debitage	Secondary	Lithic	1	0.24	JU	9/18/2017	1 bifacial thinning flake
1-2	6	50-60	Debitage	Tertiary	Lithic	1	1.78	JU	9/18/2017	1 bifacial thinning flake
1-4	1	0-10	Glass	Colorless	Glass	1	2.61	JU	9/18/2017	
1-4	1	0-10	Glass	Milk	Glass	3	4.55	JU	9/18/2017	
1-4	2	10-20	Glass	Colorless	Glass	2	1.25	JU	9/18/2017	
1-4	2	10-20	Glass	Milk	Glass	1	1.47	JU	9/18/2017	
1-4	3	20-30	Glass	Colorless	Glass	2	3.84	JU	9/18/2017	
1-4	3	20-30	Glass	Milk	Glass	1	0.48	JU	9/18/2017	
1-4	3	20-30	Debitage	Tertiary	Lithic	1	1.76	JU	9/18/2017	1 bifacial thinning flake
1-4	4	30-40	Glass	Colorless	Glass	1	0.9	JU	9/18/2017	
1-5	1	0-10	Debitage	Tertiary	Lithic	2	0.49	JU	9/18/2017	1 bifacial thinning flake
1-5	2	10-20	Debitage	Tertiary	Lithic	1	0.29	JU	9/18/2017	
1-6	7	60-70	Debitage	Secondary	Lithic	1	8.32	JU	9/18/2017	1 bifacial thinning flake
1-6	8	70-80	Debitage	Secondary	Lithic	1	1.07	JU	9/18/2017	
1-6	9	80-90	Burned Rock	Burned Rock	Lithic	2	4.33	JU	9/18/2017	
1-7	3	20-30	Debitage	Tertiary	Lithic	2	0.33	JU	9/18/2017	
1-8	2	10-20	Debitage	Tertiary	Lithic	1	0.95	JU	9/18/2017	1 bifacial thinning flake
1-8	3	20-30	Debitage	Tertiary	Lithic	1	0.46	JU	9/18/2017	1 bifacial thinning flake
1-8	4	30-40	Debitage	Secondary	Lithic	1	0.86	JU	9/18/2017	
1-8	4	30-40	Debitage	Tertiary	Lithic	2	0.57	JU	9/18/2017	2 bifacial thinning flakes
1-9	1	0-10	Debitage	Tertiary	Lithic	1	2.34	JU	9/18/2017	1 bifacial thinning flake
1-9	5	40-50	Faunal Remains	Bone		3	2.25	JU	9/18/2017	
1-9	6	50-60	Debitage	Secondary	Lithic	1	22.86	JU	9/18/2017	
1-9	6	50-60	Debitage	Tertiary	Lithic	1	0.91	JU	9/18/2017	1 bifacial thinning flake
1-9	7	60-70	Debitage	Primary	Lithic	1	0.23	JU	9/18/2017	
1-9	7	60-70	Debitage	Tertiary	Lithic	1	0.24	JU	9/18/2017	1 bifacial thinning flake
1-9	8	70-80	Debitage	Tertiary	Lithic	1	0.47	JU	9/18/2017	
1-9	9	80-90	Debitage	Tertiary	Lithic	1	0.47	JU	9/18/2017	1 bifacial thinning flake
1-10	1	0-10	Debitage	Tertiary	Lithic	1	0.19	JU	9/27/2017	
1-10	2	10-20	Debitage	Primary	Lithic	1	15.98	JU	9/27/2017	
1-10	4	40-50	Faunal Remains	Mussel Shell	Shell	1	7.27	JU	9/27/2017	Complete
1-10	4	40-50	Debitage	Secondary	Lithic	1	11.03	JU	9/27/2017	1 bifacial thinning flake
1-10	4	40-50	Debitage	Tertiary	Lithic	1	0.07	JU	9/27/2017	
1-10	8	70-80	Debitage	Secondary	Lithic	1	2.15	JU	9/27/2017	
1-11	6	50-60	Faunal Remains	Mussel Shell	Shell	2	1.29	JU	9/27/2017	1 umbo
1-12	1	0-10	Glass	Colorless	Glass	1	1.08	JU	9/27/2017	
2-1	1	0-10	Metal	Staple	Metal	1	1	JU	9/18/2017	Fence Staple
2-1	1	0-10	Debitage	Tertiary	Lithic	3	0.58	JU	9/18/2017	3 bifacial thinning flakes
2-1	2	10-20	Debitage	Secondary	Lithic	1	2.8	JU	9/18/2017	1 bifacial thinning flake
2-1	2	10-20	Debitage	Tertiary	Lithic	2	1.27	JU	9/18/2017	1 bifacial thinning flake
2-1	3	20-30	Debitage	Secondary	Lithic	4	4.38	JU	9/18/2017	
2-1	3	20-30	Debitage	Tertiary	Lithic	3	1.11	JU	9/18/2017	3 bifacial thinning flakes
2-1	5	46	Projectile Point	Montell Point	Lithic	1	4.93	JU	9/18/2017	Proximal point base

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ST	Level	Depth (cmbs)	Artifact Type	Artifact Description	Material	Artifact No.	Weight (g)	Recorders	Date	Comments
2-1	5	40-50	Debitage	Tertiary	Lithic	2	0.54	JU	9/18/2017	
2-1	6	50-60	Debitage	Secondary	Lithic	1	0.23	JU	9/18/2017	1 bifacial thinning flake
2-2	1	0-10	Debitage	Secondary	Lithic	1	0.48	JU	9/18/2017	1 bifacial thinning flake
2-2	1	0-10	Debitage	Tertiary	Lithic	4	3.23	JU	9/18/2017	3 bifacial thinning flakes
2-2	2	10-20	Debitage	Tertiary	Lithic	1	1.12	JU	9/18/2017	
2-3	1	0-10	Debitage	Secondary	Lithic	2	0.9	JU	9/18/2017	
2-3	1	0-10	Debitage	Tertiary	Lithic	2	0.23	JU	9/18/2017	2 bifacial thinning flakes
2-3	3	20-30	Debitage	Tertiary	Lithic	2	1.54	JU	9/18/2017	2 bifacial thinning flakes
2-4	2	10-20	Debitage	Tertiary	Lithic	1	0.79	JU	9/18/2017	
2-4	3	20-30	Debitage	Secondary	Lithic	1	0.96	JU	9/18/2017	1 bifacial thinning flake
2-4	3	20-30	Debitage	Tertiary	Lithic	1	0.29	JU	9/18/2017	1 bifacial thinning flake
2-5	3	20-30	Debitage	Secondary	Lithic	1	0.75	JU	9/19/2017	
2-5	3	20-30	Debitage	Tertiary	Lithic	1	0.18	JU	9/19/2017	1 bifacial thinning flake
2-5	4	30-40	Debitage	Primary	Lithic	1	0.75	JU	9/19/2017	
2-5	4	30-40	Debitage	Tertiary	Lithic	1	0.85	JU	9/19/2017	
2-6	1	0-10	Historic Ceramic	Stoneware	Ceramic	1	3.87	JU	9/18/2017	Light blue slip
2-6	1	0-10	Debitage	Secondary	Lithic	1	5.98	JU	9/18/2017	1 bifacial thinning flake
2-6	1	0-10	Debitage	Tertiary	Lithic	3	1.69	JU	9/18/2017	3 bifacial thinning flakes
2-6	2	10-20	Debitage	Primary	Lithic	2	22.62	JU	9/18/2017	
2-6	2	10-20	Debitage	Secondary	Lithic	1	0.69	JU	9/18/2017	
2-6	2	10-20	Debitage	Tertiary	Lithic	7	3.2	JU	9/18/2017	5 bifacial thinning flakes
2-6	3	20-30	Faunal Remains	Bone		2	<.01	JU	9/18/2017	2 burned
2-6	3	20-30	Debitage	Primary	Lithic	1	0.19	JU	9/18/2017	
2-6	3	20-30	Debitage	Secondary	Lithic	1	0.14	JU	9/18/2017	
2-6	4	30-40	Faunal Remains	Bone		1	0.03	JU	9/18/2017	1 burned
2-6	4	30-40	Debitage	Secondary	Lithic	2	13.63	JU	9/18/2017	
2-6	5	40-50	Debitage	Tertiary	Lithic	1	0.2	JU	9/18/2017	1 bifacial thinning flake
2-6	6	50-60	Burned Rock	Burned Rock	Lithic	1	12.98	JU	9/18/2017	
2-6	6	50-60	Debitage	Secondary	Lithic	1	0.74	JU	9/18/2017	
2-6	6	50-60	Debitage	Tertiary	Lithic	3	2.79	JU	9/18/2017	3 bifacial thinning flakes
2-7	1	0-10	Debitage	Tertiary	Lithic	2	1.22	JU	9/18/2017	1 bifacial thinning flake
2-7	4	30-40	Debitage	Secondary	Lithic	1	1.11	JU	9/18/2017	
2-7	4	30-40	Debitage	Tertiary	Lithic	2	0.23	JU	9/18/2017	2 bifacial thinning flakes
2-7	5	40-50	Debitage	Tertiary	Lithic	2	0.53	JU	9/18/2017	2 bifacial thinning flakes
2-7	6	50-60	Debitage	Tertiary	Lithic	1	0.11	JU	9/18/2017	1 bifacial thinning flake
2-7	8	70-80	Debitage	Secondary	Lithic	1	2.09	JU	9/18/2017	
2-8	1	0-10	Debitage	Tertiary	Lithic	3	1.12	JU	9/19/2017	1 bifacial thinning flake
2-8	2	10-20	Debitage	Tertiary	Lithic	1	0.66	JU	9/19/2017	1 bifacial thinning flake
2-8	3	20-30	Debitage	Tertiary	Lithic	5	4.2	JU	9/19/2017	
2-8	4	30-40	Debitage	Primary	Lithic	1	0.54	JU	9/19/2017	
2-8	4	30-40	Debitage	Tertiary	Lithic	2	2.55	JU	9/19/2017	2 bifacial thinning flakes
2-8	5	40-50	Debitage	Primary	Lithic	1	0.43	JU	9/19/2017	
2-8	5	40-50	Debitage	Tertiary	Lithic	3	1.86	JU	9/19/2017	3 bifacial thinning flakes
2-8	6	50-60	Debitage	Primary	Lithic	1	0.24	JU	9/19/2017	
2-8	6	50-60	Debitage	Tertiary	Lithic	2	2.88	JU	9/19/2017	2 bifacial thinning flakes
2-8	7	60-70	Debitage	Tertiary	Lithic	1	0.37	JU	9/19/2017	Burned
2-8	8	70-80	Debitage	Tertiary	Lithic	1	0.27	JU	9/19/2017	1 bifacial thinning flake
2-8	9	80-90	Debitage	Tertiary	Lithic	3	0.86	JU	9/19/2017	3 bifacial thinning flakes
2-8	10	90-100	Debitage	Tertiary	Lithic	5	6.45	JU	9/19/2017	3 bifacial thinning flakes
2-8	12	110-120	Debitage	Tertiary	Lithic	1	0.23	JU	9/19/2017	1 bifacial thinning flake
2-8	14	130-140	Debitage	Secondary	Lithic	1	4.28	JU	9/19/2017	
2-8	14	130-140	Debitage	Tertiary	Lithic	1	0.25	JU	9/19/2017	1 bifacial thinning flake
2-9	3	20-30	Debitage	Secondary	Lithic	1	0.44	JU	9/19/2017	
2-9	3	20-30	Debitage	Tertiary	Lithic	4	0.99	JU	9/19/2017	3 bifacial thinning flakes
2-9	4	30-40	Faunal Remains	Mussel Shell	Shell	1	1.48	JU	9/19/2017	

