AN ABSTRACT OF THE THESIS OF

Amanda J. Carroll for the degree of Master of Arts in Applied Anthropology presented on June 12, 2018

Title: Perspectives on Pits of the Western Stemmed Tradition: An Analysis on the Contents of Feature 59 at the Cooper's Ferry Site

Abstract approved: ____

Loren G. Davis

Excavation of a pit feature designated as Feature 59 (F59) from the Cooper's Ferry site (10IH73) in western Idaho offers a unique opportunity to explore more about the Western Stemmed Tradition (WST) and how people used pits in the Far West. In this thesis, an analysis is conducted on the contents from within F59. These contents include the skeleton of a wolverine (*Gulo gulo)* specimen found at the bottom of F59 in association with one WST projectile point. Furthermore, a biface, unifaces, blades, cores, modified flakes, and debitage as well as other fragmented faunal remains were excavated from F59 as well. A radiocarbon assay taken from a rib of the wolverine suggests an age of 9,620 ±30 radiocarbon years before present. Conducting analyses on F59 and its contents will further knowledge regarding how people used pits in prehistory at the Cooper's Ferry site while also furthering research on domestic lifeways of the WST.

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Perspectives on Pits of the Western Stemmed Tradition: An Analysis on the Contents of Feature 59 at the Cooper's Ferry Site

by
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A THESIS

submitted to

Oregon State University

in partial fulfillment of
the requirements for the
degree of

Master of Arts

Presented June 12, 2018
Commencement June 2018

Master of Arts thesis of Amanda J. Carroll presented on June 12, 2018

APPROVED:

Major Professor, representing Applied Anthropology

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I understand that my thesis will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my thesis to any reader upon request.

Amanda J. Carroll, Author

ACKNOWLEDGEMENTS

I would first like to thank my advisor Dr. Loren Davis for the opportunity to work on this incredible piece of research. I sincerely appreciate his support through this project and the time he spent working with me to complete it. I want to thank my committee members Dr. Leah Minc and Dr. Shawn Rowe for their guided support through this process. Additionally, I want to thank my minor professor on my committee, Dr. Rebecca Terry, for her time and expertise in bone identification as well as her help in making contacts with the comparative faunal collections on campus.

I am grateful to Dr. Peter Konstantinidis at the Department of Fisheries and wildlife and Dr. Rita Claremont and the Damon Lesmiesters lab at the Pacific Northwest Research Station for access to their collection facilities and their valuable input. I also wish to thank both Dan Stueber and Brian Tanis who provided their valuable expertise towards my thesis. Furthermore, I want to thank David Sisson, District Archaeologist from the Bureau of Land Management, for his incredible support and collaborative efforts with the Cooper's Ferry archaeological site. Likewise, I also wish to thank the Nez Perce Tribe for their collaboration.

I want to thank my collegues and friends who have been a source of motivation and knowledge. Furthermore, I am most indebted to my friend and collegue Sarah Skinner for her insight. I wish to thank Nelson Skinner who provided unwavering support and continuous encouragement throughout the research and writing processes. Finally, I would like to express my profound gratitude to my parents, Karen and Anthony Carroll, whose guidance and love are with me in whatever I pursue. My mom provides inspiration and my dad is my rock. This work is dedicated to both of you.

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Chapter 1

Introduction

Pits have held a variety of functional use and cultural significance since at least the upper Paleolithic (Soffer 1989). Pits have been used for storing subsistence resources (Ames et al. 2008; Binford 1979; Dunham 2000, Henrikson 1996; Hoffman 1999; Holman and Kirst 2001; Morgan 2012), storing tool technology (Amick 2004; Binford 1979; Davis et al. 2014, 2017; Deller et al. 2009; Kornfeld et al. 1990), and keeping significant cultural materials secure (Deller et al. 2009; Wilson 1992). People also use pits for intentional deposition of animal remains (Wilson 1992). At other points, pits are used as ovens to process subsistence resources (Dunham 2000; Hoffman 1999; Reitz and Wing 1999; Wandsnider 1997) or to create smoke for tanning hides (Binford 1967). Additionally, pits have made suitable garbage containers to hold unwanted materials away from the central living space (Hoffman 1999; Reitz and Wing 1999). From these examples, it is evident people use pits for a variety of reasons. As such, the archaeological record of pits is an essential component of study for gaining richer insight into lifeways of the past.

In archaeology, features are defined as culturally significant non-portable activities conducted in the past. Pits are an especially significant feature because they signify an area unearthed by humans that may contain important cultural materials, which help archaeologists make interpretations about cultural activities that occurred at the site level and beyond. Additionally, the life history of a pit shows a narrow window of time and provides an invaluable "snapshot" into past human lifeways. More specifically, pit features are invaluable for they allow researchers to study evidence of everyday life through the materials contained in pits, such as evidence of food processing, shelter materials, tools, textiles, ritual objects, and evidence for types of food resources utilized. Pits that preserve an invaluable "snapshot" of the past make for some of the best archaeological features for studying details of prehistoric cultures, as pits have a high temporal resolution to show evidence of domestic lifeways in prehistory.

In the Far West, there are a select few prehistoric archaeological sites with arguably intact pit features. Recent excavations at the Cooper's Ferry site (10IH73) in western Idaho, revealed multiple pit features in association with the Western Stemmed Tradition (WST) cultural component. The WST, or Paleoarchaic tradition, make up the earliest cultural component recorded in the Far West ranging from the late Pleistocene through the early Holocene, and is characterized by the presence of stemmed projectile points with sloping shoulders (Beck and Jones 2010; Bryan 1980; Davis et al. 2012, 2014, 2015, 2017; Jenkins et al. 2012). Pressure flaking of macroblades and macroflakes from a variety of core types, in contrast to an extensive bifacial reduction sequence, characterize WST tool manufacture (Davis et al. 2015). The Cooper's Ferry site has an abundant WST cultural component as exhibited by the two stemmed projectile point cache pits previously reported by Davis et al. (2014) and Davis et al. (2017). There is a great amount of knowledge concerning WST tools and the resources that were utilized to make those tools. Yet, there is little known about the domestic lifeways of people who took part in the WST of the Far West. In an attempt to investigate the WST domestic lives of the late Pleistocene and early Holocene, this thesis presents an analysis of a third WST pit feature from the Cooper's Ferry site, designated as Feature 59 (F59).

1.1 The Cooper's Ferry Site (10IH73)

The Cooper's Ferry site (10IH73) is located in western Idaho in the lower Salmon River canyon (LSRC), shown in Figure 1, approximately 17 km south of Cottonwood, Idaho (Davis et al. 2014).The Cooper's Ferry site sits on an alluvial terrace at the confluence of the Salmon River and Rock Creek. Initial archaeological excavations conducted by Butler (1969) found a stratified sequence of cultural occupations. During these excavations, Butler (1969) recorded finding stemmed and foliate projectile points indicative of early stone tool technology in the Columbia Plateau region (Leonhardy and Rice 1970). In the summer of 1997, Dr. Davis and colleagues excavated a 2 m x 2 m unit at the Cooper's Ferry site labeled Unit A (Davis and Schweger 2004; Davis et al. 2014). Within the southeastern quadrant of Unit A, Davis and others excavated a circular pit feature labeled pit feature A2 (PFA2) (Davis and Schweger 2004; Davis et al. 2014). Two AMS ages were obtained in association with PFA2, one from wood charcoal excavated within the pit with an age of 11,370 ± 40 RYBP and the other on the paleosurface associated with the top of PFA2 produced an age of 11,410 ± 130 RYBP (Davis and Schweger 2004). Excavations resumed in 2009, expanding from Unit A by creating a larger block excavation area designated Area A. In the summer of 2012 excavations were again expanded to establish a second excavation area called Area B (Figure 2) (Davis et al. 2014).

Area B sought to investigate the stratigraphy, and cultural sequence Butler (1969) previously reported on at the Cooper's Ferry site (Davis et al. 2017). As excavations started in the summer of 2012 in Area B, the second pit feature from the Cooper's Ferry site was recorded and designated pit feature P1 (PFP1) (Davis et al. 2017). In the same summer, a second pit feature (Figure 3) was excavated and designated feature O1 (FO1) (Davis et al. 2017). In the summer of

2013, excavations resumed and completed excavations on FO1. Later corrected labeling of Cooper's Ferry features assigned FO1 as Feature 59 (F59).

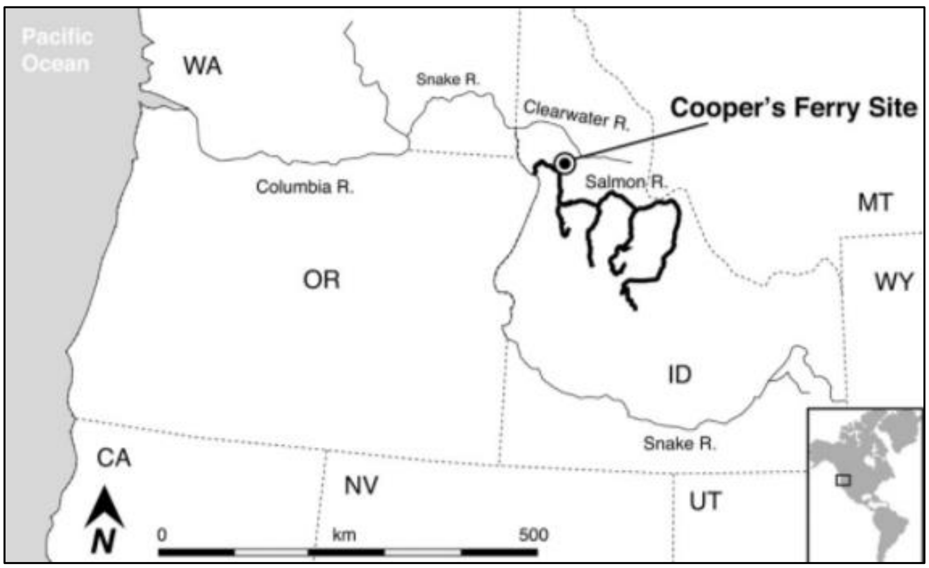


Figure 1. The Cooper's Ferry site located in western Idaho situated in the lower Salmon River canyon. Image from Davis et al. (2011).

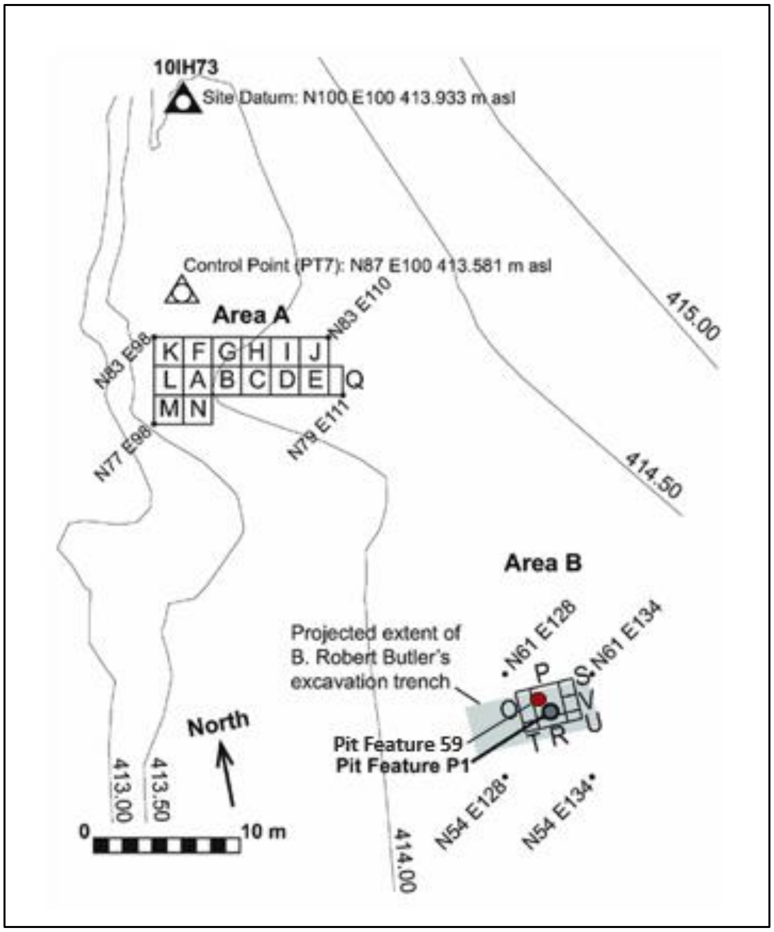


Figure 2. Map of the Cooper's Ferry Site adapted from Davis et al. 2017. Area B shows pit feature 59 (F59) in red and pit feature P1 (PFP1) in blue.

1.2 Study Approach and Significance

Borrowing from Schiffer's (1987) dimensions of artifact variability, this study will employ four analytical approaches to examine the materials recorded within F59 including: the measurement of formal properties, the calculation of frequency of artifacts, distinguishing associations between artifacts, and examining cultural material distribution. The formal properties of artifacts include completeness, shape, size, material, and weight for lithic artifacts and faunal remains. The frequency of artifacts from within the pit feature is calculated and becomes essential data for comparisons between other pit features and pit types. The association of artifacts within F59 is discussed directly relating those associations with the previously recorded pits at the Cooper's Ferry site as well as at other WST components reported in the Far West. Finally, in considering the spatial distribution of artifacts with the pit, more knowledge is gained on the original function of F59 in prehistory as visual representations are important components for interpretation.

By executing the four analytical approaches described above, the goals of this project will be three-fold. First thesis seeks to add knowledge concerning WST domestic lifeways by interpreting a pit feature's contents as a means to better understand the daily lives of people living in the LSRC during the early Holocene. Secondly, this thesis sets out to establish a framework for interpreting the use of pits in prehistory by characterizing types of pits and their contents based on archetypical functional use. Lastly, in evaluating F59 in conjunction with the previously recorded pit features from the Cooper's Ferry site, more information regarding the material culture history during the early Holocene at Cooper's Ferry is gained.

Chapter 2

Research Background

This chapter will discuss the theoretical framework behind the life cycle of a pit feature as it functions as part of a cultural system and subsequently, as it appears in an archaeological context. The theoretical framework of how pits are used in an active cultural context is vital for interpreting pit features recorded in an archaeological context. In addition to presenting a theoretical framework, this chapter seeks to create a pit type reference collection based on intended functionality and material contents. Constructing this reference collection for recognizing pit types in the archaeological record will help to better interpret F59 in regards to the WST occupation at the Cooper's Ferry site.

2.1 Theoretical Framework

The first step in understanding prehistoric pit features in the archaeological record is to describe the origination and use of pits as part of an active cultural system. Schiffer (1972) describes the theoretical relationship between a behavioral system and the archaeological record. The cultural material in use within a behavioral system belongs in the *systemic context* that can be defined as "the condition of an element which is participating in a behavioral system" (Schiffer 1972:157). Schiffer (1972) further outlines five processes that durable cultural elements undergo as part of this *systemic context* including procurement, manufacturing, use, maintenance, and discard. Procurement and manufacturing are the first two processes that entail both the manufacture of deposited cultural materials within a pit as well as the construction of the pit itself (Schiffer 1972). The third process describes use wherein cultural materials are deposited within the confines of a pit, the fourth process includes maintenance that is applicable when a pit is reused, and the final process describes the abandonment of a pit where it falls out of use. The *systemic context* ends once cultural materials deposited within a pit are not retrieved. At this stage, the pit feature enters the *archaeological context* as refuse (Schiffer 1972). During the *archaeological context*, the inactive cultural material lies in its depositional environment where the cultural product is then excavated and examined by archaeologists (Schiffer 1972). Analyzing materials within pit features through ethnography and archaeological analogs is an essential method for understanding pit features as parts of the larger *systemic context*. An analysis on the artifacts within F59 will be conducted using the theoretical framework described above. Interpretation and discussion of the *systemic context* of F59 is incorporated in Chapter 5.

2.2 Pit Feature Types

Differentiating pit feature types is not an easy task, especially when there is a continuum of pit feature types utilized throughout human history. This section will review the broad characteristics of pit features utilized by hunter-gatherer economies and seen in western North America in the archaeological record. By attempting to define pits into generalized categories, a reference collection for pit feature types in the prehistoric archaeological record will be made to assist in the investigation of F59 at the Cooper’s Ferry site. The following is based primarily on ethnography, archaeological materials, and the association of artifacts within different pit feature types.

Food Storage

The study of food economies of the prehistoric past by utilizing the archaeological record can be difficult because organic materials decompose over time. However, in recognizing the typical types of food ways seen in prehistory, researchers are better able to make conclusions about food of the past using archaeological correlates. Testart et al. (1982) determine four conditions for understanding hunter-gatherer food ways in prehistory: the abundance of food resources in a locale, seasonality of resources, efficiency of acquiring food resources, and food storage techniques such as human-made pits. Accordingly, the first pit type discussed in this section is food storage pits. Morgan (2012) outlines three primary modes of technological food storage seen in prehistory: *caching*, *central-place storage*, and *bulk caching*. All three of the pit storage modes recover materials from within a pit but through different mobility and land use practices. As people travel across landscapes acquiring food resources, the need to save food when resources become scarce is vital for survival. The manufacturing of food cache pits then becomes an insurance policy; as a way to store food resources for a time of need (Binford 1982). Therefore, Morgan's definition (2012) for *caching* refers to food storage from expedient and dispersed peoples (Morgan 2012). *Central-place storage* relates to a long-term occupation of caching foods by utilizing domestic space for storage (Ames 2008; Morgan 2012). Morgan's (2012) third storage mode describes *bulk caching* where food is stockpiled in high quantities to accommodate seasonal resource changes (Morgan 2012). These three food storage modes are dependent upon the particular economy and culture of the region.

Prehistoric food storage pits recorded in the archaeological record might include the presence of the following materials and characteristics. Food storage pits may have the presence of botanical remains, stains within the pit indicating organic materials, voids from organic decomposition, and osteological faunal remains (Ames et al. 2008; Dunham 2000; Henrikson 1996; Hoffman 1999; Holman and Kirst 2001; Wilke and McDonald 1989; Walker 1967). Food storage pits also might contain evidence for pit linings which include wood, sagebrush, burnt grasses, sand, shells, rocks, thermally altered rock or whole baskets to protect food resources (Ames et al. 2008; Dunham 2000; Henrikson 1996; Hoffman 1999; Holman and Kirst 2001; Wilke and McDonald 1989; Walker 1967). Pits that contain evidence of a wide variety of botanical or faunal resources may also be indicative of a food storage pit, especially when the ethnographic record can corroborate those food choices (Dunham 2000). These characteristics of food storage pits are archetypical and show the critical indicators of food storage pits in the archaeological record. Describing the evidence for these types of pits may lead to more accurate and relevant investigations into lifeways of the past. The greater purpose for recognizing the presence of food storage pits, as mentioned by Testart et al.'s (1982) and Morgan's (2012) food economy distinctions, is to contribute to the research of prehistoric food ways.

Equipment Cache

The second pit type also exhibits a caching method similar to food storage. Kilby and Huckell (2013:257) define equipment cache pits by "collections of artifacts that were intentionally set aside in the past as opposed to discarded, abandoned, or lost." Furthermore, "caches reflect retention of manufactured products—be they flakes, partially reduced pieces of material, or finished tools—from sources/workshops and deposition of these products in temporary storage locales" (Kilby and Huckell 2013:257). By storing equipment across a landscape, people moving over large distances may retrieve the saved equipment to help replenish or replace a toolkit (Binford 1979, Davis et al. 2014). Binford (1979) defined utilitarian equipment cache pits as “passive” gear by utilizing stored tools seasonally. The convenience of storing heavy stone tools for later use was a smart logistical choice if prehistoric peoples were returning to the same location. The existence of equipment cache pits may also be indicative of accidental or intentional surplus. If certain material sources were preferred by the manufactures, they would make a large number of tools from that specific material source, which unintentionality leads to a surplus of supplies readily available for use (Deller et al. 2009). As people make more equipment than they use, the excess equipment are placed in storage for future use as “insurance gear” (Binford 1979) or “banking caches” (Schiffer 1987). Equipment cache pits may have also been collaboratively where groups who knew the location of pits might use those resources collectively and increase overall group fitness (Davis et al. 2014). In the archaeological record, an equipment cache pit may be indicative of the various ways prehistoric peoples intentionally and unintentionally utilized a landscape.

As mentioned above, equipment caches are typically viewed as collections of tools that are intended for use at a future time (Kilby and Huckell 2013). In contrast, lithic ritual caches are collections of artifacts that may have been created exclusively for placement in a pit and are not intended to be recovered for future use (Kilby and Huckell 2013). Knowing the difference between equipment caches and ritual caches often depends on whether the tools were used or not, with collections of resharpened or repaired tools argued to reflect more utilitarian purposes (Davis et al. 2017) than will ritual caches that contain unused tools made especially for internment. Likewise, a pit that holds a diverse group of tools may also suggest the function of equipment cache indicating a tool-kit function (Davis et al. 2014). Equipment caches in the archaeological record explicitly show decisions and behaviors of the past and in understanding what defines an equipment cache pit, more consideration for lifeways of the past is attained.

Raw Material Cache

Raw material caches fall into a similar framework as food storage pits and equipment caches. A pit feature classified as a raw material cache contains nodules of knappable rock material such as obsidian. Furthermore, raw material cache pits may contain lithic materials that are larger and would not necessarily hold formed tools. Wilke and McDonald (1989) suggest raw material caches are found near places where highly desired manufacturing material is abundant, processed, or traded. In contrast, Huckell and Kilby (2014) suggest raw material cache pits are likely to be found in locations that lack an abundance of high-quality manufacturing material. They further explain how people creating raw material caches found near quality material sources may have unknowingly done so (Huckell and Kilby 2014).

Refuse Pit

Refuse pits represent the final stages of previously carried out activities and is the fourth pit type discussed here. In the archaeological record, dense concentrations of utilized cultural materials present in a pit, such as inorganic and organic waste, indicate a refuse function. Inorganic waste could include debitage and used hearth elements while organic materials may encompass food waste of faunal remains and botanical materials. Reitz and Wing (1999) also suggest refuse pits may have a high diversity of species represented in the faunal assemblage, indicative of regional diet, as well as a high-density of faunal remains, such as shell middens, to economize the pit structure for refuse (Hoffman 1999). Additionally, pits with a refuse function may hold equipment that is extremely fragmented or extensively used, indicating the intentional decision to end a tool's use life. Deciphering pits which have a refuse function are extremely important for understanding how people were utilizing their landscape in the past. The materials inside a refuse pit give clear data on what types of foods and equipment people were using. The unambiguous nature of a refuse pit is unequivocally important for study in archaeology.

Ritual Pits

An important aspect of ritual pits, similar to refuse pits, is the status of permanently deposited materials. Unlike food resources, equipment, or raw material caches, once people deposit ritual items within a pit, those materials are unlikely to be recovered. Distinguishing pits with ritual intent in the prehistoric archaeological record can be challenging to assess, however, several characteristics have been established to indicate a ritual function. Assemblages in pits with high proportions of rarer artifacts and lower proportions of more common artifacts might be indicative of ritual function (Deller et al. 2009; Hayden and Adams 2004). Red ochre can suggest ritual intent if the staining agent covers artifacts within a pit (Amick 2004). Another aspect of ritual pits is the presence of specific fauna intentionally deposited. Reitz and Wing (2008) comment on animal burial completeness as being the primary criterion for intentional ritual animal deposition. In contrast, Wilson (1992) argues the presence of complete skulls or completed elements in a pit feature do not necessarily point towards a ritual deposit. Instead, intact faunal remains may suggest the pit was protected from the full range of taphonomic processes to degrade and disarticulate skeletons. Wilson (1992) explains the location of faunal remains within a pit is crucial for determining pit functionality. An intentional ritual faunal deposit can likely occur near the base of the pit structure alluding to the main functionality of the pit as faunal deposition (Wilson 1999). Ritual burning of skeletal elements may also indicate ritual intent. However, the association and provenience of artifacts prove to be the most telling towards intentionality and context of cultural material as evidence for ritual behavior according to Driver et al. (1996). Interpreting ritual intent from a mixture of exceptional raw materials, unique animal deposits, and other culturally significant materials presents a robust framework of interpretation.

Pit Ovens

The final pit type discussed here are pit ovens, hearth pits, and all pits that indicate thermal alteration. Using pits as cooking structures is a smart way to reduce toxicity and encourage digestion of plant tissues (Wandsnider 1997). Pit ovens as a method for processing foods is a common occurrence in the Northwest as ethnographic and archaeological accounts of camas roasting pits are well documented. Other Far West pit oven contents include the presence of acorn, millet, nuts, and other tubers (Wandsnider 1997). People also use pit ovens for roasting meats to entrap water from escaping the cooking environment leading to a "moist cooking regime" (Wandsnider 1997:20). Archaeological and ethnographic work conducted in the northeastern United States, specifically concerning smudge pits, show people creating surface depressions to burn organic material to generate dense smoke for tanning hides (Binford 1967).

Evidence in the archaeological record for these types of pits might show organic material such as macrobotanical or faunal remains but show burning of a portion or all of those organic materials. Pit ovens in the archaeological record would also show evidence of burning such as heat-altered sediment, fire-cracked rock (FCR), or charcoal (Dunham 2000; Hoffman 1999; Wandsnider 1997). Indeed, the use of pit ovens is well documented archaeologically and ethnographically.

Pit Type Hypotheses

The six pit types described above were chosen based on their applicability to F59 and the Cooper's Ferry site. Adding to the six types of pits discussed above, processing, granaries, burials, trap pits, and hunting blind pits are other pit types utilized by people and seen archaeologically and ethnographically; however, these functions can be dismissed as possible interpretations of F59 based on the absence of specific materials within F59 that would give indication for those types of pits. Table 1 show pit types described above and their corresponding characteristics while Table 2 shows pit types and their corresponding materials for each pit type mentioned above. Because this thesis seeks to determine the functionality of F59, the archetypical characteristics of each pit type (Table 1) can serve as hypotheses or alternative interpretations of pit use. Using Table 1 as a base for formulating hypotheses, four hypotheses are described below based on the preliminary results of this study. These four hypotheses will be revisited and discussed further in Chapter 5 by evaluating all results of this study on a continuum of pit types.

Hypothesis 1: F59 represents a refuse pit where items were deposited once they became obsolete or unnecessary.

Hypothesis 2: F59 once represented a storage pit where people of the LSRC stored edible plant materials and meats.

Hypothesis 3: F59 was used as an equipment cache pit.

Hypothesis 4: F59 was used as a facility for ritual intent.

Hypothesis 5: F59 was used for more than one function.

Table 1. Pit Type Characteristics.

Pit Type	Characteristics
Food storage	Organic materials present (botanical and faunal); staining from decomposition of organic materials; evidence of pit linings (eg., sagebrush, shells, rocks); variety of fauna and plant resources present indicative of regional diet.
Equipment cache	Presence of anticipatory tools in good condition; a variety of tools represented; tools show some signs of use and reuse.
Raw Material Cache	Nodules of knappable rock material; presence of preforms; rare rock materials for the region.
Refuse Container	Dense concentrations of used materials present including; debitage and organics; variety of processed fauna and plant resources indicative of regional diet; tools that are fragmented or extremely used.
Ritual Pits	Red ochre present on materials; unique fauna; rare rock materials for the region; important materials located at the base of the pit.
Ovens	Burnt botanical and faunal remains; presence of fire-cracked rock; charcoal; heat-altered sediment.

Table 2. Archetypical Pit Types and Associated Materials.

Pit Types	Tools	Debitage	Raw Material	Faunal Remains	Thermal Material	Human Remains	Plant Materials	Red Ochre
Food Storage				X			X	
Equipment Cache	X		X					
Raw Material Cache			X					
Refuse	X	X	X	X	X		X	
Ritual	X			X		X	X	X
Oven				X	X		X	
Burial	X			X		X	X	X
Processing				X	X		X	
Granaries							X	
Hunting Trap				X			X	
Hunting Blind	X	X	X	X				

Chapter 3

Methods

3.1 Excavation of Feature 59

During the summer of 2012, excavations in Unit O of Area B led to the discovery of a pit feature, initially designated as pit feature O1 (PFO1), shown in Figure 3. Excavators defined PFO1 by its distinct composition of darker-colored sediment noting a patch of contrasting darker sediment that first appeared in level 4 in the southwest corner in the north half of the 1 x1 meter unit (Figure 4). By level five, the dark sediment expanded east into the north half of Unit O and held a high density of cultural material including debitage, charcoal, and bone, which continued 90 centimeters of depth until excavators reached a culturally sterile, gravel-cobble layer at 105 centimeters below the top of the feature. Excavators noted PFO1 continued further in the west wall and an auger sample was taken in the west of Unit O in southern portion of Unit S and revealed medium-sized bone fragments.

Excavations continued in the summer of 2013 on the western portion of PFO1 in Unit S (Figure 5) and recorded an abundance of ashy material on the surface of the pit indicative of a hearth feature. The sediment within PFO1 was observed as a fine loamy sand but was noted at level one that the ashy sediment, originating from the surface, disappeared as red ferric oxidized sediment appeared near the center of the feature. This oxidized sediment continued to persist until level five, 15 centimeters below the surface of the feature, while dark mottled sediment comprised of amorphous botanical material began to appear in level four. Excavators noted at Level 14, 60 centimeters below the surface of the feature, the dark organic-rich sediment disappeared completely. However, krotovina were continuously mapped throughout the pit feature and could explain a portion of the sediment discoloration and presence of rodent bones throughout the pit feature. At the conclusion of the excavation, the cylindrical dimensions of PFO1 measured at 1 meter in depth and 50 centimeters maximum in diameter. As mentioned in the previous subsection, later corrected labeling of the Cooper's Ferry features changed PFO1 to F59.

Figure 3. Plan view of Feature 59 (F59) shown on the right in Unit O. Pit feature P1 (PFP1) is shown in Unit P. Photo provided by Loren Davis.

Figure 4. Profile view of F59 in Unit O depicting the distinctive shape of a pit. Photo by Loren Davis.

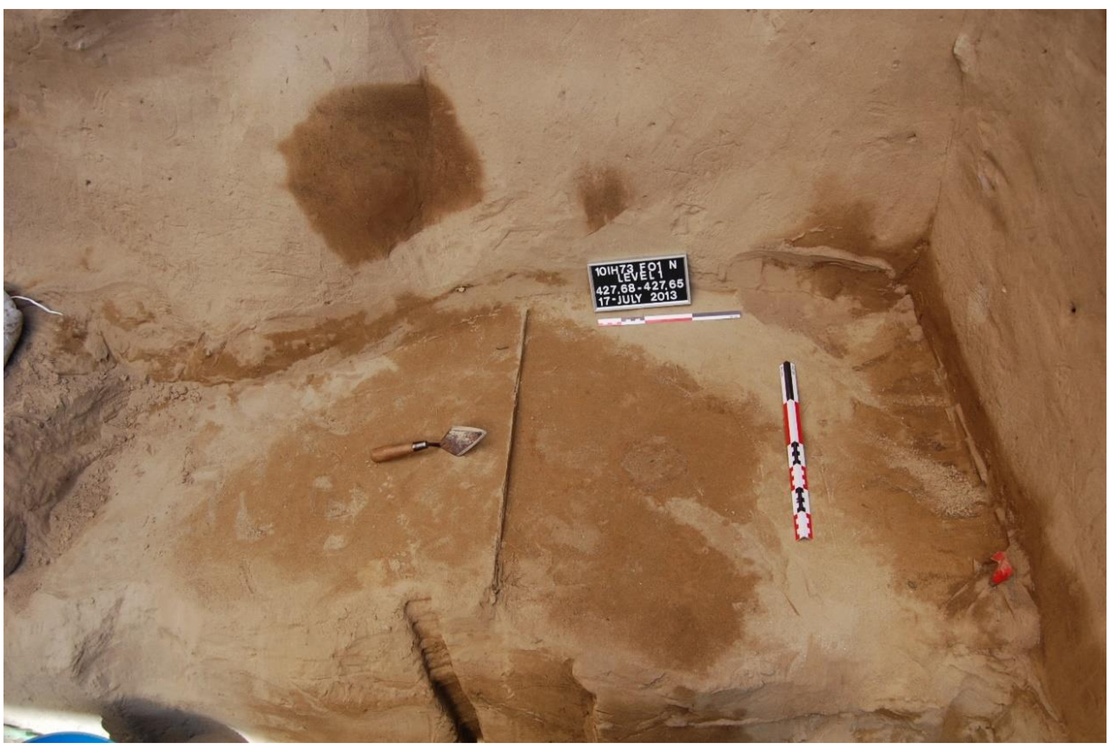


Figure 5. Level one of F59, 5 centimeters below feature surface, bisected in 2013. Photo by Loren Davis.

All artifacts from within the designated feature sediment were recorded *in situ*, using a total station to record individual spatial data including northing (m), easting (m), and elevation in meters above sea level (masl). Figure 6 shows an example of artifact density per 5 centimeter arbitrary level within F59. Sediment excavated from within the pit feature was deposited in bags and transported to Oregon State University for future study. A small portion of wall fall clean-up sediment and sediment from the beginning of excavations in Unit O were screened using a 1/8th-inch mesh screen and a 1/16th-inch mesh screen.

Figure 6. Level 15 of F59 showing artifacts discovered *in situ*. Photo by Loren Davis.

3.2 Feature 59 Artifact Analysis

Artifacts from F59 were first separated from their corresponding level bags by their material type. The lithic materials were classified based on their type including debitage, formed tools, expedient tools, cores, manuports, and fire-cracked rock (FCR). Preliminary sorting occurred on faunal materials by element and size. The following sections outline the materials and methods used for conducting a descriptive analysis of the artifacts recorded in F59.

3.3 Debitage Analyses

Debitage from F59 were analyzed using methodological approaches outlined by Andrefsky (2002) and paralleling Davis et al.'s (2014) debitage analysis including aggregate, attribute, and typological analyses. An aggregate debitage analysis seeks to organize an assemblage based on uniform criteria applicable to all debitage such as size, weight, and count (Andrefsky 2002). By focusing on these aspects of lithic debitage, an interpretation can be formed to infer kinds of lithic assemblage representation is in F59 in regards to stages of reduction. For example, larger flakes may be indicative of an early stage of stone tool reduction while smaller flakes may suggest the opposite assumption. While this approach bases conclusions on proportions of an assemblage by their size, weight, and count, a more detailed attribute analysis needs to be conducted to understand the range of variation with debitage in F59. An attribute analysis "begins with selection and recording of debitage characteristics…over an entire population or assemblage." (Andrefsky 2002:9). By analyzing and measuring characteristics of each piece including striking platform type, platform angle, platform thickness, platform width, dorsal scars, and termination type, a more detailed understanding for the stages of reduction represented in F59 may be determined. Another type of debitage analysis addressed in this thesis is Typological analysis. In contrast to attribute analysis, typological analysis seeks to classify artifacts by types such as technological typologies, cortex typologies, and free-standing typologies (Andrefsky 1998). Technological typologies analyze types of reduction technologies (Andrefsky 2002). Cortex typologies account for the abundance of cortex on the dorsal side of a flake (Andrefsky 2002). Finally, free-standing typologies "are usually not linked to the technology…but instead use objective replicable criteria to build typology…[using] independent observations while making technological and functional inferences (Andrefsky 2002:7; Sullivan and Rozen 1985). In sum, the typological analysis provides a methodology to infer the functional or technological meaning behind unique pieces of debitage. Table 3 shows the analyses conducted on F59 debitage and their associated analysis type.