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ST	Level	Depth (cmbs)	Artifact Type	Artifact Description	Material	Artifact No.	Weight (g)	Recorders	Date	Comments
2-9	4	30-40	Debitage	Tertiary	Lithic	4	2.31	JU	9/19/2017	3 bifacial thinning flakes
2-9	5	40-50	Debitage	Secondary	Lithic	1	5.71	JU	9/19/2017	1 bifacial thinning flake
2-9	6	50-60	Debitage	Secondary	Lithic	1	2.06	JU	9/19/2017	
2-9	6	50-60	Debitage	Tertiary	Lithic	6	4.2	JU	9/19/2017	3 bifacial thinning flakes
2-9	7	60-70	Debitage	Tertiary	Lithic	3	3.54	JU	9/19/2017	2 bifacial thinning flakes
2-9	8	70-80	Debitage	Secondary	Lithic	1	4.41	JU	9/19/2017	
2-9	8	70-80	Debitage	Tertiary	Lithic	2	1.66	JU	9/19/2017	2 bifacial thinning flakes
2-10	1	0-10	Debitage	Secondary	Lithic	1	1.1	JU	9/27/2017	
2-10	2	10-20	Ground Stone	Ground Stone	Lithic	1	35.06	JU	9/27/2017	
2-10	3	20-30	Burned Rock	Burned Rock	Lithic	1	42.57	JU	9/27/2017	
2-10	3	20-30	Debitage	Tertiary	Lithic	2	2.55	JU	9/27/2017	1 bifacial thinning flake
2-10	4	30-40	Debitage	Tertiary	Lithic	5	2.53	JU	9/27/2017	3 bifacial thinning flakes
2-10	5	40-50	Debitage	Secondary	Lithic	1	50.5	JU	9/27/2017	
2-10	5	40-50	Debitage	Tertiary	Lithic	8	3.39	JU	9/27/2017	5 bifacial thinning flakes
2-10	7	60-70	Debitage	Tertiary	Lithic	7	11.85	JU	9/27/2017	6 bifacial thinning flakes
2-10	7	60-70	Debitage	Shatter	Lithic	1	1.21	JU	9/27/2017	
2-10	8	70-80	Debitage	Secondary	Lithic	1	1.22	JU	9/27/2017	1 bifacial thinning flake
2-10	8	70-80	Debitage	Tertiary	Lithic	3	3.06	JU	9/27/2017	1 burned, 2 bifacial thinning flakes
2-10	9	80-90	Debitage	Tertiary	Lithic	1	2.36	JU	9/27/2017	
2-10	10	90-100	Debitage	Secondary	Lithic	1	1.32	JU	9/27/2017	
2-10	10	90-100	Debitage	Shatter	Lithic	1	0.08	JU	9/27/2017	
2-11	5	40-50	Debitage	Tertiary	Lithic	2	1.61	JU	9/27/2017	2 bifacial thinning flakes
2-11	6	50-60	Debitage	Primary	Lithic	1	11.82	JU	9/27/2017	
2-11	6	50-60	Debitage	Secondary	Lithic	1	1.42	JU	9/27/2017	1 bifacial thinning flake
2-11	6	50-60	Debitage	Tertiary	Lithic	1	0.14	JU	9/27/2017	1 bifacial thinning flake
2-11	8	70-80	Debitage	Secondary	Lithic	1	0.29	JU	9/27/2017	1 bifacial thinning flake
2-11	8	70-80	Debitage	Tertiary	Lithic	2	0.52	JU	9/27/2017	2 bifacial thinning flakes
2-12	6	50-60	Debitage	Secondary	Lithic	1	0.9	JU	9/27/2017	
3-1	3	20-30	Debitage	Tertiary	Lithic	2	0.28	JU	9/19/2017	1 bifacial thinning flake
3-1	5	40-50	Debitage	Tertiary	Lithic	2	0.32	JU	9/19/2017	
3-1	6	50-60	Debitage	Tertiary	Lithic	1	0.08	JU	9/19/2017	
3-2	1	0-10	Debitage	Tertiary	Lithic	1	2.48	JU	9/19/2017	1 bifacial thinning flake
3-2	2	10-20	Debitage	Tertiary	Lithic	1	5.81	JU	9/19/2017	
3-3	1	0-10	Debitage	Primary	Lithic	1	0.98	JU	9/19/2017	
3-3	1	0-10	Debitage	Tertiary	Lithic	1	0.36	JU	9/19/2017	1 bifacial thinning flake
3-3	2	10-20	Debitage	Tertiary	Lithic	3	0.73	JU	9/19/2017	2 bifacial thinning flakes
3-3	3	20-30	Debitage	Secondary	Lithic	2	3.05	JU	9/19/2017	
3-3	3	20-30	Debitage	Tertiary	Lithic	3	0.74	JU	9/19/2017	3 bifacial thinning flakes
3-3	4	30-40	Debitage	Primary	Lithic	1	4.31	JU	9/19/2017	
3-3	4	30-40	Debitage	Tertiary	Lithic	1	0.43	JU	9/19/2017	
3-4	2	10-20	Debitage	Secondary	Lithic	1	0.09	JU	9/19/2017	
3-4	3	20-30	Debitage	Tertiary	Lithic	1	1.81	JU	9/19/2017	1 bifacial thinning flake
3-5	3	20-30	Debitage	Tertiary	Lithic	1	0.37	JU	9/19/2017	1 bifacial thinning flake
3-5	4	30-40	Debitage	Tertiary	Lithic	2	0.46	JU	9/19/2017	1 bifacial thinning flake
3-5	5	40-50	Debitage	Tertiary	Lithic	1	0.17	JU	9/19/2017	
3-5	6	50-60	Debitage	Tertiary	Lithic	1	0.39	JU	9/19/2017	
3-7	3	20-30	Debitage	Secondary	Lithic	1	0.63	JU	9/19/2017	
3-7	4	30-40	Core	Core	Lithic	1	52.67	JU	9/19/2017	Exhausted
3-7	5	40-50	Debitage	Tertiary	Lithic	1	3.96	JU	9/19/2017	1 bifacial thinning flake
3-7	8	70-80	Debitage	Secondary	Lithic	1	6.46	JU	9/19/2017	
3-8	2	10-20	Debitage	Secondary	Lithic	1	0.23	JU	9/19/2017	
3-8	2	10-20	Debitage	Tertiary	Lithic	4	3.7	JU	9/19/2017	2 bifacial thinning flakes
3-8	3	20-30	Debitage	Tertiary	Lithic	4	6.47	JU	9/19/2017	1 bifacial thinning flake
3-8	4	30-40	Debitage	Primary	Lithic	1	0.5	JU	9/19/2017	
3-8	4	30-40	Debitage	Tertiary	Lithic	3	9.38	JU	9/19/2017	2 bifacial thinning flakes
3-8	5	40-50	Debitage	Secondary	Lithic	7	20.21	JU	9/19/2017	2 bifacial thinning flakes
3-8	5	40-50	Debitage	Tertiary	Lithic	11	7.2	JU	9/19/2017	8 bifacial thinning flakes

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ST	Level	Depth (cmbs)	Artifact Type	Artifact Description	Material	Artifact No.	Weight (g)	Recorders	Date	Comments
3-8	6	50-60	Debitage	Secondary	Lithic	2	2.29	JU	9/19/2017	1 bifacial thinning flake
3-8	6	50-60	Debitage	Tertiary	Lithic	9	2.71	JU	9/19/2017	5 bifacial thinning flakes
3-8	7	60-70	Debitage	Secondary	Lithic	1	1.27	JU	9/19/2017	
3-8	7	60-70	Debitage	Tertiary	Lithic	5	4.49	JU	9/19/2017	3 bifacial thinning flakes
3-8	8	70-80	Debitage	Primary	Lithic	2	1.36	JU	9/19/2017	
3-8	8	70-80	Debitage	Secondary	Lithic	4	8.61	JU	9/19/2017	1 bifacial thinning flake
3-8	8	70-80	Debitage	Tertiary	Lithic	11	3.48	JU	9/19/2017	7 bifacial thinning flakes
3-8	9	80-90	Debitage	Primary	Lithic	1	0.85	JU	9/19/2017	
3-8	9	80-90	Debitage	Tertiary	Lithic	12	14.98	JU	9/19/2017	8 bifacial thinning flakes
3-9	2	10-20	Debitage	Secondary	Lithic	3	9.23	JU	9/19/2017	1 bifacial thinning flake
3-9	2	10-20	Debitage	Tertiary	Lithic	1	0.29	JU	9/19/2017	1 bifacial thinning flake
3-9	3	20-30	Debitage	Primary	Lithic	1	0.62	JU	9/19/2017	
3-9	3	20-30	Debitage	Tertiary	Lithic	1	0.6	JU	9/19/2017	
3-9	4	30-40	Debitage	Secondary	Lithic	2	40.47	JU	9/19/2017	1 bifacial thinning flake
3-9	4	30-40	Debitage	Tertiary	Lithic	7	13.24	JU	9/19/2017	3 bifacial thinning flakes
3-9	5	40-50	Core	Core	Lithic	1	331.27	JU	9/19/2017	
3-9	5	40-50	Debitage	Tertiary	Lithic	10	7	JU	9/19/2017	9 bifacial thinning flakes
3-9	6	50-60	Debitage	Primary	Lithic	1	0.25	JU	9/19/2017	
3-9	6	50-60	Debitage	Secondary	Lithic	1	3.36	JU	9/19/2017	
3-9	6	50-60	Debitage	Tertiary	Lithic	11	2.55	JU	9/19/2017	7 bifacial thinning flakes
3-9	7	60-70	Debitage	Secondary	Lithic	1	41.72	JU	9/19/2017	
3-9	7	60-70	Debitage	Tertiary	Lithic	6	2.05	JU	9/19/2017	6 bifacial thinning flakes
3-9	8	70-80	Debitage	Secondary	Lithic	2	3.29	JU	9/19/2017	1 bifacial thinning flake
3-9	8	70-80	Debitage	Tertiary	Lithic	4	4.98	JU	9/19/2017	3 bifacial thinning flakes
3-9	9	80-90	Debitage	Primary	Lithic	1	0.38	JU	9/19/2017	
3-9	9	80-90	Debitage	Secondary	Lithic	1	18.71	JU	9/19/2017	1 bifacial thinning flake
3-9	9	80-90	Debitage	Tertiary	Lithic	5	7.25	JU	9/19/2017	3 bifacial thinning flakes
3-9	10	90-100	Debitage	Tertiary	Lithic	2	0.84	JU	9/19/2017	2 bifacial thinning flakes
3-10	5	40-50	Debitage	Tertiary	Lithic	2	7.96	JU	9/27/2017	1 bifacial thinning flake
3-10	7	60-70	Debitage	Tertiary	Lithic	5	43.88	JU	9/27/2017	3 bifacial thinning flakes
3-10	8	70-80	Debitage	Tertiary	Lithic	8	3.76	JU	9/27/2017	6 bifacial thinning flakes
3-10	9	80-90	Debitage	Tertiary	Lithic	4	4.93	JU	9/27/2017	3 bifacial thinning flakes
3-10	9	80-90	Debitage	Shatter	Lithic	1	0.4	JU	9/27/2017	
3-10	9	80-90	Faunal Remains	Mussel Shell	Shell	1	0.44	JU	9/27/2017	No umbo
3-10	10	90-100	Debitage	Tertiary	Lithic	1	0.87	JU	9/27/2017	1 bifacial thinning flake
3-11	4	30-40	Debitage	Secondary	Lithic	2	1.41	JU	9/27/2017	
3-11	4	30-40	Debitage	Tertiary	Lithic	1	0.47	JU	9/27/2017	1 bifacial thinning flake
3-11	5	40-50	Debitage	Secondary	Lithic	2	4.09	JU	9/27/2017	1 bifacial thinning flake
3-11	5	40-50	Debitage	Tertiary	Lithic	2	4.95	JU	9/27/2017	2 bifacial thinning flakes
3-11	6	50-60	Debitage	Tertiary	Lithic	2	0.83	JU	9/27/2017	1 bifacial thinning flake
3-11	8	70-80	Debitage	Secondary	Lithic	3	5.24	JU	9/27/2017	1 bifacial thinning flake
3-11	8	70-80	Debitage	Tertiary	Lithic	15	12.38	JU	9/27/2017	10 bifacial thinning flakes
3-11	8	70-80	Debitage	Shatter	Lithic	2	3.71	JU	9/27/2017	
3-11	9	80-90	Debitage	Tertiary	Lithic	4	2.32	JU	9/27/2017	4 bifacial thinning flakes
3-11	10	90-100	Debitage	Secondary	Lithic	1	0.53	JU	9/27/2017	1 bifacial thinning flake
3-12	8	70-80	Debitage	Tertiary	Lithic	3	2.11	JU	9/27/2017	1 bifacial thinning flake
3-12	9	80-90	Debitage	Tertiary	Lithic	3	2.04	JU	9/27/2017	2 bifacial thinning flakes
3-12	10	90-100	Debitage	Tertiary	Lithic	1	2.72	JU	9/27/2017	1 bifacial thinning flake
3-12	16	150-160	Debitage	Tertiary	Lithic	3	6.2	JU	9/27/2017	1 bifacial thinning flake
4-1	2	10-20	Debitage	Tertiary	Lithic	3	2.35	JU	9/27/2017	3 bifacial thinning flakes
4-1	2	10-20	Debitage	Shatter	Lithic	1	0.5	JU	9/27/2017	
4-2	1	0-10	Debitage	Tertiary	Lithic	1	2.07	JU	9/27/2017	1 bifacial thinning flake
4-2	2	10-20	Debitage	Secondary	Lithic	1	0.56	JU	9/27/2017	
4-2	2	10-20	Debitage	Tertiary	Lithic	8	3.86	JU	9/27/2017	5 bifacial thinning flakes
4-2	2	10-20	Debitage	Shatter	Lithic	1	0.29	JU	9/27/2017	
4-2	3	20-30	Debitage	Secondary	Lithic	1	0.74	JU	9/27/2017	
4-2	3	20-30	Debitage	Tertiary	Lithic	1	0.13	JU	9/27/2017	
4-2	5	40-50	Debitage	Secondary	Lithic	1	0.83	JU	9/27/2017	