Table 3. Categories of Debitage Analysis.

Analysis	Analysis Type
Size	Aggregate
Triple Cortex	Typological (Cortex Typologies)
Platform Type	Attribute
Platform Angle	Attribute
Platform Thickness	Attribute
Platform Width	Attribute
Bifacial Thinning Flake	Typological (Technological Typologies)
Pressure Flake	Typological (Technological Typologies)
Flake Complete/Broken/Fragment/Shatter	Typological (Free-standing Typologies)
Dorsal Flake Scars	Attribute
Termination Type	Attribute
Weight (g)	Aggregate
Count	Aggregate

Debitage Aggregate Analysis

A debitage size aggregate analysis was conducted following the methodology of Ahler (1989). Five size grades were used to classify lithic debris ranging from 1 to 6 centimeters in diameter as well as larger lithic pieces designated as 6+ centimeters. Each piece of debitage was laid on its ventral side to determine size category based on the smallest circular diameter fit. Each flake was weighed in grams using a digital scale. Most pieces of debitage with a corresponding catalog number count as one while debitage associated with screening or wall fall have multiple pieces of debitage associated with a single catalog number.

Debitage Attribute and Measurement Analysis

Andrefsky's (1998:Figure 5.6) descriptions and drawings aided in the determination of striking platform type. Four types of striking platforms can be discerned from debitage, including cortical, flat, complex, and abraded. A cortical striking platform consists of a surface where the cortex is present (Andrefsky 1998). A flat striking platform has a smooth flat surface with an approximately 75-90 degree angle (Andrefsky 1998). A complex platform has a convex surface or a surface with multiple flake scars that can leave the surface with a more bumpy appearance and feel with some areas of the platform becoming cratered by the removal of these small flakes (Andrefsky 1998). An abraded platform is a complex striking platform that has been additionally smoothed by abrading and rubbing on the platform (Andrefsky 1998). Each platform bearing flake from F59 was assigned to one of these platform types.

Dibble's method (1997) for measuring platform angle, thickness, and width is used in this analysis. Platform angle was measured from behind the platform surface to the exterior surface using a goniometer. Flakes with convex platforms used an average of degree slope. Platform thickness (mm) was measured from the bulb of percussion on the ventral surface to the paralleling exterior surface. Measurements of platform width (mm) occurred by measuring platform extension across the top of the flake. Both platform thickness and platform width were measured using a digital caliper.

The count of dorsal flake scars was determined based on Andrefsky's ordinal method and drawings (1998: Figure 5.13). Dorsal flake scars are defined as the impressions left by previous flake removal on the objective piece on the dorsal surface of a flake (Andrefsky 1998). The count of individual scars on the dorsal side of the flake went up to three. Once the dorsal scar count exceeded three for an individual flake, a classification of 3+ was assigned.

Flake terminations were determined based on drawings and descriptions from Andrefsky (1998: Figure 2.8, 5.1) and Cotterell and Kamminga (1987). Five flake termination types were distinguished. These types were feathered, stepped, hinged, plunging and inflexed finials. Characteristics of feathered termination include a smooth and gradual termination from the objective piece (Andrefsky 1998). Stepped termination occurred when the removal of the flake from the objective piece was a result of snapping the flake off to create close to a 90° angle (Andrefsky 1998). A hinged termination has a rounded or sloped termination (Andrefsky 1998). Plunging occurs when a significant portion of the flake is on the distal end of the flake (Andrefsky 1998). Lastly, finials are determined based on the presence of an unstable crack from breaking off the objective piece that "…curves sharply away to run parallel to the side face of the nucleus. The crack can either retroflex back toward the initiation face, or inflex so that it propagates away from the initiation face to create a thin and often fragile extension, which we call a finial" (Cotterell and Kamminga 1987: 701). Each piece of debitage from F59 was analyzed for termination type and was classified based on these characteristics.

Debitage Typological Analysis

The amount of cortex was estimated using the triple cortex typology. Triple cortex typology analysis on debitage can aid in determining what stage a flake represents regarding the reduction stage for tools and non-tools (Andrefsky 1998). As people remove flakes from an objective piece, cortex disappears leading to the final stages of production that have little to no cortex left on the resulting debitage. Each piece of debitage was categorized based on the triple cortex typology. Three categories for the amount of cortex present was used as the basis for typology. The lithic debitage was separated into categories of 0%, 1-49%, and >50% cortex present.

Bifacial thinning flakes were determined based on drawings and descriptions by Andrefsky (1989: 6.2). The debitage was identified as bifacial thinning flakes, based on a complex platform type, size, and presence of lip. Pressure flakes were identified based on size, thickness, and location of the bulb of percussion. Pressure flakes generally are smaller and lack a platform lip. Differentiating between bifacial thinning flakes and pressure flakes help to distinguish between the two technological types.

The debitage was classified into four debitage population types using the free-standing typology as outlined by Sullivan and Rozen (1985). The Sullivan and Rozen (1985) free-standing typology use three variables to separate the debitage in these four groups. The first variable is the presence of a discernible ventral surface. Second, the bulb of percussion indicating the point of applied force is visible and present. The third variable looks at the presence of intact margins on debitage. For these three variables, four types of debitage populations can be present are defined: debris, flake fragment, broken flake, and complete flake.

3.4 Lithic Tool Analysis

Modified flakes were distinguished using a hand-lens and desk lamp by looking for consistent negative scarring with bounding arrises observed along the margins of individual flakes. An ordinal system was implemented for the modified flakes of F59 to describe the degree of microfracturing. A score of either 1, 2, or 3 was given to each modified flake. If the edge microfracturing was slight and hardly visible to the naked eye, a modified flake received a score of 1. If microfracturing was seen by the naked eye with direct lighting on the edge, a modified flake received a 2. If the microfracturing was visible without any lab equipment, a modified flake received a score of 3. Further description included identifying bifacial or unifacial micro-flaking as well.

Blades are defined as "…flakes [produced] from unidirectional cores [having] parallel lateral margins and uniform width and thickness values at different places along the longitudinal axis." (Andrefsky 1989:165). Adding to Andrefsky's (1989) definition, the dorsal side often show evidence of even sized unidirectional flake scars from the utilization of the unidirectional core, sometimes creating a central ridge. Additionally, Davis et al. (2014) notes blades have faceted and abraded external platforms and high platform angles to achieve an elongated thin flake (Davis et al. 2014). Each flake from F59 was analyzed for evidence of above blade characteristics.

3.5 Faunal Identification

Zooarchaeological analysis of fauna from within F59 was conducted using multiple reference collections from Oregon State University in addition to the guidelines set forth by Reitz and Wing (2008). The reference collections used for this thesis include the following: the faunal reference collections at the Department of Applied Anthropology, the rodent comparative collection analyzed in the Rebecca Terry Lab at the Department of Integrated Biology, the vertebrate collection in the Department of Fisheries and Wildlife, and the Damon Lesmiesters lab within the Forestry Science Lab at the Pacific Northwest Research Station. A sample of fish specimens recovered from F59 were sent to Dr. Virginia Butler in the Anthropology Department at Portland State University for analysis and identification in 2015 (Butler 2015). Results of those findings are discussed in Chapter 4 of this thesis.

In this thesis, the term “element” describes a single complete bone or shell artifact (Reitz and Wing 2008). The term “specimen” describes a broken or fragmented element of a single bone or shell artifact (Reitz and Wing 2008). The term “bone artifact” refers to all individual pieces of faunal material excavated from F59. A thorough analysis was conducted by identifying each bone artifact to the lowest possible taxonomic category. Identification proved difficult for some bone artifacts within F59 due to the fragmented state. Each bone artifact was then weighed and carefully studied for cut marks and evidence of thermal alteration.

Number of identified specimens (NISP) and minimum number of individuals (MNI) were the quantification methods calculated from the F59 faunal assemblage. NISP is used to estimate a relative frequency of taxa from within F59 while MNI calculates the NISP divided by each element and its frequency in the body (Reitz and Wing 2008). NISP as a quantitative tool in archaeology most likely overestimates the total population of fauna by counting each bone as an independent count of "1". Overestimation is likely for F59 as many of the bone artifacts recovered from the pit are severely fragmented. MNI seeks to counteract this error by taking into account the lowest number of individuals present in a faunal assemblage (White 1953). While MNI provides a more accurate representation of individuals measured in the pit, the fragmentation for the majority of bone artifacts may still lead to some error in the quantitative analysis of the faunal assemblage. Nonetheless, an estimate for both NISP and MNI were determined from the identified fauna of F59.

3.6 Dental Microwear Texture Analysis

A dental microwear texture analysis (DMTA) was conducted on the carnassial teeth of the wolverine specimen in collaboration with Ph.D. student Brian Tanis from the Integrated Biology Department, Oregon State University. Bone artifacts used for DMTA were 73-56781 and 73-56783. A chemical mixture of acetone and ethanol was used to clean the teeth from residual sediment or dust. Polyvinylsiloxane impression material was applied to the surface of the wolverine carnassial teeth using an applicator gun to make the molds. Both the polyvinylsiloxane material and applicator gun were from Coltene/Whaledent Inc. The molds were turned into casts using a clear epoxy resin from Epoxy Technology Inc. The epoxy resin dried for 3 minutes and was gently peeled off from the teeth. Once the dried epoxy resin was removed from the teeth, the casts were transported to Vanderbilt University, Earth and Environmental Science Department for scanning. The casts were scanned using a Sensofar PLu neox optical profiler in the lab of Dr. Larisa R.G. DeSantis. The scans are then analyzed using a scale-sensitive fractal analysis software, Sfrax, and Toothfrax, Surfract Corporation. Once the scans are analyzed and put through microwear parameters, the teeth are analyzed for surface variability. Area scale fractal complexity (ASFC) measurements, exact proportion Length-scale anisotropy (epLsar) measurements, and texture fill volume (TFV) measurements were collected on carnassial teeth for six wolverine specimen including the F59 wolverine specimen to determine texture of individual carnassials based on the surface variability from the three aforementioned measurements. The five other wolverine specimens were attained from the osteological vertebrate collection at the University of California Berkeley.

Surface variability on dentition can allude to diet based on a spectrum of eating soft muscle to crunchy bone. The “soft” and “hard” diets, being two extremes, give different surface variability signatures on dentition which can be calculated at a microwear level. Studies conducted by Scott et al. (2006) and DeSantis et al. (2015) show DMTA applied to contemporary primtaes and extinct species to extrapolate diets. By utilizing the methods used in previously publsihed DMTA studies, the data collected from the wolverine specimens may give quantitative evidence for seasonality of death because DMTA results depict the last weeks of an animals life. This is possible to determine as wolverine have a seasonally distinct diet. Wolverines are opportunistic feeders adapted for carrion feeding (Hornocker and Hash 1981). In general, wolverine eat soft muscle during the summer months and frozen meat and bone in the winter months (Hornocker and Hash 1981). This lifestyle requires dentition that can withstand processing frozen carcasses as exhibited by the powerful dentition and mandible of the wolverine. As mentioned previously for comparative measurements, five other wolverine representing the different seasons of summer, winter, and spring were scanned and measured to better understand the F59 wolverine surface variability data. In conducting this analysis, the dentition of the *Gulo gulo* specimen is given a season of death and may help to infer more details on the decisions and behaviors of wolverine procurement from people of the early Holocene.

3.7 Artifact Distribution

The statistical software program R was used to create spatial distribution graphs for artifacts mapped from F59. The spatial data recorded on individual artifacts include the northing, easting, and elevation. Eight bivariate scatter plots (also known as backplots) were created for understanding the provenience and association of artifacts within F59 scatterplots represent F59, each with a northing and easting perspective. The first depicts all items recorded in F59. The second type show only the faunal remains. The third shows tool technology distribution within F59. The fourth shows thermally altered materials in F59. The results of these plots are discussed in the following Chapter.

Chapter 4

Results

4.1 Lithic Artifact Summary

There are a total of 1030 lithic artifacts recorded in F59 shown in Table 4. Approximately 88% (n=910) of the lithic assemblage in F59 is composed of cryptocrystalline silicate (CCS) material, 11% (n=117) of the assemblage is fine-grained volcanic (FGV) rock material, 0.003% is metamorphic material (n=3), and 0.0009% (n=1) is of obsidian. Forty-four tools are present in the F59 assemblage as shown in Table 4, along with 958 pieces of debitage, 24 pieces of FCR, and four manuports. The following chapter will show the results of the descriptive analysis conducted on the lithic artifacts recorded in F59.

Table 4. Lithic Artifacts Recorded From F59 at the Cooper's Ferry Site.

Artifact	Number
Tools	
Biface	2
Blade	5
Core	2
Modified Flake	33
Uniface	2
Manuport	4
FCR	24
Debitage	
FGV[1]	88
CCS[2]	867
Metamorphic	2
Obsidian	1

[1]FGV = Fine Grained Volcanic
[2]CCS = cryptocrystalline silicate

4.2 Debitage

Aggregate analysis of debitage from F59 indicates that 93% (n=891) of the pieces have an area smaller or equal to 3 cm^2 (Figure 7 and Table 5). The majority of debitage at 48.6% (n=466) have an area of approximately 2 cm^2 shown in Table 5. The average weight for debitage in F59 is 1.83 g with a relatively small standard deviation of 0.11 (C.V. = 6.0%) and a 95% confidence interval (CI) width of ±1.25 g. The median weight of the assemblage is 0.43 g, and the mode is 0.19 g. The lowest weight from the assemblage is 0.01 g while the heaviest individual piece of debitage weighs 370 g giving a range of 369.99 g. Values for debitage weight are represented in Table 6. Utilizing the free-standing typology method by Sullivan and Rozen (1985), F59 shows 14.8% (n=142) of the assemblage are considered a complete flake and 13.2% (n=127) are considered broken flakes. The majority of the debitage, approximately 71.7% (n=687) of the assemblage, show no platform present. Overall, 24.1% (n=231) of the assemblage are flake fragments that can be oriented and 47.9% (n=459) were not able to be oriented.

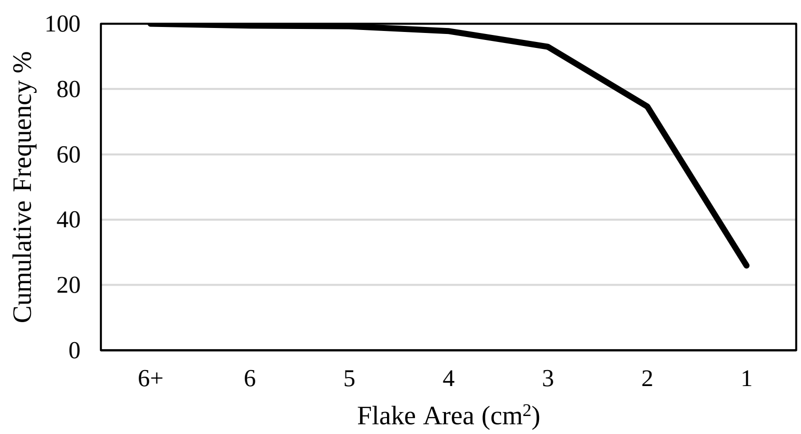


Figure 7. Plot of flake area (cm^2) by cumulative frequency % for debitage in F59.

Table 5. Debitage Size Aggregate Results.

Area (cm^2)	Debitage Count (n=)	Percent Total Assemblage (%)
1	248	25.8
2	466	48.6
3	177	18.4
4	46	4.8
5	14	1.4
6	1	0.001
6+	6	0.006

In total, 27.9% (n=268) of the F59 debitage assemblage have visible platforms. Three types of platforms are represented in the debitage assemblage of F59 including complex, cortical, and flat. Of platform bearing flakes, 16.8% (n=45) hold flat platforms, and 0.3% (n=8) hold cortical platforms and 83.3% (n=215) hold complex platforms. Platform angle measurements show an average platform angle of 51.4°. The median platform angle is 50° while the mode is 45°. Platform angle standard deviation equals 2° and a 95% CI of ±1.78°. The smallest recorded platform angle is 25° with the widest platform angle is 90°. CV for platform angle is calculated as 0.04 and range was 65°. Standard deviation and CV for platform angle may not be entirely accurate as lithic technology angle measurements represent limited numerical ranges. Platform bearing flakes in F59, which could not be measured for platform angle with confident accuracy represented 11% (n=29) of the population and are not accounted for in the above statistics. The statistical values for platform angles are shown in Table 6.

Platform thickness is averaged at 2.22 mm with a median of 1.89 mm and a mode of 1.66 mm. The platform thickness standard deviation is 1.32 with a 95% CI of ±0.19 mm. The CV for platform thickness is calculated as 59%. The thinnest platform measured 0.44 mm. The thickest platform measured at 18.88 mm and the range is 18.44 mm. Platform width is averaged at 6.11 mm with a median of 4.99 mm and a mode of 2.58 mm. The platform width standard deviation is

1.4 with a 95% CI of ±0.48. CV for platform thickness is calculated as 0.23. The narrowest platform measured at 0.75 mm. The widest platform measured at 27.22 mm. Platform width range is 26.47. The statistical values of platform thickness and platform width are compared in Table 6. For both platform thickness and platform width, the CVs are high. Platform thickness has a CV at 59% while platform width is 23%. Both represent a population that has a wide dispersion away from the mean.

The triple cortex analysis approximates 91% (n=867) of debitage in F59 have no cortex present (0%) on the dorsal surface. Only, 8% (n=75) of flakes have cortex present on less than half of their surface (1-49%). Precisely, 1% (n=12) have cortex present on more than the surface area on the flake. The most commonly seen flake termination type in F59 is a feathered termination type. Approximately 25% (n=243) of debitage have a feathered termination type. A small percentage are represented for the other termination types, 7% (n=65) of debitage in the F59 assemblage have a step termination, 3% (n=29) have a hinge termination, 0.1% (n=1) have a plunging termination, and 5% (n=45) have *finial* termination. The rest of the assemblage's termination could not confidently assessed as most of the assemblage encompasses shatter. Dorsal scar counts were counted from 0 to 3+. Thirty-three percent (n=320) of the debitage assemblage hold more than three flake scars on the dorsal surface. 0.01% (n=1) have three dorsal scars, 5% (n=59) have two, and 5% (n=47) have one while 55% (n=528) have no dorsal flake scars visible. On flakes bearing platforms, 42% (n=112) show late stage reduction characteristics, 35% (n=93) are considered bifacial thinning flakes and 7% (n=19) bear characteristics of pressure flaking.

Table 6. Debitage Measurement Statistics from F59.

Measurement	Unit	Mean	Median	Mode	SD	CI	CV	Min	Max	Range
Weight	g	1.83	0.43	0.19	0.11	1.25	0.06	0.01	370.00	369.99
Platform Thickness	mm	2.22	1.89	1.66	1.32	0.19	0.59	0.44	18.88	18.44
Platform Width	mm	6.11	4.99	2.58	1.40	0.48	0.23	0.75	27.22	26.47
Platform Angle	(°)	51.40	50.00	45.00	2.00	1.78	0.04	25.00	90.00	65.00

Note. SD=Standard Deviation of Population; CI=95% Confidence Interval; CV=Coefficient of Variation

4.3 Lithic Tools

A single WST projectile point (73-30122) was found in level 14 of F59 (Figure 9). This projectile point has an elongate blade, clear shouldering, and a broken stem with relatively straight margins on one side. The opposite side shows a large flake removal about midway down the blade. The general characteristics of the F59 projectile point (73-30122) are similar in shape and appearance to other projectile points recorded at the Cooper's Ferry site as published in Davis et al. 2014 and Davis et al. 2017.

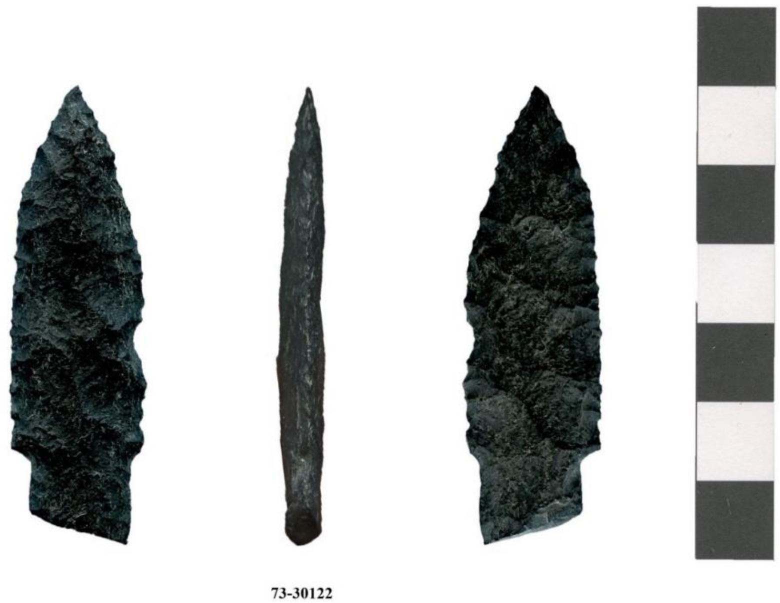


Figure 8. Projectile point (73-30122) from F59 made on fine-grained volcanic material most likely basalt. Scale in cm.

In level 15 of F59, one biface was recorded (73-3198) within the pit feature (Figure 11). The biface is broken in half crosswise and still retains the original platform from its associated objective piece. The platform angle is roughly 47° with the platform thickness and width measuring respectively at 2.61 mm and 6.58 mm. The bottom half of the biface has not been found at the Cooper's Ferry site. 73-3198 is made of a light off-white colored cryptocrystalline silicate.

Figure 9. Biface (73-3198) from F59 made on CCS. Scale in cm.

Thirty-three modified flakes made on CCS were found in F59. Each modified flake was given a microfracture degree score from 1 to 3 and analyzed for microfracture direction shown in Table 7. The majority of modified flakes (42.4%) were classified as having a microfracture degree of 2 and with a unifacial microfracture direction. There were no recorded modified flakes classified with a microfracture degree of 1 and a bifacial microfracture direction. Figures 11 through 15 show examples of each modified flake classification present in F59.

Table 7. Microfracture Degree and Direction of Modified Flakes from F59.

Number of Modified Flakes	Microfracture Degree	Microfracture Direction
3	1	Unifacial
0	1	Bifacial
14	2	Unifacial
4	2	Bifacial
10	3	Unifacial
2	3	Bifacial

Note. Microfracture degree = Scoring of microfracturing degree were based on visibility and definition of arrises. 1: edge microfracturing was hardly visible to the naked eye. 2: microfracturing seen by the naked eye with direct lighting. 3: microfracturing visible without equipment.

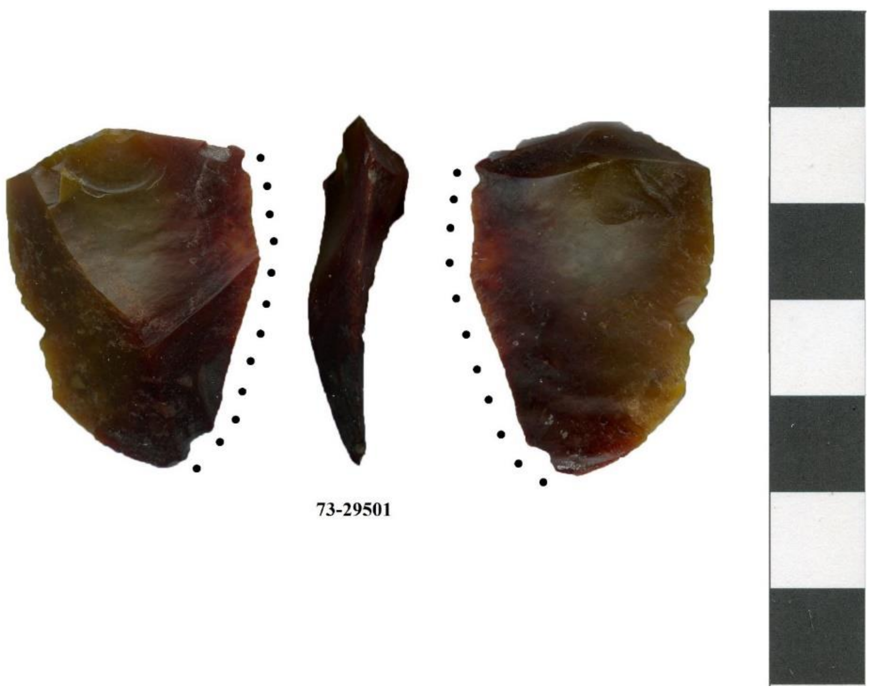


Figure 10. Modified Flake (73-29501) from F59 made on CCS with a microfracture rating of 1 and has a unifacial microfracture direction. The series of dots indicate location of edge wear. Scale is in cm.

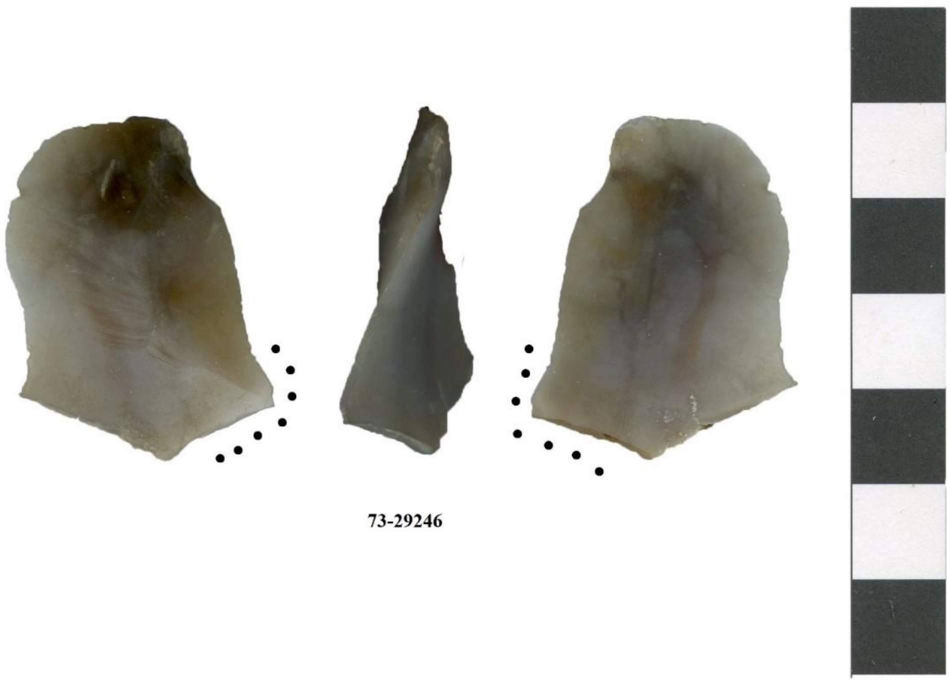


Figure 11. Modified Flake (73-29246) from F59 made on CCS with a microfracture rating of 2 and has a unifacial microfracture direction. The series of dots indicate location of edge wear. Scale is in cm.

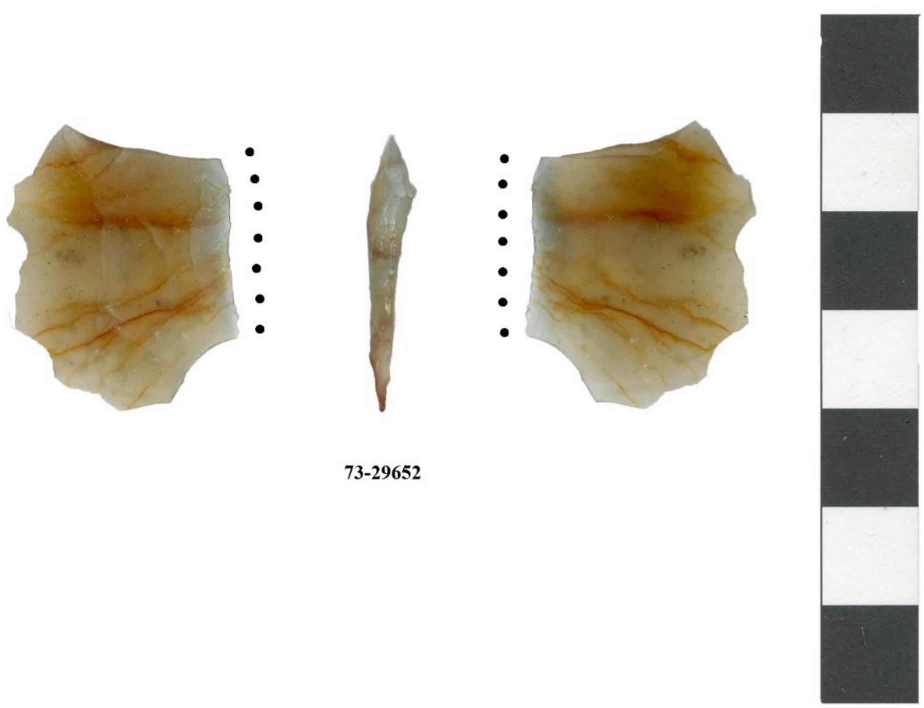


Figure 12. Modified Flake (73-29652) from F59 made on CCS with a microfracture rating of 2 and has a bifacial microfracture direction. The series of dots indicate location of edge wear. Scale is in cm.

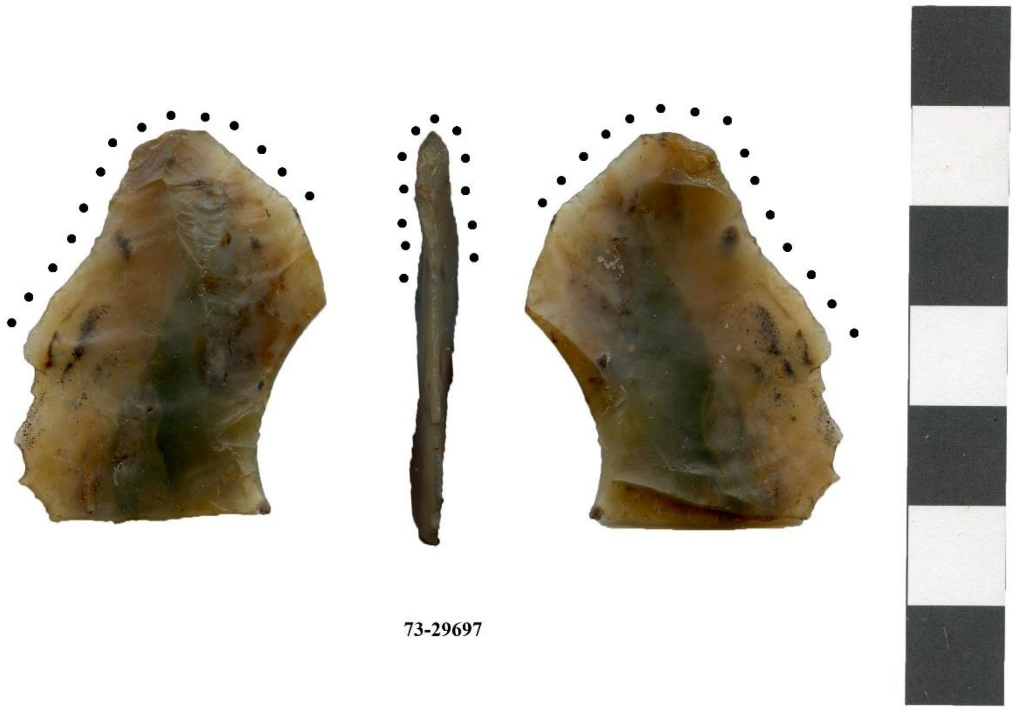


Figure 13. Modified Flake (73-29697) from F59 made on CCS with a microfracture rating of 3 and has a unifacial microfracture direction. The series of dots indicate location of edge wear. Scale is in cm.

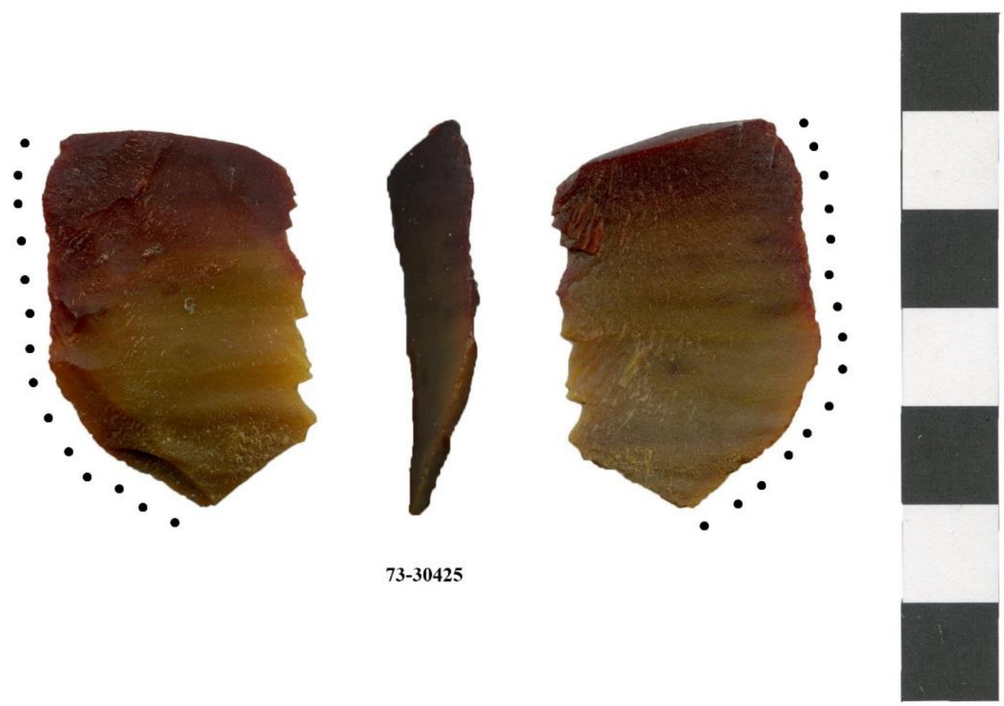


Figure 14. Modified Flake (73-30425) from F59 made on CCS with a microfracture rating of 3 and has a bifacial microfracture direction. The series of dots indicate location of edge wear. Scale is in cm.

Five lithic blades were recorded and measured in F59 (See Table 8). The largest blade (73-33216) is a prismatic blade made of an off-white, almost translucent, CCS material. This blade shows evidence of two centripetal flake scars on the dorsal surface. Viewing the blade from the dorsal side, the shape of the blade curves off to the right (Figure 17). The blade also has a slightly curved longitudinal direction when viewed from the side, most likely caused by the overall shape of the blade. The platform angle recorded for this blade is 45°. Blade (73-32067) is a fragmented prismatic blade. The platform measures at a near-90° platform angle and shows abrasion. This blade is also made on an off-white, almost translucent, CCS material. This blade fragment shows a flat longitudinal angle when viewed from the side (Figure 18). The smallest complete blade (73-32124), shown in Figure 19, bears similar characteristics with the previous blade (73-32067), except for a central linear ridgeline along the dorsal surface. It is not possible to accurately measure the platform angle. Figure 20 shows a small blade fragment that holds a 50° flat platform angle and evidence of centripetal flake scars on the dorsal side. Figure 21 shows a blade-like flake, retaining evidence of the objective piece. No use-wear was present on any of the previously mentioned blades. All show a straight longitudinal cross-section.