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ST	Level	Depth (cmbs)	Artifact Type	Artifact Description	Material	Artifact No.	Weight (g)	Recorders	Date	Comments
4-2	5	40-50	Debitage	Tertiary	Lithic	4	1.96	JU	9/27/2017	2 bifacial thinning flakes
4-2	6	50-60	Debitage	Secondary	Lithic	2	1.4	JU	9/27/2017	1 bifacial thinning flake
4-2	6	50-60	Debitage	Tertiary	Lithic	3	1.04	JU	9/27/2017	2 bifacial thinning flakes
4-2	9	80-90	Debitage	Secondary	Lithic	1	1.09	JU	9/27/2017	1 bifacial thinning flake
4-3	1	0-10	Debitage	Tertiary	Lithic	2	0.27	JU	9/27/2017	1 bifacial thinning flake
4-3	3	20-30	Debitage	Tertiary	Lithic	3	2.64	JU	9/27/2017	3 bifacial thinning flakes
4-5	3	20-30	Debitage	Tertiary	Lithic	2	0.86	JU	9/27/2017	1 bifacial thinning flake
4-6	2	10-20	Debitage	Tertiary	Lithic	1	15.67	JU	9/27/2017	1 bifacial thinning flake
4-6	3	20-30	Debitage	Secondary	Lithic	1	30.7	JU	9/27/2017	
4-6	5	40-50	Debitage	Tertiary	Lithic	1	0.35	JU	9/27/2017	1 bifacial thinning flake
4-6	5	40-50	Debitage	Shatter	Lithic	2	1.92	JU	9/27/2017	
4-6	6	50-60	Debitage	Tertiary	Lithic	2	2.25	JU	9/27/2017	2 bifacial thinning flakes
4-7	1	0-10	Debitage	Primary	Lithic	1	1.15	JU	9/27/2017	
4-7	1	0-10	Debitage	Secondary	Lithic	2	1.83	JU	9/27/2017	
4-7	1	0-10	Debitage	Tertiary	Lithic	14	23.12	JU	9/27/2017	9 bifacial thinning flakes
4-7	2	10-20	Projectile Point	Scallorn Point	Lithic	1	1.55	JU	9/27/2017	Corner-notched broad stemmed variant
4-7	2	10-20	Debitage	Secondary	Lithic	4	5.64	JU	9/27/2017	2 bifacial thinning flakes
4-7	2	10-20	Debitage	Tertiary	Lithic	5	2.58	JU	9/27/2017	3 bifacial thinning flakes
4-7	4	30-40	Debitage	Secondary	Lithic	4	2.41	JU	9/27/2017	1 bifacial thinning flake
4-7	4	30-40	Debitage	Tertiary	Lithic	9	4.71	JU	9/27/2017	6 bifacial thinning flakes
4-7	4	30-40	Debitage	Shatter	Lithic	2	1.73	JU	9/27/2017	
4-7	5	40-50	Debitage	Secondary	Lithic	1	5.07	JU	9/27/2017	
4-7	5	40-50	Debitage	Tertiary	Lithic	3	3.45	JU	9/27/2017	2 bifacial thinning flakes
4-7	6	50-60	Debitage	Tertiary	Lithic	11	17.96	JU	9/27/2017	7 bifacial thinning flakes
4-7	6	50-60	Debitage	Shatter	Lithic	2	1.29	JU	9/27/2017	
4-7	7	60-70	Debitage	Tertiary	Lithic	2	0.68	JU	9/27/2017	2 bifacial thinning flakes
4-7	8	70-80	Debitage	Primary	Lithic	1	2.32	JU	9/27/2017	
4-7	8	70-80	Debitage	Secondary	Lithic	2	2.93	JU	9/27/2017	1 bifacial thinning flake
4-7	8	70-80	Debitage	Tertiary	Lithic	4	9.66	JU	9/27/2017	2 bifacial thinning flakes
4-7	9	80-90	Debitage	Tertiary	Lithic	4	6.13	JU	9/27/2017	2 bifacial thinning flakes
4-7	10	90-100	Debitage	Secondary	Lithic	2	21.51	JU	9/27/2017	
4-7	10	90-100	Debitage	Tertiary	Lithic	3	0.59	JU	9/27/2017	4 bifacial thinning flakes
4-8	1	0-10	Debitage	Secondary	Lithic	2	2.74	JU	9/27/2017	
4-8	1	0-10	Debitage	Tertiary	Lithic	18	23.21	JU	9/27/2017	10 bifacial thinning flakes
4-8	1	0-10	Debitage	Shatter	Lithic	2	2.42	JU	9/27/2017	
4-8	1	0-10	Burned Rock	Burned Rock	Lithic	2	8	JU	9/27/2017	
4-8	2	10-20	Faunal Remains	Bone		1	0.39	JU	9/27/2017	
4-8	2	10-20	Debitage	Secondary	Lithic	1	2.82	JU	9/27/2017	
4-8	2	10-20	Debitage	Tertiary	Lithic	9	13.88	JU	9/27/2017	4 bifacial thinning flakes
4-8	3	20-30	Debitage	Primary	Lithic	1	0.74	JU	9/28/2017	
4-8	3	20-30	Debitage	Secondary	Lithic	4	10.01	JU	9/28/2017	2 bifacial thinning flakes
4-8	3	20-30	Debitage	Tertiary	Lithic	8	13.15	JU	9/28/2017	5 bifacial thinning flakes
4-8	3	20-30	Debitage	Shatter	Lithic	5	5.06	JU	9/28/2017	
4-8	4	30-40	Debitage	Primary	Lithic	1	1.39	JU	9/28/2017	
4-8	4	30-40	Debitage	Tertiary	Lithic	10	6.47	JU	9/28/2017	7 bifacial thinning flakes
4-8	4	30-40	Debitage	Shatter	Lithic	5	3.62	JU	9/28/2017	
4-8	5	40-50	Debitage	Secondary	Lithic	1	0.54	JU	9/28/2017	
4-8	5	40-50	Debitage	Tertiary	Lithic	6	2.39	JU	9/28/2017	3 bifacial thinning flakes
4-8	6	50-60	Debitage	Primary	Lithic	2	37.56	JU	9/28/2017	
4-8	6	50-60	Debitage	Tertiary	Lithic	1	2.3	JU	9/28/2017	
4-8	7	60-70	Debitage	Tertiary	Lithic	4	3.05	JU	9/28/2017	3 bifacial thinning flakes
4-8	8	70-80	Debitage	Primary	Lithic	1	0.53	JU	9/28/2017	
4-8	8	70-80	Debitage	Secondary	Lithic	1	0.13	JU	9/28/2017	
4-8	8	70-80	Debitage	Tertiary	Lithic	8	3.57	JU	9/28/2017	5 bifacial thinning flakes
4-8	8	70-80	Debitage	Shatter	Lithic	3	6.33	JU	9/28/2017	
4-8	9	80-90	Debitage	Secondary	Lithic	1	0.19	JU	9/28/2017	
4-8	9	80-90	Debitage	Tertiary	Lithic	7	4.14	JU	9/28/2017	3 bifacial thinning flakes

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ST	Level	Depth (cmbs)	Artifact Type	Artifact Description	Material	Artifact No.	Weight (g)	Recorders	Date	Comments
4-8	10	90-100	Debitage	Primary	Lithic	1	1.88	JU	9/28/2017	
4-8	10	90-100	Debitage	Secondary	Lithic	4	5.76	JU	9/28/2017	2 bifacial thinning flakes
4-8	10	90-100	Debitage	Tertiary	Lithic	2	1.95	JU	9/28/2017	1 bifacial thinning flake
4-9	1	0-10	Debitage	Secondary	Lithic	1	0.46	JU	9/28/2017	
4-9	1	0-10	Debitage	Tertiary	Lithic	3	4.56	JU	9/28/2017	1 bifacial thinning flake
4-9	2	10-20	Debitage	Tertiary	Lithic	2	0.75	JU	9/28/2017	2 bifacial thinning flakes
4-9	3	20-30	Debitage	Tertiary	Lithic	4	1.48	JU	9/28/2017	3 bifacial thinning flakes
4-9	4	30-40	Debitage	Secondary	Lithic	2	1.42	JU	9/28/2017	1 bifacial thinning flake
4-9	4	30-40	Debitage	Tertiary	Lithic	3	0.63	JU	9/28/2017	2 bifacial thinning flakes
4-9	5	40-50	Debitage	Secondary	Lithic	1	8.29	JU	9/28/2017	1 bifacial thinning flake
4-9	5	40-50	Debitage	Tertiary	Lithic	5	2.76	JU	9/28/2017	3 bifacial thinning flakes
4-9	6	50-60	Debitage	Secondary	Lithic	1	12.19	JU	9/28/2017	1 bifacial thinning flake
4-9	6	50-60	Debitage	Tertiary	Lithic	5	2.95	JU	9/28/2017	4 bifacial thinning flakes
4-9	8	70-80	Debitage	Primary	Lithic	2	4.55	JU	9/28/2017	
4-9	8	70-80	Debitage	Tertiary	Lithic	4	3.11	JU	9/28/2017	3 bifacial thinning flakes
4-9	8	70-80	Debitage	Shatter	Lithic	1	0.46	JU	9/28/2017	
4-9	10	90-100	Debitage	Primary	Lithic	1	1.56	JU	9/28/2017	
4-9	10	90-100	Debitage	Secondary	Lithic	1	0.27	JU	9/28/2017	1 bifacial thinning flake
4-9	10	90-100	Debitage	Tertiary	Lithic	1	0.13	JU	9/28/2017	
4-10	6	50-60	Projectile Point	Untyped Arrow Point	Lithic	1	1	JU	9/28/2017	Missing proximal end of base; translucent; probable Sabinal
4-10	6	50-60	Debitage	Primary	Lithic	1	22.75	JU	9/28/2017	
4-10	6	50-60	Debitage	Secondary	Lithic	1	0.43	JU	9/28/2017	
4-10	6	50-60	Debitage	Tertiary	Lithic	2	0.18	JU	9/28/2017	1 bifacial thinning flake
4-10	7	60-70	Debitage	Secondary	Lithic	1	17.54	JU	9/28/2017	
4-10	8	70-80	Debitage	Tertiary	Lithic	2	0.88	JU	9/28/2017	2 bifacial thinning flakes
4-10	9	80-90	Debitage	Secondary	Lithic	1	0.71	JU	9/28/2017	
4-10	10	90-100	Debitage	Shatter	Lithic	1	0.09	JU	9/28/2017	
5-1	1	0-10	Debitage	Primary	Lithic	1	3.68	JU	9/28/2017	
5-1	1	0-10	Debitage	Tertiary	Lithic	1	0.39	JU	9/28/2017	
5-1	2	10-20	Debitage	Tertiary	Lithic	1	0.62	JU	9/28/2017	1 bifacial thinning flake
5-1	3	20-30	Debitage	Secondary	Lithic	1	10.3	JU	9/28/2017	
5-1	3	20-30	Debitage	Tertiary	Lithic	2	3.38	JU	9/28/2017	1 bifacial thinning flake
5-1	4	30-40	Debitage	Tertiary	Lithic	3	2.16	JU	9/28/2017	3 bifacial thinning flakes
5-1	5	40-50	Debitage	Secondary	Lithic	1	1.04	JU	9/28/2017	
5-1	5	40-50	Debitage	Tertiary	Lithic	2	1.62	JU	9/28/2017	1 bifacial thinning flake
5-2	2	10-20	Debitage	Tertiary	Lithic	2	0.69	JU	9/28/2017	2 bifacial thinning flakes
5-2	2	10-20	Debitage	Shatter	Lithic	1	0.86	JU	9/28/2017	
5-2	3	20-30	Debitage	Shatter	Lithic	2	0.88	JU	9/28/2017	
5-2	4	30-40	Debitage	Tertiary	Lithic	2	2.28	JU	9/28/2017	2 bifacial thinning flakes
5-2	5	40-50	Debitage	Secondary	Lithic	1	2	JU	9/28/2017	
5-3	1	0-10	Debitage	Secondary	Lithic	2	1.4	JU	9/28/2017	
5-3	1	0-10	Debitage	Tertiary	Lithic	14	5.68	JU	9/28/2017	11 bifacial thinning flakes
5-3	1	0-10	Debitage	Shatter	Lithic	2	0.67	JU	9/28/2017	
5-3	2	10-20	Projectile Point	Untyped Arrow Point	Lithic	1	0.3	JU	9/28/2017	Medial section
5-3	2	10-20	Debitage	Secondary	Lithic	1	2.62	JU	9/28/2017	1 bifacial thinning flake
5-3	2	10-20	Debitage	Tertiary	Lithic	12	20.39	JU	9/28/2017	5 bifacial thinning flakes
5-3	2	10-20	Debitage	Shatter	Lithic	2	0.72	JU	9/28/2017	
5-3	4	30-40	Debitage	Secondary	Lithic	2	6.81	JU	9/28/2017	
5-3	4	30-40	Debitage	Tertiary	Lithic	2	1.21	JU	9/28/2017	2 bifacial thinning flakes
5-3	6	50-60	Debitage	Secondary	Lithic	1	0.76	JU	9/28/2017	
5-3	6	50-60	Debitage	Tertiary	Lithic	2	2.75	JU	9/28/2017	2 bifacial thinning flakes
5-3	7	60-70	Debitage	Tertiary	Lithic	2	1.17	JU	9/28/2017	2 bifacial thinning flakes
5-4	1	0-10	Debitage	Secondary	Lithic	4	2.23	JU	9/28/2017	1 bifacial thinning flake
5-4	1	0-10	Debitage	Tertiary	Lithic	15	11.7	JU	9/28/2017	10 bifacial thinning flakes
5-4	1	0-10	Debitage	Shatter	Lithic	4	9.92	JU	9/28/2017	
5-4	2	10-20	Debitage	Primary	Lithic	1	4.97	JU	9/28/2017	
5-4	2	10-20	Debitage	Secondary	Lithic	5	11.48	JU	9/28/2017	