Table 8. Blade Measurements from F59.

Blade	Length (mm)	Width (mm)	Thickness (mm)	Weight (g)
73-32394	11.91	6.15	1.26	0.19
73-32124	21.35	8.80	2.19	0.51
73-33216	53.18	13.47	4.13	3.0
73-30580	29.89	29.92	4.10	2.44
73-32067	32.75	20.96	2.39	2.08

Note. Thickness was measured at the center midpoint on the blade.

Figure 15. Blades and blade fragments found in F59 made on CCS. Scale in cm.

Just two unifaces were found in F59 (Figures 17-18). The uniface first uniface (73-32051) was manufactured on a piece of flake shatter with no discernable platform (Figure 17). Light flaking is located on one of the margins. The unifacial flaking was not continued for any length on a marginal edge and looks as if effort ceased on the flake quickly. The second uniface (73-31336) shows nesting along the length of the margin.

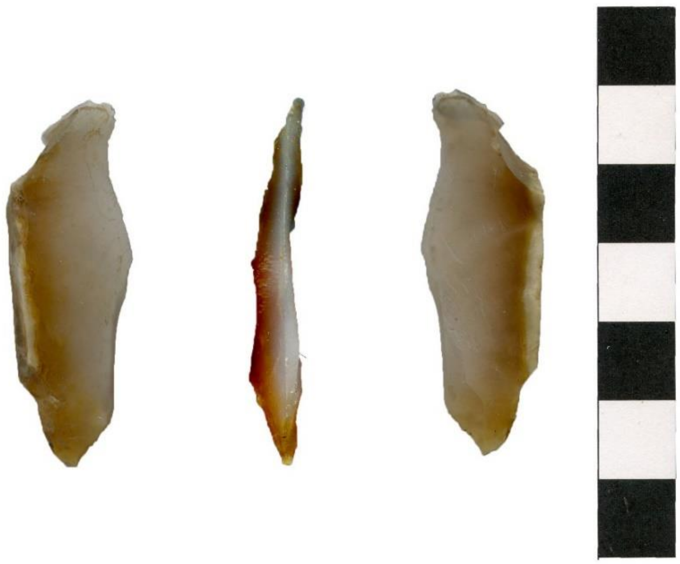


Figure 16. Uniface (73-32051) found in F59 made on CCS. Scale is in cm.

Figure 17. Uniface (73-31336) found in F59 made on CCS. Scale is in cm.

Two unidirectional cores were found in F59. The first core shows classic prismatic angles made on CCS material shown in Figure 19. The second core (73-32092) is made of basalt (Figure 20). The outside edging shows flake removals along the margins. Because of the material, it is difficult to see the direction of flake scaring along these edges. From the shape of the core itself, it can be estimated by the end of its use-life, low angle flaking occurred.

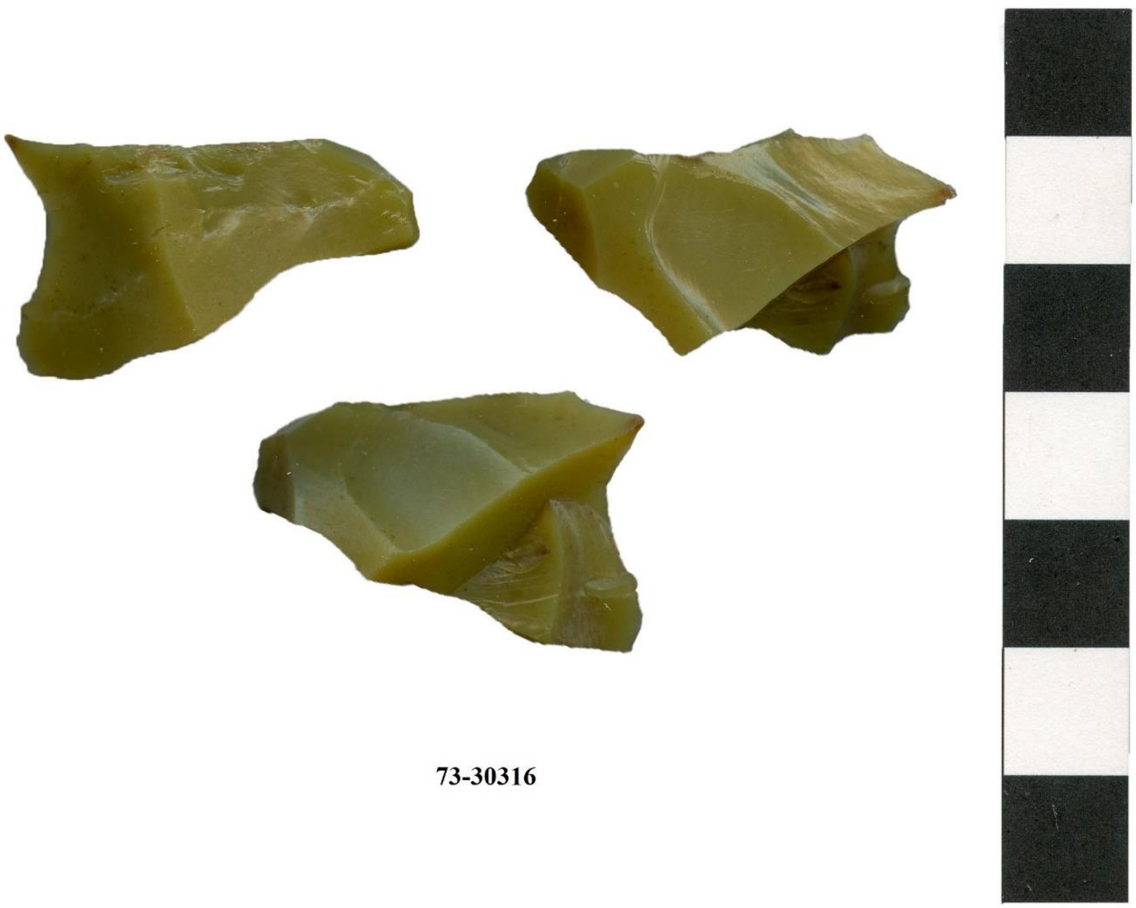


Figure 18. Core fragment (73-30316) made on CCS from F59. Scale is in cm.

73-32092

Figure 19. Core (73-32092) found in F59 made on fine-grained volcanic material. Scale is in cm.

4.4 Thermally Altered Artifacts

F59 represents the only pit feature recorded from Cooper’s Ferry with a thermally altered hearth feature on its paleosurface. Within the contents F59, FCR make up approximately 2% (n=25) of the lithic assemblage with 18 charcoal samples taken throughout the pit (See Graph 8 and 9). Debitage showing characteristics of heat alteration, which including potlids and numerous thin fractures throughout the whole of a flake, make up 2% (n=23) of debitage within the pit. In addition, 6% (n=2) of modified flakes had possible evidence for heat alteration as well.

4.5 Faunal Summary

Within F59 there are 191 individual bones artifacts. Of these bone artifacts 73- 32056, 73-33433, 73-33434, 73-33435, and 73-33437 were not analyzed by the author nor included in this analysis as these artifacts were sent to the Centre for Ancient Genetics at Denmark's University of Copenhagen for DNA testing in 2014. Fragmented skeletal elements represent 94% of the F59 faunal assemblage, of which 73% percent are unidentifiable, generally based on the degree of fragmentation. Fourteen bone artifact fragments show thermal alteration. The total faunal assemblage within F59 has a NISP of 40 and an MNI of 18 based only on the identifiable faunal remains (Table 9). The total weight of all bone in F59 is 64.74 g. The majority of the identified faunal assemblage in F59 was determined to be mammalian.

Table 9. Faunal Summary from F59.

Faunal	Measurement
Bone (NISP)	40
Bone (MNI)	18
Bone (g)	64.74
Snail Shell (g)	1.04

4.6 Taxonomic Representation in Feature 59

Of the 191 faunal remains recovered from F59, 21 elements are diagnostic to the taxonomic Genus level, 12 elements are diagnostic to the taxonomic Family, and 24 are diagnostic to the taxonomic Class. Table 11 shows a complete summary of NISP and MNI for F59. The following section describes the identified faunal remains and their corresponding NISP and MNI.

Mammal

An ulna (73-31415) was recovered in Level 1 of the feature. In comparison with a *Lepus californicus* ulna element, the ulna (73-31415) specimen was identified as *Lepus* sp. The specimen is fragmented on the proximal end. The ulna was the only bone found in the assemblage that was determined to be jackrabbit in origin. The NISP *Lepus* sp. is one and an MNI of one.

Five medium animal sized rib fragments were analyzed with most likely having origins of *Gulo gulo* based on size, shape, and association. However, as a conservative approach, all ribs in the following description were counted towards the mammalian class count and counted for the total MNI, not classified as *Gulo gulo*. A fragmented left rib (73-31069), a fragmented right rib (73-31070), and another fragmented right rib (73-31068) were all recorded in level 22 of the pit feature. A fragmented left first or second rib (73-33349) and a fragmented right rib (73-33349) was recorded in level 21. A fragmented right rib (73-38627) was part of wall fall and associated with level 1 of the pit feature. A fragmented left rib (73-33514) was recovered in the pollen sample column from level 1 as well. Other elements besides these rib elements can definitively be determined as *Gulo gulo* in F59. A fragmented back portion of the left mandible (73-38622) was recovered in level 21 of F59. The coronoid process is complete on the specimen while the condyloid process is fragmented laterally, medially, and ventrally. This dentary fragment was compared to four other wolverine dentaries' and determined to be morphologically similar to modern day *Gulo gulo*. The measurements were conducted by comparing width and height of the coronoid process data below shown in Table 10. The dentary fragment exhibits potential cut marks on the lower portion of the jaw as shown in Figure 21. A *Gulo gulo* humerus (73-56782) was found in level 23 of F59 which shows rodent tooth marks displayed on its diaphysis (Figure 25). All teeth associated with the *Gulo gulo* mandible is represented in the F59 assemblage. Figure 22 shows *Gulo gulo* recovered *in situ*.

Table 10. Comparative Measurements of *Gulo Gulo* Dentary.

Specimen Identification	Height (cm)	Length (cm)
73-38622	2.6	2.2
FW 3173	3.4	2.7
FW 2609	3.5	2.6
FW 3172	2.7	2.2
PSAL Specimen	3.2	2.1

Note. General measurements were determined from the dorsal base of the condyloid process to the end of the coronoid process. The length was determined by measuring the highest point dorsally to the most anterior edge of the coronoid process. The measurement tool used was a standard 12 cm ruler from "The C-Thru Ruler Company."

Figure 20. *Gulo gulo* dentary fragment with M2 still attached (left) and incisions. *Gulo gulo* humerus (right) with rodent teeth marks.

Figure 21. *Gulo gulo* recovered from the bottom of F59 (previous labeling of F59 was FO1) in level 23 of the pit feature. Culturally sterile cobble layer shown. Photo by Loren Davis.

Seven specimens of the faunal assemblage were determined to be a part of the Cricetidae Family including a right femur (73-32457), an incisor (73-32691), a rib and innominate bone (both have the same catalog # 73-56635), two right ulnas (73-56635 and 73-32649 respectively), and one left ulna (73-33387). MNI for the family Cricetidae in F59 equaled the difference between the three ulnas. Thus, the MNI of Cricetidae is two. *Microtus* sp. was present in F59 and has a NISP of one and MNI one for a right mandible (73-38623). *Peromyscus* spp. were present in F59 with a NISP of three and MNI of two. The MNI was calculated based on the presence of two right mandibles (73-56635 and 73-33444) and one left mandible (73-33387). *Perognathus* sp. was also represented in F59 with a NISP of one and MNI of one. The MNI was calculated based on a right humerus (73-33346).

Amphibian

One possible amphibian specimen (73-31904) was recovered from F59. The specimen was identified as an intermediate phalange by comparison with a *Lithobates catesbeianus* element (American Bullfrog). The amphibian specimen (73-31904) was similar in size and shape to *Lithobates catesbeianus*. The cartilaginous joints of the phalanges, which are indicative of amphibians, have decomposed from the bone. The obvious missing components on the distal and proximal end of the element (73-31904) and the similarity in size and shape show, arguably, a representative amphibian present in F59. Thus, the taxonomic class Amphibia has NISP of one and MNI of one.

Fish

The majority of fish specimens recovered from F59 were sent for analysis and identification to Dr. Virginia Butler in the Anthropology Department at Portland State University. In combination with Dr. Butler's findings and the author's findings, there are eight identified fish specimens in F59. Five miscellaneous vertebrae (73-29969, 73-30043, 73-30140, 73-30869, and 73-58045) were identified as part of the Cyprinid or Catostomid families. Two abdominal vertebrae (73-30287 and 73-30577) were also identified as part of the Cyprinid or Catostomid families. Additionally, one caudal vertebra was identified and also part of the Cyprinid or Catostomid families. Fish vertebral spines (73-30593 and 73-32373) of unknown origin were recovered from F59 as well. A NISP of eight and MNI of one represent the fish quantifications in F59.

Snail

A total of five Gastropoda shells were recovered from F59 of which three were mapped *in situ*. Two elements are identified as *Taylorconcha* spp. (73-30958 and 73-56642). Precisely one element is identified as *Cryptomastix* sp. (73-32055). Two Gastropoda shell specimens (73-56642 and 73-33445) are unidentified.

Table 11. NISP and MNI of Fauna in F59

Taxonomic Identification	Common Name	NISP	MNI
Mammalia		9	9
Rodentia		7	2
Microtus sp.	Vole	1	1
Perognathus sp.	Pocket Mouse	1	1
Peromyscus sp.	Deer Mouse	3	2
Lepus sp.	Jackrabbit	1	1
Gulo gulo	Wolverine	4	1
Total Mammal		26	11
Amphibia		1	1
Total Amphibian		1	1
Cyprinid/Catostimid	Minnow/Sucker	8	1
Total Fish		8	1
Gastropoda		2	2
Taylorchoncha sp.	Rapids Snail	2	2
Cryptomastix sp.	Land Snail	1	1
Total Gastropoda		5	5

Note. Taxonomic classifications are based on the lowest identification possible by the author; NISP=Number of Identified Specimens; MNI=Minimum Number of Individuals.

4.7 Dental Microwear Texture Analysis Results

DMTA data collected on the F59 wolverine show epLsar data measurements as the lowest (Table 12) in comparison with the five other wolverine specimens suggesting brittle foods were masticated according to diet interpretations by Scott et al. (2006). The epLsar measurements test the orientation of striations found on dentition with straight striations indicating homogenous jaw movement during mastication. Additionally, Asfc measurements placed the F59 wolverine in the middle of the spectrum in comparison to the other specimens. Asfc measurements indicate complexity on the surface of dentition and suggest a diet heavy in “hard” textured foods would create a complex surface. Tfv shares similar indications depicting volume fill on teeth where masticating hard foods creates divots and depressions on the tooth surface. The F59 wolverine has the second lowest Tfv score of the sample indicating softer foods were most likely consumed. The F59 wolverine has a mix of data suggesting a lack of homogenous chewing while also eating softer foods suggesting a diet most likely consisted of both fresh meats and abrasive bone materials. In comparison with the other wolverine specimens, F59 wolverine aligns with other spring wolverines in epLsar and Asfc measurements as shown in Figure 23 as well as epLsar and Ttfv in Figure 24. More wolverine specimens need to be measured to have a fuller understanding for the variation of surface variability on wolverine dentition in association with seasonality.

Table 12. Dental Microwear Texture Analysis on Wolverine Dentition.

Taxon	Specimen	Asfc	epLsar	Tfv	Season	Year	Country	State
Gulo gulo	RN25816	3.300054	0.001513	13495.577	*spring*[1]	9,620 ±30 RYBP	USA	ID
Gulo gulo	MVZ12236	4.154926	0.001381	14490.822	Spring	1906	USA	AK
Gulo gulo	MVZ30049	4.744453	0.00272	14719.790	Summer	1919	USA	CA
Gulo gulo	MVZ33269	1.148022	0.005402	14293.610	Winter	1916-1917	CAN	BC
Gulo gulo	MVZ34396	3.457216	0.004015	13551.260	Winter	1923	CAN	YT
Gulo gulo	MVZ43632	1.761947	0.001814	11954.162	Spring	1927	CAN	BC

Note. Asfc=area-scale fractal complexity; epLsar= anisotropy; Tfv=textural fill volume.; [1]=estimation for season of specimen based on comparative measurements within this sample.

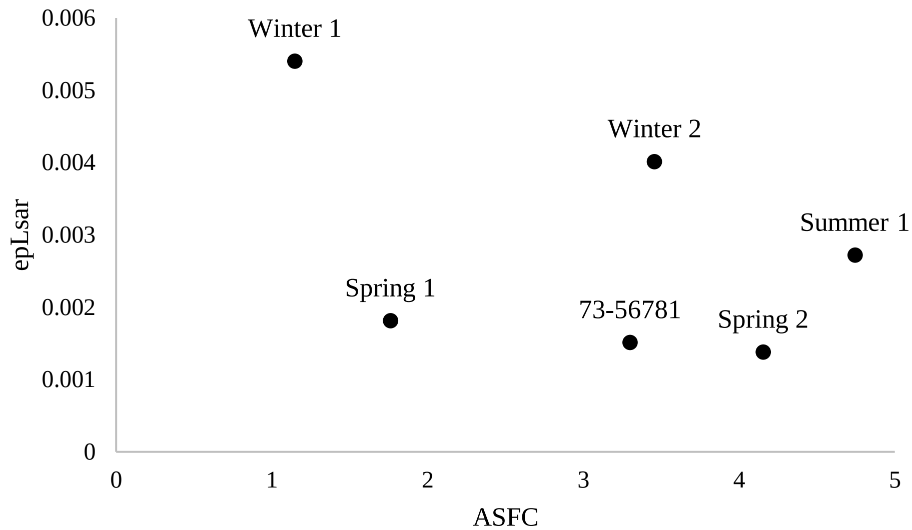


Figure 22. epLsar and ASFC wolverine dentition texture microwear measurement comparisons between Feature 59 specimen (73-56781) and five other comparative wolverines from the vertebrae collection at the University of California Berkeley. Winter 1: MVZ33269; Winter 2: MVZ34396; Spring 1: MVZ43632; Spring 2: MVZ12236; Summer 1: MVZ30049.

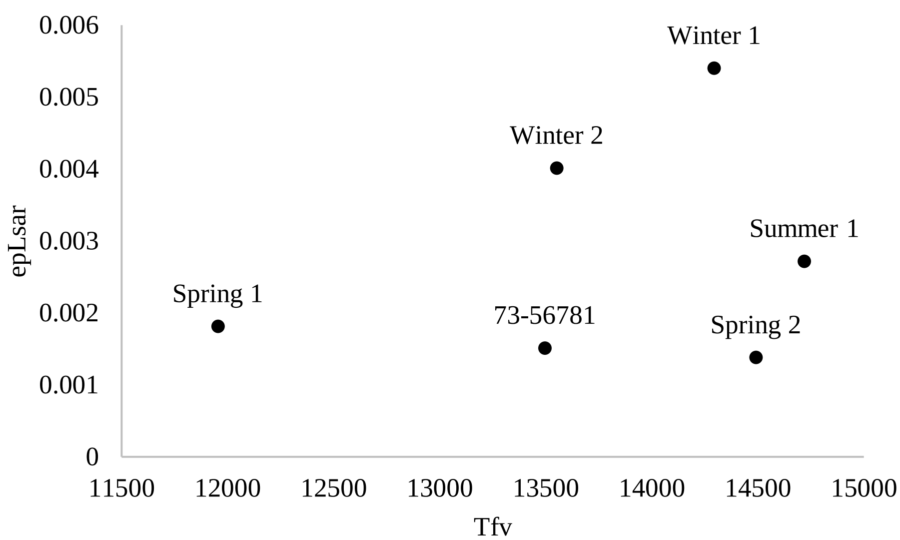


Figure 23. epLsar and Tfv wolverine dentition texture microwear measurement comparisons between Feature 59 specimen (73-56781) and five other comparative wolverines from the vertebrae collection at the University of California Berkeley. Winter 1: MVZ33269; Winter 2: MVZ34396; Spring 1: MVZ43632; Spring 2: MVZ12236; Summer 1: MVZ30049.

4.8 Artifact Provenience in F59

Primary scatterplots of F59 (Figure 24) show artifact distribution within the pit feature is heavily mixed. An abundance of debitage is recorded throughout the entirety of F59 as shown in Figure 24. Debitage showed even dispersion. Other artifacts that also show even distribution include modified flakes, blades (Figure 26), charcoal and FCR (Figure 27), and manuports (Figure 24).

While faunal remains may look as dispersed as the previously mentioned artifacts, Figures 24 and 25 shows slight patterning of faunal remains in F59. Wolverine remains are centralized to the bottom of F59. The medium bones represented in red depict the ribs that are likely to be wolverine as well. The wolverine was obviously placed in F59 first. Snails are also only found at the bottom of F59 but may be attributed impart to the activities of rodents at the site. However, there are cases of land snails being part of the human diet however which would explain the combination of river and land snails present within F59 (Weiner 2010). More likely, the presence of land snails is indicative of their natural movement into F59 as their preferred habitation is living within sediments that are loosely packed (Weiner 2010). The presence of river snail was either deposited by humans around the same time as the wolverine or by rodents.

In contrast with the wolverine, the majority of faunal remains in F59 are fragmented and found throughout the pit. However, more bones both in density and size are centralized at the bottom of F59. Smaller bones, and especially bones with thermal alteration, are more common towards the top of F59. Fish bones show no distinct spatial pattern. Rodent bones show two clusters. The first group clusters near the wolverine specimen while the second group cluster towards the middle of the pit. One amphibian element was recorded at the top of F59 that was most likely a naturally deposit. Formed lithic tools, including the biface and projectile point, are found in the center of the pit (Figure 25). Throughout the pit, modified flakes and blades are dispersed evenly throughout F59. There are two cores within F59 as well as with no clear spatial pattern.

Besides the seemingly intentional placement of the wolverine, other artifacts show an even distribution throughout F59. Most lithic tools show dispersal above the centralized dense concentration of faunal remains at the bottom of F59. There is a high density of artifacts and an extreme mixing of materials which aid in the interpretation of function for F59. In the next chapter, the association of these items will be discussed.

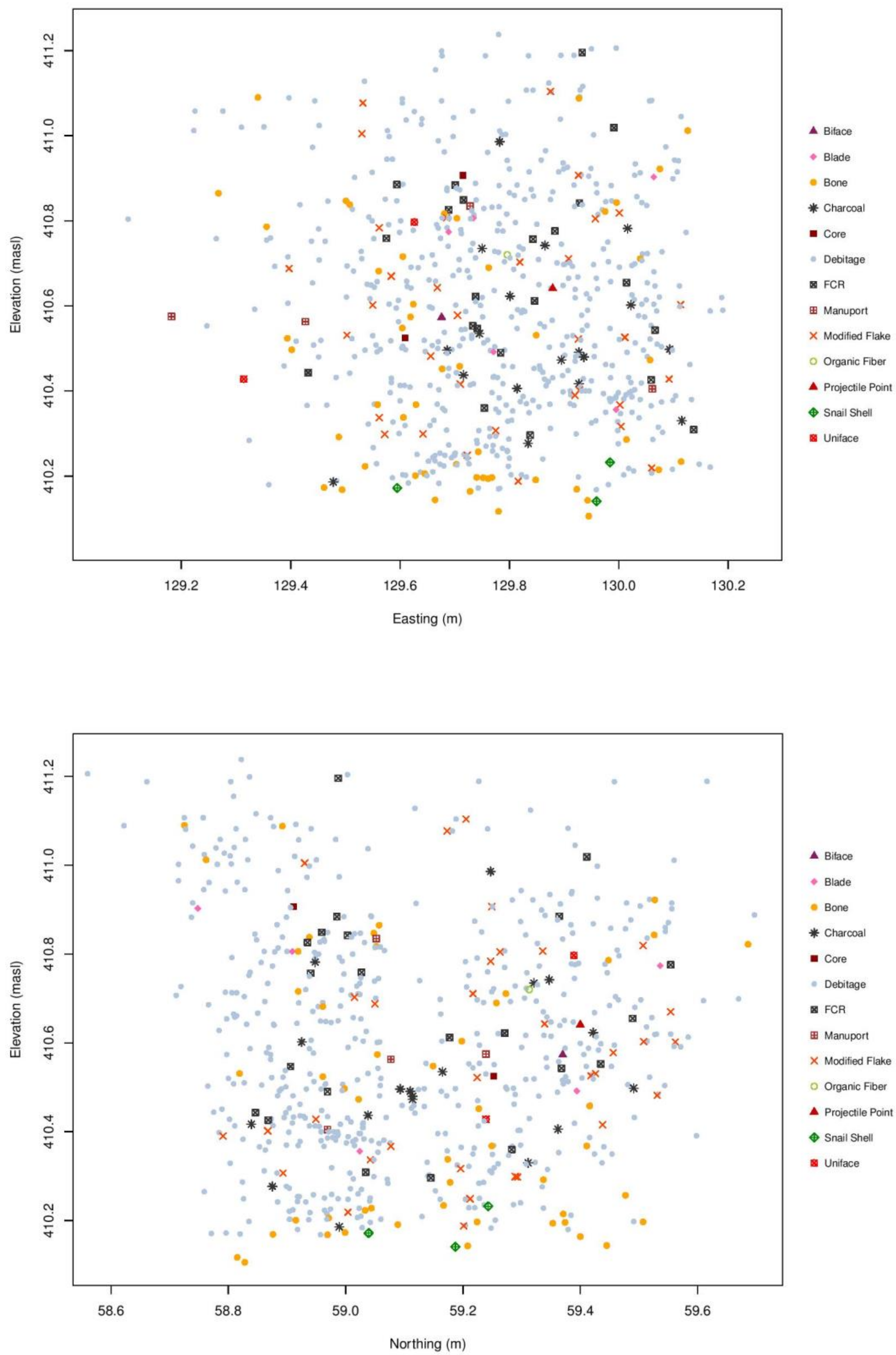


Figure 24. Easting (Top) and Northing (Bottom) scatterplot distrubution of artifacts in F59. Depth is in meters above sea level (masl). Easting and Northing in meters (m).

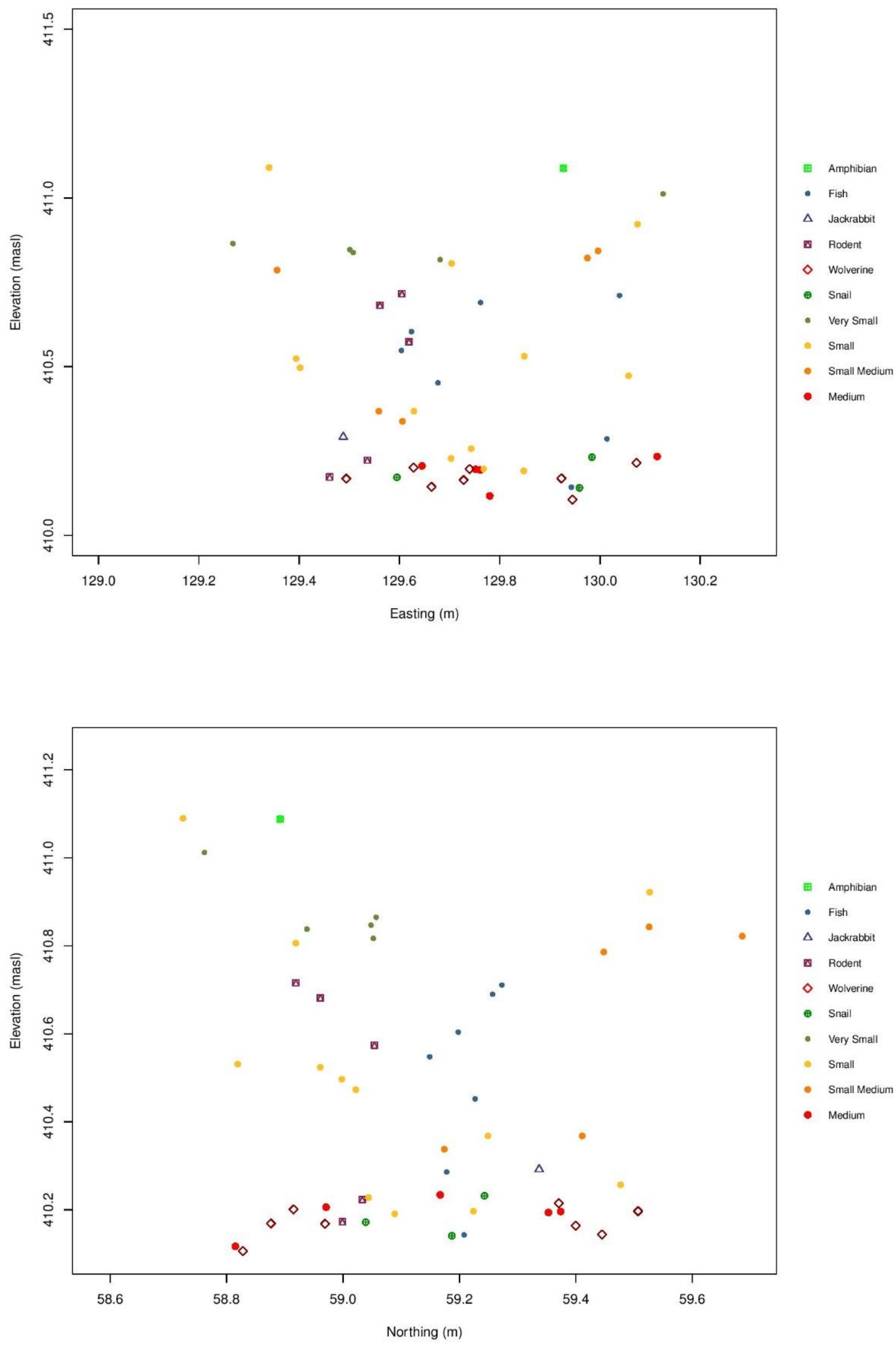
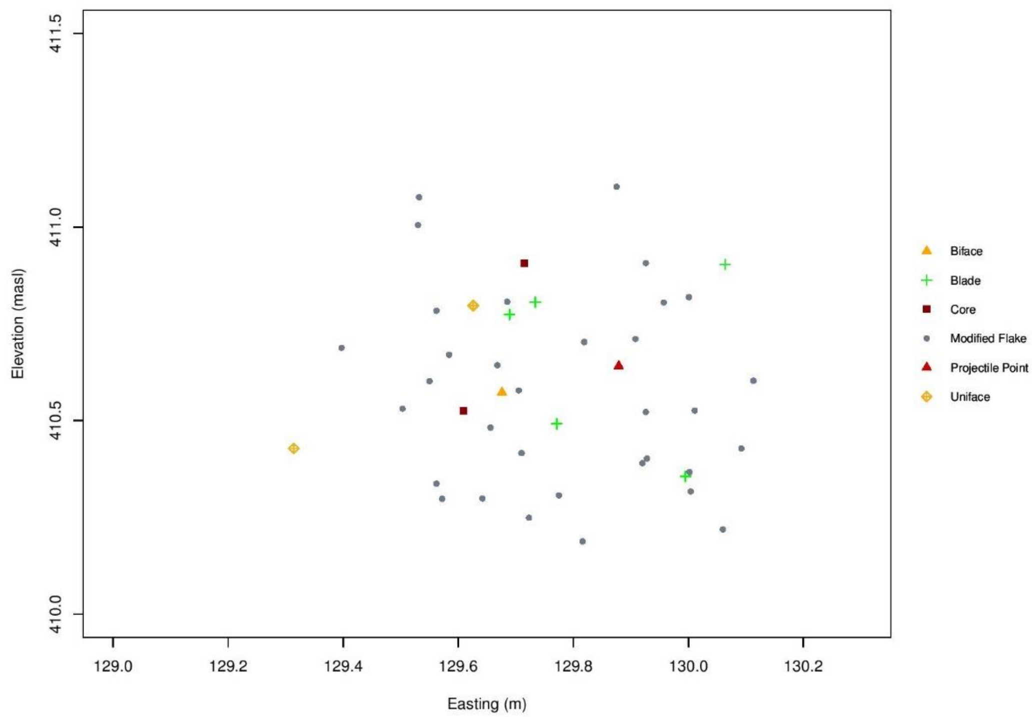


Figure 25. Easting (Top) and Northing (Bottom) scatterplot distribution of faunal remains in F59. Depth is in meters above sea level (masl). Easting and Northing in meters (m).



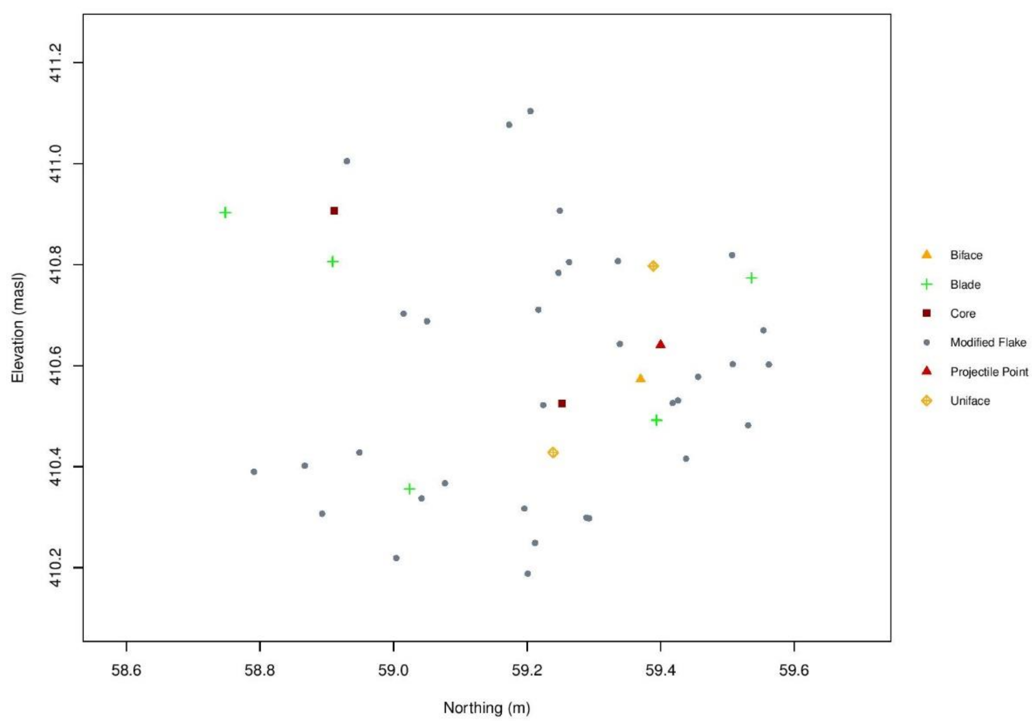
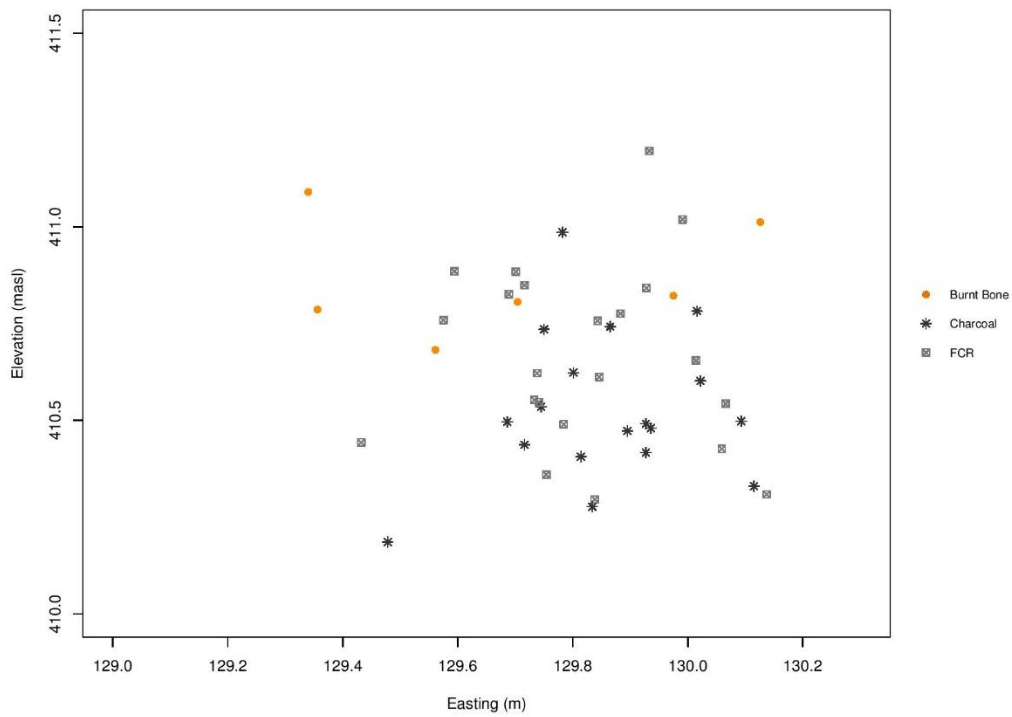


Figure 26. Easting (Top) and Northing (Bottom) scatterplot distribution of lithic tools in F59. Depth is in meters above sea level (masl). Easting and Northing in meters (m).