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ST	Level	Depth (cmbs)	Artifact Type	Artifact Description	Material	Artifact No.	Weight (g)	Recorders	Date	Comments
5-4	2	10-20	Debitage	Tertiary	Lithic	13	14.74	JU	9/28/2017	8 bifacial thinning flakes
5-4	2	10-20	Debitage	Shatter	Lithic	4	1.64	JU	9/28/2017	
5-4	3	20-30	Debitage	Primary	Lithic	2	1.03	JU	9/28/2017	
5-4	3	20-30	Debitage	Secondary	Lithic	3	5.18	JU	9/28/2017	
5-4	3	20-30	Debitage	Tertiary	Lithic	6	12.22	JU	9/28/2017	5 bifacial thinning flakes
5-4	3	20-30	Debitage	Shatter	Lithic	2	3.34	JU	9/28/2017	
5-4	4	30-40	Debitage	Tertiary	Lithic	1	0.24	JU	9/28/2017	1 bifacial thinning flake
5-4	8	70-80	Debitage	Tertiary	Lithic	3	8.26	JU	9/28/2017	2 bifacial thinning flakes
5-4	9	80-90	Debitage	Tertiary	Lithic	4	0.62	JU	9/28/2017	2 bifacial thinning flakes
5-4	10	90-100	Debitage	Primary	Lithic	1	4.52	JU	9/28/2017	
5-4	10	90-100	Debitage	Tertiary	Lithic	1	1.79	JU	9/28/2017	1 bifacial thinning flake
5-5	1	0-10	Debitage	Secondary	Lithic	1	5.25	JU	9/28/2017	
5-5	1	0-10	Debitage	Tertiary	Lithic	10	14.78	JU	9/28/2017	7 bifacial thinning flakes
5-5	2	10-20	Debitage	Primary	Lithic	1	1.86	JU	9/28/2017	
5-5	2	10-20	Debitage	Secondary	Lithic	1	1.36	JU	9/28/2017	
5-5	2	10-20	Debitage	Tertiary	Lithic	3	1.78	JU	9/28/2017	2 bifacial thinning flakes
5-5	4	30-40	Debitage	Primary	Lithic	1	4.41	JU	9/28/2017	
5-5	4	30-40	Debitage	Tertiary	Lithic	10	22.1	JU	9/28/2017	7 bifacial thinning flakes
5-5	7	60-70	Debitage	Primary	Lithic	1	6.27	JU	9/28/2017	
5-5	7	60-70	Debitage	Secondary	Lithic	3	10.9	JU	9/28/2017	1 bifacial thinning flake
5-5	7	60-70	Debitage	Tertiary	Lithic	9	4.12	JU	9/28/2017	8 bifacial thinning flakes
5-5	8	70-80	Debitage	Secondary	Lithic	1	0.36	JU	9/28/2017	
5-5	9	80-90	Debitage	Secondary	Lithic	1	1.67	JU	9/28/2017	
5-5	9	80-90	Debitage	Tertiary	Lithic	1	0.43	JU	9/28/2017	1 bifacial thinning flake
5-6	1	0-10	Debitage	Secondary	Lithic	1	45.91	JU	9/28/2017	
5-6	2	10-20	Debitage	Tertiary	Lithic	4	3.27	JU	9/28/2017	4 bifacial thinning flakes
5-6	2	10-20	Debitage	Shatter	Lithic	1	0.93	JU	9/28/2017	
5-6	3	20-30	Modified Flake	Modified Flake	Lithic	1	11.91	JU	9/28/2017	
5-6	4	30-40	Debitage	Tertiary	Lithic	7	2.76	JU	9/28/2017	5 bifacial thinning flakes
5-6	4	30-40	Debitage	Shatter	Lithic	2	0.98	JU	9/28/2017	
5-6	4	30-40	Burned Rock	Burned Rock	Lithic	1	5.13	JU	9/28/2017	
5-6	5	40-50	Debitage	Tertiary	Lithic	4	5.64	JU	9/28/2017	2 bifacial thinning flakes
5-6	6	50-60	Debitage	Secondary	Lithic	1	16.99	JU	9/28/2017	1 bifacial thinning flake
5-6	6	50-60	Debitage	Tertiary	Lithic	15	19.16	JU	9/28/2017	12 bifacial thinning flakes
5-6	6	50-60	Ground Stone	Ground Stone	Lithic	1	285.57	JU	9/28/2017	
5-6	7	60-70	Projectile Point	Untyped Point Tip	Lithic	1	1.66	JU	9/28/2017	Distal end
5-6	7	60-70	Debitage	Tertiary	Lithic	6	2.97	JU	9/28/2017	4 bifacial thinning flakes
5-6	7	60-70	Debitage	Shatter	Lithic	1	0.63	JU	9/28/2017	
5-6	8	70-80	Debitage	Tertiary	Lithic	4	1.49	JU	9/28/2017	3 bifacial thinning flakes
5-6	9	80-90	Debitage	Secondary	Lithic	1	5.94	JU	9/28/2017	
5-6	9	80-90	Debitage	Tertiary	Lithic	10	15.02	JU	9/28/2017	7 bifacial thinning flakes
5-6	9	80-90	Burned Rock	Burned Rock	Lithic	1	3.33	JU	9/28/2017	
5-6	10	90-100	Debitage	Tertiary	Lithic	3	0.69	JU	9/28/2017	2 bifacial thinning flakes
5-7	1	0-10	Debitage	Tertiary	Lithic	3	3.54	JU	9/29/2017	3 bifacial thinning flakes
5-7	2	10-20	Debitage	Tertiary	Lithic	2	11.14	JU	9/29/2017	2 bifacial thinning flakes
5-7	5	40-50	Debitage	Tertiary	Lithic	3	1.8	JU	9/29/2017	2 bifacial thinning flakes
5-7	5	40-50	Debitage	Shatter	Lithic	1	0.23	JU	9/29/2017	
5-7	8	70-80	Debitage	Tertiary	Lithic	3	1.18	JU	9/29/2017	2 bifacial thinning flakes
5-7	14	130-140	Debitage	Tertiary	Lithic	1	0.13	JU	9/29/2017	
KS139	1	0-10	Debitage	Tertiary	Lithic	13	-	DR	10/19/2017	Not collected
KS139	2	10-20	Debitage	Primary	Lithic	6	-	DR	10/19/2017	Not collected
KS139	3	20-30	Debitage	Tertiary	Lithic	9	-	DR	10/19/2017	Not collected
KS139	4	30-40	Debitage	Tertiary	Lithic	15	-	DR	10/19/2017	Not collected
KS139	5	40-50	Debitage	Tertiary	Lithic	10	-	DR	10/19/2017	Not collected
KS139	6	50-60	Debitage	Tertiary	Lithic	6	-	DR	10/19/2017	Not collected

ST	Level	Depth (cmbs)	Artifact Type	Artifact Description	Material	Artifact No.	Weight (g)	Recorders	Date	Comments
KS139	7	70-80	Debitage	Tertiary	Lithic	5	-	DR	10/19/2017	Not collected
RW342	4-8	30-80	Debitage	Tertiary	Lithic	6	-	DR	10/19/2017	Not collected
RW342	4-8	30-80	Debitage	Shatter	Lithic	4	-	DR	10/19/2017	Not collected
RW343	3-4	20-40	Debitage	Tertiary	Lithic	1	-	DR	10/19/2017	Not collected

APPENDIX B

BACKHOE TRENCH RESULTS

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BHT	Depth (cmbs)	Munsell*	Soil Color*	Soil Texture	Consistency	Structure Type	Grade	Inclusions	Lower Boundary	Comments
BHT01	0-58	10YR3/2	very dark grayish brown	silt loam	Friable	Subangular Blocky to Angular Blocky	Weak to moderate	roots-rootlets 15-20%, few snail shell (Helio), 30% pin holes, 5% worm burrows, 5% snail fragments	Gradual and Smooth	Root zone 0-9cmbs
	58-99	10YR4/3	brown	Loam	Friable	Subangular Blocky	Weak to moderate	5-10% rootlets, 30% pin holes, 5% worm burrows, 1% snail fragments	Gradual and Smooth	Transitional
	99-183	10YR5/4	yellowish brown	Silt Loam	Friable	Subangular Blocky	Moderate	3-5% rootlets, 30% pin holes, 5% worm burrows, 10% snail - Rabdotus, 1% snail fragments	Clear and smooth	
	183-326	10YR5/6 to 10YR6/6	yellowish brown to brownish yellow	Clay loam	Friable	Angular Blocky	Moderate	1% rootlets, 5-10% pin holes, 1% white filament (1mm), 20-30% snail - helio and rabdotus, 10% snail fragments	Unobserved	CaCO ₃ filaments increase with depth 3-4mm (5%) ~280cmbs, clay content increases with depth
BHT02	0-41	10YR3/2	very dark grayish brown	silt loam	Friable	Subangular Blocky to Angular Blocky	Weak to moderate	roots-rootlets 15-20%, few snail shell (Helio), 30% pin holes, 5% worm burrows, 5% snail fragments	Gradual and Smooth	Root zone 0-9cmbs
	41-93	10YR4/3	brown	Loam	Friable	Subangular Blocky	Weak to moderate	5-10% rootlets, 30% pin holes, 5% worm burrows, 1% snail fragments	Gradual to clear and slightly wavy	Transitional
	93-196	10YR5/4	yellowish brown	Silt Loam	Friable	Subangular Blocky	Moderate	3-5% rootlets, 30% pin holes, 5% worm burrows, 10% snail - Rabdotus, 1% snail fragments, pockets of snail - rabdotus, Insect burrows - 6mm -1%	Clear and smooth	
	196-306	10YR5/6 to 10YR6/6	yellowish brown to brownish yellow	Clay loam	Friable	Angular Blocky	Moderate	1% rootlets, 3% pin holes, 1% white filament (1cm), 20-30% snail - helio and rabdotus, 10% snail fragments, large insect burrows	Unobserved	CaCO ₃ filaments increase with depth 3-4mm (5%) ~280cmbs, clay content increases with depth
BHT03	0-26	10YR 5/3	brown	Silty clay loam	Friable to Firm	Subangular Blocky	Moderate	5% roots, 5% rootlets, rare gravels, rare insect casts, 10% white filament	Clear and irregular	No snail shell observed
	26-149	10YR 6/4	Light yellowish brown	Silt loam	Friable	Subangular Crumb	Weak to moderate	1% roots, 1% rootlets, 25% limestone gravels, rare insect casts	Gradual and smooth	5% CaCO ₃ filaments decrease with depth starting at approximately 70 cmbs
	149-170	10YR 7/4	Very pale brown	Silt loam	Friable	Platy	Weak to moderate	>1% rootlets, 20% limestone gravels, 1% white filament	Unobserved	
BHT04	0-11	10YR3/2	very dark grayish brown	silt loam	Friable	Subangular Blocky to Angular Blocky	Weak to moderate	roots-rootlets 15-20%, few snail shell (Helio), 30% pin holes, 5% worm burrows, 5% snail fragments	Gradual and Smooth	Root zone 0-9cmbs
	11-35	10YR4/3	brown	Loam	Friable	Subangular Blocky	Weak to moderate	5-10% rootlets, 30% pin holes, 5% worm burrows, 1% snail fragments	Gradual to clear and slightly wavy	Transitional
	35-83	10YR5/4	yellowish brown	Silt Loam	Friable	Subangular Blocky	Moderate	3-5% rootlets, 30% pin holes, 5% worm burrows, 10% snail - Rabdotus, 1% snail fragments, pockets of snail - rabdotus, Insect burrows - 6mm -1%	Clear and smooth	
	83-130	10YR5/6 to 10YR6/6	yellowish brown to brownish yellow	Clay loam	Friable	Angular Blocky	Moderate	1% rootlets, 3% pin holes, 1% white filament (1cm), 20-30% snail - helio and rabdotus, 10% snail fragments, large insect burrows	Unobserved	CaCO ₃ filaments increase with depth 3-4mm (5%) ~280cmbs, clay content increases with depth
	130-170	10YR6/2-6/3	Light brownish gray	Silt Loam	Friable	Subangular, medium	moderate	rootlets 5-10%, rabdotus <3%, white filaments 10% - dispersed, limestone subangular fragments <19%	Unobserved	

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BHT	Depth (cmbs)	Munsell*	Soil Color*	Soil Texture	Consistency	Structure Type	Grade	Inclusions	Lower Boundary	Comments
BHT05	0-12	10YR3/2	very dark grayish brown	silt loam	Friable	Subangular Blocky to Angular Blocky	Weak to moderate	roots-rootlets 15-20%, few snail shell (Helio), 30% pin holes, 5% worm burrows, 5% snail fragments	Gradual and Smooth	Root zone 0-9cmbs
	12-40	10YR4/3	brown	Loam	Friable	Subangular Blocky	Weak to moderate	5-10% rootlets, 30% pin holes, 5% worm burrows, 1% snail fragments	Gradual to clear and slightly wavy	Transitional
	40-76	10YR5/4	yellowish brown	Silt Loam	Friable	Subangular Blocky	Moderate	3-5% rootlets, 30% pin holes, 5% worm burrows, 10% snail - Rabdotus, 1% snail fragments, pockets of snail - rabdotus, Insect burrows - 6mm -1%	Clear and smooth	
	76-128	10YR5/6 to 10YR6/6	yellowish brown to brownish yellow	Clay loam	Friable	Angular Blocky	Moderate	1% rootlets, 3% pin holes, 1% white filament (1cm), 20-30% snail - helio and rabdotus, 10% snail fragments, large insect burrows	Unobserved	CaCO ₃ filaments increase with depth 3-4mm (5%) ~280cmbs, clay content increases with depth
	128-138	10YR6/2-6/3	Light brownish gray	Silt Loam	Friable	Subangular, medium	moderate	rootlets 5-10%, rabdotus <3%, white filaments 10% - dispersed, limestone subangular fragments <19%	Unobserved	
BHT06	0-10	10YR3/2	very dark grayish brown	silt loam	Friable	Subangular Blocky to Angular Blocky	Weak to moderate	roots-rootlets 15-20%, few snail shell (Helio), 30% pin holes, 5% worm burrows, 5% snail fragments	Gradual and Smooth	Root zone 0-9cmbs
	10-38	10YR4/3	brown	Loam	Friable	Subangular Blocky	Weak to moderate	5-10% rootlets, 30% pin holes, 5% worm burrows, 1% snail fragments	Gradual to clear and slightly wavy	Transitional
	38-80	10YR5/4	yellowish brown	Silt Loam	Friable	Subangular Blocky	Moderate	3-5% rootlets, 30% pin holes, 5% worm burrows, 10% snail - Rabdotus, 1% snail fragments, pockets of snail - rabdotus, Insect burrows- 6mm -1%	Clear and smooth	
	08-132	10YR5/6 to 10YR6/6	yellowish brown to brownish yellow	Clay loam	Friable	Angular Blocky	Moderate	1% rootlets, 3% pin holes, 1% white filament (1cm), 20-30% snail - helio and rabdotus, 10% snail fragments, large insect burrows	Unobserved	CaCO ₃ filaments increase with depth 3-4mm (5%) ~280cmbs, clay content increases with depth
	132-140	10YR6/2-6/3	Light brownish gray	Silt Loam	Friable	Subangular, medium	moderate	rootlets 5-10%, rabdotus <3%, white filaments 10% - dispersed, limestone subangular fragments <19%	Unobserved	