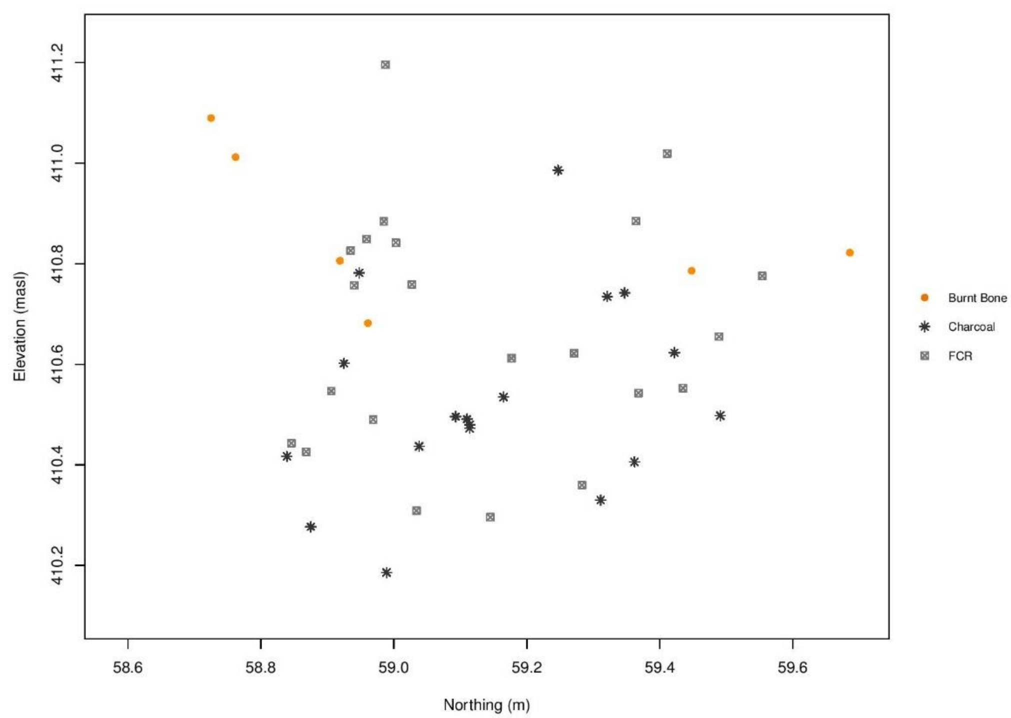


Figure 27. Easting (Top) and Northing (Bottom) scatterplot distribution of thermally altered artifacts in F59. Depth is in meters above sea level (masl). Easting and Northing in meters (m).

Chapter 5

Discussion

Descriptive analysis conducted on the contents within F59 shows unique insight into the use of pits at the Cooper's Ferry Site. As discussed in Chapter One, two pit features, PFA2, and PFP1 have already been reported by Davis et al. (2014) and Davis et al. (2017) from the Cooper's Ferry site. Feature 59 is the third pit feature analyzed thus far from the Cooper's Ferry site and dates to the early Holocene. Two radiocarbon-dated samples of wood charcoal associated with PFA2 produced C^{14} ages of 11,410 ± 130 RYBP and 11,370 ± 40 RYBP (Davis and Schweger 2004), linking it to Cooper's Ferry Phase I (CFI) (Davis 2001a). In contrast, F59 has an associated C^{14} age of 9,620 ±30 RYBP taken from a wolverine rib located at the bottom of the pit (Davis 2018), establishing it within the Cooper's Ferry II Phase (CF2) during the early Holocene (Davis 2001a). Thus, PFA2 represents a significantly older pit than F59, providing an opportunity to compare pit use through time as a significant part of Cooper's Ferry cultural history (Davis 2001a). Additionally, outlining the similarities and differences between F59, PFA2, and PFP1 will provide an interesting perspective on pits of the WST. Using the reference pit type collection outlined in Chapter Two to investigate the relationships between these three pits at the Cooper's Ferry site will allow for further discussion on the function and significance of F59 in regards to domestic life of the WST.

5.1 Western Stemmed Tradition Lithics in Pits at The Cooper's Ferry Site

Debitage

The F59 debitage assemblage show representations of most Paleoarchaic lithic reduction stages visualized in Figure 28 by Davis et al. (2012). The presence of cortex in the F59 debitage assemblage indicates initial core reduction. However, the representation of an early reduction stage in F59 makes up a small portion of the total collection with 0.8% (n=8) holding cortical platforms and 9% (n=87) of flakes having any cortex present. A flake (73-31338) of CCS bearing the convex top portion of a centripetal core shows the transitioning stage from stage c to e and f in Figure 28 and represent a middle reduction stage. Similarly, the majority of platform bearing flakes, about 52% (n=141), show core reduction representing this intermediate reduction stage as well. Approximately 42% (n=112) show evidence of bifacial reduction and pressure flaking indicative of late reduction stage. Arguably, the debitage from F59 shows evidence for most stages of lithic reduction with an emphasis on late stage reduction, indicative of people bringing prepared pieces (e.g., preforms) from source locations and continuing their manufacture at the site.

The debitage of F59 shows similar characteristics to PFA2 and PFP1. Davis et al. (2014) describe the majority of PFA2 platform bearing flakes reflect core reduction. However, they suggest a more substantial portion of flakes most likely represent bifacial reduction and pressure flaking as flakes with the presence of platforms make up only 8.8% of the debitage assemblage (Davis et al. 2014). PFP1 held significantly less debitage than F59 and PFA2, yet the debitage recovered was reported to be indicative of late stage reduction as well.

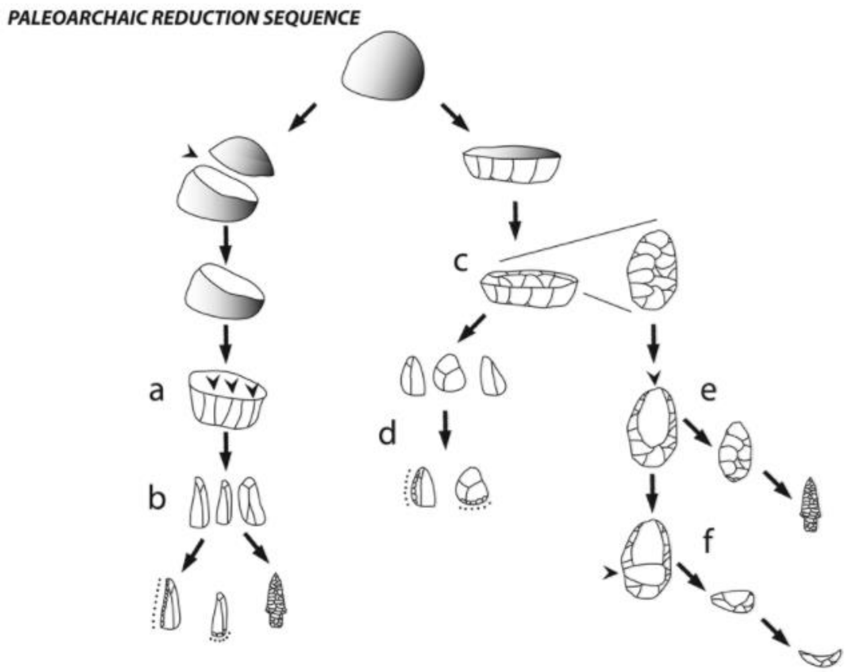


Figure 28. Reproduced from Davis et al. (2012:51). “Paleoarchaic lithic reduction sequence, including unidirectional core production (a), followed by the creation of flake tools and simple modified flakes, projectile points, and crescents from blades and macroflakes (b); centripetal core production (c), resulting in macroflakes that are crafted into flake tools or simple modified flakes (d); centripetal core production (c) that leads to discoidal macroflakes and subsequent projectile point and crescent production (e–f).”

Table 13. Lithic Artifacts Recorded From F59, PFA2, and PFP1 at the Cooper’s Ferry Site.

Artifact	F59	PFA2	PFP1
Tools			
Biface	2	4	14
Blade	5	3	0
Core	2	1	0
Hammerstone	0	1	0
Modified Flake	33	2	0
Uniface	2	2	0
Manuport	4	0	0
FCR	24	0	0
Debitage			
FGV[1]	88	73	0
CCS[2]	867	641	2
Metamorphic	2	10	0
Obsidian	1	0	0

[1]FGV = Fine Grained Volcanic
[2]CCS = cryptocrystalline silicate

Lithic Tools

F59 holds similar tool content as PFA2 and technological similarity with both PFA2 and PFP1 (See Table 13). The projectile points from PFA2 and PFP1 bear slightly contracting to straight margins and have elongate blades that measure approximately two-thirds of the projectile point's total length (Davis et al. 2014, 2017). Furthermore, the WST projectile points also hold a range of subtle to pronounced ears (Davis et al. 2014, 2017). The F59 projectile point shares these point style characteristics and gives evidence for the continued WST seen through time at the Cooper's Ferry site. Other tools recorded in F59 were similar to that of PFA2 and indicative of the WST toolkit and the reduction sequence shown in Figure 28. The style of unidirectional cores for the manufacture of blades and utilitarian flakes are evident in the F59 assemblage. Centripetal cores must have also been utilized, similar to the Old World Levallois technique to create the piece of debitage (73-31338) present in F59, representing the top portion of a centripetal core that was knapped off of the objective piece. This Old World Levallois reduction technique is associated with the production of WST projectile points and bifaces. Thus, within the assemblage of F59 lithic tools, blades, modified flakes, a core, a uniface, a biface, and a projectile point are representative tools that are present in both F59 and PFA2. A significant distinction between the tools of an equipment cache pit like that of PFA2 and PFP1 is the status of tools within F59. Both the biface and projectile point are fragmented, the modified flakes are numerous and opportunistic in design, the blades have not been used as they do not show wear, and the unifaces were an attempted start but did not become a fully formed tool along an entire margin. The theme of discard is apparent throughout the stone tool assemblage in F59. Examples of these types of representative tools in F59 helps to draw distinctions of form and functionality between F59 and other pits such as PFA2 and PFP1.

F59 obviously has a lithic tool assemblage that is dissimilar to PFA2 and PFP1. This thesis has attempted to focus on those differences as to gain more of an understanding of the various details of lifeways and traditions of the WST at the Cooper's Ferry site. There are obvious similarities in technologies between the pits at Cooper's Ferry, and thus, F59 represents an essential piece of study for the cultural history in the region as well as the site.

5.2 Fauna of the Western Stemmed Tradition

Faunal remains found in F59 create the most significant distinction between the other pit features PFA2 and PFP1 as well as most WST sites in the Far West. PFP1 did not hold any faunal remains. However, there are a similar count and weight of bone artifacts within PFA2 in comparison to F59. The only identified mammal remain from PFA2, besides 22 rodent bones, was an artiodactyl metapodial fragment bearing a linear cutmark approximately one centimeter long. This faunal diversity creates a notable distinction between the pit features as artiodactyl bone is not present in F59. Freshwater mussel shells were also recorded in PFA2 but do not appear in F59. The presence of fish in F59 is unique for pits at the Cooper's Ferry Site and follow the LSRC culture history model as Davis (2001) observes an increase in riparian use from CF1 to CF2. All identified fish remains from F59 were determined to be part of either the Cyprinidae or Catostomidae Family (Butler 2015). These fish types, commonly known as minnows or suckers, are not rare species in the Snake River tributaries. Dr. Virginia Butler attempted to reconstruct the size of the fish specimen from the vertebral elements (Butler 2015). Her results showed the fish present in F59 would have been modest in size, in comparison to species of those families that can grow to be double in size (Butler 2015). With such a small sample size of fish remains, it is difficult to make claims on the fishing practices. However, F59 shows additional evidence for an increased focus on fishing during the CF2.

F59 holds at least two purposefully deposited taxonomically identified mammal remains including a wolverine and a jackrabbit. The jackrabbit element is not out of place in association with the WST. Examples of Far West early WST archaeological sites that report the presence of *Lepus* sp. that include Sentinel Gap, Marmes Rockshelter, and Lind Coulee (Lyman 2013). In contrast, the presence of the wolverine is a curious oddity amongst the faunal assemblage as wolverines are not reported at any early WST sites. Faunal exploitation studies of the early WST in the Far West focus on local and seasonal resources where residential mobility was practiced (Butler and Campbell 2004). Yet, wolverines usually live at higher elevations in alpine tundra and in boreal and mountain forests where they acquire food resources throughout the year (Horn and Hash 1981; Lippincott et al. 1997). According to paleoclimate data, wolverines might have lived near the LSRC during the early Holocene when very cold and dry winters were prevalent (Davis 2001b). The habitation range of the wolverine may have expanded to areas closer to the Cooper's Ferry site during this cooling period in the early Holocene (Davis 2001b). Thus, it would not have been unlikely for people of the LSRC to hunt wolverine nearby possibly for subsistence but likely for their fur for clothing based on ethnographic records of people utilizing wolverine fur in Canadian and Subarctic regions (Irving et al. 1960; Morrison 1988; Smith 1981). Nevertheless, the uniqueness of a wolverine at Cooper's Ferry is still intriguing as it gives perspective to the behaviors and decisions of hunter-gatherers in the LSRC during the early Holocene.

As mentioned in the previous chapter, approximately 94% of the faunal assemblage recorded in F59 are fragmented. Such a large amount of fragmentation might be indicative of many different taphonomic processes at work such as carnivores scavenging bone remains, trampling, fluvial transport, geospatial changes, weathering, and geochemical alterations (Behrensmeyer 1978). However, this degree of fragmentation within the confined temporal framework of a pit in association with thermally altered artifacts, suggests bone grease processing. Bone grease processing involves the heat-in-liquid rendering of bone where lipids are extracted from submersion of fragmented bone pieces in boiling water (Manne 2014). This method is a logical calorie extraction strategy. Bones have consistent fat stores, even after the death of the individual. This can make for a steady food source in all times of the year with access to animal carcasses (Outram 2001). However, finding evidence of bone greasing in the archaeological record is difficult to prove analytically. In prehistoric groups with no pottery, the bone grease boiling process was accomplished by heating rocks in the fire and relocating them to a water container such as a skin bag or tightly woven basketry (Speth and Spielmann 1983). The heated rocks boil the water and facilitate the release of fat stores from within the skeletal elements (Outram 2001). The lipid substance rises to the surface and is skimmed off. The product of this process would not necessarily preserve in the archaeological record. The combination of items such as heated rocks and bone preserving and revealing this process helps to see this processing technique in the archaeological record.

The faunal materials, as well as the association between them from F59, provide a glimpse of intentional hunting, procurement, and deposition activities in the early Holocene at the Cooper’s Ferry site. One of the main uses of animals by humans is for nutrition and while some of the species within F59 are indicative of foods seen in association with the WST, the wolverine provides a potential example of animals that may not be used for survival. F59 is a fascinating example that may allude to the WST cultural component’s use of animals to signify social affiliations and belief systems. Much more data regarding human-animal interaction of the WST, from Cooper’s Ferry and other prehistoric archaeological sites, will need to be collected to better interpret that particular aspect of F59. In the next section, the function of F59 is discussed further in regards to these material components.

5.3 Analogous Pits

The Buffalo Flat Bunny Pits (35LK1880, 35LK1881, 35LK2076, 35LK2095), located in south central Oregon, show examples of refuses pit recovered in the archaeological record. 35LK1881 uncovered buried cultural material in a large pit feature with C^{14} ages between 8,000 and 9,000 RCYBP (Oetting 1994). The Buffalo Flat pit feature located at this site is much larger than F59, measuring almost three times larger than F59. The lithic contents within this pit include a WST projectile point base fragment, cores, bifaces, utilized flakes, a mano, metate fragments, abraders, charcoal, and 286 pieces of debitage (Jenkins et al. 2000). The most abundant material found within the Buffalo Flat pit feature were bone fragments. Approximately 10,153 bone fragments were recorded from within the large pit with the majority identified as rabbit (Jenkins et al. 2000). Archaeologists interpret the site as an intense rabbit processing location as well as a pit for refuse as the bone fragments suggest post-processing activities (Oetting 1993).

Bobcat Cave (10BM56), located in eastern Idaho on a Snake River Plain, shows prehistoric meat storage practices 4,000 years ago (Henrikson 1996). The Bobcat Cave pit feature is unique in that the organic materials lining the feature were preserved and frozen. Approximately 30 to 40 cm deep, three layers of sagebrush stalks were laid down methodically in perpendicular layers (Henrikson 1996). Capping this subterranean sagebrush layer feature is a thick layer of burned sagebrush and ash, as well as unburned sagebrush (Henrikson 1996). Within this sagebrush feature are flakes, ground stone tools, full antler tines, antler fragments, antler tips, artiodactyl ribs, and long bone fragments (Henrikson 1996). Some of these long bone fragments found surrounding the sagebrush feature have been identified as *Bison bison* bones as well as the presence butchering from the disarticulation of both the bison and artiodactyl bones (Henrickson 1996). Henrikson (1996) argues the functionality of the sagebrush feature was to store meat in the winter season for later consumption. To accomplish the storing of meat, the pit is lined with layers of sagebrush as the meat is placed within the confines of the pit. The pit itself is argued to have been a perfect freezer for meat products as people traveling and coming back to the area would have an insured source of protein. While the freezer pit type may not be entirely applicable to F59, use of a pit as food storage is present in the Columbia River Plateau and should be considered in interpreting pit functions with the presence of faunal and floral materials.

The Charlie Lake Cave site located in Northeastern British Columbia on a hillside above a creek that drains into Charlie Lake (Driver 1999). The earliest age of human occupations at this site is from 10,500 B.P. and becomes minimally occupied by 9,500 B.P. (Driver et al. 1996). Two relatively complete *Corvus corax* skeletons, labeled Raven I and Raven II, were recorded at the Charlie Lake Cave site within these time ranges and with accurate associated radiocarbon dates (Driver 1999). Raven I was dated using radiocarbon dating on the left scapula (Driver 1999). The scapula gave an age of 10290±100 B.P. (Driver 1999). Raven II was dated using a radiocarbon date on the right scapula and produced an age of 9490±140 B.P. (Driver 1999). The two ravens were recorded in association with cultural materials (Driver 1999). Raven I was in association with a fluted projectile point, two cores, eight large quartzite tools that consisted of a retouched cobble, a biface, a uniface, and retouched flake (Driver 1996). Eight pieces of debitage were recorded as well and a butchered bison bone (Driver 1999; Driver et al. 1996). Raven II was found with a microbl

ade core near the feet of the specimen (Driver 1996). Within the same cultural component, there were 160 pieces of debitage, one unformed lithic tool, and one core (Driver 1996). With these characteristics, this site provides a reasonable analog to F59 at the Cooper's Ferry site. The location near a watershed draining into Charlie Lake fits the first half of the environmental parameters. However, the location in Northeastern British Columbia has a slightly different environment than the LSRC in Idaho but potentially was similar in an environment in the early Holocene. The radiocarbon dates from the site are the most closely similar dates to that of F59. The uniqueness of these potential ravens being deposited by people during the early Holocene is the main analogous factor. The ravens were not reported in specific pit features, yet their presence alongside other significant artifacts make the Charlie Lake Cave site an interesting glimpse of potential cultural traditions in the early Holocene and may be a good analog for what was recorded in F59.

The Bergen site (35LK3175) is located in southern Oregon and contains several pit features. A shallow pit feature was found in association with a house structure containing bifaces, elk antler flaking billets, *Olivella* shell beads, and fragments of abalone shells (O'Grady 2004; Helzer 2001). The abalone shells and *Olivella* beads are materials found in a marine ecosystem, a far distance away from the site itself and serves as an example of rare materials deposited in pit structures similar to the wolverine specimen in F59. A second pit at the Bergen site, contained two manos, two larger bifaces, two northern side-notched projectile points, and one abrader that was interpreted as an equipment cache (Helzer 2001). The people who lived at this site created these pit structures to store both equipment materials as well as "special deposits" potentially indicative of cultural affiliation. This site has associated ages between 6,000 to 4,000 calendar years ago, around the time when storage features are becoming abundant in the northwestern portion of the United States (Helzer 2001). The Bergen site presents an interesting parallel for the multiple pit features seen at the Cooper's Ferry site.

5.4 Pit Functions

As discussed in the previous subsections, there are compelling distinctions between PFA2, PFP1, and F59 (Table 13). The interpretation of pit function based on those distinctions provide a better understanding of the Cooper's Ferry site and the relationship between people and pit structure. PFP1 is arguably an equipment cache based on the abundance of formed projectile points with evidence of use and sharpening of the projectile points prior to burial. (Davis et al. 2017). Similarly, Davis et al. (2014) describe their lines of reasoning for classifying PFA2 as an equipment cache. Davis et al. (2014) discuss the possibility of PFA2 representing a ritual or mortuary pit, but quickly dismiss this idea as evidence for ritualistic intentions such as exceptional raw materials, red ochre, or human remains (Amick 2004; Davis et al. 2014). Davis et al. (2014) also hypothesize PFA2's functionality as a trash pit. However, the presence of 13 workable tools with a lower density of artifacts within PFA2 than that of the surrounding sediment leads to conclusions of PFA2 representing an intentional equipment cache pit. The line of reasoning for F59 serving as a trash pit is much more likely. The mixing of artifacts throughout the pit feature would suggest a location of refuse. However, the presence of a unique animal specimen at the bottom of the pit feature could indicate a different functionality such as a ritual deposit. The presence of the wolverine and debitage indicative of late stage reduction may suggest more of a ritual function of based on the criteria set forth by Deller et al. (2009), Driver et al. (1996), and Wilson (1992). However, F59 encompasses aspects of almost all main pit types described in

Chapter Two (Table 1, Table 2, and Table 14) including a food storage pit, equipment cache, ritual deposit, and refuse container with the presence of such items like debitage, FCR, charcoal, bone fragments, lithic tools, stains of organic rich sediment, and plant materials. In the following subsection, hypotheses for the functionality of F59 will be addressed based on the reference framework of pit types outlined in Chapter Two.

Table 14. Archetypical Pit Types and Associated Materials Including Cooper's Ferry Pit Features.

Pit Types	Tools	Debitage	Raw Material	Faunal Remains	Thermal Material	Human Remains	Plant Materials	Red Ochre
Food Storage				X			X	
Equipment Cache	X		X					
Raw Material Cache			X					
Refuse	X	X		X	X		X	
Ritual	X			X		X	X	X
Oven				X	X		X	
Burial	X			X		X	X	X
Processing				X	X		X	
Granaries							X	
Hunting Trap				X			X	
Hunting Blind	X	X	X	X				
PFA2	X	X		X	X			
PFP1	X	X						
F59	X	X		X	X		X	

Hypothesis 1

F59 represents a refuse pit where items were deposited once they became obsolete or unnecessary. As discussed by Reitz and Wing (1999), a high amount of faunal diversity or a large variation of cultural materials, especially if they pertain to the ending stages of lithic reduction in a pit feature, suggests refuse. This is especially true if said cultural materials are broken or used and the faunal remains are fragmented. F59 follows these criteria in full for the lithic cultural materials as they are varied in type as well as the status and are used or fragmented such as the broken biface and projectile point as well as the exhausted core. The status of the faunal remains also follows the same pattern that highly suggests intentional discard. According to the provenience of artifacts within F59, the wolverine specimen was one of the first items to be deposited within the pit. Other faunal remains and lithics were deposited afterward that suggests the first intent of the pit feature was to deposit the wolverine. However, unlike ritual pits found in the Far West, there is no presence of red ochre or other ritual indicators (Amick 2004) other than the wolverine specimen itself. Through provenience analysis, the general contents within F59 are highly mixed, besides the wolverine specimen, suggesting those items were swept into the pit. A refuse function holds implications for long-term occupation at the Cooper's Ferry site as nomadic groups would not necessarily find use in refuse containers for a short-term occupation in a living space.

Hypothesis 2

F59 once represented a storage pit where people of the LSRC stored edible plant materials and meats. The original use of F59 as an organic storage pit is directly related to the remnant of amorphous organic materials and dark sediment mottling the sandy loam context of F59. The abundance of organic material recorded in F59 was higher than that of either PFA2 or PFP1. A piece of unknown fibrous material was also recorded from within F59 that could be indicative of woven basketry (Walker 1967) or mats placed in the pit to protect organic resources. The dark stains of the sediment within F59 may also suggest skin bags filled with bones for bone greasing or other organic materials that decomposed in the pit over time (Speth and Spielmann 1983). Instead of a refuse pit, the original intent much more emphasized logistical resource use.

Hypothesis 3

F59 was used as an equipment cache pit. As previously mentioned, Cooper's Ferry has two previously published pit features, PFA2 and PFP1, which show characteristics of tool caching where F59 following a similar pattern of functionality would be logical. Similar to PFA2, F59 shows a wide variety of tools types including a biface, unifaces, blades, cores, modified flakes, and one projectile point; however, the overall number of tools is higher than that observed in PFA2. The projectile point and biface do not show signs of extreme use and perhaps were placed in the pit for later use and modification. F59 may be an example of an equipment cache seen as part of a pit function trend as part of Cooper's Ferry culture history. With equipment cache pits present from the late Pleistocene to the early Holocene, a measurable behavior is seen at the sight in regards to the logistical decisions of storing tool technology in pits along the landscape of the LSRC.

Hypothesis 4

F59 was used as a facility for ritual intent. Ritual activity in the archaeological record pertaining to pit features, show dense concentrations of faunal remains that are unique, partially complete, or located at the base of a pit (Driver et al. 1996; Reitz and Wing 1999; Wilson 1999). Pit features with ritual activity in the archaeological record usually lack debitage but if present may heavily be weighted towards evidence of later stages of lithic reduction such as bifacial thinning flakes as well as containing rare artifacts or raw materials for tools. (Amick 2004; Deller et al. 2009; Hayden and Adams 2004). F59 exhibits characteristics of pits with ritual intent including the presence of a wolverine specimen located at the base of F59. Furthermore, the F59 debitage assemblage results show an emphasis on late stage reduction, including bifacial thinning flakes and pressure flakes following the criteria for lithic debitage materials seen within ritual pits. These material contents within F59 leads to the interpretation of F59 as an example of a ritual pit at the Cooper's Ferry site.

Hypothesis 5

Feature 59 was created and used for more than one function. Feature 59 demonstrates characteristics of different types of pit functions discussed in this thesis. There is overwhelming evidence of refuse as the function of F59 with the state of materials representing the garbage from the surrounding area that was conveniently swept into the pit as it was uncovered where the pit became part of the archaeological context. Additionally, F59 does show probable evidence of cooking and processing of food resources by the presence of FCR, botanical materials, fragmented faunal remains, and mottled organic-rich sediment suggesting possible decomposition of organic materials recorded throughout the pit. Thus, F59 shares strong characteristics with food storage pits as well as other pit types that cannot be ignored either such as ritual deposits and equipment caches as described by the previous hypotheses. With these pit type characteristics in mind, a pit that holds evidence of multiple functions clearly fits F59 and its material contents. If F59 was used for multiple purposes, this leads to more questions concerning the utilitarian use of single function pits and multiple function pits at the Cooper's Ferry site. It is undeniable however, that F59 as a multiple function pit has produced unique information on domestic lifeways of the WST and cultural traditions of the LSRC.

Chapter 6

Conclusions

Excavation of Feature 59 (F59) at the Cooper's Ferry site (10IH73) in western Idaho offers a unique opportunity to learn more about the people of the Western Stemmed Tradition (WST). This thesis attempted to add to knowledge concerning WST domestic lifeways by interpreting F59 and its material contents to better understand the daily lives of people living in the LSRC during the early Holocene. By analyzing the contents of F59 and comparing those contents with other pit feature types, a stronger argument is made towards the functionality of F59. The lithic assemblage, state of the faunal remains, and the patterning of materials within the pit is strongly indicative of the fifth hypothesis outlined in this thesis, a multiple function use. F59, and the evidence for its multiple pit type function, provides significant information for expanding knowledge concerning the domestic lifeways of the WST by recording and analyzing the kinds of materials that were used in the daily lives of people living in early Holocene. Distinctive lithic materials found in F59 includes one WST projectile point, a biface, unifaces, blades, cores, modified flakes, and debitage. The lithic assemblage shows a mixture of both formed and expedient tools demonstrating a varied tool kit was used during daily activities. In the faunal assemblage, a wolverine (*Gulo gulo)*, jackrabbit (*Lepus* sp.) and fish (Cyrprinid or Catostomid Family), as well as other fragmented faunal remains potentially indicating bone grease processing, show types of faunal resource exploitation. Whether these species of fauna were used for food or for a culturally significant purpose, it can be rightly interpreted that these particular fauna were being intentionally procured by people in the early Holocene. These various materials recovered from F59 represent a unique perspective on pits of the WST and their multiple function use. To gain further knowledge on pits of the WST, and their importance to the lives of people in prehistory, more research will need to be conducted surrounding WST pit features at other archaeological sites as well as all pit features recorded at the Cooper's Ferry site.

Bibliography

Ahler, Stanley A.
1989 Mass Analysis of Flaking Debris: Studying the Forest Rather Than the Trees. In *Alternative Approaches to Lithic Analysis*, edited by Donald Henry and George Odell, pp. 85-118. Archaeological Papers No. 1. American Anthropological Association, Washington D.C.

Ames, Kenneth M., Cameron McP. Smith, and Alexander Bourdeau
2008 Large Domestic Pits on the Northwest Coast of North America. *Journal of Field Archaeology* 33:3-18.

Amick, Daniel S.
2004 A Possible Ritual Cache of Great Basin Stemmed Bifaces from the Terminal Pleistocene-Early Holocene Occupation of NW Nevada, USA. *Lithic Technology* 29:119-145.

Andrefsky, William
2002 *Lithic debitage: context, form, meaning*. Univ. of Utah Press, Salt Lake City.

Andrefsky, William
1998 *Lithics: Macroscopic Approaches to Analysis*. Cambridge University Press. Cambridge, UK.

Beck, Charlotte, and George, T. Jones
2010 Clovis and Western Stemmed: Population Migration and the Meeting of Two Technologies in the Intermountain West. *American Antiquity* 75:81–116.

Behrensmeyer Anna K.
1978 Taphonomic and Ecologic Information from Bone Weathering. *Paleobiology* 4(2): 150-162.

Binford, Lewis R.
1967 Smudge Pits and Hide Smoking: The Use of Analogy in Archaeological Reasoning. *American Antiquity* 45: 1-12.

1979 Organization and Formation Processes: Looking at Curated Technologies. *Journal of Anthropological Research* 35: 255-273.

1982 The Archaeology of Place. *Journal of Anthropological Archaeology* 1:5-31.

Bryan
1980 The Stemmed Point Tradition: An Early Technological Tradition in Western North America. In *Anthropological Paper in Memory of Earl H. Swanson, Jr.*, edited by L.

Harten, Claude Warren, and Don Tuohy, pp. 77-107. Special Publican of the Idaho State University Museum of Natural History, Pocatello.

Butler, B. Robert
1969 The Earlier Cultural Remains at Cooper's Ferry. *Tebiwa* 12:35-50.

Butler, Virginia L.
2015 Fish Remains from 10IH73, Fea O1. Report on file in the Applied Anthropology Department at Oregon State University, Corvallis, OR.

Butler, Virginia L., and Sarah K. Campbell
2004 Resource Intensification and Resource Depression in the Pacific Northwest of North America: A Zooarchaeological Review. *Journal of World Prehistory* 18:327-405.

Cotterell, Brian and John Kamminga
1987 Formation of Flakes. *American Antiquity* 52(4): 675-708.

Cunliffe, Barry
1992 Pits, Preconceptions and Propitiation in the British Iron Age. *Oxford Journal of Archaeology* 11(1): 69-83.

Davis, Loren G.
2001a Lower Salmon River Cultural Chronology: A Revised and expanded model. *Northwest Anthropological Research Notes* 35:229-248.

Davis, Loren G.
2001b The Coevolution of Early Hunter-Gatherer Culture and Riparian Ecosystems in the Southern Columbia River Plateau. Unpublished Ph.D. dissertation, University of Alberta, Edmonton.

Davis, Loren G.
2018 Radiocarbon Ages of Feature 59 from the Cooper's Ferry Site. Report on file in the Applied Anthropology Department at Oregon State University, Corvallis, OR.

Davis, Loren G., Alexander J. Nyers, and Samuel C. Willis
2014 Context, Provenance and Technology of a Western Stemmed Tradition Artifact Cache from the Cooper's Ferry Site, Idaho. *American Antiquity* 79(4): 596–615.

Davis, Loren G., and Charles E. Schweger
2004 Geroarchaeological Context of late Pleistocene and Early Holocene Occupation at Cooper's Ferry Site, Wester Idaho, USA. *Geroarchaeological: An International Journal* 19(7): 685-704.

Davis, Loren G., Daniel W. Bean, and Alexander J. Nyers
2017 Morphometric And Technological Attributes Of Western Stemmed Tradition Projectile Points Revealed In A Second Artifact Cache From The Coopers Ferry Site, Idaho. *American Antiquity* 82(3): 536–557.

Davis, Loren G., Daniel W. Bean, and Alexander J. Nyers
2015 GLiMR: A GIS-Based Method for the Geometric Morphometric Analysis of Artifacts. *Lithic Technology* 40:199-217.

Davis, Loren G., Samuel C. Willis, and Shane J. Macfarlan
2012 Lithic Technology, Cultural Transmission, and the Nature of the Far Western Paleoarchaic-Paleoindian Co-Tradition. In *Meetings at the Margins: Prehistoric Cultural Interactions in the Intermountain West*, edited by David Rhode, pp. 47–64. University of Utah Press, Salt Lake City.

Davis, Loren G., Shane J. Macfarlan, Celeste N. Henrickson
2011 A PXRF-based Chemostratigraphy and Provenience System for the Cooper's Ferry site, Idaho. *Journal of Archaeological Science* 39: 663-671.

Deller, Brian D., Christopher J. Ellis, and James R. Keron
2009 Understanding Cache Variability: A Deliberately Burned Early Paleoindian Tool Assemblage From the Crowfield Site, Southwestern Ontario, Canada. *American Antiquity* 74(2): 371-397.

DeSantis, Larisa. R. G., Blaine W. Schubert, Elizabeth Schmitt-Linville, Peter S. Ungar, Shelly L. Donohue, and Ryan J. Haup
2015 Dental Microwear Textures of Carnivorans from the La Brea Tar Pits, California, and Potential Extinction Implications. In *La Brea and beyond: the paleontology of asphalt-preserved biotas*, edited by Harris, J. M., pp. 37-52. Natural History Museum of Los Angeles County, Los Angeles.

Dibble, Harold L.
1997 Platform Variability and Flake Morphology: A Comparison of Experimental and Archaeological Data and Implications for Interpreting Prehistoric Lithic Technological Strategies. *Lithic Technology* 22:150-170.

Driver, Jonathan. C.
1999 Raven Skeletons from Paleoindian Contexts, Charlie Lake Cave, British Columbia. *American Antiquity* 64(2): 289-298.

Driver, Jonathan C., Martin Handly, Knut R. Fladmark, D. Erle Nelson, Gregg M. Sullivan, and Randall Preston
1996 Stratigraphy, Radiocarbon Dating, and Culture History of Charlie Lake Cave, British Columbia. *Arctic* 49(3): 265-277.

Dunham, Sean B
2000 Cache Pits: Ethnohistory, Archaeology, and the Continuity of Tradition. In *Interpretations of Native North American Life*, pp. 225–260. University of Florida Press.

Hayden, Brian and Aubrey Cannon
1983 Where the Garbage Goes: Refuse Disposal in the Maya Highlands. *Journal of Anthropological Archaeology* 2:117-163.

Henrikson, Suzann L.
1996 Prehistoric cold storage on the Snake River Plain: archaeological investigations at Bobcat Cave. Archaeological Survey of Idaho, Boise, ID.

Helzer, Margaret M.
2001 *Paleoethnobotany and household archaeology at the Bergen site: a Middle Holocene occupation in the Fort Rock Basin, Oregon*. University of Oregon.

Hoffman, Brian W.
1999 Agayadan Village: Household Archaeology on Unimak Island, Alaska. *Journal of Field Archaeology* 26(2): 147-161.

Holman, Margaret B., and Frank J. Krist
2001 Late Woodland Storage and Mobility in Western Lower Michigan. *The Wisconsin Archeologist* 82(1-2):7-32.

Hornocker, Maurice G., and Howard S. Hash
1981 Ecology of the wolverine in northwestern Montana. *Canadian Journal of Zoology* 59(7): 1286–1301.

Huckell, Bruce B., and J. David. Kilby
2014 *Clovis caches: recent discoveries & new research*. University of New Mexico Press, Albuquerque.

Irving, Laurence, Kristian Lange Andersen, Atle Bolstad, Robert Elsner, J. A. Hildes, Yngve L∅Yning, John D. Nelms, Leonard J. Peyton, and Robert D. Whaley
1960 Metabolism and temperature of Arctic Indian men during a cold night. *Journal of Applied Physiology* 15(4): 635–644

Jenkins, Dennis L., Aikens C. Melvin, and Cannon, J. William
2000 *University of Oregon Archaeological Field School Northern Great Basin Prehistory Project Research Design*. University of Oregon.

Jenkins, Dennis L., Loren G. Davis, Thomas W. Stafford, Jr., Paula F. Campos, Bryan Hockett, George T. Jones, Linda Scott Cummings, Chad Yost, Thomas J. Connolly, Robert M. Yohe II, Summer C. Gibbons, Maanasa Raghavan, Morten Rasmussen, Johanna L. A.

Paijmans, Michael Hofreiter, Brian M. Kemp, Jodi Lynn Barta, Cara Monroe, M. Thomas P. Gilbert, Eske Willerslev
2012 Clovis Age Western Stemmed Projectile Points and Human Coprolites at the Paisley Caves. Science 337:223–228.

Kilby, David J., and Bruce B. Huckell
2013 Clovis Caches: Current Perspectives and Future Directions. In *Paleooamerican Odyssey*, edited by Kelly E. Graf. Caroline V. Ketron, and Micahel R. Waters, pp. 257-272. Center for the Study of the First Americans, College Station, Texas.

Kornfeld, Marcel, Kaoru Akoshima, and George C. Frison.
1990 Stone Tool Caching on the North American Plains: Implication of the McKean Site Tool Kit. *Journal of Field Archaeology* 17:301-309.

Leonhardy, Frank. C., and David G. Rice
1970 A Proposed Cultural Typology for the Lower Snake River Region, Southeastern Washington. *Northwest Anthropological Research Notes* 4(1):1-29.

Lippincott, Abigail, Craig R. Groves, Bart Butterfield, Abigail Lippincott, Blair Csuti, and J. Michael. Scott
1997 *Atlas of Idahos wildlife: integrating gap analysis and natural heritage information*. Idaho Dept. of Fish and Game, Boise, ID.

Lyman, Lee R.
2013 Paleoindian Exploitation of Mammals in Eastern Washington State. *American Antiquity* 78(2): 227-247.

Manne, Tina
2014 Early Upper Paleolithic bone processing and insights into small-scale storage of fats at Vale Boi, southern Iberia. *Journal of Archaeological Science* 43: 111–123.

Morgan, Christopher
2012 Modeling Modes of Hunter-Gatherer Food Storage. *American Antiquity* 77(4). Cambridge University Press: 714–736.

Morrison, David A.
1988 *The Kugaluk site and the Nuvorugmiut : The archaeology and history of a nineteenth-century Mackenzie Inuit society* (Mercury series). Canadian Museum of Civilization, & Archaeological Survey of Canada. Hull, Quebec: Canadian Museum of Civilization, National Museum of Canada.

Oetting, Albert C.
1993 The Archaeology of Buffalo Flat: Cultural Resources Investigations for the CONUS OTH-B Buffalo Flat Radar Transmitter Site, Christmas Lake Valley, Oregon. Heritage Research Associates Report No. 151.

1994 Prehistoric Land Use Patterns on Buffalo Flat, Christmas Lake Valley, Oregon. In Archaeological Researches in the Northern Great Basin: Fort Rock Archaeology Since --- Cressman, edited by C. Melvin Aikens and Dennis L. Jenkins. University of Oregon Anthropological Papers 50.

Outram, A. K.
2001 A New Approach to Identifying Bone Marrow and Grease Exploitation: Why the “Indeterminate” Fragments should not be Ignored. *Journal of Archaeological Science,* 28(4): 401-410.

Schiffer, Michael B.
1972 Archaeological Context and Systemic Context. *American Antiquity* 37(2): 156-165.

1987 *Formation Processes of the Archaeological Record*. University of New Mexico Press, Albuquerque.

Scott, Robert S., Peter S. Ungar, Torbjorn S. Bergstrom, Christopher A. Brown, Benjamin E. Childs, Mark F. Teaford, and Alan Walker
2006 Dental microwear texture analysis: technical considerations. Journal of Human Evolution 51:339-349.

Smith, James G. E.
1981 Chipewyan. In:Handbook of North American Indians, Volume 6: Subarctic. edited by Helm J., pp. 271-277. Washington, DC: Smithsonian Institution.

Speth, John D., Katherine A. Spielmann
1983 Energy Source, Protein Metabolism, and Hunter-Gatherer Subsistence Strategies. *Journal of Anthropological Archaeology* 2:1-31.

Soffer, Olga
1989 Storage, Sedentism, and the Eurasian Palaeolithic Record. *Antiquity* 64: 719-732.

Sullivan III, Alan P., and Kenneth C. Rozen
1985 Debitage Analysis and Archaeological Interpretation. *American Antiquity* 50(4):755-779.

Testart, Alain, Richard G. Forbis, Brian Hayden, Tim Ingold, Stephen M. Perlman, David L. Pokotylo, Peter Rowley-Conwy, and David E. Stuart
1982 The Significance of Food Storage Among Hunter-Gatherers: Residence Patterns, Population Densities, and Social Inequalities [and Comments and Reply]. *Current Anthropology* 23(5): 523–537.

Walker, D. E., Jr.
1967 Mutual cross-utilization of economic resources in the Plateau: An example from aboriginal Nez Perce fishing practices, Washington State University, Laboratory of Anthropology Report of Investigations No. 41, Pullman.

Wandsnider, LuAnn
1997 The Roasted and the Boiled: Food Composition and Heat Treatment with Special Emphasis on Pit-Hearth Cooking. *Journal of Anthropological Archaeology* 16(1): 1-48.

White, Theodore E.
1953 A method of calculating the dietary percentage of various food animals utilized by aboriginal peoples. *American Antiquity* 18(4): 396–398.

Wilke, Philip J., and Meg McDonald
1989 Prehistoric Use of Rock-Lined Cache Pits: California Deserts and Southwest. *Journal of California and Great Basin Anthropology* 11: 50-73.

Wilson, Bob
1992 Considerations for the identification of ritual deposits of animal bones in Iron Age pits. *International Journal of Osteoarchaeology* 2(4): 341–349.

Wing, Elizabeth S., and Elizabeth J. Reitz
2008 *Zooarchaeology*. Cambridge University Press.

Appendices

Appendix A

Debitage Aggregate Analysis Data from F59

Unit	Level	Catalog #	Reading #	Lithic Type	Material	Size Aggregate Analysis (cm^2)	Weight (g)	Count
Feature	1	32046	25975	DEB	CCS	2	0.09	1
Wall Fall	1	32047	25977	DEB	CCS	2	0.29	1
Wall Fall	1	32049	25978	DEB	CCS	3	0.38	1
Wall Fall	1	32052	25979	DEB	CCS	3	0.62	1
Feature	1	32053	25980	DEB	CCS	3	2.34	1
Feature	1	32050	25981	DEB	CCS	2	1.38	1
Feature	1	32048	25982	DEB	CCS	4	3.86	1
S	1	31762	26081	DEB	CCS	2	0.55	1
S	1	31763	26082	DEB	CCS	3	0.43	1
Feature	1	31285	25873	DEB	CCS	2	0.29	1
Feature	1	31278	25861	DEB	CCS	4	1.99	1
Feature	1	31268	25863	DEB	CCS	4	1.42	1
Feature	1	31293	25875	DEB	CCS	3	0.59	1
Feature	1	31251	25858	DEB	CCS	3	1.97	1
Feature	1	31275	25867	DEB	CCS	3	0.59	1
Feature	1	31260	25842	DEB	CCS	3	1.32	1
Feature	1	31254	25837	DEB	CCS	2	0.4	1
Feature	1	31280	25862	DEB	CCS	2	0.59	1
Feature	1	31257	25840	DEB	CCS	3	1.19	1
Feature	1	31255	25838	DEB	CCS	3	0.82	1
Feature	1	31292	25877	DEB	CCS	2	0.26	1
Feature	1	31270	25868	DEB	CCS	2	0.22	1
Feature	1	31273	25866	DEB	CCS	4	5.52	1
Feature	1	31272	25859	DEB	CCS	3	1.62	1
Feature	1	31277	25860	DEB	CCS	2	0.42	1
Feature	1	31271	25864	DEB	CCS	3	1.28	1
Feature	1	31262	25849	DEB	CCS	2	0.41	1
Feature	1	31286	25879	DEB	CCS	3	0.33	1
Feature	1	31256	25839	DEB	CCS	2	0.14	1
Feature	1	33516	26978	DEB	CCS	3	0.93	1
Feature	1	33520	26979	DEB	CCS	2	0.72	1
Feature	1	33521	26998	DEB	CCS	2	0.35	1
Feature	1	33518	26978	DEB	CCS	3	0.6	1
Feature	1	33519	26982	DEB	CCS	2	0.34	1
Feature	1	33523	26977	DEB	CCS	2	0.41	1
Feature	1	33515	26981	DEB	CCS	2	0.18	1
Feature	1	33517	26999	DEB	CCS	2	0.74	1
Feature	1	33522	26983	DEB	CCS	4	5.93	1
Feature	1	32043	26079	DEB	CCS	2	0.23	1
Feature	1	31338	25908	DEB	CCS	6+	46.46	1
Feature	1	31391	25940	DEB	Basalt	2	0.6	1
Feature	1	31402	25956	DEB	CCS	5	5.76	1
Feature	1	31397	25939	DEB	CCS	4	1.05	1
Feature	1	31406	25958	DEB	CCS	3	0.97	1
Feature	1	31390	25948	DEB	CCS	3	0.89	1

Feature	1	31411	25953	DEB	CCS	3	0.38	1
Feature	1	31412	25944	DEB	CCS	3	5.2	1
Feature	1	31388	25947	DEB	CCS	4	2.59	1
Feature	1	32045	25996	DEB	Basalt	4	0.72	1
Feature	1	31333	25910	DEB	CCS	3	1.56	1
Feature	1	31329	25916	DEB	CCS	2	0.28	1
Feature	1	31331	25911	DEB	CCS	4	4.88	1
Feature	1	31326	25912	DEB	CCS	3	2.78	1
Feature	1	31325	25914	DEB	CCS	2	0.48	1
Feature	1	31328	25917	DEB	CCS	2	0.44	1
Feature	1	31327	25918	DEB	CCS	3	0.61	1
Feature	1	31321	25922	DEB	CCS	3	1.24	1
Feature	1	31323	25920	DEB	CCS	3	3.79	1
Feature	1	31395	25937	DEB	CCS	3	0.48	1
Feature	1	31413	25938	DEB	CCS	4	1.9	1
Feature	1	31414	25942	DEB	CCS	3	2.21	1
Feature	1	31387	25943	DEB	CCS	6+	20.31	1
Feature	1	31386	25945	DEB	CCS	2	0.47	1
Feature	1	31400	25946	DEB	CCS	2	0.12	1
Feature	1	31389	25949	DEB	CCS	2	0.42	1
Feature	1	31404	25952	DEB	CCS	2	0.59	1
Feature	1	31409	25955	DEB	CCS	2	0.28	1
Feature	1	32044	25997	DEB	CCS	2	1.17	1
S	1	56636		DEB	CCS	1	0.06	1
S	1	56637		DEB	Metamorphic	1	0.06	1
S	1	56640		DEB	Basalt	5	2.01	1
S	1	56638		DEB	Obsidian	1	0.01	1
O	1	56635		DEB	CCS	1	0.01	2
S	1	56640		DEB	Basalt	2	3.57	20
S	1	56640		DEB	Basalt	1	1.26	15
S	1	56636		DEB	CCS	1	2.86	77
S	1	56636		DEB	CCS	1	0.03	1
S	1	56636		DEB	CCS	1	0.03	1
S	1	56636		DEB	CCS	1	0.06	1
S	1	56636		DEB	CCS	1	0.03	1
S	1	56636		DEB	CCS	1	0.05	1
S	1	56636		DEB	CCS	2	2.71	10
S	1	56636		DEB	CCS	2	6.97	47
S	1	56636		DEB	CCS	2	2.3	16
S	1	56636		DEB	CCS	3	2.98	4
S	1	56636		DEB	CCS	3	0.84	1
S	1	56636		DEB	CCS	3	0.6	1
S	1	56636		DEB	CCS	2	0.1	1
S	1	56636		DEB	CCS	2	0.09	1
S	1	56636		DEB	CCS	2	0.38	1
S	1	56636		DEB	CCS	2	0.18	1
S	1	56636		DEB	CCS	2	0.11	1
S	1	56636		DEB	CCS	2	0.15	1
S	1	56636		DEB	CCS	2	0.09	1
S	1	56636		DEB	CCS	2	0.12	1
S	1	56636		DEB	CCS	2	0.09	1
S	1	56636		DEB	CCS	2	0.11	1
S	1	56636		DEB	CCS	2	0.1	1
S	1	56636		DEB	CCS	2	0.08	1
Feature	1	33516	26997	DEB	CCS	4	2.81	1
Feature	1	33518	26978	DEB	CCS	4	1.68	1
S	2	31764	26105	DEB	CCS	3	2.71	1

S	2	31769	26106	DEB	CCS	2	0.53	1
S	2	31766	26107	DEB	CCS	2	0.33	1
S	2	31768	26108	DEB	CCS	2	0.89	1
S	2	31767	26109	DEB	CCS	3	0.74	1
S	3	29242	24857	DEB	CCS	3	1.71	1
S	3	29243	24858	DEB	CCS	2	0.53	1
S	3	29241	24859	DEB	CCS	4	4.82	1
S	3	31836	26143	DEB	Basalt	3	0.98	1
S	3	31837	26144	DEB	CCS	3	0.47	1
S	3	31838	26145	DEB	CCS	2	0.18	1
S	3	31839	26146	DEB	CCS	2	0.29	1
S	3	31835	26148	DEB	CCS	3	1.6	1
S	4	29244	24883	DEB	CCS	3	0.39	1
S	4	29245	24884	DEB	CCS	2	0.23	1
S	4	29247	24896	DEB	CCS	3	0.69	1
S	4	31909	26149	DEB	CCS	3	0.25	1
S	4	31910	26150	DEB	CCS	2	0.33	1
S	4	31908	26152	DEB	CCS	2	0.51	1
S	4	31905	26153	DEB	CCS	3	0.7	1
S	4	31907	26154	DEB	CCS	2	0.43	1
S	4	31917	26155	DEB	CCS	3	2.52	1
S	4	31906	26156	DEB	CCS	2	0.25	1
S	4	31916	26157	DEB	CCS	2	0.39	1
S	4	31915	26158	DEB	CCS	2	0.18	1
S	4	31914	26159	DEB	CCS	3	1.54	1
S	4	31912	26160	DEB	CCS	2	0.19	1
S	4	31913	26161	DEB	CCS	3	0.59	1
S	4	31911	26162	DEB	CCS	3	0.32	1
O	4	58018		DEB	CCS	1	0.36	11
O	4	58470		DEB	Basalt	1	0.13	2
O	4	58018		DEB	CCS	2	1.5	5
O	4	58018		DEB	CCS	2	0.81	2
O	4	58018		DEB	CCS	2	0.16	1
S	5	29326	24931	DEB	CCS	2	0.14	1
S	5	29327	24932	DEB	CCS	3	0.84	1
S	5	29329	24933	DEB	CCS	3	2.08	1
S	5	29422	24945	DEB	CCS	3	0.94	1
S	5	31958	26201	DEB	CCS	2	0.2	1
S	5	31959	26202	DEB	CCS	2	0.29	1
S	5	31957	26203	DEB	CCS	3	1.22	1
S	5	31953	26168	DEB	CCS	2	0.76	1
S	5	31955	26169	DEB	CCS	2	0.19	1
S	5	29421	24970	DEB	CCS	4	2.03	1
S	5	31954	26176	DEB	CCS	3	0.71	1
S	5	31956	26177	DEB	CCS	2	0.25	1
S	5	31961	26195	DEB	CCS	2	0.19	1
O	5	58026		DEB	CCS	1	0.23	6
O	5	58464		DEB	Basalt	1	0.04	4
O	5	58025		DEB	CCS	4	1.61	1
O	5	58026		DEB	CCS	1	0.06	1
O	5	58026		DEB	CCS	2	0.22	2
O	5	58026		DEB	CCS	2	0.41	2
O	5	58026		DEB	CCS	2	1.12	2
O	5	58026		DEB	CCS	3	1.36	2
S	6	32037	26204	DEB	CCS	2	0.14	1
S	6	32031	26231	DEB	CCS	2	0.25	1
S	6	32034	26232	DEB	CCS	3	0.85	1

S	6	32036	26233	DEB	CCS	3	0.89	1
S	6	32035	26242	DEB	CCS	4	1.76	1
S	6	32030	26243	DEB	CCS	3	0.78	1
S	6	32032	26244	DEB	CCS	2	0.3	1
S	6	32038	26245	DEB	CCS	3	1.95	1
S	6	32033	26246	DEB	CCS	2	0.16	1
O	6	58036		DEB	CCS	4	1.55	1
O	6	58035		DEB	CCS	1	0.76	18
O	6	58486		DEB	Basalt	1	0.22	5
O	6	58035		DEB	CCS	1	0.18	2
O	6	58035		DEB	CCS	2	1.17	6
O	6	58035		DEB	CCS	2	0.23	2
O	6	58035		DEB	CCS	2	0.51	3
O	6	58035		DEB	CCS	1	0.06	1
O	6	58035		DEB	CCS	1	0.03	1
O	6	58035		DEB	CCS	1	0.01	1
O	6	58035		DEB	CCS	2	0.34	1
O	6	58035		DEB	CCS	2	0.13	1
O	6	58035		DEB	CCS	2	0.25	1
O	6	58035		DEB	CCS	2	0.16	1
O	6	58035		DEB	CCS	2	0.15	1
O	6	58035		DEB	CCS	2	0.08	1
O	6	58486		DEB	Basalt	2	0.28	2
S	7	29427	24973	DEB	CCS	2	0.3	1
S	7	29488	24983	DEB	CCS	3	0.44	1
S	7	32095	26271	DEB	CCS	3	2.14	1
S	7	32094	26272	DEB	CCS	3	0.48	1
S	7	32098	26273	DEB	CCS	3	0.24	1
S	7	32096	26274	DEB	CCS	2	0.15	1
O	7	58047		DEB	CCS	1	1.09	27
O	7	58484		DEB	Basalt	1	0.56	7
O	7	58047		DEB	CCS	1	0.03	1
O	7	58047		DEB	CCS	2	2.62	13
O	7	58047		DEB	CCS	2	0.47	2
O	7	58047		DEB	CCS	2	1.33	4
O	7	58047		DEB	CCS	3	1.22	1
O	7	58047		DEB	CCS	2	0.13	1
O	7	58047		DEB	CCS	2	0.47	1
O	7	58047		DEB	CCS	2	0.4	1
O	7	58047		DEB	CCS	2	0.49	1
R	8	29498	25003	DEB	CCS	2	0.41	1
R	8	29497	25002	DEB	CCS	2	0.21	1
S	8	29495	25000	DEB	CCS	2	0.13	1
S	8	29496	25001	DEB	CCS	2	0.4	1
S	8	29499	25004	DEB	CCS	2	0.29	1
S	8	29500	25005	DEB	CCS	2	0.1	1
S	8	44882	25019	DEB	CCS	4	0.158	1
S	8	44883	25020	DEB	CCS	3	0.38	1
S	8	32122	26293	DEB	CCS	3	0.66	1
S	8	32120	26294	DEB	CCS	2	0.13	1
S	8	32118	26295	DEB	CCS	3	1.56	1
S	8	32116	26296	DEB	CCS	4	1.71	1
S	8	32113	26298	DEB	CCS	2	0.3	1
S	8	32263	26346	DEB	CCS	2	0.12	1
S	8	32226	26330	DEB	CCS	2	0.62	1
S	8	32227	26333	DEB	CCS	2	0.42	1
S	8	32229	26336	DEB	CCS	3	0.99	1

S	8	32232	26334	DEB	CCS	2	0.22	1
S	8	44881	25018	DEB	CCS	2	0.19	1
O	8	58052		DEB	CCS	1	1	29
O	8	58477		DEB	Basalt	1	0.52	12
O	8	58053		DEB	CCS	2	0.48	1
O	8	58055		DEB	CCS	3	1.01	1
O	8	58056		DEB	CCS	4	2.42	1
O	8	58058		DEB	CCS	4	2.63	1
O	8	58052		DEB	CCS	1	0.08	1
O	8	58052		DEB	CCS	2	0.1	1
O	8	58052		DEB	CCS	2	1.3	10
O	8	58052		DEB	CCS	2	1.57	5
O	8	58052		DEB	CCS	2	0.16	1
O	8	58477		DEB	Basalt	2	0.86	3
S	9	29566	25025	DEB	CCS	2	0.34	1
S	9	29564	25026	DEB	CCS	3	0.98	1
S	9	29563	25027	DEB	CCS	2	0.35	1
S	9	29562	25028	DEB	CCS	2	0.36	1
S	9	29616	25034	DEB	CCS	2	0.47	1
S	9	29614	25035	DEB	CCS	2	0.38	1
S	9	29612	25036	DEB	CCS	4	1.78	1
S	9	29619	25037	DEB	CCS	3	0.29	1
S	9	29602	25038	DEB	CCS	3	0.27	1
S	9	29609	25042	DEB	CCS	3	0.78	1
S	9	29605	25043	DEB	CCS	2	0.19	1
S	9	29608	25044	DEB	CCS	3	0.33	1
S	9	32301	26355	DEB	CCS	2	0.26	1
S	9	32300	26356	DEB	CCS	2	0.26	1
S	9	32299	26357	DEB	CCS	3	3.33	1
S	9	32298	26358	DEB	CCS	3	0.76	1
S	9	32297	26359	DEB	CCS	2	0.45	1
S	9	32294	26361	DEB	CCS	2	0.21	1
S	9	32295	26360	DEB	CCS	3	0.51	1
S	9	32293	26362	DEB	CCS	4	1.52	1
S	9	32393	26365	DEB	CCS	2	0.29	1
S	9	32392	26366	DEB	Basalt	2	0.19	1
S	9	32391	26367	DEB	CCS	3	0.56	1
S	9	32390	26369	DEB	CCS	4	1.97	1
S	9	32387	26370	DEB	CCS	2	0.25	1
S	9	32389	26371	DEB	CCS	3	1.17	1
S	9	32382	26381	DEB	CCS	2	0.24	1
S	9	32383	26382	DEB	CCS	2	0.56	1
S	9	32381	26383	DEB	CCS	2	0.06	1
S	9	32386	26385	DEB	CCS	2	0.24	1
S	9	32378	26386	DEB	CCS	2	0.18	1
S	9	32388	26388	DEB	CCS	4	1.78	1
S	9	32385	26389	DEB	CCS	3	0.75	1
S	9	32384	26390	DEB	Basalt	2	0.7	1
O	9	58063		DEB	CCS	1	0.39	11
O	9	58479		DEB	Basalt	1	0.28	3
O	9	58063		DEB	CCS	2	0.89	4
O	9	58063		DEB	CCS	2	0.2	2
O	9	58063		DEB	CCS	2	0.11	1
O	9	58063		DEB	CCS	2	0.15	1
O	9	58063		DEB	CCS	3	2.47	2
S	10	29666	25022	DEB	CCS	2	0.32	1
S	10	29663	25063	DEB	CCS	3	1.31	1

S	10	29661	25064	DEB	CCS	2	0.48	1
S	10	29659	25065	DEB	CCS	3	0.43	1
S	10	29654	25066	DEB	CCS	6	17.29	1
S	10	29656	25067	DEB	CCS	2	0.25	1
S	10	29650	25070	DEB	CCS	2	0.19	1
S	10	32410	26395	DEB	CCS	2	0.1	1
S	10	32405	26396	DEB	CCS	4	1.53	1
S	10	32418	26398	DEB	CCS	4	5.76	1
S	10	32421	26399	DEB	CCS	3	0.57	1
S	10	32432	26406	DEB	CCS	2	0.14	1
S	10	32428	26407	DEB	CCS	2	0.45	1
S	10	29655	25062	DEB	CCS	4	2.59	1
S	10	29657	25061	DEB	CCS	3	0.62	1
S	11	29696	25089	DEB	CCS	2	0.21	1
S	11	29793	25125	DEB	CCS	4	3.43	1
S	11	29791	25126	DEB	CCS	3	0.85	1
S	11	29835	25153	DEB	CCS	3	0.69	1
S	11	32460	26447	DEB	CCS	3	2.89	1
S	11	32472	26448	DEB	CCS	5	7.75	1
S	11	32477	26449	DEB	CCS	2	0.09	1
S	11	32463	26450	DEB	CCS	2	0.44	1
S	11	32476	26451	DEB	CCS	2	0.36	1
S	11	32474	26452	DEB	CCS	2	0.46	1
S	11	32478	26453	DEB	CCS	3	0.86	1
S	11	32468	26455	DEB	CCS	3	1.7	1
S	11	32458	26456	DEB	CCS	2	0.67	1
S	11	32470	26457	DEB	CCS	3	0.45	1
S	11	32459	26458	DEB	CCS	4	2.21	1
S	11	32479	26459	DEB	CCS	2	0.38	1
S	11	32469	26460	DEB	CCS	3	0.48	1
S	11	32462	26462	DEB	CCS	3	0.14	1
S	11	32466	26463	DEB	CCS	2	0.17	1
S	11	32465	26464	DEB	CCS	2	0.25	1
S	12	29953	25166	DEB	Basalt	2	0.2	1
S	12	29956	25167	DEB	CCS	3	0.82	1
S	12	29960	25189	DEB	CCS	2	0.27	1
S	12	29951	25190	DEB	CCS	3	1.17	1
S	12	29962	25191	DEB	CCS	2	0.3	1
S	12	29963	25192	DEB	CCS	3	0.94	1
S	12	32667	26465	DEB	CCS	2	0.2	1
S	12	32653	26466	DEB	CCS	2	0.18	1
S	12	32646	26467	DEB	CCS	2	0.33	1
S	12	32641	26469	DEB	CCS	2	0.12	1
S	12	32638	26470	DEB	CCS	3	0.7	1
S	12	32632	26471	DEB	CCS	2	0.16	1
S	12	32629	26473	DEB	CCS	2	0.32	1
S	12	32673	26474	DEB	CCS	3	0.61	1
S	12	32669	26475	DEB	CCS	2	0.6	1
S	12	32670	26476	DEB	CCS	2	0.14	1
S	12	32663	26477	DEB	CCS	3	0.48	1
S	12	32671	26478	DEB	CCS	3	1.81	1
S	12	32659	26479	DEB	CCS	4	2.59	1
S	12	32658	26480	DEB	CCS	2	0.47	1
S	12	32655	26481	DEB	CCS	2	0.26	1
S	12	32662	26482	DEB	CCS	4	2.46	1
S	13	30058	25244	DEB	CCS	4	2.57	1
S	13	30046	25225	DEB	CCS	3	1.14	1

S	13	30044	25226	DEB	CCS	2	0.23	1
S	13	30045	25227	DEB	CCS	2	0.38	1
S	13	30047	25228	DEB	CCS	3	1.39	1
S	13	32661	26490	DEB	CCS	3	1.12	1
S	13	32656	26491	DEB	CCS	2	0.14	1
S	13	32652	26492	DEB	CCS	3	0.16	1
S	13	32664	26493	DEB	CCS	3	0.53	1
S	13	32635	26494	DEB	CCS	2	0.11	1
S	13	32648	26495	DEB	CCS	2	0.18	1
S	13	32668	26496	DEB	Basalt	3	2.03	1
S	13	32645	26500	DEB	CCS	3	0.18	1
S	13	32666	26501	DEB	CCS	5	12.75	1
S	14	32704	26528	DEB	CCS	3	1.42	1
S	14	32705	26529	DEB	CCS	2	0.14	1
S	14	32702	26530	DEB	Basalt	2	1.08	1
S	14	32703	26531	DEB	CCS	4	1.97	1
S	14	32701	26532	DEB	CCS	3	0.62	1
S	14	32700	26533	DEB	CCS	5	2.97	1
S	14	30123	25250	DEB	CCS	4	2.08	1
S	14	30124	25251	DEB	CCS	3	0.43	1
S	14	30125	25252	DEB	CCS	3	0.34	1
S	14	30127	25253	DEB	CCS	2	0.66	1
S	14	32698	26554	DEB	CCS	2	0.13	1
S	14	32697	26555	DEB	Basalt	3	0.77	1
S	14	32699	26556	DEB	CCS	3	1.48	1
S	14	32694	26557	DEB	CCS	2	0.19	1
S	14	32693	26558	DEB	CCS	2	0.67	1
S	14	32695	26570	DEB	CCS	2	0.45	1
S	14	30119	25272	DEB	CCS	3	0.32	1
S	14	30118	25273	DEB	CCS	2	0.53	1
S	14	30121	25275	DEB	CCS	3	0.74	1
S	14	30112	25276	DEB	CCS	2	0.13	1
S	14	30120	25278	DEB	CCS	2	0.24	1
S	14	30137	25283	DEB	CCS	2	0.55	1
S	14	30138	25284	DEB	CCS	2	0.24	1
S	14	30135	25285	DEB	CCS	3	0.8	1
S	14	30131	25287	DEB	CCS	3	1.48	1
S	15	30202	25295	DEB	CCS	2	0.4	1
S	15	30201	25296	DEB	CCS	4	1.97	1
S	15	30206	25316	DEB	CCS	2	0.41	1
S	15	30205	25317	DEB	CCS	2	0.42	1
S	15	30199	25318	DEB	CCS	3	0.79	1
S	15	30196	25319	DEB	CCS	2	0.28	1
S	15	30197	25321	DEB	CCS	3	0.6	1
S	15	30204	25322	DEB	CCS	3	1.47	1
S	15	30200	25323	DEB	CCS	5	11.67	1
S	15	30194	25326	DEB	CCS	3	1.04	1
S	15	30288	25333	DEB	CCS	2	0.23	1
S	15	30290	25334	DEB	CCS	2	0.29	1
S	15	32754	26575	DEB	CCS	2	0.1	1
S	15	32753	26576	DEB	CCS	5	8.6	1
S	15	32752	26578	DEB	CCS	3	0.67	1
S	15	32751	26579	DEB	CCS	2	0.25	1
S	15	32757	26590	DEB	CCS	2	0.17	1
S	15	32758	26592	DEB	CCS	2	0.3	1
S	15	32755	26593	DEB	CCS	2	0.92	1
S	15	32756	26594	DEB	CCS	2	0.31	1