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BHT	Depth (cmbs)	Munsell*	Soil Color*	Soil Texture	Consistency	Structure Type	Grade	Inclusions	Lower Boundary	Comments
BHT07	0-21	10YR3/2-2/3	Very dark grayish brown	Silt Loam	Friable	crumb to subangular, fine	weak	Roots 3%, rootlets 2%, worm burrows 5%, pin holes 5-10%, limestone pebbles 3% (subangular)	clear, sloping to east	Mottled 10YR 5/3 (disturbed), secondary colors as lenses 20%, cultural material: debitage, some fire cracked rock (FCR), and burned chert
	21-39	10YR4/2-5/2	Dark grayish brown	Silt Loam	Friable to firm	subangular to angular, medium	moderate	Roots 10%, rootlets 15-20%, rabdotus 3%, snail fragments 20%, worm 3-5%, pinhole 5-10%, limestone subangular pebbles 3%	clear, smooth to slightly sloping	No secondary colors, possibly truncated from above, Cultural material: debitage and occasional FCR fragment
	39-71	10YR 5/3	Brown	Silt Loam	Friable	Subangular to angular, medium	moderate	Roots 5-10%, rootlets 15%, snail fragments 15%, rabdotus 3%, pinholes 5%	clear, smooth to slightly sloping	Cultural material: scattered debitage, no concentrations
	71-101	10YR 5/3-5/4	Brown	Silt Loam	Friable	Subangular, fine to medium	moderate	Rootlets 15%, pinholes 5%, white filaments 3-5%, rabdotus 3-5%, vertically arranged and clustered (root activity), heliodiscus 1%, snail fragments 5%	Gradual, smooth	Cultural material: small scattered FCR, low density debitage,
	101-139	10YR6/2-6/3	Light brownish gray	Silt Loam	Friable	Subangular, medium	moderate	rootlets 5-10%, rabdotus <3%, white filaments 10% - dispersed, limestone subangular fragments <19%	Gradual, smooth	Cultural material; FCR, larger debitage than strats above, calcine coated artifacts, several large FCR at 131 cmbs
	139-183	10YR7/3	Very pale brown	Fine Silt Loam	Loose to Friable	Crumb to subangular, fine	weak	root <1%, rootlets <5%, snail <1%	Gradual, smooth	
	183-253	10YR6/4-7/4	Light yellowish brown	Very Fine Silt Loam	Loose	Crumb, fine	Weak	Heliodiscus <5%, rabdotus <2%, amorphous gravels, pebbles 3%,	Unobserved	No cultural material found
BHT08	0-17	10YR3/2-4/2	Very dark grayish brown	Silt Loam	Loose to Friable	crumb to subangular, fine	weak	Roots 5%, rootlets 20%, rabdotus 10%, worm 5%, pinholes 15-20%, partially decomposed vegetation in upper 4cm	Clear, slightly wavy	
	17-42	10YR5/2-5/3	Brown	Silt Loam	Friable	Subangular, fine to medium	weak	Roots 3%, rootlets 15%, rabdotus 10-15%, limestone gravels and cobbles 3%, pinholes 10-15%	Clear, slightly irregular	Flake at 28 cmbs (chert) early stage (secondary 1 or 3), one FCR at 28-32 cmbs
	42-84	10YR5/3	Brown	Silt Loam	Friable	Subangular, medium	Weak	Roots 1%, rootlets 10%, rabdotus 3-5%, white filaments 3%, worm burrows 5-6 cm diameter 3-5%	Clear, irregular	10YR6/2 15% mottles, Flake/debitage at 62cmbs, many roots/burrows
	84-302+	10YR7/3-7/4	Very pale brown	Silt Loam	Friable	Subangular, fine	Weak	Rootlets 15%, subangular limestone gravels and pebbles 20-30%, no large cobbles of limestone, prominent burrows with strat 2/3 matrix, large chamber/den or burrow 38x44 cm in size, rabdotus 10%, rootlets in clustered burrows	Unobserved	

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BHT	Depth (cmbs)	Munsell*	Soil Color*	Soil Texture	Consistency	Structure Type	Grade	Inclusions	Lower Boundary	Comments
BHT09	0-14	10YR4/2	Dark grayish brown	Silt Loam	Loose to Friable	Crumb, fine	Weak	Roots 5%, rootlets 20%, rabdotus 10%, worm burrows 5%, pinholes 5-10%	Clear, slightly wavy	O horizon (decomposing vegetation), Base at Strat 1 = Fist size FCR (limestone)
	14-37	10YR4/3	Brown	Silt Loam	Friable	crumb to subangular, fine to medium	weak	Roots 5%, rootlets 20%, rabdotus 5%, subangular limestone pebbles 5-10%, worm 5%, pinholes 10%	Gradual - slopes to N	Artifact
	37-56	10YR5/3-5/4	Brown	Silt Loam	Friable	Subangular, fine to medium	Weak to moderate	Roots 5-10%, rootlets 15-10%, rabdotus 10%, worms 3-5%, pinholes 3-5%, subangular limestone pebbles (5-10%)	Gradual, slightly wavy	
	56-78	10YR6/3	Pale brown	Silt Loam	Loose to Friable	Crumb to subangular, fine	Weak	Roots 3%, rootlets 10-15%, rabdotus 5%, heliodiscus 1-2%, pinholes 5-10%, worm burrows <3%, white filaments <5%	Clear, slightly irregular	Bottom of Strat 4: 1 debitage specimen in situ in west wall, this may be a transition strat
	78-141	10YR6/4-7/4	Light yellowish brown	Silt Loam	Friable	Subangular, fine to medium	Weak to moderate	Rootlets 10%, pinholes 5%, roots <1%, no earth worms, subangular limestone pebbles (10-15%), gravels 5-10%, snail fragments 5%	Gradual, smooth	No cultural material, small burrows 2% infilled with strat 3 or 4 matrix
	141-176+	10YR8/4	Very pale brown	Silt Loam	Friable to Slightly firm	subangular to angular, medium	moderate	Rootlets 5%, pinholes 3%, white filaments 5%, worm burrows 3%, No pebbles or rabdotus	Unobserved	No Cultural material
BHT10	0-22	10YR3/2	Very dark grayish brown	Silt Loam	Loose	Crumb, fine	Weak	Roots 3%, rootlets 15-20%, pinholes 5%, worm burrows 5%, rabdotus 5-10%	Clear, slightly wavy	Partially decomposed vegetation O horizon
	22-54	10YR4/2-4/3	Dark grayish brown	Silt Loam	Loose to Friable	Crumb to subangular, fine	Weak	Roots 10%, rootlets 20%, pinholes 5-10%, worm burrows 5%, rabdotus 3-5%	Gradual, smooth	Cultural Material: 1 FCR 39-42
	54-122	10YR5/3-5/4	Brown	Silt Loam	Friable	Subangular, fine to medium	Weak	Root 5%, Rootlets 20%, worm burrows 10%, rabdotus 5%, pinholes 20%, white filaments 10-15%	Gradual, smooth	FCR fragment 103 cmbs, one FCR 76 cmbs
	122-159	10YR5/4-6/4	Yellowish brown	Silt Loam	Friable	subangular to angular, medium	moderate	Root <1%, rootlets <1%, Rabdotus 5%, pinhole <1%, worm burrows 5%, white filaments <10%	Clear, smooth	One FCR at 139 cmbs
	159-185	10YR7/3	Very pale brown	Silt Loam	Loose to Friable	subangular to angular, medium	moderate	Limestone pebble subangular <2%, snail fragments 5%, filaments <5%, heliodiscus	Unobserved	Single FCR at 179 cmbs

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BHT	Depth (cmbs)	Munsell*	Soil Color*	Soil Texture	Consistency	Structure Type	Grade	Inclusions	Lower Boundary	Comments
BHT11	0-9	10Y3/2	Very dark grayish brown	Loam	Loose	Crumb, fine	Weak	snail rabdotus 5%	Gradual, wavy	Decomposing vegetation O horizon
	9-35	10YR4/2-4/3	Dark grayish brown	Silt Loam	Friable	Subangular, fine	weak	Root 5%, Rootlets 20%, rabdotus 15%, heliodiscus 3%, pinholes 15%, worm burrows 5-10%, roots are clustered at base of strat	Clear, slightly wavy	
	35-51	10YR4/2-4/3	Dark grayish brown	Silt Loam	Friable	Subangular, medium	Weak to moderate	Roots 3-5%, rootlets 15%, pinholes 15%, worm burrows 5%, white filaments 5-10% dendritic, rabdotus 5% fragments 15-20%, subangular pebbles <1% transitional?	Clear, slightly wavy	
	51-81	10YR5/3	Brown	Silt Loam	Friable	subangular to angular, medium	moderate	Roots 3%, rootlets 10%, worm burrows 3-5%, pinholes 10-15%, white filaments 5-10% dendritic, rabdotus 3-5%, snail fragments 5%, unidentified snail <1%	Gradual, slightly wavy	
	81-243	10YR 6/3	Pale brown	Silt Loam	Friable	Subangular, medium	moderate	Roots 2%, rootlets 5%, pinholes 5-10%, worm burrows <3%, white filaments <5%, rabdotus 3%, snail fragments 10%	Gradual, smooth	Lenses of 10YR 4/2 - silt loam, friable, subangular, fine, weak, rootlets 3%, abrupt sloping eastward, variable thickness, averaging 3 cmbs, one burned rock at 121 cmbs, ranged from 89 cmbs at W end to 144 on east end and dives to floor stops 1/3 of way to east end of trench
	243-244+	10YR6/4-7/4	Light yellowish brown	Silt Loam	Firm	Subangular, coarse	moderate	pinholes 10%, worm burrows <3%, white filaments (CaCO3) 5-10% increases (1-3mm), rabdotus 3-5%, snail fragments 5%	Unobserved	No cultural material, slightly inundated
BHT12	0-11	10YRY3/2	Very dark grayish brown	Loam	Loose	Crumb, fine	Weak	snail rabdotus 5%	Gradual, wavy	Decomposing vegetation O horizon
	11-39	10YR4/2-4/3	Dark grayish brown	Silt Loam	Friable	Subangular, fine	weak	Root 5%, Rootlets 20%, rabdotus 15%, heliodiscus 3%, pinholes 15%, worm burrows 5-10%, roots are clustered at base of strat	Clear, slightly wavy	
	39-54	10YR4/2-4/3	Dark grayish brown	Silt Loam	Friable	Subangular, medium	Weak to moderate	Roots 3-5%, rootlets 15%, pinholes 15%, worm burrows 5%, white filaments 5-10% dendritic, rabdotus 5% fragments 15-20%, subangular pebbles <1% transitional?	Clear, slightly wavy	
	54-73	10YR5/3	Brown	Silt Loam	Friable	subangular to angular, medium	moderate	Roots 3%, rootlets 10%, worm burrows 3-5%, pinholes 10-15%, white filaments 5-10% dendritic, rabdotus 3-5%, snail fragments 5%, unidentified snail <1%	Gradual, slightly wavy	insect burrows infilled with strat 5 matrix
	73-126	10YR5/3	Brown	Silt Loam	Friable	subangular to angular, medium	moderate	pinholes 3%, worm burrows <3%, white filaments <3%, snail fragments 5%	Clear, smooth	Lenses prominent
	126-156	10YR6/3-6/4	Pale brown	Silt Loam	Loose to Friable	crumb to subangular, fine to medium	Weak	rootlets 5%, snail rabdotus 3%, root burrows 1%, white filaments 1% (very diffuse)	Unobserved	Gritty matrix, became denser and none compact around 200 cmbs very similar to basal strat BHT11, Lens 10YR4/2-5/2 sloping to NE, discontinuous horizon in all directions

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BHT	Depth (cmbs)	Munsell*	Soil Color*	Soil Texture	Consistency	Structure Type	Grade	Inclusions	Lower Boundary	Comments
BHT13	0-9	10YR 3/1-3/2	very dark grayish brown	Loam	Loose	Crumb, fine	Weak	snail rabdotus 5%	Gradual, wavy	Decomposing vegetation O horizon
	9-32	10YR 4/3	dark grayish brown	Silty clay loam	Loose to Friable	Crumb to Subangular	Weak	5% Roots, 20% Rootlets, 10% Worm casts, 10% pin holes, insect burrows, 10% limestone pebbles (subangular to sub rounded)	Clear, Slightly wavy due to bioturbation	Some Rabdotus (3-5%)
	32-59	10YR 6/4-6/6	Pale brown	Silt loam	Friable	Crumb to Subangular	Weak	3% roots, 10% rootlets, 2% small nodules (3-4mm) of CaCO ₃ , 5% pin holes, 5% worm casts, 5% krotovina infilled with Strat II	Gradual, smooth	Transitional
	59-253	10YR 7/4-7/6	Very pale brown to yellow brown	Silt loam	Friable to Firm	Subangular to angular	Moderate	5% rootlets decreasing with depth, 3-5% CaCO ₃ nodules (2-3mm), 5% pin holes, 3% worm burrows	Unobserved	Hue is lighter with depth

APPENDIX C

TEST UNIT SPECIMEN INVENTORY

Unit	Level	Depth (cmbs)	Artifact Type	Artifact Description	Material	Artifact No.	Weight (g)	Recorders	Date	Comments
1	1	0–10	Debitage	Primary	Lithic	2	7.28	JL	10/13/2016	Shatter
1	1	0–10	Debitage	Tertiary	Lithic	14	14.4	JL	10/13/2016	Shatter
1	1	0–10	Faunal Remains	Mussel Shell	Shell	1	0.38	JL	10/12/2016	Unmodified fragment
1	1	3	Groundstone	Mano	Lithic	1	304.81	JL	10/12/2016	Roughly half complete
1	2	10–20	Biface	Early-stage biface	Lithic	1	61.97	JL	10/13/2016	Thick and Crude
1	2	10–20	Debitage	Primary	Lithic	7	8.19	JL	10/13/2016	
1	2	10–20	Debitage	Secondary	Lithic	15	35.9	JL	10/13/2016	4 Bifacial thinning flakes
1	2	10–20	Debitage	Tertiary	Lithic	71	47.54	JL	10/13/2016	56 Bifacial thinning flakes
1	2	10–20	Faunal Remains	Burned Bone		1	0.17	JL	10/13/2016	
1	3	20–30	Blade	Blade		1	9.08	JL	10/12/2016	
1	3	20–30	Burned Rock	Burned Rock	Lithic	4	18.26	JL	10/12/2016	
1	3	20–30	Debitage	Primary	Lithic	12	23.63	JL	10/12/2016	
1	3	20–30	Debitage	Secondary	Lithic	10	14.05	JL	10/12/2016	7 Bifacial thinning flakes
1	3	20–30	Debitage	Tertiary	Lithic	38	28.86	JL	10/12/2016	30 Bifacial thinning flakes
1	4	30–40	Debitage	Primary	Lithic	6	62.4	JL	10/12/2016	
1	4	30–40	Debitage	Secondary	Lithic	10	26.3	JL	10/12/2016	7 Bifacial thinning flakes
1	4	30–40	Debitage	Tertiary	Lithic	53	54.92	JL	10/12/2016	48 Bifacial thinning flakes
1	4	30–40	Burned Rock	Burned Rock	Lithic	6	14.5	JL	10/12/2016	
1	4	30–40	Faunal Remains	Mussel Shell	Shell	2	0.69	JL	10/12/2016	Unmodified
1	4	30–40	Projectile Point	Untyped Arrow Point	Lithic	1	2.15	JL	10/12/2016	Missing distal tip and base
1	5	50	Charcoal	Charcoal		4	0.15	JL	10/13/2016	
1	5	40–50	Faunal Remains	Bone		3	4.63	JL	10/13/2016	1 Burned fragment
1	5	40–50	Debitage	Primary	Lithic	2	9.25	JL	10/13/2016	Shatter
1	5	40–50	Debitage	Secondary	Lithic	11	54.3	JL	10/13/2016	2 Bifacial thinning flakes
1	5	40–50	Debitage	Tertiary	Lithic	37	37.57	JL	10/13/2016	23 Bifacial thinning flakes
1	5	40–50	Utilized Flake	Utilized Flake	Lithic	1	1.15	JL	10/13/2016	
1	6	50–60	Biface	Bifacial Fragment	Lithic	1	53.15	JL	10/13/2016	
1	6	50–60	Core	Core	Lithic	1	133.85	JL	10/13/2016	
1	6	50–60	Debitage	Primary	Lithic	18	29.95	JL	10/13/2016	
1	6	50–60	Debitage	Secondary	Lithic	24	113.78	JL	10/13/2016	8 Bifacial thinning flakes
1	6	50–60	Debitage	Tertiary	Lithic	100	84.23	JL	10/13/2016	76 Bifacial thinning flakes
1	6	50–60	Faunal Remains	Bone		5	3.33	JL	10/13/2016	
1	6	50–60	Tested Cobble	Tested Cobble	Lithic	1	163.13	JL	10/13/2016	
1	7	60–70	Burned Rock	Burned Rock	Lithic	1	1.3	JL	10/12/2016	
1	7	60–70	Debitage	Primary	Lithic	1	0.67	JL	10/12/2016	
1	7	60–70	Debitage	Secondary	Lithic	11	11.22	JL	10/12/2016	7 Bifacial thinning flakes
1	7	60–70	Debitage	Tertiary	Lithic	60	64.2	JL	10/12/2016	48 Bifacial thinning flakes
1	7	60–70	Faunal Remains	Bone		6	7.57	JL	10/12/2016	
1	7	60–70	Projectile Point	Scallorn Point	Lithic	1	1.25	JL	10/12/2016	Missing distal tip; corner-notched broad stemmed variant