S	15	32750	26595	DEB	CCS	2	0.11	1
S	16	30321	25340	DEB	CCS	1	0.1	1
S	16	30319	25341	DEB	CCS	2	0.19	1
S	16	30315	25351	DEB	Metamorphic	6+	370	1
S	16	30324	25353	DEB	CCS	2	0.2	1
S	16	30323	25354	DEB	CCS	3	0.8	1
S	16	30322	25355	DEB	CCS	5	6.64	1
S	16	30318	25356	DEB	CCS	3	0.66	1
S	16	30317	25357	DEB	CCS	3	1.86	1
S	16	30320	25360	DEB	CCS	3	0.57	1
S	16	30436	25363	DEB	CCS	3	0.7	1
S	16	30427	25376	DEB	CCS	4	1.4	1
S	16	30431	25377	DEB	CCS	2	0.37	1
S	16	30433	25378	DEB	CCS	2	0.39	1
S	16	30462	25379	DEB	CCS	3	0.36	1
S	16	30424	25385	DEB	CCS	3	0.68	1
S	16	30437	25386	DEB	CCS	3	0.76	1
S	16	30430	25387	DEB	CCS	2	0.53	1
S	16	32815	26601	DEB	CCS	3	1.71	1
S	16	32816	26603	DEB	CCS	4	1.06	1
S	16	32814	26602	DEB	CCS	3	1.72	1
S	16	32818	26605	DEB	CCS	2	0.39	1
S	16	32819	26606	DEB	CCS	2	0.15	1
S	16	32820	26607	DEB	CCS	2	0.35	1
S	16	32809	26608	DEB	CCS	2	0.43	1
S	16	32811	26621	DEB	CCS	2	0.11	1
S	16	32812	26622	DEB	CCS	2	0.33	1
S	16	32813	26623	DEB	CCS	2	0.12	1
S	16	32817	26604	DEB	CCS	2	0.07	1
S	16	32879	26626	DEB	CCS	2	0.29	1
S	16	32877	26627	DEB	CCS	2	0.2	1
S	16	32810	26624	DEB	CCS	2	0.24	1
S	16	32880	26625	DEB	CCS	2	0.06	1
S	16	32876	26628	DEB	CCS	5	3.18	1
S	16	32874	26629	DEB	CCS	4	3.56	1
S	16	32873	26630	DEB	CCS	2	0.17	1
S	16	32871	26631	DEB	CCS	2	0.06	1
S	16	32867	26633	DEB	CCS	2	0.39	1
S	17	30599	25398	DEB	CCS	3	1.06	1
S	17	30598	25399	DEB	CCS	3	2.04	1
S	17	30588	25411	DEB	CCS	3	0.74	1
S	17	30591	25412	DEB	CCS	2	0.12	1
S	17	30585	25416	DEB	CCS	3	0.54	1
S	17	30582	25445	DEB	CCS	3	0.37	1
S	17	30590	25447	DEB	CCS	2	0.34	1
S	17	30595	25448	DEB	CCS	2	0.36	1
S	17	30600	25462	DEB	CCS	4	1.14	1
S	17	33019	26668	DEB	CCS	3	1.35	1
S	17	33023	26669	DEB	CCS	2	0.06	1
S	17	33024	26670	DEB	CCS	2	0.23	1
S	17	33016	26672	DEB	CCS	2	0.3	1
S	17	33022	26671	DEB	CCS	4	4.1	1
S	17	33020	26682	DEB	CCS	2	0.07	1
S	17	33018	26683	DEB	CCS	3	1.32	1
S	17	33015	26684	DEB	CCS	2	0.57	1
S	17	33017	26686	DEB	CCS	2	0.56	1
S	17	32995	26687	DEB	CCS	3	0.28	1

S	17	33001	26691	DEB	CCS	2	0.29	1
S	17	33021	26692	DEB	CCS	4	1.28	1
S	17	33008	26695	DEB	CCS	2	0.12	1
S	17	33012	26696	DEB	CCS	2	0.29	1
S	17	32999	26697	DEB	CCS	2	0.15	1
S	17	33011	26698	DEB	CCS	2	0.67	1
S	17	33003	26699	DEB	CCS	2	0.27	1
S	17	33014	26700	DEB	CCS	2	0.14	1
S	17	33010	26701	DEB	CCS	2	0.23	1
S	17	33009	26702	DEB	CCS	2	0.23	1
S	17	33007	26703	DEB	CCS	3	0.81	1
S	17	33006	26707	DEB	CCS	2	0.35	1
S	17	32992	26706	DEB	CCS	2	0.31	1
S	17	33025	26716	DEB	CCS	2	0.58	1
S	17	32998	26709	DEB	CCS	2	0.3	1
S	17	32989	26710	DEB	CCS	3	1.05	1
S	17	33004	26711	DEB	CCS	2	0.19	1
S	17	32990	26712	DEB	CCS	2	0.33	1
S	17	33028	26713	DEB	CCS	2	0.79	1
S	17	33027	26714	DEB	CCS	2	0.23	1
S	17	33026	26715	DEB	CCS	3	0.37	1
S	17	32988	26717	DEB	CCS	2	0.26	1
S	18	32063	25482	DEB	CCS	3	0.41	1
S	18	32062	25483	DEB	CCS	3	3.65	1
S	18	32058	25484	DEB	CCS	2	0.08	1
S	18	32064	25486	DEB	CCS	2	0.82	1
S	18	32060	25487	DEB	CCS	2	0.42	1
S	18	32059	25488	DEB	CCS	6+	34.85	1
S	18	32061	25489	DEB	CCS	5	5.08	1
S	18	32066	25501	DEB	CCS	2	0.46	1
S	18	33221	26721	DEB	CCS	3	0.56	1
S	18	33264	26722	DEB	CCS	1	0.02	1
S	18	33238	26723	DEB	CCS	2	0.42	1
S	18	33231	26724	DEB	CCS	3	0.22	1
S	18	33234	26725	DEB	CCS	2	0.33	1
S	18	33241	26726	DEB	CCS	2	0.18	1
S	18	33277	26728	DEB	CCS	2	0.4	1
S	18	33229	26729	DEB	CCS	3	1.22	1
S	18	33275	26730	DEB	CCS	2	0.06	1
S	18	33259	26731	DEB	CCS	2	0.06	1
S	18	33271	26732	DEB	CCS	2	0.22	1
S	18	33255	26734	DEB	CCS	2	0.51	1
S	18	33236	26735	DEB	CCS	2	0.39	1
S	18	33250	26736	DEB	CCS	2	0.24	1
S	18	33249	26737	DEB	CCS	2	0.19	1
S	18	33262	26738	DEB	CCS	3	0.89	1
S	18	33246	26739	DEB	CCS	1	0.03	1
S	18	33248	26740	DEB	CCS	2	0.28	1
S	18	33251	26741	DEB	CCS	3	1.27	1
S	18	33252	26742	DEB	CCS	2	0.07	1
S	18	33253	26743	DEB	CCS	2	0.22	1
S	18	33254	26744	DEB	CCS	2	0.12	1
S	18	33257	26745	DEB	CCS	2	0.17	1
S	18	33256	26746	DEB	CCS	4	7.22	1
S	18	33224	26747	DEB	CCS	2	0.5	1
S	18	33233	26748	DEB	CCS	2	0.21	1
S	18	33243	26749	DEB	CCS	3	0.78	1

S	18	33205	26750	DEB	CCS	2	0.21	1
S	18	33203	26751	DEB	CCS	2	0.3	1
S	18	33201	26752	DEB	CCS	2	0.22	1
S	18	33218	26753	DEB	CCS	2	0.05	1
S	18	33211	26754	DEB	CCS	3	0.17	1
S	18	33208	26755	DEB	CCS	2	0.61	1
S	18	33163	26784	DEB	CCS	2	0.21	1
S	19	30689	25529	DEB	CCS	2	0.7	1
S	19	30688	25530	DEB	CCS	2	0.66	1
S	19	30686	25531	DEB	CCS	2	0.62	1
S	19	30699	25532	DEB	CCS	3	0.25	1
S	19	30685	25533	DEB	CCS	3	2.08	1
S	19	30684	25534	DEB	CCS	2	0.17	1
S	19	30682	25536	DEB	CCS	2	0.42	1
S	19	30710	25538	DEB	CCS	3	1.52	1
S	19	30708	25540	DEB	CCS	4	4.81	1
S	19	30707	25541	DEB	CCS	2	0.67	1
S	19	30706	25542	DEB	CCS	3	1.31	1
S	19	30705	25543	DEB	CCS	2	1.16	1
S	19	33192	26762	DEB	CCS	3	0.76	1
S	19	33196	26763	DEB	CCS	2	0.14	1
S	19	33194	26765	DEB	CCS	4	2.11	1
S	19	33189	26766	DEB	Basalt	6+	55.66	1
S	19	33198	26772	DEB	CCS	2	0.41	1
S	19	33197	26773	DEB	CCS	2	0.09	1
S	20	33179	26783	DEB	Basalt	2	0.88	1
S	20	33188	26789	DEB	CCS	2	0.28	1
S	20	33183	26799	DEB	CCS	2	0.57	1
S	20	33180	26792	DEB	CCS	3	1.77	1
S	20	33178	26797	DEB	CCS	2	0.16	1
S	20	33175	26794	DEB	CCS	2	0.12	1
S	20	33171	26788	DEB	CCS	2	0.49	1
S	20	33172	26782	DEB	CCS	3	0.28	1
S	20	33191	26761	DEB	CCS	2	0.6	1
S	20	30739	25571	DEB	CCS	3	0.81	1
S	20	30741	25570	DEB	CCS	2	0.12	1
S	20	33181	26780	DEB	CCS	3	2.69	1
S	20	30773	25590	DEB	CCS	3	0.66	1
S	20	30745	25567	DEB	CCS	2	0.4	1
S	20	30735	25574	DEB	CCS	2	0.43	1
S	20	30769	25592	DEB	CCS	2	0.49	1
S	20	30782	25597	DEB	CCS	3	0.28	1
S	20	30766	25594	DEB	CCS	3	0.75	1
S	20	30786	25600	DEB	CCS	3	0.25	1
S	20	33174	26795	DEB	Basalt	2	0.03	1
S	20	33184	26796	DEB	CCS	5	7.36	1
S	20	33186	26787	DEB	CCS	2	0.05	1
S	20	33176	26790	DEB	CCS	2	0.16	1
S	20	33177	26791	DEB	CCS	2	0.44	1
S	20	33187	26793	DEB	CCS	3	0.43	1
S	20	33185	26781	DEB	CCS	5	7.64	1
S	20	30774	25589	DEB	CCS	2	0.2	1
S	20	33182	26798	DEB	CCS	2	0.39	1
S	20	30768	25593	DEB	Basalt	2	0.78	1
S	20	30737	25573	DEB	CCS	3	0.42	1
S	20	30744	25568	DEB	CCS	3	0.77	1
S	20	33169	26786	DEB	CCS	2	0.11	1

S	20	30738	25572	DEB	CCS	2	0.72	1
S	20	30764	25595	DEB	CCS	2	0.35	1
S	20	33166	26785	DEB	CCS	2	0.33	1
S	21	30865	25625	DEB	CCS	6+	17.5	1
S	21	30871	25621	DEB	CCS	3	0.25	1
S	21	30867	25623	DEB	CCS	3	0.69	1
S	21	30863	25627	DEB	CCS	3	0.79	1
S	21	30860	25628	DEB	CCS	3	2.57	1
S	21	30859	25629	DEB	CCS	3	1.38	1
S	21	30872	25620	DEB	CCS	3	0.75	1
S	21	30857	25630	DEB	CCS	2	0.35	1
S	21	30856	25631	DEB	CCS	2	0.19	1
S	21	30893	25650	DEB	CCS	2	0.49	1
S	21	30892	25651	DEB	CCS	5	14.75	1
S	21	30891	25652	DEB	CCS	2	0.23	1
S	21	30960	25689	DEB	CCS	5	0.15	1
S	21	33360	26820	DEB	CCS	2	0.24	1
S	21	33379	26823	DEB	CCS	2	0.44	1
S	21	33382	26819	DEB	CCS	2	0.12	1
S	21	33352	26860	DEB	CCS	2	0.09	1
S	21	33383	26824	DEB	CCS	2	0.26	1
S	21	33370	26835	DEB	CCS	2	0.07	1
S	21	33380	26836	DEB	CCS	2	0.42	1
S	21	33356	26861	DEB	CCS	2	0.11	1
S	21	33378	26839	DEB	CCS	4	3.33	1
S	21	33355	26840	DEB	CCS	2	0.26	1
S	21	33367	26822	DEB	CCS	2	0.09	1
S	21	33381	26838	DEB	CCS	2	0.28	1
S	21	33374	26837	DEB	CCS	2	0.07	1
S	21	33358	26859	DEB	CCS	3	0.44	1
S	21	33377	26841	DEB	CCS	3	1.43	1
S	21	33377	26841	DEB	CCS	2	0.19	1
S	22	33442	26938	DEB	CCS	3	2.05	1
S	22	33439	26905	DEB	CCS	3	0.78	1
S	22	33441	26904	DEB	CCS	2	0.21	1
S	22	33443	26907	DEB	CCS	2	0.35	1
S	23	31067	25762	DEB	CCS	2	0.47	1
S	23	31065	25763	DEB	CCS	2	0.36	1
17	23	44289	43900	DEB	Basalt	2	0.2	1

Appendix B

Debitage Attribute Analysis from F59

Unit	Level	Catalog #	Reading #	Tool Type	Material	Platform Type	Angle Platform (°)	Thickness (mm) Platform
Feature	1	32046	25975	DEB	CCS	N/A		
Wall Fall	1	32047	25977	DEB	CCS	Complex	50	1.93
Wall Fall	1	32049	25978	DEB	CCS	N/A		
Wall Fall	1	32052	25979	DEB	CCS	N/A		
Feature	1	32053	25980	DEB	CCS	N/A		
Feature	1	32050	25981	DEB	CCS	N/A		
Feature	1	32048	25982	DEB	CCS	N/A		
S	1	31762	26081	DEB	CCS	N/A		
S	1	31763	26082	DEB	CCS	N/A		
Feature	1	31285	25873	DEB	CCS	N/A		
Feature	1	31278	25861	DEB	CCS	Complex	55	2.09
Feature	1	31268	25863	DEB	CCS	Complex	65	1.22
Feature	1	31293	25875	DEB	CCS	N/A		
Feature	1	31251	25858	DEB	CCS	Flat	69	2.06
Feature	1	31275	25867	DEB	CCS	N/A		
Feature	1	31260	25842	DEB	CCS	Complex	60	2.39
Feature	1	31254	25837	DEB	CCS	Complex	50	2.24
Feature	1	31280	25862	DEB	CCS	N/A		
Feature	1	31257	25840	DEB	CCS	N/A		
Feature	1	31255	25838	DEB	CCS	Flat	45	2.39
Feature	1	31292	25877	DEB	CCS	N/A		
Feature	1	31270	25868	DEB	CCS	N/A		
Feature	1	31273	25866	DEB	CCS	N/A		
Feature	1	31272	25859	DEB	CCS	Complex	63	2.38
Feature	1	31277	25860	DEB	CCS	Complex	57	1.86
Feature	1	31271	25864	DEB	CCS	Complex	65	2.64
Feature	1	31262	25849	DEB	CCS	Complex	45	3.66
Feature	1	31286	25879	DEB	CCS	N/A		
Feature	1	31256	25839	DEB	CCS	N/A		
Feature	1	33516	26978	DEB	CCS	Complex	48	2.12
Feature	1	33520	26979	DEB	CCS	N/A		

Feature	1	33521	26998	DEB	CCS	Complex		46	1.7
Feature	1	33518	26978	DEB	CCS	N/A			
Feature	1	33519	26982	DEB	CCS	N/A			
Feature	1	33523	26977	DEB	CCS	Complex		45	1.4
Feature	1	33515	26981	DEB	CCS	N/A			
Feature	1	33517	26999	DEB	CCS	N/A			
Feature	1	33522	26983	DEB	CCS	N/A			
Feature	1	32043	26079	DEB	CCS	Complex		30	2.52
Feature	1	31338	25908	DEB	CCS	N/A			
Feature	1	31391	25940	DEB	Basalt	Complex		50	2.86
Feature	1	31402	25956	DEB	CCS	Complex		47	3.05
Feature	1	31397	25939	DEB	CCS	N/A			
Feature	1	31406	25958	DEB	CCS	N/A			
Feature	1	31390	25948	DEB	CCS	N/A			
Feature	1	31411	25953	DEB	CCS	Flat		71	1.15
Feature	1	31412	25944	DEB	CCS	N/A			
Feature	1	31388	25947	DEB	CCS	N/A			
Feature	1	32045	25996	DEB	Basalt	N/A			
Feature	1	31333	25910	DEB	CCS	N/A			
Feature	1	31329	25916	DEB	CCS	N/A			
Feature	1	31331	25911	DEB	CCS	Complex		62	6.15
Feature	1	31326	25912	DEB	CCS	N/A			
Feature	1	31325	25914	DEB	CCS	Complex		58	2.94
Feature	1	31328	25917	DEB	CCS	N/A			
Feature	1	31327	25918	DEB	CCS	N/A			
Feature	1	31321	25922	DEB	CCS	N/A			
Feature	1	31323	25920	DEB	CCS	N/A			
Feature	1	31395	25937	DEB	CCS	N/A			
Feature	1	31413	25938	DEB	CCS	N/A			
Feature	1	31414	25942	DEB	CCS	N/A			
Feature	1	31387	25943	DEB	CCS	N/A			
Feature	1	31386	25945	DEB	CCS	Cortical	N/A		2.61
Feature	1	31400	25946	DEB	CCS	Flat		78	1.32
Feature	1	31389	25949	DEB	CCS	N/A			
Feature	1	31404	25952	DEB	CCS	N/A			
Feature	1	31409	25955	DEB	CCS	Complex	N/A		1.14
Feature	1	32044	25997	DEB	CCS	N/A			
S	1	56636		DEB	CCS	N/A			
S	1	56637		DEB	Metamorphic	N/A			
S	1	56640		DEB	Basalt	Complex		40	2.21
S	1	56638		DEB	Obsidian	Complex	N/A		0.44
O	1	56635		DEB	CCS	N/A			
S	1	56640		DEB	Basalt	N/A			

S	1	56640		DEB	Basalt	N/A			
S	1	56636		DEB	CCS	N/A			
S	1	56636		DEB	CCS	Complex	N/A		0.79
S	1	56636		DEB	CCS	Complex	N/A		0.92
S	1	56636		DEB	CCS	Complex		42	0.76
S	1	56636		DEB	CCS	Flat		77	0.82
S	1	56636		DEB	CCS	Complex		30	1.06
S	1	56636		DEB	CCS	N/A			
S	1	56636		DEB	CCS	N/A			
S	1	56636		DEB	CCS	N/A			
S	1	56636		DEB	CCS	N/A			
S	1	56636		DEB	CCS	Complex		38	1.93
S	1	56636		DEB	CCS	Complex		50	2.35
S	1	56636		DEB	CCS	Complex		65	1.73
S	1	56636		DEB	CCS	Flat		70	1.51
S	1	56636		DEB	CCS	Complex	N/A		0.77
S	1	56636		DEB	CCS	Complex		55	1.82
S	1	56636		DEB	CCS	Complex	N/A		1.14
S	1	56636		DEB	CCS	Complex		44	2.76
S	1	56636		DEB	CCS	Flat		88	1.11
S	1	56636		DEB	CCS	Complex		45	2.28
S	1	56636		DEB	CCS	Complex		30	1.04
S	1	56636		DEB	CCS	Complex		47	1.66
S	1	56636		DEB	CCS	Complex		41	1.32
S	1	56636		DEB	CCS	Complex		43	1.64
Feature	1	33516	26997	DEB	CCS	N/A			
Feature	1	33518	26978	DEB	CCS	N/A			
S	2	31764	26105	DEB	CCS	Complex		50	5.96
S	2	31769	26106	DEB	CCS	N/A			
S	2	31766	26107	DEB	CCS	N/A			
S	2	31768	26108	DEB	CCS	Cortical		60	2.93
S	2	31767	26109	DEB	CCS	N/A			
S	3	29242	24857	DEB	CCS	N/A			
S	3	29243	24858	DEB	CCS	Complex		47	1.62
S	3	29241	24859	DEB	CCS	Complex		27	3.99
S	3	31836	26143	DEB	Basalt	Flat		65	3.99
S	3	31837	26144	DEB	CCS	Complex		47	1.36
S	3	31838	26145	DEB	CCS	Complex		45	1.33
S	3	31839	26146	DEB	CCS	Complex		30	3.24
S	3	31835	26148	DEB	CCS	Flat		68	3.12
S	4	29244	24883	DEB	CCS	N/A			
S	4	29245	24884	DEB	CCS	N/A			
S	4	29247	24896	DEB	CCS	N/A			

S	4	31909	26149	DEB	CCS	N/A		
S	4	31910	26150	DEB	CCS	Complex	52	2.16
S	4	31908	26152	DEB	CCS	N/A		
S	4	31905	26153	DEB	CCS	Complex	58	1.59
S	4	31907	26154	DEB	CCS	N/A		
S	4	31917	26155	DEB	CCS	N/A		
S	4	31906	26156	DEB	CCS	Complex	48	3.06
S	4	31916	26157	DEB	CCS	Complex	32	3.81
S	4	31915	26158	DEB	CCS	N/A		
S	4	31914	26159	DEB	CCS	Complex	70	3.08
S	4	31912	26160	DEB	CCS	Complex	58	1.96
S	4	31913	26161	DEB	CCS	Complex	32	1.91
S	4	31911	26162	DEB	CCS	N/A		
O	4	58018		DEB	CCS	N/A		
O	4	58470		DEB	Basalt	N/A		
O	4	58018		DEB	CCS	N/A		
O	4	58018		DEB	CCS	N/A		
O	4	58018		DEB	CCS	Complex	45	1.76
S	5	29326	24931	DEB	CCS	N/A		
S	5	29327	24932	DEB	CCS	N/A		
S	5	29329	24933	DEB	CCS	N/A		
S	5	29422	24945	DEB	CCS	Complex	60	1.87
S	5	31958	26201	DEB	CCS	Complex	45	2.78
S	5	31959	26202	DEB	CCS	N/A		
S	5	31957	26203	DEB	CCS	N/A		
S	5	31953	26168	DEB	CCS	N/A		
S	5	31955	26169	DEB	CCS	N/A		
S	5	29421	24970	DEB	CCS	Flat	80	3.8
S	5	31954	26176	DEB	CCS	N/A		
S	5	31956	26177	DEB	CCS	N/A		
S	5	31961	26195	DEB	CCS	Complex	44	1.93
O	5	58026		DEB	CCS	N/A		
O	5	58464		DEB	Basalt	N/A		
O	5	58025		DEB	CCS	Complex	55	1.89
O	5	58026		DEB	CCS	Complex	25	1.98
O	5	58026		DEB	CCS	N/A		
O	5	58026		DEB	CCS	N/A		
	5	58026		DEB	CCS	N/A		
	5	58026		DEB	CCS	N/A		
S	6	32037	26204	DEB	CCS	N/A		
S	6	32031	26231	DEB	CCS	N/A		
S	6	32034	26232	DEB	CCS	N/A		
S	6	32036	26233	DEB	CCS	Complex	76	1.49

S	6	32035	26242	DEB	CCS	N/A			
S	6	32030	26243	DEB	CCS	N/A			
S	6	32032	26244	DEB	CCS	N/A			
S	6	32038	26245	DEB	CCS	N/A			
S	6	32033	26246	DEB	CCS	N/A			
O	6	58036		DEB	CCS	Complex		45	2.23
O	6	58035		DEB	CCS	N/A			
O	6	58486		DEB	Basalt	N/A			
O	6	58035		DEB	CCS	N/A			
O	6	58035		DEB	CCS	N/A			
O	6	58035		DEB	CCS	N/A			
O	6	58035		DEB	CCS	N/A			
O	6	58035		DEB	CCS	Complex		45	0.94
O	6	58035		DEB	CCS	Complex		56	0.83
O	6	58035		DEB	CCS	Complex		40	1.01
O	6	58035		DEB	CCS	Complex	N/A		1.54
O	6	58035		DEB	CCS	Complex		42	1.86
O	6	58035		DEB	CCS	Complex	N/A		1.03
O	6	58035		DEB	CCS	Complex		31	1.28
O	6	58035		DEB	CCS	Complex		57	1.55
O	6	58035		DEB	CCS	Complex		46	1.33
O	6	58486		DEB	Basalt	N/A			
S	7	29427	24973	DEB	CCS	N/A			
S	7	29488	24983	DEB	CCS	N/A			
S	7	32095	26271	DEB	CCS	Complex		33	2.11
S	7	32094	26272	DEB	CCS	Complex	N/A		1.33
S	7	32098	26273	DEB	CCS	N/A			
S	7	32096	26274	DEB	CCS	Complex		46	1.5
O	7	58047		DEB	CCS	N/A			
O	7	58484		DEB	Basalt	N/A			
O	7	58047		DEB	CCS	Complex	N/A		1.02
O	7	58047		DEB	CCS	N/A			
O	7	58047		DEB	CCS	N/A			
O	7	58047		DEB	CCS	N/A			
O	7	58047		DEB	CCS	N/A			
O	7	58047		DEB	CCS	Flat		65	1.11
O	7	58047		DEB	CCS	Complex	N/A		3.03
O	7	58047		DEB	CCS	Flat		84	1.52
O	7	58047		DEB	CCS	Complex	N/A		2.37
R	8	29498	25003	DEB	CCS	Complex		50	3.97
R	8	29497	25002	DEB	CCS	N/A			
S	8	29495	25000	DEB	CCS	Complex		48	0.95
S	8	29496	25001	DEB	CCS	N/A			

S	8	29499	25004	DEB	CCS	N/A		
S	8	29500	25005	DEB	CCS	N/A		
S	8	44882	25019	DEB	CCS	N/A		
S	8	44883	25020	DEB	CCS	Complex	65	1.49
S	8	32122	26293	DEB	CCS	Flat	88	1.42
S	8	32120	26294	DEB	CCS	N/A		
S	8	32118	26295	DEB	CCS	Flat	51	3.83
S	8	32116	26296	DEB	CCS	Complex	N/A	2.07
S	8	32113	26298	DEB	CCS	N/A		
S	8	32263	26346	DEB	CCS	N/A		
S	8	32226	26330	DEB	CCS	N/A		
S	8	32227	26333	DEB	CCS	N/A		
S	8	32229	26336	DEB	CCS	Complex	40	3.37
S	8	32232	26334	DEB	CCS	Complex	60	0.59
S	8	44881	25018	DEB	CCS	Flat	52	2.08
O	8	58052		DEB	CCS	N/A		
O	8	58477		DEB	Basalt	N/A		
O	8	58053		DEB	CCS	N/A		
O	8	58055		DEB	CCS	N/A		
O	8	58056		DEB	CCS	Complex	40	4.16
O	8	58058		DEB	CCS	N/A		
O	8	58052		DEB	CCS	N/A		
O	8	58052		DEB	CCS	N/A		
O	8	58052		DEB	CCS	N/A		
O	8	58052		DEB	CCS	N/A		
O	8	58052		DEB	CCS	Complex	N/A	1.06
O	8	58477		DEB	Basalt	N/A		
S	9	29566	25025	DEB	CCS	N/A		
S	9	29564	25026	DEB	CCS	N/A		
S	9	29563	25027	DEB	CCS	N/A		
S	9	29562	25028	DEB	CCS	N/A		
S	9	29616	25034	DEB	CCS	N/A		
S	9	29614	25035	DEB	CCS	N/A		
S	9	29612	25036	DEB	CCS	Complex	50	2.66
S	9	29619	25037	DEB	CCS	Flat	76	3
S	9	29602	25038	DEB	CCS	N/A		
S	9	29609	25042	DEB	CCS	Complex	75	2.06
S	9	29605	25043	DEB	CCS	N/A		
S	9	29608	25044	DEB	CCS	N/A		
S	9	32301	26355	DEB	CCS	N/A		
S	9	32300	26356	DEB	CCS	N/A		
S	9	32299	26357	DEB	CCS	Complex	44	5.27
S	9	32298	26358	DEB	CCS	N/A		

S	9	32297	26359	DEB	CCS	N/A		
S	9	32294	26361	DEB	CCS	N/A		
S	9	32295	26360	DEB	CCS	N/A		
S	9	32293	26362	DEB	CCS	Complex	55	2.6
S	9	32393	26365	DEB	CCS	Complex	46	1.96
S	9	32392	26366	DEB	Basalt	N/A		
S	9	32391	26367	DEB	CCS	N/A		
S	9	32390	26369	DEB	CCS	Complex	35	3.04
S	9	32387	26370	DEB	CCS	N/A		
S	9	32389	26371	DEB	CCS	N/A		
S	9	32382	26381	DEB	CCS	N/A		
S	9	32383	26382	DEB	CCS	N/A		
S	9	32381	26383	DEB	CCS	N/A		
S	9	32386	26385	DEB	CCS	Cortical	62	1.5
S	9	32378	26386	DEB	CCS	N/A		
S	9	32388	26388	DEB	CCS	Complex	46	2.02
S	9	32385	26389	DEB	CCS	N/A		
S	9	32384	26390	DEB	Basalt	Flat	55	3.1
O	9	58063		DEB	CCS	N/A		
O	9	58479		DEB	Basalt	N/A		
O	9	58063		DEB	CCS	N/A		
O	9	58063		DEB	CCS	N/A		
O	9	58063		DEB	CCS	Complex	44	1.1
O	9	58063		DEB	CCS	Complex	65	2.33
O	9	58063		DEB	CCS	N/A		
S	10	29666	25022	DEB	CCS	Flat	70	1.9
S	10	29663	25063	DEB	CCS	N/A		
S	10	29661	25064	DEB	CCS	Complex	45	0.79
S	10	29659	25065	DEB	CCS	N/A		
S	10	29654	25066	DEB	CCS	N/A		
S	10	29656	25067	DEB	CCS	Complex	50	1.42
S	10	29650	25070	DEB	CCS	N/A		
S	10	32410	26395	DEB	CCS	Complex	37	1.27
S	10	32405	26396	DEB	CCS	Complex	67	3.24
S	10	32418	26398	DEB	CCS	Complex	60	7.74
S	10	32421	26399	DEB	CCS	N/A		
S	10	32432	26406	DEB	CCS	Complex	40	1.44
S	10	32428	26407	DEB	CCS	Complex	45	2.15
S	10	29655	25062	DEB	CCS	Complex	65	2.21
S	10	29657	25061	DEB	CCS	Complex	25	2.1
S	11	29696	25089	DEB	CCS	N/A		
S	11	29793	25125	DEB	CCS	Complex	62	7
S	11	29791	25126	DEB	CCS	N/A		

S	11	29835	25153	DEB	CCS	Complex	53	1.62
S	11	32460	26447	DEB	CCS	N/A		
S	11	32472	26448	DEB	CCS	Flat	40	3.69
S	11	32477	26449	DEB	CCS	Complex	45	0.68
S	11	32463	26450	DEB	CCS	Complex	65	2.28
S	11	32476	26451	DEB	CCS	Complex	35	2.59
S	11	32474	26452	DEB	CCS	N/A		
S	11	32478	26453	DEB	CCS	Flat	51	1.07
S	11	32468	26455	DEB	CCS	Complex	50	2.62
S	11	32458	26456	DEB	CCS	N/A		
S	11	32470	26457	DEB	CCS	N/A		
S	11	32459	26458	DEB	CCS	Complex	75	4.04
S	11	32479	26459	DEB	CCS	N/A		
S	11	32469	26460	DEB	CCS	Complex	51	1.33
S	11	32462	26462	DEB	CCS	N/A		
S	11	32466	26463	DEB	CCS	Complex	58	1.04
S	11	32465	26464	DEB	CCS	N/A		
S	12	29953	25166	DEB	Basalt	Complex	N/A	1.04
S	12	29956	25167	DEB	CCS	N/A		
S	12	29960	25189	DEB	CCS	N/A		
S	12	29951	25190	DEB	CCS	Complex	67	2.71
S	12	29962	25191	DEB	CCS	Complex	N/A	1.27
S	12	29963	25192	DEB	CCS	N/A		
S	12	32667	26465	DEB	CCS	N/A		
S	12	32653	26466	DEB	CCS	N/A		
S	12	32646	26467	DEB	CCS	N/A		
S	12	32641	26469	DEB	CCS	Complex	N/A	0.72
S	12	32638	26470	DEB	CCS	Complex	38	2.88
S	12	32632	26471	DEB	CCS	N/A		
S	12	32629	26473	DEB	CCS	Complex	32	1.3
S	12	32673	26474	DEB	CCS	Complex	N/A	1.66
S	12	32669	26475	DEB	CCS	N/A		
S	12	32670	26476	DEB	CCS	Cortical	62	0.91
S	12	32663	26477	DEB	CCS	N/A		
S	12	32671	26478	DEB	CCS	N/A		
S	12	32659	26479	DEB	CCS	Complex	49	2.44
S	12	32658	26480	DEB	CCS	Complex	35	3.82
S	12	32655	26481	DEB	CCS	Complex	45	1.55
S	12	32662	26482	DEB	CCS	Complex	40	18.88
S	13	30058	25244	DEB	CCS	N/A		
S	13	30046	25225	DEB	CCS	N/A		
S	13	30044	25226	DEB	CCS	Complex	30	1.7
S	13	30045	25227	DEB	CCS	Complex	45	3.45

S	13	30047	25228	DEB	CCS	Cortical	N/A		2.24
S	13	32661	26490	DEB	CCS	N/A			
S	13	32656	26491	DEB	CCS	N/A			
S	13	32652	26492	DEB	CCS	N/A			
S	13	32664	26493	DEB	CCS	N/A			
S	13	32635	26494	DEB	CCS	Complex		60	1.86
S	13	32648	26495	DEB	CCS	Complex		50	1.75
S	13	32668	26496	DEB	Basalt	Complex	N/A		1.59
S	13	32645	26500	DEB	CCS	Flat		70	0.71
S	13	32666	26501	DEB	CCS	N/A			
S	14	32704	26528	DEB	CCS	Complex		39	2.87
S	14	32705	26529	DEB	CCS	Complex		55	0.81
S	14	32702	26530	DEB	Basalt	Flat		80	1.34
S	14	32703	26531	DEB	CCS	Flat		75	2.37
S	14	32701	26532	DEB	CCS	N/A			
S	14	32700	26533	DEB	CCS	Complex		67	2.1
S	14	30123	25250	DEB	CCS	Flat		70	2.22
S	14	30124	25251	DEB	CCS	Complex	N/A		1.18
S	14	30125	25252	DEB	CCS	Complex		63	1.16
S	14	30127	25253	DEB	CCS	Flat		65	2.81
S	14	32698	26554	DEB	CCS	Flat		70	0.64
S	14	32697	26555	DEB	Basalt	N/A			
S	14	32699	26556	DEB	CCS	Flat		88	3.01
S	14	32694	26557	DEB	CCS	Complex		49	1.4
S	14	32693	26558	DEB	CCS	Flat		61	1.32
S	14	32695	26570	DEB	CCS	Complex		50	2.42
S	14	30119	25272	DEB	CCS	N/A			
S	14	30118	25273	DEB	CCS	Complex		40	2.38
S	14	30121	25275	DEB	CCS	Complex		41	1.67
S	14	30112	25276	DEB	CCS	Complex		35	1.68
S	14	30120	25278	DEB	CCS	Complex		38	1.54
S	14	30137	25283	DEB	CCS	Complex		31	1.53
S	14	30138	25284	DEB	CCS	N/A			
S	14	30135	25285	DEB	CCS	N/A			
S	14	30131	25287	DEB	CCS	Complex		25	2.55
S	15	30202	25295	DEB	CCS	N/A	N/A		
S	15	30201	25296	DEB	CCS	N/A			
S	15	30206	25316	DEB	CCS	Flat		85	3.38
S	15	30205	25317	DEB	CCS	Flat		51	1.95
S	15	30199	25318	DEB	CCS	N/A			
S	15	30196	25319	DEB	CCS	N/A			
S	15	30197	25321	DEB	CCS	N/A			
S	15	30204	25322	DEB	CCS	Complex		67	1.8