Unit	Level	Depth (cmbs)	Artifact Type	Artifact Description	Material	Artifact No.	Weight (g)	Recorders	Date	Comments
1	8	70–80	Debitage	Primary	Lithic	8	36.06	JL	10/14/2016	2 Bifacial thinning flakes
1	8	70–80	Debitage	Secondary	Lithic	13	59.03	JL	10/14/2016	6 Bifacial thinning flakes
1	8	70–80	Debitage	Tertiary	Lithic	64	96.89	JL	10/14/2016	49 Bifacial thinning flakes
1	8	70–80	Faunal Remains	Bone		13	6.48	JL	10/14/2016	1 Burned fragment
1	8	70–80	Faunal Remains	Mussel Shell	Shell	2	33.36	JL	10/14/2016	Unmodified fragments
1	8	70–80	Organic remains	Burned Nut Shell		2	0.27	JL	10/14/2016	
1	8	70–80	Utilized Flake	Utilized Flake	Lithic	1	6.52	JL	10/14/2016	
1	9	80–90	Burned Rock	Burned Rock	Lithic	3	28.34	JL	10/14/2016	
1	9	80–90	Core	Core	Lithic	1	68.3	JL	10/14/2016	Broken into 3 pieces
1	9	80–90	Debitage	Primary	Lithic	3	28.58	JL	10/14/2016	1 Bifacial thinning flake
1	9	80–90	Debitage	Secondary	Lithic	4	30.54	JL	10/14/2016	1 Bifacial thinning flake
1	9	80–90	Debitage	Tertiary	Lithic	24	47.94	JL	10/14/2016	20 Bifacial thinning flakes
1	9	80–90	Faunal Remains	Bone		3	0.96	JL	10/14/2016	1 Burned fragment
1	9	80–90	Faunal Remains	Mussel Shell	Shell	3	15.35	JL	10/14/2016	Unmodified fragments
1	10	90–100	Debitage	Primary	Lithic	7	20.05	JL	10/12/2016	1 Bifacial thinning flake
1	10	90–100	Debitage	Secondary	Lithic	10	36.96	JL	10/12/2016	7 Bifacial thinning flakes
1	10	90–100	Debitage	Tertiary	Lithic	33	64	JL	10/12/2016	31 Bifacial thinning flakes
1	10	90–100	Faunal Remains	Bone		5	0.07	JL	10/12/2016	
1	11	100–110	Debitage	Primary	Lithic	1	0.91	JL	10/13/2016	
1	11	100–110	Debitage	Secondary	Lithic	7	20.15	JL	10/13/2016	3 Bifacial thinning flakes
1	11	100–110	Debitage	Tertiary	Lithic	33	35.1	JL	10/13/2016	25 Bifacial thinning flakes
1	11	100–110	Faunal Remains	Bone		8	1.57	JL	10/13/2016	
1	11	100–110	Faunal Remains	Mussel Shell	Shell	3	6.32	JL	10/13/2016	Unmodified fragments
1	12	110–120	Debitage	Primary	Lithic	7	54.47	JL	10/14/2016	4 Bifacial thinning flakes
1	12	110–120	Debitage	Secondary	Lithic	6	39.54	JL	10/14/2016	4 Bifacial thinning flakes
1	12	110–120	Debitage	Tertiary	Lithic	15	8.52	JL	10/14/2016	13 Bifacial thinning flakes
1	12	110–120	Faunal Remains	Bone		12	8.31	JL	10/14/2016	
1	13	120–130	Debitage	Primary	Lithic	2	3.12	JL	10/13/2016	
1	13	120–130	Debitage	Tertiary	Lithic	6	5.9	JL	10/13/2016	5 Bifacial thinning flakes
1	13	120–130	Faunal Remains	Mussel Shell	Shell	1	9.52	JL	10/13/2016	Unmodified fragments
1	14	130–140	Debitage	Primary	Lithic	4	82.57	JL	10/13/2016	
1	14	130–140	Debitage	Secondary	Lithic	5	110.35	JL	10/13/2016	2 Bifacial thinning flakes
1	14	130–140	Debitage	Tertiary	Lithic	17	19.68	JL	10/13/2016	16 Bifacial thinning flakes
1	14	130–140	Faunal Remains	Bone		14	5.83	JL	10/13/2016	

Unit	Level	Depth (cmbs)	Artifact Type	Artifact Description	Material	Artifact No.	Weight (g)	Recorders	Date	Comments
1	15	140–150	Debitage	Secondary	Lithic	2	2.4	JL	10/13/2016	
1	15	140–150	Debitage	Tertiary	Lithic	9	9.74	JL	10/13/2016	8 Bifacial thinning flakes
1	15	140–150	Faunal Remains	Bone		5	3.05	JL	10/13/2016	
1	15	140–150	Organic remains	Burned Seed		2	0.04	JL	10/13/2016	
1	15	140–150	Projectile Point	Untyped Arrow Point	Lithic	1	0.25	JL	10/13/2016	Serrated medial arrow point fragment
1	16	150–160	Faunal Remains	Bone		5	15.75	JU	8/31/2017	
1	16	150–160	Debitage	Secondary	Lithic	1	6.28	JU	8/31/2017	1 bifacial thinning flake
1	16	150–160	Debitage	Tertiary	Lithic	2	2.75	JU	8/31/2017	1 bifacial thinning flake
1	17	160–170	Debitage	Tertiary	Lithic	4	5.98	JU	8/31/2017	3 bifacial thinning flakes
1	6, 7	56–70	Soil Sample	Matrix Sample						3 gal. bags
2	1	0–10	Debitage	Primary	Lithic	1	10.76	JL	10/14/2016	
2	1	0–10	Debitage	Tertiary	Lithic	16	11.48	JL	10/14/2016	14 Bifacial thinning flakes
2	2	10–20	Debitage	Primary	Lithic	1	89.07	JL	10/13/2016	
2	2	10–20	Debitage	Secondary	Lithic	6	34.9	JL	10/13/2016	4 Bifacial thinning flakes
2	2	10–20	Debitage	Tertiary	Lithic	19	23.15	JL	10/13/2016	18 Bifacial thinning flakes
2	3	20–30	Debitage	Primary	Lithic	2	19.64	JL	10/13/2016	
2	3	20–30	Debitage	Secondary	Lithic	3	4.56	JL	10/13/2016	1 Bifacial thinning flake
2	3	20–30	Debitage	Tertiary	Lithic	8	3.66	JL	10/13/2016	4 Bifacial thinning flakes
2	4	30–40	Debitage	Secondary	Lithic	2	1.16	JL	10/14/2016	
2	4	30–40	Debitage	Tertiary	Lithic	2	0.3	JL	10/14/2016	2 Bifacial thinning flakes
2	5	40–50	Blade	Blade		1	22.17	JL	10/14/2016	
2	5	40–50	Core	Core	Lithic	1	44.26	JL	10/14/2016	
2	5	40–50	Debitage	Primary	Lithic	21	154.45	JL	10/14/2016	1 Bifacial thinning flake
2	5	40–50	Debitage	Secondary	Lithic	24	70.78	JL	10/14/2016	13 Bifacial thinning flakes
2	5	40–50	Debitage	Tertiary	Lithic	88	76.77	JL	10/14/2016	70 Bifacial thinning flakes
2	6	50–60	Charcoal	Charcoal		4	0.27	JL	10/14/2016	
2	6	50–60	Debitage	Primary	Lithic	23	115.08	JL	10/14/2016	5 Bifacial thinning flakes
2	6	50–60	Debitage	Secondary	Lithic	28	211.09	JL	10/14/2016	14 Bifacial thinning flakes
2	6	50–60	Debitage	Tertiary	Lithic	149	119.02	JL	10/14/2016	126 Bifacial thinning flakes
2	6	50–60	Projectile Point	Scallorn Point	Lithic	1	3.79	JL	10/14/2016	Missing distal tip; corner-notched broad stemmed variant; very large for arrow point
2	7	60–70	Burned Rock	Burned Rock	Lithic	21	270.5	JL	10/12/2016	
2	7	60–70	Charcoal	Charcoal		6	0.71	JL	10/12/2016	
2	7	60–70	Debitage	Primary	Lithic	53	389.05	JL	10/12/2016	11 Bifacial thinning flakes
2	7	60–70	Debitage	Secondary	Lithic	86	418.54	JL	10/12/2016	46 Bifacial thinning flakes
2	7	60–70	Debitage	Tertiary	Lithic	226	200.05	JL	10/12/2016	194 Bifacial thinning flakes
2	7	60–70	Faunal Remains	Burned Bone		8	6.93	JL	10/12/2016	1 Calcified fragment

Unit	Level	Depth (cmbs)	Artifact Type	Artifact Description	Material	Artifact No.	Weight (g)	Recorders	Date	Comments
2	7	60–70	Shell Artifact	Shell Bead	Shell	1	0.3	JL	10/12/2016	Modified shell bead with beveled drill hole and an another decorative incised drill mark
2	8	70–80	Debitage	Primary	Lithic	10	20.9	JL	10/12/2016	4 Bifacial thinning flakes
2	8	70–80	Debitage	Secondary	Lithic	19	41.23	JL	10/12/2016	8 Bifacial thinning flakes
2	8	70–80	Debitage	Tertiary	Lithic	77	50.01	JL	10/12/2016	66 Bifacial thinning flakes
2	8	70–80	Projectile Point	Untyped Arrow Point Preform	Lithic	1	5.4	JL	10/12/2016	Missing distal tip; incomplete manufacturing failure?; unifacially trimmed; likely Scallorn preform
2	8	70–80	Projectile Point	Untyped Arrow Point	Lithic	1	1.41	JL	10/12/2016	Distal arrow point frag missing base
2	8	70–80	Utilized Flake	Utilized Flake	Lithic	1	4.96	JL	10/12/2016	
2	9	80–90	Blade	Blade		1	5.29	JL	10/13/2016	
2	9	80–90	Debitage	Primary	Lithic	7	21.69	JL	10/13/2016	
2	9	80–90	Debitage	Secondary	Lithic	12	23.21	JL	10/13/2016	8 Bifacial thinning flakes
2	9	80–90	Debitage	Tertiary	Lithic	63	49.64	JL	10/13/2016	60 Bifacial thinning flakes
2	9	80–90	Utilized Flake	Utilized Flake	Lithic	1	11.6	JL	10/13/2016	
2	10	90–100	Debitage	Primary	Lithic	1	0.79	JL	10/12/2016	
2	10	90–100	Debitage	Secondary	Lithic	7	51.83	JL	10/12/2016	4 Bifacial thinning flakes
2	10	90–100	Debitage	Tertiary	Lithic	52	73.71	JL	10/12/2016	38 Bifacial thinning flakes
2	11	100–110	Charcoal	Charcoal		5	0.59	JL	10/13/2016	
2	11	100–110	Debitage	Primary	Lithic	4	49.89	JL	10/13/2016	
2	11	100–110	Debitage	Secondary	Lithic	8	100.74	JL	10/13/2016	3 Bifacial thinning flakes
2	11	100–110	Debitage	Tertiary	Lithic	36	52.51	JL	10/13/2016	25 Bifacial thinning flakes
2	12	110–120	Debitage	Primary	Lithic	2	0.61	JL	10/14/2016	2 Bifacial thinning flakes
2	12	110–120	Debitage	Secondary	Lithic	18	23.2	JL	10/14/2016	6 Bifacial thinning flakes
2	12	110–120	Debitage	Tertiary	Lithic	64	37.15	JL	10/14/2016	40 Bifacial thinning flakes
2	12	110–120	Faunal Remains	Bone		2	2.18	JL	10/14/2016	
2	12	110–120	Hammerstone	Hammerstone	Lithic	1	434.52	JL	10/14/2016	
2	13	120–130	Charcoal	Charcoal		1	0.23	JL	10/14/2016	
2	13	120–130	Debitage	Primary	Lithic	2	4.35	JL	10/14/2016	
2	13	120–130	Debitage	Secondary	Lithic	3	13.48	JL	10/14/2016	
2	13	120–130	Debitage	Tertiary	Lithic	59	46.88	JL	10/14/2016	36 Bifacial thinning flakes
2	14	130–140	Biface	Bifacial Fragment	Lithic	1	56.08	JL	10/14/2016	
2	14	130–140	Debitage	Primary	Lithic	2	5.78	JL	10/14/2016	
2	14	130–140	Debitage	Secondary	Lithic	1	0.72	JL	10/14/2016	
2	14	130–140	Debitage	Tertiary	Lithic	14	12	JL	10/14/2016	10 Bifacial thinning flakes

Unit	Level	Depth (cmbs)	Artifact Type	Artifact Description	Material	Artifact No.	Weight (g)	Recorders	Date	Comments
2	15	140-150	Faunal Remains	Snail Shell	Shell	1	3.21	JU	8/31/2017	Unknown, complete shell
2	15	140-150	Debitage	Secondary	Lithic	3	3.76	JU	8/31/2017	1 bifacial thinning flake
2	15	140-150	Debitage	Tertiary	Lithic	3	0.88	JU	8/31/2017	1 bifacial thinning flake
2	16	150-160	Debitage	Secondary	Lithic	1	2.94	JU	8/31/2017	
3	1	0-10	Debitage	Primary	Lithic	1	50.16	JL	10/14/2016	
3	1	0-10	Debitage	Secondary	Lithic	1	0.35	JL	10/14/2016	
3	1	0-10	Debitage	Tertiary	Lithic	6	2.44	JL	10/14/2016	5 Bifacial thinning flakes
3	1	0-10	Utilized Flake	Utilized Flake	Lithic	1	2.58	JL	10/14/2016	
3	2	10-20	Debitage	Secondary	Lithic	2	1.6	JL	10/14/2016	
3	2	10-20	Debitage	Tertiary	Lithic	6	0.98	JL	10/14/2016	6 Bifacial thinning flakes
3	3	20-30	Debitage	Primary	Lithic	1	0.19	JL	10/14/2016	
3	3	20-30	Debitage	Tertiary	Lithic	12	2.9	JL	10/14/2016	10 Bifacial thinning flakes
3	4	30-40	Burned Rock	Burned Rock	Lithic	2	18.18	JL	10/14/2016	
3	4	30-40	Debitage	Primary	Lithic	7	48.46	JL	10/14/2016	1 Bifacial thinning flake
3	4	30-40	Debitage	Secondary	Lithic	18	36.29	JL	10/14/2016	6 Bifacial thinning flakes
3	4	30-40	Debitage	Tertiary	Lithic	60	31.1	JL	10/14/2016	54 Bifacial thinning flakes
3	5	40-50	Faunal Remains	Mussel Shell	Shell	1	2.47	JU	8/31/2017	
3	5	40-50	Ground Stone	Ground Stone		1	85.14	JU	8/31/2017	
3	5	40-50	Modified Flake	Modified Flake	Lithic	1	10.33	JU	8/31/2017	
3	5	40-50	Debitage	Primary	Lithic	6	63.93	JU	8/31/2017	
3	5	40-50	Debitage	Secondary	Lithic	21	238.78	JU	8/31/2017	8 bifacial thinning flakes
3	5	40-50	Debitage	Tertiary	Lithic	74	112.97	JU	8/31/2017	53 bifacial thinning flakes
3	6	50-60	Faunal Remains	Bone		9	0.94	JU	8/31/2017	
3	6	50-60	Debitage	Primary	Lithic	8	32.41	JU	8/31/2017	
3	6	50-60	Debitage	Secondary	Lithic	43	122.26	JU	8/31/2017	15 bifacial thinning flakes
3	6	50-60	Debitage	Tertiary	Lithic	128	119.41	JU	8/31/2017	85 bifacial thinning flakes
3	6	50-60	Tool	Biface	Lithic	1	5.13	JU	8/31/2017	thin, proximal
3	6	50-60	Projectile Point	Untyped Arrow Point Tip	Lithic	1	0.63	JU	8/31/2017	Distal tip; serrated; well-thinned
3	6	50-60	Projectile Point	Untyped Arrow Point	Lithic	1	3.07	JU	8/31/2017	Nearly complete
3	7	60-70	Projectile Point	Untyped Dart Point	Lithic	1	4.5	JU	8/31/2017	Proximal half of point; heavily burned; probable Frio or Ensor
3	7	60-70	Faunal Remains	Mussel Shell	Shell	1	0.21	JU	8/31/2017	
3	7	60-70	Debitage	Primary	Lithic	3	55.44	JU	8/31/2017	1 bifacial thinning flake
3	7	60-70	Debitage	Secondary	Lithic	7	21.6	JU	8/31/2017	2 bifacial thinning flakes
3	7	60-70	Debitage	Tertiary	Lithic	18	22.47	JU	8/31/2017	13 bifacial thinning flakes
3	8	70-80	Debitage	Primary	Lithic	3	51.34	JU	8/31/2017	
3	8	70-80	Debitage	Secondary	Lithic	12	76.02	JU	8/31/2017	6 bifacial thinning flakes
3	8	70-80	Debitage	Tertiary	Lithic	27	36.42	JU	8/31/2017	19 bifacial thinning flakes

Unit	Level	Depth (cmbs)	Artifact Type	Artifact Description	Material	Artifact No.	Weight (g)	Recorders	Date	Comments
3	9	80-90	Faunal Remains	Bone		2	0.12	JU	8/31/2017	
3	9	80-90	Debitage	Secondary	Lithic	4	45.03	JU	8/31/2017	2 bifacial thinning flakes
3	9	80-90	Debitage	Tertiary	Lithic	25	20.72	JU	8/31/2017	13 bifacial thinning flakes
3	10	90-100	Organic Remains	Charcoal		1	0.71	JU	8/31/2017	
3	10	90-100	Ground Stone	Ground Stone		3	62.89	JU	8/31/2017	
3	10	90-100	Debitage	Secondary	Lithic	7	19.02	JU	8/31/2017	1 bifacial thinning flake
3	10	90-100	Debitage	Tertiary	Lithic	25	17.51	JU	8/31/2017	17 bifacial thinning flakes
3	10	90-100	Modified Flake	Modified Flake	Lithic	1	3.05	JU	8/31/2017	
3	11	100-110	Debitage	Primary	Lithic	3	111.05	JU	8/31/2017	
3	11	100-110	Debitage	Secondary	Lithic	10	31.49	JU	8/31/2017	3 bifacial thinning flakes
3	11	100-110	Debitage	Tertiary	Lithic	55	81.03	JU	8/31/2017	38 bifacial thinning flakes
3	12	110-120	Faunal Remains	Bone		5	1.04	JU	8/31/2017	2 burned
3	12	110-120	Debitage	Primary	Lithic	5	107.78	JU	8/31/2017	
3	12	110-120	Debitage	Secondary	Lithic	5	22.76	JU	8/31/2017	2 bifacial thinning flakes
3	12	110-120	Debitage	Tertiary	Lithic	62	41.93	JU	8/31/2017	43 bifacial thinning flakes
3	12	110-120	Core	Core	Lithic	1	217.1	JU	8/31/2017	
3	13	120-130	Debitage	Primary	Lithic	3	12.55	JU	8/31/2017	
3	13	120-130	Debitage	Secondary	Lithic	4	3.81	JU	8/31/2017	2 bifacial thinning flakes
3	13	120-130	Debitage	Tertiary	Lithic	25	22.88	JU	8/31/2017	17 bifacial thinning flakes
3	14	130-140	Faunal Remains	Bone		9	3.16	JU	8/31/2017	
3	14	130-140	Faunal Remains	Bone		1	0.12	JU	8/31/2017	
3	14	130-140	Debitage	Secondary	Lithic	2	1.68	JU	8/31/2017	
3	14	130-140	Debitage	Tertiary	Lithic	23	18.76	JU	8/31/2017	17 bifacial thinning flakes
3	15	140-150	Faunal Remains	Bone		3	0.85	JU	8/31/2017	
3	15	140-150	Debitage	Secondary	Lithic	4	4.72	JU	8/31/2017	1 bifacial thinning flake
3	15	140-150	Debitage	Tertiary	Lithic	19	17.18	JU	8/31/2017	11 bifacial thinning flakes
3	16	150-160	Debitage	Primary	Lithic	5	12.33	JU	8/31/2017	
3	16	150-160	Debitage	Secondary	Lithic	10	30.48	JU	8/31/2017	4 bifacial thinning flakes
3	16	150-160	Debitage	Tertiary	Lithic	44	26.89	JU	8/31/2017	25 bifacial thinning flakes
3	17	160-170	Faunal Remains	Bone		2	0.85	JU	8/31/2017	
3	17	160-170	Debitage	Primary	Lithic	1	3.42	JU	8/31/2017	
3	17	160-170	Debitage	Secondary	Lithic	3	3.26	JU	8/31/2017	1 bifacial thinning flake
3	17	160-170	Debitage	Tertiary	Lithic	15	15.66	JU	8/31/2017	8 bifacial thinning flakes
3	18	170-180	Faunal Remains	Bone		3	2.88	JU	8/31/2017	

Unit	Level	Depth (cmbs)	Artifact Type	Artifact Description	Material	Artifact No.	Weight (g)	Recorders	Date	Comments
3	18	170-180	Debitage	Secondary	Lithic	2	1.62	JU	8/31/2017	1 bifacial thinning flake
3	18	170-180	Debitage	Tertiary	Lithic	13	24.8	JU	8/31/2017	9 bifacial thinning flakes
4	1	0-10	Debitage	Primary	Lithic	1	12.19	JL	10/14/2016	
4	1	0-10	Debitage	Tertiary	Lithic	14	7.15	JL	10/14/2016	12 Bifacial thinning flakes
4	2	10-20	Debitage	Primary	Lithic	1	3.81	JL	10/13/2016	
4	2	10-20	Debitage	Secondary	Lithic	1	35.43	JL	10/13/2016	
4	2	10-20	Debitage	Tertiary	Lithic	12	10.11	JL	10/13/2016	10 Bifacial thinning flakes
4	3	20-30	Debitage	Primary	Lithic	25	29.05	JL	10/12/2016	11 Bifacial thinning flakes
4	3	20-30	Debitage	Secondary	Lithic	14	11.42	JL	10/12/2016	4 Bifacial thinning flakes
4	3	20-30	Debitage	Tertiary	Lithic	145	68.05	JL	10/12/2016	129 Bifacial thinning flakes
4	3	20-30	Scraper	Unifacial scraper	Lithic	1	4.07	JL	10/13/2016	Unifacially worked
4	4	30-40	Tool	Biface	Lithic	1	3.74	JU	8/30/2017	thin, proximal
4	4	30-40	Faunal Remains	Mussel Shell	Shell	2	7.76	JU	8/30/2017	Shell with hole
4	4	30-40	Ground Stone	Ground Stone		4	143.67	JU	8/30/2017	
4	4	30-40	Organic Remains	Charcoal		3	0.4	JU	8/30/2017	From screen
4	4	30-40	Special Sample	DAUB	Clay	5	6.45	JU	8/30/2017	
4	4	30-40	Faunal Remains	Bone		7	4.96	JU	8/30/2017	1 burned
4	4	30-40	Debitage	Primary	Lithic	7	72.6	JU	8/30/2017	1 bifacial thinning flake
4	4	30-40	Debitage	Secondary	Lithic	27	75.38	JU	8/30/2017	9 bifacial thinning flakes
4	4	30-40	Debitage	Tertiary	Lithic	121	151.42	JU	8/30/2017	70 bifacial thinning flakes
4	5	40-50	Ground Stone	Ground Stone		1		JU	8/30/2017	
4	5	40-50	Faunal Remains	Bone		1	7.14	JU	8/30/2017	
4	5	40-50	Debitage	Primary	Lithic	8	55.47	JU	8/30/2017	2 bifacial thinning flakes
4	5	40-50	Debitage	Secondary	Lithic	17	33.69	JU	8/30/2017	9 bifacial thinning flakes
4	5	40-50	Debitage	Tertiary	Lithic	69	56.92	JU	8/30/2017	39 bifacial thinning flakes
4	6	50-60	Organic Remains	Charcoal		3	0.37	JU	8/30/2017	
4	6	50-60	Tool	Biface	Lithic	1	6.36	JU	8/30/2017	thin, proximal
4	6	50-60	Special Sample	DAUB	Clay	3	20.61	JU	8/30/2017	
4	6	50-60	Faunal Remains	Bone		12	13.34	JU	8/30/2017	1 burned
4	6	50-60	Debitage	Primary	Lithic	8	10.49	JU	8/30/2017	1 bifacial thinning flake
4	6	50-60	Debitage	Secondary	Lithic	18	114.01	JU	8/30/2017	5 bifacial thinning flakes
4	6	50-60	Debitage	Tertiary	Lithic	49	44.32	JU	8/30/2017	26 bifacial thinning flakes
4	7	60-70	Faunal Remains	Mussel Shell	Shell	1	2.57	JU	8/30/2017	
4	7	60-70	Organic Remains	Charcoal		5	2.19	JU	8/30/2017	
4	7	60-70	Ground Stone	Ground Stone		1	46.81	JU	8/30/2017	
4	7	60-70	Debitage	Primary	Lithic	3	14.9	JU	8/30/2017	
4	7	60-70	Debitage	Secondary	Lithic	11	59.73	JU	8/30/2017	2 bifacial thinning flakes