S	15	30200	25323	DEB	CCS	N/A		
S	15	30194	25326	DEB	CCS	Complex	74	2.6
S	15	30288	25333	DEB	CCS	N/A		
S	15	30290	25334	DEB	CCS	Complex	40	1.24
S	15	32754	26575	DEB	CCS	N/A		
S	15	32753	26576	DEB	CCS	Complex	59	5.45
S	15	32752	26578	DEB	CCS	Complex	30	1.97
S	15	32751	26579	DEB	CCS	Complex	47	2
S	15	32757	26590	DEB	CCS	Complex	65	1.29
S	15	32758	26592	DEB	CCS	Complex	N/A	0.46
S	15	32755	26593	DEB	CCS	N/A		
S	15	32756	26594	DEB	CCS	Complex	29	1.21
S	15	32750	26595	DEB	CCS	N/A		
S	16	30321	25340	DEB	CCS	Complex	60	1.43
S	16	30319	25341	DEB	CCS	N/A		
S	16	30315	25351	DEB	Metamorphic	N/A		
S	16	30324	25353	DEB	CCS	N/A		
S	16	30323	25354	DEB	CCS	Complex	40	1.91
S	16	30322	25355	DEB	CCS	Complex	36	3.84
S	16	30318	25356	DEB	CCS	Complex	35	1.95
S	16	30317	25357	DEB	CCS	Complex	49	4.78
S	16	30320	25360	DEB	CCS	Flat	58	2.1
S	16	30436	25363	DEB	CCS	N/A		
S	16	30427	25376	DEB	CCS	Complex	32	2.72
S	16	30431	25377	DEB	CCS	Complex	40	2.55
S	16	30433	25378	DEB	CCS	N/A		
S	16	30462	25379	DEB	CCS	N/A		
S	16	30424	25385	DEB	CCS	Flat	51	1.7
S	16	30437	25386	DEB	CCS	N/A		
S	16	30430	25387	DEB	CCS	N/A		
S	16	32815	26601	DEB	CCS	N/A		
S	16	32816	26603	DEB	CCS	N/A		
S	16	32814	26602	DEB	CCS	N/A		
S	16	32818	26605	DEB	CCS	N/A		
S	16	32819	26606	DEB	CCS	Complex	60	1.55
S	16	32820	26607	DEB	CCS	Complex	32	3.61
S	16	32809	26608	DEB	CCS	Complex	29	3.97
S	16	32811	26621	DEB	CCS	Complex	42	1.59
S	16	32812	26622	DEB	CCS	N/A		
S	16	32813	26623	DEB	CCS	N/A		
S	16	32817	26604	DEB	CCS	Complex	N/A	1.04
S	16	32879	26626	DEB	CCS	N/A		
S	16	32877	26627	DEB	CCS	Complex	47	1.16

S	16	32810	26624	DEB	CCS	N/A		
S	16	32880	26625	DEB	CCS	N/A		
S	16	32876	26628	DEB	CCS	N/A		
S	16	32874	26629	DEB	CCS	Complex	56	4.29
S	16	32873	26630	DEB	CCS	Complex	40	1.67
S	16	32871	26631	DEB	CCS	Complex	N/A	0.82
S	16	32867	26633	DEB	CCS	N/A		
S	17	30599	25398	DEB	CCS	N/A		
S	17	30598	25399	DEB	CCS	Flat	75	7.01
S	17	30588	25411	DEB	CCS	N/A		
S	17	30591	25412	DEB	CCS	N/A		
S	17	30585	25416	DEB	CCS	N/A		
S	17	30582	25445	DEB	CCS	N/A		
S	17	30590	25447	DEB	CCS	N/A		
S	17	30595	25448	DEB	CCS	Complex	59	1.19
S	17	30600	25462	DEB	CCS	Complex	40	2.12
S	17	33019	26668	DEB	CCS	N/A		
S	17	33023	26669	DEB	CCS	N/A		
S	17	33024	26670	DEB	CCS	N/A		
S	17	33016	26672	DEB	CCS	Complex	44	1.3
S	17	33022	26671	DEB	CCS	N/A		
S	17	33020	26682	DEB	CCS	Complex	38	0.82
S	17	33018	26683	DEB	CCS	Complex	25	2.08
S	17	33015	26684	DEB	CCS	N/A		
S	17	33017	26686	DEB	CCS	N/A		
S	17	32995	26687	DEB	CCS	N/A		
S	17	33001	26691	DEB	CCS	Flat	46	3.62
S	17	33021	26692	DEB	CCS	Abraded	55	3.42
S	17	33008	26695	DEB	CCS	Complex	41	1.63
S	17	33012	26696	DEB	CCS	N/A		
S	17	32999	26697	DEB	CCS	N/A		
S	17	33011	26698	DEB	CCS	Flat	47	3.74
S	17	33003	26699	DEB	CCS	N/A		
S	17	33014	26700	DEB	CCS	N/A		
S	17	33010	26701	DEB	CCS	Complex	58	1.19
S	17	33009	26702	DEB	CCS	N/A		
S	17	33007	26703	DEB	CCS	Complex	60	3.03
S	17	33006	26707	DEB	CCS	N/A		
S	17	32992	26706	DEB	CCS	N/A		
S	17	33025	26716	DEB	CCS	Flat	52	2.42
S	17	32998	26709	DEB	CCS	N/A		
S	17	32989	26710	DEB	CCS	Complex	45	1.9
S	17	33004	26711	DEB	CCS	Complex	48	1.53

S	17	32990	26712	DEB	CCS	N/A		
S	17	33028	26713	DEB	CCS	Complex	28	1.66
S	17	33027	26714	DEB	CCS	Complex	55	1.76
S	17	33026	26715	DEB	CCS	N/A		
S	17	32988	26717	DEB	CCS	N/A		
S	18	32063	25482	DEB	CCS	Flat	73	1.18
S	18	32062	25483	DEB	CCS	N/A		
S	18	32058	25484	DEB	CCS	N/A		
S	18	32064	25486	DEB	CCS	N/A		
S	18	32060	25487	DEB	CCS	N/A		
S	18	32059	25488	DEB	CCS	N/A		
S	18	32061	25489	DEB	CCS	Flat	62	3.52
S	18	32066	25501	DEB	CCS	N/A		
S	18	33221	26721	DEB	CCS	N/A		
S	18	33264	26722	DEB	CCS	Complex	45	1.49
S	18	33238	26723	DEB	CCS	Complex	50	2.91
S	18	33231	26724	DEB	CCS	N/A		
S	18	33234	26725	DEB	CCS	Complex	45	1.81
S	18	33241	26726	DEB	CCS	N/A		
S	18	33277	26728	DEB	CCS	N/A		
S	18	33229	26729	DEB	CCS	Complex	33	5.26
S	18	33275	26730	DEB	CCS	N/A		
S	18	33259	26731	DEB	CCS	N/A		
S	18	33271	26732	DEB	CCS	N/A		
S	18	33255	26734	DEB	CCS	Complex	46	0.9
S	18	33236	26735	DEB	CCS	N/A		
S	18	33250	26736	DEB	CCS	N/A		
S	18	33249	26737	DEB	CCS	N/A		
S	18	33262	26738	DEB	CCS	Complex	50	1.71
S	18	33246	26739	DEB	CCS	Complex	45	1.02
S	18	33248	26740	DEB	CCS	Flat	59	3.71
S	18	33251	26741	DEB	CCS	Cortical	90	2.26
S	18	33252	26742	DEB	CCS	Complex	60	1.15
S	18	33253	26743	DEB	CCS	N/A		
S	18	33254	26744	DEB	CCS	N/A		
S	18	33257	26745	DEB	CCS	Flat	58	0.81
S	18	33256	26746	DEB	CCS	Complex	30	5.64
S	18	33224	26747	DEB	CCS	N/A		
S	18	33233	26748	DEB	CCS	N/A		
S	18	33243	26749	DEB	CCS	Flat	50	1.32
S	18	33205	26750	DEB	CCS	N/A		
S	18	33203	26751	DEB	CCS	Complex	32	1.71
S	18	33201	26752	DEB	CCS	Complex	45	1.66

S	18	33218	26753	DEB	CCS	Complex	N/A	0.73
S	18	33211	26754	DEB	CCS	N/A		
S	18	33208	26755	DEB	CCS	Complex	62	2.27
S	18	33163	26784	DEB	CCS	N/A		
S	19	30689	25529	DEB	CCS	N/A		
S	19	30688	25530	DEB	CCS	Complex	50	2.21
S	19	30686	25531	DEB	CCS	N/A		
S	19	30699	25532	DEB	CCS	Complex	42	1.22
S	19	30685	25533	DEB	CCS	N/A		
S	19	30684	25534	DEB	CCS	N/A		
S	19	30682	25536	DEB	CCS	Complex	51	1.83
S	19	30710	25538	DEB	CCS	Complex	52	3.38
S	19	30708	25540	DEB	CCS	Flat	56	3.25
S	19	30707	25541	DEB	CCS	N/A		
S	19	30706	25542	DEB	CCS	N/A		
S	19	30705	25543	DEB	CCS	N/A		
S	19	33192	26762	DEB	CCS	N/A		
S	19	33196	26763	DEB	CCS	N/A		
S	19	33194	26765	DEB	CCS	Cortical	70	2.46
S	19	33189	26766	DEB	Basalt	Flat	60	6.4
S	19	33198	26772	DEB	CCS	Cortical	45	1.53
S	19	33197	26773	DEB	CCS	N/A		
S	20	33179	26783	DEB	Basalt	Flat	60	3.31
S	20	33188	26789	DEB	CCS	N/A		
S	20	33183	26799	DEB	CCS	N/A		
S	20	33180	26792	DEB	CCS	N/A		
S	20	33178	26797	DEB	CCS	Complex	60	1.69
S	20	33175	26794	DEB	CCS	N/A		
S	20	33171	26788	DEB	CCS	Complex	50	1.92
S	20	33172	26782	DEB	CCS	N/A		
S	20	33191	26761	DEB	CCS	N/A		
S	20	30739	25571	DEB	CCS	Complex	35	1.43
S	20	30741	25570	DEB	CCS	N/A		
S	20	33181	26780	DEB	CCS	Complex	75	2.39
S	20	30773	25590	DEB	CCS	Complex	65	2.46
S	20	30745	25567	DEB	CCS	Complex	31	1.52
S	20	30735	25574	DEB	CCS	N/A		
S	20	30769	25592	DEB	CCS	N/A		
S	20	30782	25597	DEB	CCS	Complex	33	1.93
S	20	30766	25594	DEB	CCS	N/A		
S	20	30786	25600	DEB	CCS	N/A		
S	20	33174	26795	DEB	Basalt	N/A		
S	20	33184	26796	DEB	CCS	N/A		

S	20	33186	26787	DEB	CCS	N/A		
S	20	33176	26790	DEB	CCS	N/A		
S	20	33177	26791	DEB	CCS	N/A		
S	20	33187	26793	DEB	CCS	N/A		
S	20	33185	26781	DEB	CCS	N/A		
S	20	30774	25589	DEB	CCS	Flat	48	2.07
S	20	33182	26798	DEB	CCS	Complex	65	1.29
S	20	30768	25593	DEB	Basalt	N/A		
S	20	30737	25573	DEB	CCS	Complex	47	1.91
S	20	30744	25568	DEB	CCS	Complex	49	2.46
S	20	33169	26786	DEB	CCS	N/A		
S	20	30738	25572	DEB	CCS	Complex	47	3.2
S	20	30764	25595	DEB	CCS	Complex	55	1.65
S	20	33166	26785	DEB	CCS	N/A		
S	21	30865	25625	DEB	CCS	Complex	65	8.93
S	21	30871	25621	DEB	CCS	N/A		
S	21	30867	25623	DEB	CCS	Complex	73	1.66
S	21	30863	25627	DEB	CCS	N/A		
S	21	30860	25628	DEB	CCS	N/A		
S	21	30859	25629	DEB	CCS	N/A		
S	21	30872	25620	DEB	CCS	N/A		
S	21	30857	25630	DEB	CCS	N/A		
S	21	30856	25631	DEB	CCS	N/A		
S	21	30893	25650	DEB	CCS	N/A		
S	21	30892	25651	DEB	CCS	N/A		
S	21	30891	25652	DEB	CCS	N/A		
S	21	30960	25689	DEB	CCS	N/A		
S	21	33360	26820	DEB	CCS	Complex	35	1.26
S	21	33379	26823	DEB	CCS	N/A		
S	21	33382	26819	DEB	CCS	N/A		
S	21	33352	26860	DEB	CCS	N/A		
S	21	33383	26824	DEB	CCS	N/A		
S	21	33370	26835	DEB	CCS	Complex	N/A	0.97
S	21	33380	26836	DEB	CCS	N/A		
S	21	33356	26861	DEB	CCS	Complex	62	1.48
S	21	33378	26839	DEB	CCS	N/A		
S	21	33355	26840	DEB	CCS	Complex	52	1.64
S	21	33367	26822	DEB	CCS	Complex	65	0.9
S	21	33381	26838	DEB	CCS	N/A		
S	21	33374	26837	DEB	CCS	N/A		
S	21	33358	26859	DEB	CCS	Complex	50	1.6
S	21	33377	26841	DEB	CCS	Complex	48	2.37
S	21	33377	26841	DEB	CCS	N/A		

S		22	33442	26938	DEB	CCS	N/A			
S		22	33439	26905	DEB	CCS	N/A			
S		22	33441	26904	DEB	CCS	Complex		59	1.31
S		22	33443	26907	DEB	CCS	Complex		25	2.42
S		23	31067	25762	DEB	CCS	N/A	N/A		
S		23	31065	25763	DEB	CCS	Complex		28	0.77
	17	23	44289	43900	DEB	Basalt	N/A			

Debitage Attribute Analysis Cont.

Unit	Level	Catalog #	Reading #	Lithic Type	Material	Width (mm) Platform	Dorsal Scar Count	Termination Type
Feature	1	32046	25975	DEB	CCS		0	Feathered
Wall Fall	1	32047	25977	DEB	CCS	13.04	3+	Feathered
Wall Fall	1	32049	25978	DEB	CCS		3+	Finial
Feature	1	32053	25980	DEB	CCS		3+	N/A
Feature	1	32050	25981	DEB	CCS		1	N/A
Feature	1	32048	25982	DEB	CCS		0	N/A
S	1	31762	26081	DEB	CCS		3+	N/A
S	1	31763	26082	DEB	CCS		3+	N/A
Feature	1	31285	25873	DEB	CCS		3+	N/A
Feature	1	31278	25861	DEB	CCS	6.08	3+	Stepped
Feature	1	31268	25863	DEB	CCS	1.64	3+	Feathered
Feature	1	31251	25858	DEB	CCS	5.68	3+	Finial
Feature	1	31275	25867	DEB	CCS		0	Feathered
Feature	1	31260	25842	DEB	CCS	4.51	3+	Feathered
Feature	1	31254	25837	DEB	CCS	4.68	2	Finial
Feature	1	31280	25862	DEB	CCS		0	N/A
Feature	1	31257	25840	DEB	CCS		3+	N/A
Feature	1	31255	25838	DEB	CCS	8.81	3+	Feathered
Feature	1	31292	25877	DEB	CCS		3+	N/A
Feature	1	31270	25868	DEB	CCS		2	Stepped
Feature	1	31273	25866	DEB	CCS		3+	N/A
Feature	1	31272	25859	DEB	CCS	4.78	3+	Finial
Feature	1	31277	25860	DEB	CCS	4.47	3+	Feathered
Feature	1	31271	25864	DEB	CCS	10.1	0	Feathered
Feature	1	31262	25849	DEB	CCS	2.19	3+	Feathered

Feature	1	31286	25879	DEB	CCS			2	Feathered
Feature	1	33516	26978	DEB	CCS	3.48	3+		Stepped
Feature	1	33520	26979	DEB	CCS		3+		N/A
Feature	1	33521	26998	DEB	CCS	7.73	3+		Stepped
Feature	1	33518	26978	DEB	CCS		3+		Stepped
Feature	1	33519	26982	DEB	CCS			2	Feathered
Feature	1	33523	26977	DEB	CCS	4.03	3+		Hinge
Feature	1	33515	26981	DEB	CCS			0	N/A
Feature	1	33517	26999	DEB	CCS			0	N/A
Feature	1	33522	26983	DEB	CCS		3+		Feathered
Feature	1	32043	26079	DEB	CCS	8.74		0	Feathered
Feature	1	31338	25908	DEB	CCS		3+		Feathered
Feature	1	31391	25940	DEB	Basalt	10.55	3+		Feathered
Feature	1	31402	25956	DEB	CCS	9.35	3+		Stepped
Feature	1	31397	25939	DEB	CCS			0	Feathered
Feature	1	31406	25958	DEB	CCS		3+		Feathered
Feature	1	31390	25948	DEB	CCS		3+		N/A
Feature	1	31411	25953	DEB	CCS	3.28		2	Feathered
Feature	1	31388	25947	DEB	CCS			0	N/A
Feature	1	32045	25996	DEB	Basalt			0	Feathered
Feature	1	31333	25910	DEB	CCS			0	N/A
Feature	1	31329	25916	DEB	CCS		3+		Feathered
Feature	1	31331	25911	DEB	CCS	14.08	3+		Feathered
Feature	1	31326	25912	DEB	CCS			0	N/A
Feature	1	31325	25914	DEB	CCS	9.63	3+		Finial
Feature	1	31328	25917	DEB	CCS		3+		N/A
Feature	1	31327	25918	DEB	CCS			0	N/A
Feature	1	31321	25922	DEB	CCS		3+		N/A
Feature	1	31395	25937	DEB	CCS			0	N/A
Feature	1	31413	25938	DEB	CCS			0	N/A
Feature	1	31414	25942	DEB	CCS		3+		N/A
Feature	1	31387	25943	DEB	CCS		3+		Feathered
Feature	1	31386	25945	DEB	CCS	7.02	3+		Feathered
Feature	1	31400	25946	DEB	CCS	5.53	3+		N/A
Feature	1	31389	25949	DEB	CCS		3+		N/A
Feature	1	31404	25952	DEB	CCS			0	Feathered
Feature	1	31409	25955	DEB	CCS	1.26		1	Feathered
S	1	56636		DEB	CCS			0	N/A
S	1	56637		DEB	Metamorphic	0	N/A		
S	1	56640		DEB	Basalt	16.41	3+		Feathered
S	1	56638		DEB	Obsidian	0.75	3+		Finial
O	1	56635		DEB	CCS			0	Feathered
S	1	56640		DEB	Basalt			0	N/A

S	1	56640		DEB	Basalt			0	N/A
S	1	56636		DEB	CCS			0	N/A
S	1	56636		DEB	CCS	2.36	3+		Feathered
S	1	56636		DEB	CCS	3.51	3+		Feathered
S	1	56636		DEB	CCS	2.49	3+		Feathered
S	1	56636		DEB	CCS	3.6	3+		Feathered
S	1	56636		DEB	CCS			0	N/A
S	1	56636		DEB	CCS			2	N/A
S	1	56636		DEB	CCS			1	N/A
S	1	56636		DEB	CCS	4.56	3+		Finial
S	1	56636		DEB	CCS	7.96	3+		Feathered
S	1	56636		DEB	CCS	5.59		0	Feathered
S	1	56636		DEB	CCS	5.77	3+		Stepped
S	1	56636		DEB	CCS	4.43		1	Feathered
S	1	56636		DEB	CCS	1.49		1	Feathered
S	1	56636		DEB	CCS	4.41	3+		Finial
S	1	56636		DEB	CCS	3.1	3+		Stepped
S	1	56636		DEB	CCS	4.6	3+		Stepped
S	1	56636		DEB	CCS	2.33	3+		Hinge
S	1	56636		DEB	CCS	3.47	3+		Feathered
Feature	1	33516	26997	DEB	CCS		3+		Hinge
Feature	1	33518	26978	DEB	CCS		3+		Feathered
S	2	31764	26105	DEB	CCS	12.81		0	Finial
S	2	31769	26106	DEB	CCS		3+		N/A
S	2	31766	26107	DEB	CCS			0	N/A
S	2	31768	26108	DEB	CCS	5.62		0	Step
S	2	31767	26109	DEB	CCS			1	N/A
S	3	29242	24857	DEB	CCS			0	N/A
S	3	29243	24858	DEB	CCS	3.97	3+		Feathered
S	3	29241	24859	DEB	CCS	10.49	3+		N/A
S	3	31836	26143	DEB	Basalt	20.28		0	Feathered
S	3	31837	26144	DEB	CCS	3	3+		N/A
S	3	31838	26145	DEB	CCS	3.38	3+		N/A
S	3	31839	26146	DEB	CCS	6.18	3+		N/A
S	3	31835	26148	DEB	CCS	8.69	3+		Feathered
S	4	29244	24883	DEB	CCS			0	Feathered
S	4	29245	24884	DEB	CCS			0	Finial
S	4	31910	26150	DEB	CCS	8.58	3+		Feathered
S	4	31908	26152	DEB	CCS			0	Feathered
S	4	31905	26153	DEB	CCS	2.58	3+		N/A
S	4	31907	26154	DEB	CCS			1	Hinge
S	4	31917	26155	DEB	CCS			0	Feathered
S	4	31906	26156	DEB	CCS	6.4		0	N/A

S	4	31916	26157	DEB	CCS	7.79		1	N/A
S	4	31915	26158	DEB	CCS		3+		Feathered
S	4	31914	26159	DEB	CCS	6.11	3+		Feathered
S	4	31913	26161	DEB	CCS	8.38	3+		Stepped
S	4	31911	26162	DEB	CCS			0	N/A
O	4	58018		DEB	CCS			0	N/A
O	4	58470		DEB	Basalt			0	N/A
O	4	58018		DEB	CCS			0	N/A
O	4	58018		DEB	CCS			1	Feathered
O	4	58018		DEB	CCS	3.6	3+		Feathered
S	5	29326	24931	DEB	CCS			0	N/A
S	5	29327	24932	DEB	CCS		3+		N/A
S	5	29329	24933	DEB	CCS			0	Hinge
S	5	29422	24945	DEB	CCS	3.02	3+		Feathered
S	5	31958	26201	DEB	CCS	8.43		1	Finial
S	5	31957	26203	DEB	CCS		3+		Finial
S	5	31953	26168	DEB	CCS		3+		N/A
S	5	29421	24970	DEB	CCS	4.49	3+		Feathered
S	5	31954	26176	DEB	CCS		3+		Feathered
S	5	31961	26195	DEB	CCS	3.23	3+		Feathered
O	5	58026		DEB	CCS			0	N/A
O	5	58464		DEB	Basalt			0	N/A
O	5	58026		DEB	CCS	3.9	3+		Feathered
O	5	58026		DEB	CCS			0	N/A
O	5	58026		DEB	CCS		3+		Feathered
	5	58026		DEB	CCS		3+		Feathered
	5	58026		DEB	CCS			0	N/A
S	6	32037	26204	DEB	CCS		3+		Feathered
S	6	32031	26231	DEB	CCS		3+		Feathered
S	6	32034	26232	DEB	CCS		3+		Feathered
S	6	32036	26233	DEB	CCS	3.51	3+		Hinge
S	6	32035	26242	DEB	CCS		3+		Feathered
S	6	32030	26243	DEB	CCS			0	N/A
S	6	32032	26244	DEB	CCS		3+		N/A
S	6	32038	26245	DEB	CCS			0	N/A
S	6	32033	26246	DEB	CCS			0	N/A
O	6	58036		DEB	CCS	4.1		1	Feathered
O	6	58035		DEB	CCS			0	N/A
O	6	58486		DEB	Basalt			0	N/A
O	6	58035		DEB	CCS			0	N/A
O	6	58035		DEB	CCS			0	N/A
O	6	58035		DEB	CCS			0	N/A
O	6	58035		DEB	CCS	2.34	3+		Feathered

O	6	58035		DEB	CCS	5.07		2	Feathered
O	6	58035		DEB	CCS	4.15	3+		Stepped
O	6	58035		DEB	CCS	2.58	3+		Finial
O	6	58035		DEB	CCS	4.7	3+		Hinge
O	6	58035		DEB	CCS	1.27	3+		Finial
O	6	58035		DEB	CCS	4.08	3+		Feathered
O	6	58035		DEB	CCS	3.01	3+		Finial
O	6	58486		DEB	Basalt			0	N/A
S	7	29427	24973	DEB	CCS			0	N/A
S	7	29488	24983	DEB	CCS			0	N/A
S	7	32095	26271	DEB	CCS	8.14	3+		Stepped
S	7	32094	26272	DEB	CCS	3.73	3+		Stepped
S	7	32098	26273	DEB	CCS			0	N/A
S	7	32096	26274	DEB	CCS	3.46		1	Stepped
O	7	58047		DEB	CCS			0	N/A
O	7	58484		DEB	Basalt			0	N/A
O	7	58047		DEB	CCS	3.87		0	Finial
O	7	58047		DEB	CCS			0	N/A
O	7	58047		DEB	CCS			0	N/A
O	7	58047		DEB	CCS		3+		N/A
O	7	58047		DEB	CCS	4.52	3+		Feathered
O	7	58047		DEB	CCS	4.89	3+		Feathered
O	7	58047		DEB	CCS	2.58	3+		Finial
O	7	58047		DEB	CCS	3.82	3+		Finial
R	8	29498	25003	DEB	CCS	6.35	3+		Feathered
R	8	29497	25002	DEB	CCS			0	N/A
S	8	29495	25000	DEB	CCS	2.93	3+		N/A
S	8	29496	25001	DEB	CCS			0	N/A
S	8	29499	25004	DEB	CCS			2	Feathered
S	8	29500	25005	DEB	CCS			0	N/A
S	8	44882	25019	DEB	CCS			0	N/A
S	8	44883	25020	DEB	CCS	2.25	3+		Feathered
S	8	32122	26293	DEB	CCS	2.3	3+		Finial
S	8	32120	26294	DEB	CCS			0	Feathered
S	8	32118	26295	DEB	CCS	8.03	3+		Hinge
S	8	32116	26296	DEB	CCS	5.9	3+		Feathered
S	8	32113	26298	DEB	CCS			1	N/A
S	8	32263	26346	DEB	CCS		3+		Finial
S	8	32226	26330	DEB	CCS			2	N/A
S	8	32227	26333	DEB	CCS			2	Feathered
S	8	32229	26336	DEB	CCS	6.33		0	Stepped
S	8	32232	26334	DEB	CCS	2.96	3+		N/A
S	8	44881	25018	DEB	CCS	3.67	3+		N/A

O	8	58052		DEB	CCS			0	N/A
O	8	58477		DEB	Basalt			0	N/A
O	8	58053		DEB	CCS			0	N/A
O	8	58055		DEB	CCS			3	Feathered
O	8	58056		DEB	CCS	8.35	3+		Stepped
O	8	58058		DEB	CCS			2	Hinge
O	8	58052		DEB	CCS			0	N/A
O	8	58052		DEB	CCS			0	N/A
O	8	58052		DEB	CCS			0	Feathered
O	8	58052		DEB	CCS	1.72	3+		Stepped
O	8	58477		DEB	Basalt			0	N/A
S	9	29566	25025	DEB	CCS		3+		N/A
S	9	29564	25026	DEB	CCS		3+		Feathered
S	9	29563	25027	DEB	CCS			0	N/A
S	9	29562	25028	DEB	CCS			1	N/A
S	9	29616	25034	DEB	CCS			0	N/A
S	9	29614	25035	DEB	CCS		3+		Feathered
S	9	29612	25036	DEB	CCS	8.54	3+		Feathered
S	9	29619	25037	DEB	CCS	1.22	3+		Feathered
S	9	29602	25038	DEB	CCS			0	N/A
S	9	29609	25042	DEB	CCS	10.37	3+		Feathered
S	9	29605	25043	DEB	CCS			0	N/A
S	9	32301	26355	DEB	CCS			0	N/A
S	9	32300	26356	DEB	CCS			0	Feathered
S	9	32299	26357	DEB	CCS	14.39	3+		Finial
S	9	32297	26359	DEB	CCS			1	N/A
S	9	32294	26361	DEB	CCS			2	Feathered
S	9	32295	26360	DEB	CCS			0	Feathered
S	9	32293	26362	DEB	CCS	7.74		2	N/A
S	9	32393	26365	DEB	CCS	6.81		1	Feathered
S	9	32391	26367	DEB	CCS			0	N/A
S	9	32390	26369	DEB	CCS	14.41	3+		Stepped
S	9	32387	26370	DEB	CCS			2	N/A
S	9	32389	26371	DEB	CCS		3+		N/A
S	9	32382	26381	DEB	CCS			2	N/A
S	9	32383	26382	DEB	CCS			0	N/A
S	9	32381	26383	DEB	CCS			2	N/A
S	9	32386	26385	DEB	CCS	6.34		1	Feathered
S	9	32378	26386	DEB	CCS			0	Feathered
S	9	32388	26388	DEB	CCS	4.51	3+		Feathered
S	9	32385	26389	DEB	CCS			0	N/A
S	9	32384	26390	DEB	Basalt	8.97		0	N/A
O	9	58063		DEB	CCS			0	N/A

O	9	58479		DEB	Basalt			0	N/A
O	9	58063		DEB	CCS			0	N/A
O	9	58063		DEB	CCS	3.36	3+		Feathered
O	9	58063		DEB	CCS		3+		Feathered
S	10	29663	25063	DEB	CCS		3+		Feathered
S	10	29661	25064	DEB	CCS	1.35	3+		Stepped
S	10	29659	25065	DEB	CCS			1	Finial
S	10	29654	25066	DEB	CCS			0	Feathered
S	10	29656	25067	DEB	CCS	15.17		0	Feathered
S	10	29650	25070	DEB	CCS			2	Feathered
S	10	32410	26395	DEB	CCS	2.49		1	Feathered
S	10	32405	26396	DEB	CCS	12.2	3+		N/A
S	10	32418	26398	DEB	CCS	16.72	3+		Stepped
S	10	32421	26399	DEB	CCS			0	N/A
S	10	32432	26406	DEB	CCS	3.57	3+		Feathered
S	10	32428	26407	DEB	CCS	14.78		2	Feathered
S	10	29655	25062	DEB	CCS	4.74	3+		Feathered
S	10	29657	25061	DEB	CCS	6	3+		Feathered
S	11	29696	25089	DEB	CCS		3+		Feathered
S	11	29793	25125	DEB	CCS	21.13	3+		Hinge
S	11	29791	25126	DEB	CCS		3+		Feathered
S	11	29835	25153	DEB	CCS	3.84	3+		Feathered
S	11	32460	26447	DEB	CCS			0	N/A
S	11	32472	26448	DEB	CCS	6.54		0	Stepped
S	11	32477	26449	DEB	CCS	2.02	3+		Feathered
S	11	32463	26450	DEB	CCS	8.3		1	Stepped
S	11	32476	26451	DEB	CCS	7.77		2	Stepped
S	11	32474	26452	DEB	CCS		3+		N/A
S	11	32478	26453	DEB	CCS	6.4	3+		Feathered
S	11	32468	26455	DEB	CCS	8.78	3+		Stepped
S	11	32470	26457	DEB	CCS			1	Stepped
S	11	32479	26459	DEB	CCS			1	Hinge
S	11	32469	26460	DEB	CCS	4.71	3+		Feathered
S	11	32462	26462	DEB	CCS		3+		Feathered
S	11	32466	26463	DEB	CCS	3.74	3+		Feathered
S	12	29953	25166	DEB	Basalt	2.97		1	Stepped
S	12	29956	25167	DEB	CCS			0	Finial
S	12	29960	25189	DEB	CCS		3+		N/A
S	12	29951	25190	DEB	CCS	5.73		2	Feathered
S	12	29962	25191	DEB	CCS	3.59	3+		Finial
S	12	29963	25192	DEB	CCS		3+		Feathered
S	12	32667	26465	DEB	CCS			0	Feathered
S	12	32653	26466	DEB	CCS			0	N/A

S	12	32646	26467	DEB	CCS			0	N/A
S	12	32641	26469	DEB	CCS	0.78	3+		Stepped
S	12	32638	26470	DEB	CCS	5.54	3+		Feathered
S	12	32632	26471	DEB	CCS			1	Finial
S	12	32629	26473	DEB	CCS	4.12	3+		Feathered
S	12	32673	26474	DEB	CCS	2.33		0	Hinge
S	12	32669	26475	DEB	CCS			1	Feathered
S	12	32670	26476	DEB	CCS	2.97		2	Feathered
S	12	32663	26477	DEB	CCS			0	N/A
S	12	32658	26480	DEB	CCS	4.48		2	Stepped
S	12	32655	26481	DEB	CCS	4.27	3+		Feathered
S	12	32662	26482	DEB	CCS	7.51	3+		Feathered
S	13	30058	25244	DEB	CCS			0	N/A
S	13	30046	25225	DEB	CCS		3+		Feathered
S	13	30044	25226	DEB	CCS	4.71	3+		Feathered
S	13	30045	25227	DEB	CCS	4.96	3+		Stepped
S	13	30047	25228	DEB	CCS	3.73	3+		Stepped
S	13	32661	26490	DEB	CCS			0	Finial
S	13	32656	26491	DEB	CCS			0	N/A
S	13	32652	26492	DEB	CCS		3+		Feathered
S	13	32664	26493	DEB	CCS			0	N/A
S	13	32635	26494	DEB	CCS	5.15	3+		N/A
S	13	32648	26495	DEB	CCS	11.8		0	Feathered
S	13	32668	26496	DEB	Basalt	2.27		0	Feathered
S	13	32645	26500	DEB	CCS	2.07		1	Stepped
S	13	32666	26501	DEB	CCS		3+		Feathered
S	14	32704	26528	DEB	CCS	7.25	3+		Feathered
S	14	32705	26529	DEB	CCS	2.88	3+		Feathered
S	14	32702	26530	DEB	Basalt	3.12		0	Hinge
S	14	32703	26531	DEB	CCS	27.22	3+		N/A
S	14	32701	26532	DEB	CCS		3+		Feathered
S	14	32700	26533	DEB	CCS	6.64	3+		Feathered
S	14	30124	25251	DEB	CCS	2.05	3+		Feathered
S	14	30125	25252	DEB	CCS	6.58	3+		Feathered
S	14	30127	25253	DEB	CCS	7.85		0	Hinge
S	14	32698	26554	DEB	CCS	1.87	3+		Feathered
S	14	32699	26556	DEB	CCS	4.72	3+		Hinge
S	14	32695	26570	DEB	CCS	7.55	3+		Hinge
S	14	30119	25272	DEB	CCS		3+		Feathered
S	14	30118	25273	DEB	CCS	12.29		0	Finial
S	14	30121	25275	DEB	CCS	4.33	3+		Feathered
S	14	30112	25276	DEB	CCS	3.02		1	Feathered
S	14	30120	25278	DEB	CCS	5.96		0	Feathered