Unit	Level	Depth (cmbs)	Artifact Type	Artifact Description	Material	Artifact No.	Weight (g)	Recorders	Date	Comments
4	7	60-70	Debitage	Tertiary	Lithic	17	42.08	JU	8/30/2017	12 bifacial thinning flakes
4	8	70-80	Faunal Remains	Mussel Shell	Shell	3	6.86	JU	8/30/2017	
4	8	70-80	Faunal Remains	Bone		3	5.3	JU	8/30/2017	
4	8	70-80	Debitage	Primary	Lithic	2	5.13	JU	8/30/2017	
4	8	70-80	Debitage	Secondary	Lithic	10	60.67	JU	8/30/2017	3 bifacial thinning flakes
4	8	70-80	Debitage	Tertiary	Lithic	27	60.79	JU	8/30/2017	15 bifacial thinning flakes
4	9	80-90	Faunal Remains	Mussel Shell	Shell	4	8.46	JU	8/30/2017	
4	9	80-90	Faunal Remains	Tooth	Bone	1	2.52	JU	8/30/2017	
4	9	80-90	Faunal Remains	Bone		18	36.17	JU	8/30/2017	
4	9	80-90	Debitage	Primary	Lithic	13	80.91	JU	8/30/2017	1 bifacial thinning flake
4	9	80-90	Debitage	Secondary	Lithic	27	176.2	JU	8/30/2017	7 bifacial thinning flakes
4	9	80-90	Debitage	Tertiary	Lithic	61	110.78	JU	8/30/2017	39 bifacial thinning flakes
4	10	90-100	Tool	Biface	Lithic	1	0.51	JU	8/30/2017	Distal
4	10	90-100	Faunal Remains	Bone		10	17.02	JU	8/30/2017	
4	10	90-100	Debitage	Primary	Lithic	6	36.61	JU	8/30/2017	1 bifacial thinning flake
4	10	90-100	Debitage	Secondary	Lithic	11	62.59	JU	8/30/2017	4 bifacial thinning flakes
4	10	90-100	Debitage	Tertiary	Lithic	33	62.77	JU	8/30/2017	25 bifacial thinning flakes
4	11	100-110	Faunal Remains	Bone		3	2.85	JU	8/30/2017	
4	11	100-110	Tool	Biface	Lithic	1	4.74	JU	8/30/2017	thin, distal
4	11	100-110	Debitage	Primary	Lithic	3	6.97	JU	8/30/2017	
4	11	100-110	Debitage	Secondary	Lithic	8	38.54	JU	8/30/2017	3 bifacial thinning flakes
4	11	100-110	Debitage	Tertiary	Lithic	24	15.09	JU	8/30/2017	17 bifacial thinning flakes
4	11	100-110	Tool	Biface	Lithic	1	116.2	JU	8/30/2017	Biface blank, chunky
4	12	110-120	Debitage	Secondary	Lithic	7	31.4	JU	8/30/2017	3 bifacial thinning flakes
4	12	110-120	Debitage	Tertiary	Lithic	18	20.9	JU	8/30/2017	15 bifacial thinning flakes
4	13	120-130	Projectile Point	Untyped Arrow Point Preform	Lithic	1	4.45	JU	8/30/2017	probable unfinished preform-failure to thin; unifacial
4	13	120-130	Faunal Remains	Bone		1	0.47	JU	8/30/2017	
4	13	120-130	Debitage	Secondary	Lithic	9	52.35	JU	8/30/2017	2 bifacial thinning flakes
4	13	120-130	Debitage	Tertiary	Lithic	14	29.85	JU	8/30/2017	12 bifacial thinning flakes
4	13	120-130	Tool	Biface	Lithic	1	35.09	JU	8/30/2017	thin, proximal
4	13	120-130	Tool	Utilized Flake	Lithic	1	23.13	JU	8/30/2017	
4	14	130-140	Debitage	Tertiary	Lithic	11	14.25	JU	8/30/2017	8 bifacial thinning flakes
4	14	130-140	Faunal Remains	Bone		6	1.53	JU	8/30/2017	

Unit	Level	Depth (cmbs)	Artifact Type	Artifact Description	Material	Artifact No.	Weight (g)	Recorders	Date	Comments
4	14	130-140	Organic Remains	Charcoal		4	0.28	JU	8/30/2017	
4	14	130-140	Tool	Chopper	Lithic	1	91.32	JU	8/30/2017	
4	15	140-150	Faunal Remains	Bone		9	3.64	JU	8/30/2017	
4	15	140	Faunal Remains	Bone		13	10.13	JU	8/30/2017	
4	15	140	Tool	Chopper	Lithic	1	152.49	JU	8/30/2017	
4	15	140-150	Faunal Remains	Tooth	Bone	1	0.86	JU	8/30/2017	
4	15	140-150	Faunal Remains	Bone		29	8.94	JU	8/30/2017	
4	15	140-150	Debitage	Primary	Lithic	1	5.92	JU	8/30/2017	
4	15	140-150	Debitage	Secondary	Lithic	2	18.65	JU	8/30/2017	
4	15	140-150	Debitage	Tertiary	Lithic	13	12.45	JU	8/30/2017	9 bifacial thinning flakes
4	16	150-160	Faunal Remains	Bone		2	0.48	JU	8/31/2017	
4	16	150-160	Debitage	Secondary	Lithic	1	75.89	JU	8/31/2017	
4	16	150-160	Debitage	Tertiary	Lithic	9	12.33	JU	8/31/2017	8 bifacial thinning flakes
4	5-6	-	Faunal Remains	Mussel Shell	Shell	1	7.13	JU	8/30/2017	In rodent burrow between levels 5 and 6
5	1	0-10	Debitage	Secondary	Lithic	1	18.24	JU	9/1/2017	
5	2	10-20	Debitage	Tertiary	Lithic	3	1.48	JU	9/1/2017	1 bifacial thinning flake
5	2	10-20	Core	Core	Lithic	1	150.39	JU	9/1/2017	
5	3	20-30	Faunal Remains	Bone		1	0.73	JU	9/1/2017	
5	3	20-30	Debitage	Secondary	Lithic	1	0.35	JU	9/1/2017	
5	3	20-30	Debitage	Tertiary	Lithic	3	6.1	JU	9/1/2017	2 bifacial thinning flakes
5	4	30-40	Faunal Remains	Mussel Shell	Shell	1	4.32	JU	9/1/2017	
5	4	30-40	Debitage	Primary	Lithic	3	4.3	JU	9/1/2017	
5	4	30-40	Debitage	Secondary	Lithic	5	36.14	JU	9/1/2017	1 bifacial thinning flake
5	4	30-40	Debitage	Tertiary	Lithic	18	33.86	JU	9/1/2017	11 bifacial thinning flakes
5	5	40-50	Debitage	Primary	Lithic	2	3.25	JU	9/1/2017	1 bifacial thinning flake
5	5	40-50	Debitage	Secondary	Lithic	7	13.98	JU	9/1/2017	3 bifacial thinning flakes
5	5	40-50	Debitage	Tertiary	Lithic	34	20.32	JU	9/1/2017	21 bifacial thinning flakes
5	6	50-60	Faunal Remains	Bone		2	0.51	JU	9/1/2017	1 burned
5	6	50-60	Debitage	Primary	Lithic	3	3.56	JU	9/1/2017	
5	6	50-60	Debitage	Secondary	Lithic	4	1.35	JU	9/1/2017	1 bifacial thinning flake
5	6	50-60	Debitage	Tertiary	Lithic	28	29.77	JU	9/1/2017	21 bifacial thinning flakes
5	7	60-70	Faunal Remains	Bone		1	0.26	JU	9/1/2017	Burned
5	7	60-70	Debitage	Primary	Lithic	5	34.48	JU	9/1/2017	1 bifacial thinning flake
5	7	60-70	Debitage	Secondary	Lithic	4	20.65	JU	9/1/2017	2 bifacial thinning flakes
5	7	60-70	Debitage	Tertiary	Lithic	19	22.87	JU	9/1/2017	8 bifacial thinning flakes
5	8	70-80	Debitage	Secondary	Lithic	1	1.74	JU	9/1/2017	

Unit	Level	Depth (cmts)	Artifact Type	Artifact Description	Material	Artifact No.	Weight (g)	Recorders	Date	Comments
5	8	70-80	Debitage	Tertiary	Lithic	5	2.59	JU	9/1/2017	3 bifacial thinning flakes
5	9	80-90	Debitage	Primary	Lithic	1	1.04	JU	9/1/2017	
5	9	80-90	Debitage	Secondary	Lithic	2	4.8	JU	9/1/2017	
5	9	80-90	Debitage	Tertiary	Lithic	6	11.15	JU	9/1/2017	5 bifacial thinning flakes
5	10	90-100	Debitage	Primary	Lithic	1	17.5	JU	9/1/2017	
5	10	90-100	Debitage	Secondary	Lithic	2	8.49	JU	9/1/2017	
5	10	90-100	Debitage	Tertiary	Lithic	3	5.45	JU	9/1/2017	1 bifacial thinning flake
5	11	100-110	Debitage	Secondary	Lithic	2	7.61	JU	9/1/2017	
5	11	100-110	Debitage	Tertiary	Lithic	3	8.4	JU	9/1/2017	2 bifacial thinning flakes
1	2	10-20	Burned Rock	Burned Rock	Lithic	7	500	DR	10/19/2017	Not collected
1	3	20-30	Burned Rock	Burned Rock	Lithic	1	<100	DR	10/19/2017	Not collected
1	4	30-40	Burned Rock	Burned Rock	Lithic	4	200	DR	10/19/2017	Not collected
1	5	40-50	Burned Rock	Burned Rock	Lithic	8	800	DR	10/19/2017	Not collected
1	6	50-60	Burned Rock	Burned Rock	Lithic	11	600	DR	10/19/2017	Not collected
1	7	60-70	Burned Rock	Burned Rock	Lithic	8	600	DR	10/19/2017	Not collected
1	8	70-80	Burned Rock	Burned Rock	Lithic	13	600	DR	10/19/2017	Not collected
1	9	80-90	Burned Rock	Burned Rock	Lithic	12	750	DR	10/19/2017	Not collected
1	10	90-100	Burned Rock	Burned Rock	Lithic	17	1250	DR	10/19/2017	Not collected
1	11	100-110	Burned Rock	Burned Rock	Lithic	8	600	DR	10/19/2017	Not collected
1	13	120-130	Burned Rock	Burned Rock	Lithic	7	205	DR	10/19/2017	Not collected
2	1	0-10	Burned Rock	Burned Rock	Lithic	2	100	DR	10/19/2017	Not collected
2	2	10-20	Burned Rock	Burned Rock	Lithic	16	300	DR	10/19/2017	Not collected
2	3	20-30	Burned Rock	Burned Rock	Lithic	2	110	DR	10/19/2017	Not collected
2	5	40-50	Burned Rock	Burned Rock	Lithic	15	300	DR	10/19/2017	Not collected
2	6	50-60	Burned Rock	Burned Rock	Lithic	4	250	DR	10/19/2017	Not collected
2	7	60-70	Burned Rock	Burned Rock	Lithic	5	>600	DR	10/19/2017	Not collected
2	8	70-80	Burned Rock	Burned Rock	Lithic	12	400	DR	10/19/2017	Not collected
2	9	80-90	Burned Rock	Burned Rock	Lithic	6	100	DR	10/19/2017	Not collected
2	10	90-100	Burned Rock	Burned Rock	Lithic	11	500	DR	10/19/2017	Not collected
2	11	100-110	Burned Rock	Burned Rock	Lithic	5	400	DR	10/19/2017	Not collected
2	12	110-120	Burned Rock	Burned Rock	Lithic	7	2700	DR	10/19/2017	Not collected
2	13	120-130	Burned Rock	Burned Rock	Lithic	7	500	DR	10/19/2017	Not collected
3	1	0-10	Burned Rock	Burned Rock	Lithic	2	<100	DR	10/19/2017	Not collected
3	5	40-50	Burned Rock	Burned Rock	Lithic	5	150	DR	10/19/2017	Not collected
3	6	50-60	Burned Rock	Burned Rock	Lithic	32	200	DR	10/19/2017	Not collected
3	9	80-90	Burned Rock	Burned Rock	Lithic	5	100	DR	10/19/2017	Not collected
3	11	100-110	Burned Rock	Burned Rock	Lithic	5	200	DR	10/19/2017	Not collected
3	12	110-120	Burned Rock	Burned Rock	Lithic	13	600	DR	10/19/2017	Not collected
3	13	120-130	Burned Rock	Burned Rock	Lithic	1	100	DR	10/19/2017	Not collected
3	16	150-160	Burned Rock	Burned Rock	Lithic	2	200	DR	10/19/2017	Not collected
4	3	20-30	Burned Rock	Burned Rock	Lithic	4	100	DR	10/19/2017	Not collected
4	4	30-40	Burned Rock	Burned Rock	Lithic	16	600	DR	10/19/2017	Not collected
4	5	40-50	Burned Rock	Burned Rock	Lithic	21	1000	DR	10/19/2017	Not collected
4	6	50-60	Burned Rock	Burned Rock	Lithic	20	800	DR	10/19/2017	Not collected
4	7	60-70	Burned Rock	Burned Rock	Lithic	17	600	DR	10/19/2017	Not collected
4	8	70-80	Burned Rock	Burned Rock	Lithic	21	400	DR	10/19/2017	Not collected
4	9	80-90	Burned Rock	Burned Rock	Lithic	60	1100	DR	10/19/2017	Not collected
4	10	90-100	Burned Rock	Burned Rock	Lithic	20	1300	DR	10/19/2017	Not collected

Unit	Level	Depth (cmbs)	Artifact Type	Artifact Description	Material	Artifact No.	Weight (g)	Recorders	Date	Comments
4	11	100-110	Burned Rock	Burned Rock	Lithic	14	600	DR	10/19/2017	Not collected
4	12	110-120	Burned Rock	Burned Rock	Lithic	9	200	DR	10/19/2017	Not collected
4	13	120-130	Burned Rock	Burned Rock	Lithic	14	400	DR	10/19/2017	Not collected
4	14	130-140	Burned Rock	Burned Rock	Lithic	6	100	DR	10/19/2017	Not collected
4	15	140-150	Burned Rock	Burned Rock	Lithic	8	100	DR	10/19/2017	Not collected
4	16	150-160	Burned Rock	Burned Rock	Lithic	3	200	DR	10/19/2017	Not collected
5	4	30-40	Burned Rock	Burned Rock	Lithic	3	100	DR	10/19/2017	Not collected
5	5	40-50	Burned Rock	Burned Rock	Lithic	17	1000	DR	10/19/2017	Not collected
5	6	50-60	Burned Rock	Burned Rock	Lithic	31	2200	DR	10/19/2017	Not collected
5	7	60-70	Burned Rock	Burned Rock	Lithic	17	1200	DR	10/19/2017	Not collected
5	8	70-80	Burned Rock	Burned Rock	Lithic	2	100	DR	10/19/2017	Not collected
5	9	80-90	Burned Rock	Burned Rock	Lithic	13	100	DR	10/19/2017	Not collected
5	10	90-100	Burned Rock	Burned Rock	Lithic	2	100	DR	10/19/2017	Not collected
5	11	100-110	Burned Rock	Burned Rock	Lithic	2	100	DR	10/19/2017	Not collected
Surface	Surface		Biface	Late-stage, thin biface	Lithic	1	56.3	JL	10/14/2016	Surface collection. Thin biface.