S	14	30137	25283	DEB	CCS	5.49	3+		Feathered
S	14	30138	25284	DEB	CCS			1	Stepped
S	14	30135	25285	DEB	CCS			0	Finial
S	14	30131	25287	DEB	CCS	6.06	3+		Feathered
S	15	30202	25295	DEB	CCS		3+		Finial
S	15	30206	25316	DEB	CCS	8.8	3+		Hinge
S	15	30205	25317	DEB	CCS	2.99		2	Finial
S	15	30199	25318	DEB	CCS			0	Feathered
S	15	30196	25319	DEB	CCS			0	N/A
S	15	30197	25321	DEB	CCS			0	N/A
S	15	30204	25322	DEB	CCS	6.81	3+		Feathered
S	15	30200	25323	DEB	CCS			0	N/A
S	15	30194	25326	DEB	CCS	3.81		0	Feathered
S	15	30288	25333	DEB	CCS			2	Feathered
S	15	30290	25334	DEB	CCS	5.58	3+		Feathered
S	15	32754	26575	DEB	CCS		3+		Feathered
S	15	32753	26576	DEB	CCS	10.57	3+		Stepped
S	15	32752	26578	DEB	CCS	4.2	3+		Feathered
S	15	32751	26579	DEB	CCS	6.67	3+		Feathered
S	15	32757	26590	DEB	CCS	3.78		1	Feathered
S	15	32758	26592	DEB	CCS	1.42	3+		Feathered
S	15	32755	26593	DEB	CCS			0	N/A
S	15	32756	26594	DEB	CCS	4.19		2	Finial
S	15	32750	26595	DEB	CCS			0	N/A
S	16	30321	25340	DEB	CCS	2.89	3+		Feathered
S	16	30319	25341	DEB	CCS			1	Feathered
S	16	30315	25351	DEB	Metamorphic	0	N/A		
S	16	30322	25355	DEB	CCS	8.73	3+		Feathered
S	16	30318	25356	DEB	CCS	4.85	3+		Finial
S	16	30317	25357	DEB	CCS	6.75	3+		Finial
S	16	30320	25360	DEB	CCS	12.14	3+		Finial
S	16	30436	25363	DEB	CCS		3+		Feathered
S	16	30427	25376	DEB	CCS	6.49	3+		Stepped
S	16	30431	25377	DEB	CCS	6.7		2	Feathered
S	16	30462	25379	DEB	CCS		3+		N/A
S	16	30424	25385	DEB	CCS	10.67	3+		Feathered
S	16	30437	25386	DEB	CCS		3+		Stepped
S	16	30430	25387	DEB	CCS		3+		Hinge
S	16	32815	26601	DEB	CCS		3+		Feathered
S	16	32816	26603	DEB	CCS		3+		N/A
S	16	32814	26602	DEB	CCS			0	N/A
S	16	32818	26605	DEB	CCS			0	N/A
S	16	32820	26607	DEB	CCS	13.73		2	Feathered

S	16	32809	26608	DEB	CCS	10.45	3+		Stepped
S	16	32812	26622	DEB	CCS			0	N/A
S	16	32813	26623	DEB	CCS			1	Feathered
S	16	32817	26604	DEB	CCS	2.71	3+		N/A
S	16	32879	26626	DEB	CCS			0	N/A
S	16	32877	26627	DEB	CCS	3.06	3+		Feathered
S	16	32810	26624	DEB	CCS			0	N/A
S	16	32880	26625	DEB	CCS			1	N/A
S	16	32876	26628	DEB	CCS		3+		Feathered
S	16	32874	26629	DEB	CCS	8.48	3+		Feathered
S	16	32873	26630	DEB	CCS	7.81	3+		Feathered
S	16	32871	26631	DEB	CCS	1.63	3+		N/A
S	16	32867	26633	DEB	CCS		3+		N/A
S	17	30599	25398	DEB	CCS			0	N/A
S	17	30588	25411	DEB	CCS		3+		Feathered
S	17	30591	25412	DEB	CCS			0	N/A
S	17	30585	25416	DEB	CCS			0	N/A
S	17	30590	25447	DEB	CCS		3+		Hinge
S	17	30595	25448	DEB	CCS	8.41		2	N/A
S	17	30600	25462	DEB	CCS	6.09	3+		N/A
S	17	33019	26668	DEB	CCS		3+		Stepped
S	17	33023	26669	DEB	CCS		3+		Feathered
S	17	33024	26670	DEB	CCS			0	N/A
S	17	33022	26671	DEB	CCS		3+		N/A
S	17	33020	26682	DEB	CCS	6.23	3+		Feathered
S	17	33018	26683	DEB	CCS	3.87	3+		Feathered
S	17	33015	26684	DEB	CCS			0	N/A
S	17	33017	26686	DEB	CCS			0	N/A
S	17	32995	26687	DEB	CCS			0	N/A
S	17	33021	26692	DEB	CCS	10.7		2	Stepped
S	17	33008	26695	DEB	CCS	7.62		0	Feathered
S	17	33012	26696	DEB	CCS		3+		Stepped
S	17	32999	26697	DEB	CCS		3+		N/A
S	17	33011	26698	DEB	CCS	7.61	3+		Feathered
S	17	33003	26699	DEB	CCS		3+		N/A
S	17	33014	26700	DEB	CCS			0	N/A
S	17	33010	26701	DEB	CCS	2.12	3+		Feathered
S	17	33009	26702	DEB	CCS			0	N/A
S	17	33006	26707	DEB	CCS		3+		N/A
S	17	33025	26716	DEB	CCS	5.1	3+		Feathered
S	17	32998	26709	DEB	CCS			0	N/A
S	17	32989	26710	DEB	CCS	6.88	3+		Feathered
S	17	33004	26711	DEB	CCS	10.7	3+		Stepped

S	17	32990	26712	DEB	CCS		3+		N/A
S	17	33028	26713	DEB	CCS	7.61	3+		Stepped
S	17	33027	26714	DEB	CCS	2.92		1	Finial
S	17	33026	26715	DEB	CCS		3+		Feathered
S	17	32988	26717	DEB	CCS		3+		N/A
S	18	32063	25482	DEB	CCS	3.78	3+		N/A
S	18	32062	25483	DEB	CCS			0	N/A
S	18	32058	25484	DEB	CCS		3+		Feathered
S	18	32064	25486	DEB	CCS			2	Stepped
S	18	32060	25487	DEB	CCS		3+		N/A
S	18	32059	25488	DEB	CCS			0	N/A
S	18	32061	25489	DEB	CCS	4.05	3+		Feathered
S	18	32066	25501	DEB	CCS		3+		N/A
S	18	33221	26721	DEB	CCS		3+		Feathered
S	18	33264	26722	DEB	CCS	5.68		0	Feathered
S	18	33231	26724	DEB	CCS			0	N/A
S	18	33234	26725	DEB	CCS	3.74	3+		Feathered
S	18	33241	26726	DEB	CCS		3+		Feathered
S	18	33277	26728	DEB	CCS			0	N/A
S	18	33229	26729	DEB	CCS	17.11	3+		Feathered
S	18	33275	26730	DEB	CCS			2	Hinge
S	18	33259	26731	DEB	CCS		3+		Feathered
S	18	33271	26732	DEB	CCS			1	N/A
S	18	33255	26734	DEB	CCS	1.92		1	Feathered
S	18	33236	26735	DEB	CCS		3+		Finial
S	18	33250	26736	DEB	CCS			0	N/A
S	18	33249	26737	DEB	CCS			0	N/A
S	18	33262	26738	DEB	CCS	3.57	3+		Feathered
S	18	33248	26740	DEB	CCS	5.08		2	Feathered
S	18	33252	26742	DEB	CCS	2.52		2	Feathered
S	18	33253	26743	DEB	CCS			0	N/A
S	18	33257	26745	DEB	CCS	3.75	3+		Feathered
S	18	33256	26746	DEB	CCS	11.19	3+		Finial
S	18	33224	26747	DEB	CCS			0	N/A
S	18	33233	26748	DEB	CCS			0	N/A
S	18	33243	26749	DEB	CCS	2.52	3+		Stepped
S	18	33205	26750	DEB	CCS			0	Feathered
S	18	33203	26751	DEB	CCS	4.17	3+		Stepped
S	18	33201	26752	DEB	CCS	7.03	3+		Feathered
S	18	33218	26753	DEB	CCS	1.09	3+		Feathered
S	18	33211	26754	DEB	CCS		3+		Feathered
S	19	30689	25529	DEB	CCS		3+		N/A
S	19	30688	25530	DEB	CCS	5.74	3+		Stepped

S	19	30686	25531	DEB	CCS		3+		N/A
S	19	30699	25532	DEB	CCS	4.2	3+		Stepped
S	19	30685	25533	DEB	CCS		3+		N/A
S	19	30684	25534	DEB	CCS			0	N/A
S	19	30682	25536	DEB	CCS	7.37	3+		Hinge
S	19	30710	25538	DEB	CCS	9.84		1	Stepped
S	19	30708	25540	DEB	CCS	11.79	3+		Stepped
S	19	30707	25541	DEB	CCS			0	N/A
S	19	30706	25542	DEB	CCS		3+		Hinge
S	19	30705	25543	DEB	CCS			0	N/A
S	19	33192	26762	DEB	CCS		3+		Feathered
S	19	33196	26763	DEB	CCS		3+		N/A
S	19	33194	26765	DEB	CCS	7.53	3+		Feathered
S	19	33189	26766	DEB	Basalt	19.44	3+		Hinge
S	19	33198	26772	DEB	CCS	5.45		0	N/A
S	19	33197	26773	DEB	CCS			2	Feathered
S	20	33179	26783	DEB	Basalt	8.38	3+		Feathered
S	20	33188	26789	DEB	CCS			0	N/A
S	20	33180	26792	DEB	CCS		3+		Feathered
S	20	33178	26797	DEB	CCS	4.5	3+		Feathered
S	20	33171	26788	DEB	CCS	8.57	3+		Feathered
S	20	33172	26782	DEB	CCS		3+		N/A
S	20	33191	26761	DEB	CCS			0	N/A
S	20	30739	25571	DEB	CCS	4.45	3+		Feathered
S	20	30741	25570	DEB	CCS		3+		Feathered
S	20	33181	26780	DEB	CCS	5.03	3+		Plunging
S	20	30745	25567	DEB	CCS	3.74	3+		Stepped
S	20	30769	25592	DEB	CCS			2	Hinge
S	20	30782	25597	DEB	CCS	5.24	3+		Stepped
S	20	30766	25594	DEB	CCS		3+		Stepped
S	20	30786	25600	DEB	CCS			0	N/A
S	20	33184	26796	DEB	CCS			0	N/A
S	20	33186	26787	DEB	CCS			0	N/A
S	20	33176	26790	DEB	CCS			0	N/A
S	20	33187	26793	DEB	CCS			2	Feathered
S	20	33185	26781	DEB	CCS		3+		Feathered
S	20	30774	25589	DEB	CCS	4.37	3+		Feathered
S	20	33182	26798	DEB	CCS	2.49	3+		Stepped
S	20	30768	25593	DEB	Basalt			0	N/A
S	20	30737	25573	DEB	CCS	4.54	3+		Feathered
S	20	30744	25568	DEB	CCS	6.82	3+		Feathered
S	20	33169	26786	DEB	CCS			0	N/A
S	20	30738	25572	DEB	CCS	15.02	3+		Feathered

S	20	30764	25595	DEB	CCS	7.58		2	Feathered
S	21	30865	25625	DEB	CCS	20.63	3+		Feathered
S	21	30871	25621	DEB	CCS		3+		Feathered
S	21	30867	25623	DEB	CCS	3.02	3+		Feathered
S	21	30860	25628	DEB	CCS			0	N/A
S	21	30960	25689	DEB	CCS			2	N/A
S	21	33360	26820	DEB	CCS	2.88	3+		Stepped
S	21	33379	26823	DEB	CCS			0	N/A
S	21	33382	26819	DEB	CCS			0	N/A
S	21	33352	26860	DEB	CCS			0	N/A
S	21	33370	26835	DEB	CCS	3.49	3+		Feathered
S	21	33380	26836	DEB	CCS		3+		N/A
S	21	33356	26861	DEB	CCS	8.07		0	Feathered
S	21	33378	26839	DEB	CCS		3+		N/A
S	21	33355	26840	DEB	CCS	3.54	3+		Stepped
S	21	33367	26822	DEB	CCS	3.5		0	Stepped
S	21	33374	26837	DEB	CCS			1	Feathered
S	21	33358	26859	DEB	CCS	6.13	3+		Stepped
S	21	33377	26841	DEB	CCS	8.19	3+		Feathered
S	21	33377	26841	DEB	CCS			0	N/A
S	22	33442	26938	DEB	CCS			0	N/A
S	22	33439	26905	DEB	CCS			0	Feathered
S	22	33441	26904	DEB	CCS	6.25	3+		Feathered
S	22	33443	26907	DEB	CCS	5.44	3+		Feathered
S	23	31067	25762	DEB	CCS		3+		Hinge
S	23	31065	25763	DEB	CCS	2.92	3+		Stepped
17	23	44289	43900	DEB	Basalt			0	N/A

Appendix C

Debitage Typological Analysis

Unit	Level	Catalog #	Reading #	Material	Triple Cortex Analysis %	Bifacial Thinning Flake	Pressure Flake
R	8	29498	25003	CCS	0		
R	8	29497	25002	CCS	0		
Feature	1	32046	25975	CCS	0		
Wall Fall	1	32047	25977	CCS	0		
Wall Fall	1	32049	25978	CCS	0		
Wall Fall	1	32052	25979	CCS	0		
Feature	1	32050	25981	CCS	0		
Feature	1	32048	25982	CCS	>50%		
S	1	31762	26081	CCS	0		
S	1	31763	26082	CCS	0		
S	2	31764	26105	CCS	0	X	
S	2	31769	26106	CCS	0		
S	2	31766	26107	CCS	0		
S	2	31768	26108	CCS	1-49%		
S	2	31767	26109	CCS	0		
S	3	29242	24857	CCS	0		
S	3	29243	24858	CCS	0		X
S	3	29241	24859	CCS	1-49%	X	
S	3	31836	26143	Basalt	0		
S	3	31837	26144	CCS	0		X
S	3	31838	26145	CCS	0		
S	3	31839	26146	CCS	0	X	
S	3	31835	26148	CCS	0		
S	4	29244	24883	CCS	0		
S	4	29245	24884	CCS	0		

S	4	29247	24896	CCS	0		
S	4	31909	26149	CCS	0		
S	4	31910	26150	CCS	0		
S	4	31908	26152	CCS	0		
S	4	31905	26153	CCS	0	X	
S	4	31907	26154	CCS	1-49%		
S	4	31917	26155	CCS	0		
S	4	31906	26156	CCS	0		
S	4	31916	26157	CCS	0		
S	4	31915	26158	CCS	0		
S	4	31914	26159	CCS	0		
S	4	31912	26160	CCS	0		
S	4	31913	26161	CCS	0		X
S	4	31911	26162	CCS	0		
S	5	29326	24931	CCS	0		
S	5	29327	24932	CCS	0		
S	5	29329	24933	CCS	0		
S	5	29422	24945	CCS	0		
S	5	31958	26201	CCS	0	X	
S	5	31959	26202	CCS	0		
S	5	31957	26203	CCS	0		
S	5	31953	26168	CCS	1-49%		
S	5	31955	26169	CCS	0		
S	5	29421	24970	CCS	0		
S	5	31954	26176	CCS	0		
S	5	31956	26177	CCS	0		
S	5	31961	26195	CCS	0	X	
S	6	32037	26204	CCS	0		
S	6	32031	26231	CCS	0		
S	6	32034	26232	CCS	0		
S	6	32036	26233	CCS	0	X	
S	6	32035	26242	CCS	0		
S	6	32030	26243	CCS	>50%		
S	6	32032	26244	CCS	0		
S	6	32038	26245	CCS	0		
S	6	32033	26246	CCS	0		

S	7	29427	24973	CCS	0	
S	7	29488	24983	CCS	0	
S	7	32095	26271	CCS	0	X
S	7	32094	26272	CCS	0	
S	7	32098	26273	CCS	0	
S	7	32096	26274	CCS	0	X
S	8	29495	25000	CCS	0	X
S	8	29496	25001	CCS	0	
S	8	29499	25004	CCS	0	
S	8	29500	25005	CCS	0	
S	8	44882	25019	CCS	0	
S	8	44883	25020	CCS	0	
S	8	32122	26293	CCS	0	
S	8	32120	26294	CCS	0	
S	8	32118	26295	CCS	0	
S	8	32116	26296	CCS	0	
S	8	32113	26298	CCS	0	
S	8	32263	26346	CCS	0	
S	8	32226	26330	CCS	1-49%	
S	8	32227	26333	CCS	0	
S	8	32229	26336	CCS	0	X
S	8	32232	26334	CCS	0	X
S	8	44881	25018	CCS	0	
S	9	29566	25025	CCS	0	
S	9	29564	25026	CCS	0	
S	9	29563	25027	CCS	0	
S	9	29562	25028	CCS	0	
S	9	29616	25034	CCS	0	
S	9	29614	25035	CCS	0	
S	9	29612	25036	CCS	0	X
S	9	29619	25037	CCS	0	
S	9	29602	25038	CCS	0	
S	9	29609	25042	CCS	0	
S	9	29605	25043	CCS	0	
S	9	29608	25044	CCS	0	
S	9	32301	26355	CCS	0	

S	9	32300	26356	CCS	0	
S	9	32299	26357	CCS	1-49%	X
S	9	32298	26358	CCS	0	
S	9	32297	26359	CCS	0	
S	9	32294	26361	CCS	0	
S	9	32295	26360	CCS	0	
S	9	32293	26362	CCS	0	X
S	9	32393	26365	CCS	0	
S	9	32392	26366	Basalt	0	
S	9	32391	26367	CCS	0	
S	9	32390	26369	CCS	0	X
S	9	32387	26370	CCS	0	
S	9	32389	26371	CCS	1-49%	
S	9	32382	26381	CCS	0	
S	9	32383	26382	CCS	0	
S	9	32381	26383	CCS	0	
S	9	32386	26385	CCS	0	
S	9	32378	26386	CCS	0	
S	9	32388	26388	CCS	0	X
S	9	32385	26389	CCS	>50%	
S	9	32384	26390	Basalt	0	
S	10	29666	25022	CCS	0	
S	10	29663	25063	CCS	0	
S	10	29661	25064	CCS	0	
S	10	29659	25065	CCS	0	
S	10	29654	25066	CCS	0	
S	10	29656	25067	CCS	0	
S	10	29650	25070	CCS	0	
S	10	32410	26395	CCS	0	X
S	10	32405	26396	CCS	0	
S	10	32418	26398	CCS	1-49%	
S	10	32421	26399	CCS	0	
S	10	32432	26406	CCS	0	X
S	10	32428	26407	CCS	0	
S	11	29696	25089	CCS	0	
S	11	29793	25125	CCS	0	

S	11	29791	25126	CCS	0		
S	11	29835	25153	CCS	0		
S	11	32460	26447	CCS	0		
S	11	32472	26448	CCS	1-49%		
S	11	32477	26449	CCS	0	X	
S	11	32463	26450	CCS	0		
S	11	32476	26451	CCS	0		
S	11	32474	26452	CCS	0		
S	11	32478	26453	CCS	0		
S	11	32468	26455	CCS	0		
S	11	32458	26456	CCS	0		
S	11	32470	26457	CCS	0		
S	11	32459	26458	CCS	0		
S	11	32479	26459	CCS	0		
S	11	32469	26460	CCS	0		
S	11	32462	26462	CCS	0		
S	11	32466	26463	CCS	0	X	
S	11	32465	26464	CCS	0		
S	12	29953	25166	Basalt	0		X
S	12	29956	25167	CCS	0		
S	12	29960	25189	CCS	0		
S	12	29951	25190	CCS	0		
S	12	29962	25191	CCS	0		X
S	12	29963	25192	CCS	0		
S	12	32667	26465	CCS	0		
S	12	32653	26466	CCS	0		
S	12	32646	26467	CCS	0		
S	12	32641	26469	CCS	0	X	
S	12	32638	26470	CCS	0	X	
S	12	32632	26471	CCS	0		
S	12	32629	26473	CCS	0	X	
S	12	32673	26474	CCS	0		
S	12	32669	26475	CCS	0		
S	12	32670	26476	CCS	0		
S	12	32663	26477	CCS	0		
S	12	32671	26478	CCS	0		

S	12	32659	26479	CCS	0		
S	12	32658	26480	CCS	0		
S	12	32655	26481	CCS	0		
S	12	32662	26482	CCS	0	X	
S	13	30058	25244	CCS	0		
S	13	30046	25225	CCS	0		
S	13	30044	25226	CCS	0		X
S	13	30045	25227	CCS	1-49%	X	
S	13	30047	25228	CCS	1-49%		
S	13	32661	26490	CCS	0		
S	13	32656	26491	CCS	0		
S	13	32652	26492	CCS	0		
S	13	32664	26493	CCS	>50%		
S	13	32635	26494	CCS	0		
S	13	32648	26495	CCS	0		
S	13	32668	26496	Basalt	1-49%		
S	13	32645	26500	CCS	0		
S	13	32666	26501	CCS	>50%		
S	14	32704	26528	CCS	0	X	
S	14	32705	26529	CCS	0		
S	14	32702	26530	Basalt	0		
S	14	32703	26531	CCS	0		
S	14	32701	26532	CCS	0		
S	14	32700	26533	CCS	0		
S	14	30123	25250	CCS	0	X	
S	14	30124	25251	CCS	0		X
S	14	30125	25252	CCS	0		
S	14	30127	25253	CCS	0		
S	14	32698	26554	CCS	0		
S	14	32697	26555	Basalt	0		
S	14	32699	26556	CCS	0		
S	14	32694	26557	CCS	0	X	
S	14	32693	26558	CCS	0		
S	14	32695	26570	CCS	0		
S	14	30119	25272	CCS	0		
S	14	30118	25273	CCS	0		

S	14	30121	25275	CCS	0	X	
S	14	30112	25276	CCS	0		
S	14	30120	25278	CCS	0	X	
S	14	30137	25283	CCS	0	X	
S	14	30138	25284	CCS	0		
S	14	30135	25285	CCS	0		
S	14	30131	25287	CCS	0	X	
S	15	30202	25295	CCS	0		
S	15	30201	25296	CCS	>50%		
S	15	30206	25316	CCS	0		
S	15	30205	25317	CCS	1-49%		
S	15	30199	25318	CCS	1-49%		
S	15	30196	25319	CCS	>50%		
S	15	30197	25321	CCS	0		
S	15	30204	25322	CCS	0		
S	15	30200	25323	CCS	0		
S	15	30194	25326	CCS	0		
S	15	30288	25333	CCS	0		
S	15	30290	25334	CCS	0	X	
S	15	32754	26575	CCS	0		
S	15	32753	26576	CCS	1-49%		
S	15	32752	26578	CCS	0	X	
S	15	32751	26579	CCS	0		
S	15	32757	26590	CCS	0		
S	15	32758	26592	CCS	0	X	X
S	15	32755	26593	CCS	>50%		
S	15	32756	26594	CCS	0	X	
S	15	32750	26595	CCS	0		
S	16	30321	25340	CCS	0		
S	16	30319	25341	CCS	0		
S	16	30315	25351	Metamorphic	0		
S	16	30324	25353	CCS	0		
S	16	30323	25354	CCS	0	X	
S	16	30322	25355	CCS	1-49%	X	
S	16	30318	25356	CCS	0	X	
S	16	30317	25357	CCS	0	X	

S	16	30320	25360	CCS	0		
S	16	30436	25363	CCS	0		
S	16	30427	25376	CCS	0	X	
S	16	30431	25377	CCS	1-49%	X	
S	16	30433	25378	CCS	0		
S	16	30462	25379	CCS	0		
S	16	30424	25385	CCS	0		
S	16	30437	25386	CCS	0		
S	16	30430	25387	CCS	0		
S	16	32815	26601	CCS	0		
S	16	32816	26603	CCS	0		
S	16	32814	26602	CCS	0		
S	16	32818	26605	CCS	0		
S	16	32819	26606	CCS	0		
S	16	32820	26607	CCS	0		
S	16	32809	26608	CCS	0	X	
S	16	32811	26621	CCS	0		
S	16	32812	26622	CCS	0		
S	16	32813	26623	CCS	0		
S	16	32817	26604	CCS	0		X
S	16	32879	26626	CCS	0		
S	16	32877	26627	CCS	0	X	
S	16	32810	26624	CCS	>50%		
S	16	32880	26625	CCS	1-49%		
S	16	32876	26628	CCS	0		
S	16	32874	26629	CCS	0		
S	16	32873	26630	CCS	0		
S	16	32871	26631	CCS	0	X	
S	16	32867	26633	CCS	0		
S	17	30599	25398	CCS	1-49%		
S	17	30598	25399	CCS	1-49%		
S	17	30588	25411	CCS	0		
S	17	30591	25412	CCS	0		
S	17	30585	25416	CCS	0		
S	17	30582	25445	CCS	0		
S	17	30590	25447	CCS	0		

S	17	30595	25448	CCS	0	
S	17	30600	25462	CCS	0	X
S	17	33019	26668	CCS	0	
S	17	33023	26669	CCS	0	
S	17	33024	26670	CCS	0	
S	17	33016	26672	CCS	0	X
S	17	33022	26671	CCS	0	
S	17	33020	26682	CCS	0	
S	17	33018	26683	CCS	0	X
S	17	33015	26684	CCS	0	
S	17	33017	26686	CCS	1-49%	
S	17	32995	26687	CCS	0	
S	17	33001	26691	CCS	0	
S	17	33021	26692	CCS	0	
S	17	33008	26695	CCS	0	
S	17	33012	26696	CCS	0	
S	17	32999	26697	CCS	1-49%	
S	17	33011	26698	CCS	0	
S	17	33003	26699	CCS	0	
S	17	33014	26700	CCS	0	
S	17	33010	26701	CCS	0	X
S	17	33009	26702	CCS	0	
S	17	33007	26703	CCS	0	X
S	17	33006	26707	CCS	0	
S	17	32992	26706	CCS	0	
S	17	33025	26716	CCS	0	
S	17	32998	26709	CCS	0	
S	17	32989	26710	CCS	0	X
S	17	33004	26711	CCS	0	
S	17	32990	26712	CCS	0	
S	17	33028	26713	CCS	0	X
S	17	33027	26714	CCS	0	
S	17	33026	26715	CCS	0	
S	17	32988	26717	CCS	0	
S	18	32063	25482	CCS	0	
S	18	32062	25483	CCS	0	

S	18	32058	25484	CCS	0		
S	18	32064	25486	CCS	0		
S	18	32060	25487	CCS	1-49%		
S	18	32059	25488	CCS	1-49%		
S	18	32061	25489	CCS	0		
S	18	32066	25501	CCS	0		
S	18	33221	26721	CCS	0		
S	18	33264	26722	CCS	0	X	
S	18	33238	26723	CCS	0	X	
S	18	33231	26724	CCS	0		
S	18	33234	26725	CCS	0		X
S	18	33241	26726	CCS	0		
S	18	33277	26728	CCS	1-49%		
S	18	33229	26729	CCS	0	X	
S	18	33275	26730	CCS	0		
S	18	33259	26731	CCS	0		
S	18	33271	26732	CCS	0		
S	18	33255	26734	CCS	1-49%		
S	18	33236	26735	CCS	0		
S	18	33250	26736	CCS	0		
S	18	33249	26737	CCS	0		
S	18	33262	26738	CCS	0	X	
S	18	33246	26739	CCS	0	X	
S	18	33248	26740	CCS	1-49%		
S	18	33251	26741	CCS	0		
S	18	33252	26742	CCS	0		X
S	18	33253	26743	CCS	0		
S	18	33254	26744	CCS	0		
S	18	33257	26745	CCS	0		
S	18	33256	26746	CCS	0	X	
S	18	33224	26747	CCS	0		
S	18	33233	26748	CCS	0		
S	18	33243	26749	CCS	0		
S	18	33205	26750	CCS	1-49%		
S	18	33203	26751	CCS	0	X	
S	18	33201	26752	CCS	0	X	

S	18	33218	26753	CCS	0		X
S	18	33211	26754	CCS	0		
S	18	33208	26755	CCS	0		
S	18	33163	26784	CCS	0		
S	19	30689	25529	CCS	0		
S	19	30688	25530	CCS	0		
S	19	30686	25531	CCS	0		
S	19	30699	25532	CCS	0	X	
S	19	30685	25533	CCS	1-49%		
S	19	30684	25534	CCS	0		
S	19	30682	25536	CCS	0		
S	19	30710	25538	CCS	0		
S	19	30708	25540	CCS	0		
S	19	30707	25541	CCS	0		
S	19	30706	25542	CCS	0		
S	19	30705	25543	CCS	0		
S	19	33192	26762	CCS	0		
S	19	33196	26763	CCS	0		
S	19	33194	26765	CCS	1-49%		
S	19	33189	26766	Basalt	0		
S	19	33198	26772	CCS	1-49%		
S	19	33197	26773	CCS	0		
S	20	33179	26783	Basalt	0		
S	20	33188	26789	CCS	1-49%		
S	20	33183	26799	CCS	>50%		
S	20	33180	26792	CCS	0		
S	20	33178	26797	CCS	0		
S	20	33175	26794	CCS	1-49%		
S	20	33171	26788	CCS	0		
S	20	33172	26782	CCS	0		
S	20	33191	26761	CCS	0		
S	20	30739	25571	CCS	0	X	
S	20	30741	25570	CCS	0		
S	20	33181	26780	CCS	0		
S	20	30773	25590	CCS	0		
S	20	30745	25567	CCS	0		

S	20	30735	25574	CCS	0	
S	20	30769	25592	CCS	0	
S	20	30782	25597	CCS	0	X
S	20	30766	25594	CCS	1-49%	
S	20	30786	25600	CCS	0	
S	20	33174	26795	Basalt	0	
S	20	33184	26796	CCS	1-49%	
S	20	33186	26787	CCS	0	
S	20	33176	26790	CCS	0	
S	20	33177	26791	CCS	0	
S	20	33187	26793	CCS	0	
S	20	33185	26781	CCS	0	
S	20	30774	25589	CCS	0	
S	20	33182	26798	CCS	0	X
S	20	30768	25593	Basalt	0	
S	20	30737	25573	CCS	0	
S	20	30744	25568	CCS	1-49%	
S	20	33169	26786	CCS	0	
S	20	30738	25572	CCS	0	
S	20	30764	25595	CCS	0	
S	20	33166	26785	CCS	0	
S	21	30865	25625	CCS	>50%	
S	21	30871	25621	CCS	0	
S	21	30867	25623	CCS	0	
S	21	30863	25627	CCS	0	
S	21	30860	25628	CCS	1-49%	
S	21	30859	25629	CCS	1-49%	
S	21	30872	25620	CCS	0	
S	21	30857	25630	CCS	0	
S	21	30856	25631	CCS	1-49%	
S	21	30893	25650	CCS	0	
S	21	30892	25651	CCS	0	
S	21	30891	25652	CCS	0	
S	21	30960	25689	CCS	0	
S	21	33360	26820	CCS	0	X
S	21	33379	26823	CCS	0	

S	21	33382	26819	CCS	0		
S	21	33352	26860	CCS	0		
S	21	33383	26824	CCS	0		
S	21	33370	26835	CCS	0		X
S	21	33380	26836	CCS	0		
S	21	33356	26861	CCS	0		
S	21	33378	26839	CCS	0		
S	21	33355	26840	CCS	0		
S	21	33367	26822	CCS	0		
S	21	33381	26838	CCS	1-49%		
S	21	33374	26837	CCS	1-49%		
S	21	33358	26859	CCS	0	X	
S	22	33442	26938	CCS	0		
S	22	33439	26905	CCS	1-49%		
S	22	33441	26904	CCS	0		
S	22	33443	26907	CCS	0		
S	23	31067	25762	CCS	0		
S	23	31065	25763	CCS	0		
17	23	44289	43900	Basalt	0		
Feature	1	31285	25873	CCS	0		
Feature	1	31278	25861	CCS	0		
Feature	1	31268	25863	CCS	0		
Feature	1	31293	25875	CCS	0		
Feature	1	31251	25858	CCS	0		
Feature	1	31275	25867	CCS	1-49%		
Feature	1	31260	25842	CCS	0		
Feature	1	31254	25837	CCS	0		
Feature	1	31280	25862	CCS	1-49%		
Feature	1	31257	25840	CCS	0		
Feature	1	31255	25838	CCS	0		
Feature	1	31292	25877	CCS	0		
Feature	1	31270	25868	CCS	0		
Feature	1	31273	25866	CCS	0		
Feature	1	31272	25859	CCS	0		
Feature	1	31277	25860	CCS	0		
Feature	1	31271	25864	CCS	0		

Feature	1	31262	25849	CCS	0	X
Feature	1	31286	25879	CCS	0	
Feature	1	31256	25839	CCS	0	
Feature	1	33516	26978	CCS	0	X
Feature	1	33520	26979	CCS	0	
Feature	1	33521	26998	CCS	0	X
Feature	1	33518	26978	CCS	0	
Feature	1	33519	26982	CCS	0	
Feature	1	33523	26977	CCS	0	X
Feature	1	33515	26981	CCS	>50%	
Feature	1	33517	26999	CCS	1-49%	
Feature	1	33522	26983	CCS	0	
Feature	1	32043	26079	CCS	0	X
S	21	33377	26841	CCS	0	
Feature	1	31338	25908	CCS	1-49%	
Feature	1	31391	25940	Basalt	0	
Feature	1	31402	25956	CCS	0	X
Feature	1	31397	25939	CCS	0	
Feature	1	31406	25958	CCS	0	
Feature	1	31390	25948	CCS	0	
Feature	1	31411	25953	CCS	0	
Feature	1	31388	25947	CCS	0	
Feature	1	32045	25996	Basalt	0	
Feature	1	31333	25910	CCS	1-49%	
Feature	1	31329	25916	CCS	0	
Feature	1	31331	25911	CCS	0	
Feature	1	31326	25912	CCS	1-49%	
Feature	1	31325	25914	CCS	0	
Feature	1	31328	25917	CCS	0	
Feature	1	31327	25918	CCS	0	
Feature	1	31321	25922	CCS	0	
Feature	1	31323	25920	CCS	0	
Feature	1	31395	25937	CCS	0	
Feature	1	31413	25938	CCS	0	
Feature	1	31414	25942	CCS	1-49%	
Feature	1	31387	25943	CCS	0	

Feature	1	31386	25945	CCS	1-49%		
Feature	1	31400	25946	CCS	0		
Feature	1	31389	25949	CCS	0		
Feature	1	31404	25952	CCS	1-49%		
Feature	1	31409	25955	CCS	0		
Feature	1	32044	25997	CCS	0		
S	10	29655	25062	CCS	0		
S	10	29657	25061	CCS	0	X	
S	1	56636		CCS	1-49%		
S	1	56637		Metamorphic	0		
S	1	56640		Basalt	0	X	
S	1	56638		Obsidian	0		X
O	6	58036		CCS	0	X	
O	5	58026		CCS	0		
O	4	58018		CCS	0		
O	8	58052		CCS	0		
O	9	58063		CCS	0		
O	7	58047		CCS	0		
O	6	58035		CCS	0		
O	4	58470		Basalt	0		
O	5	58464		Basalt	0		
O	8	58477		Basalt	0		
O	9	58479		Basalt	0		
O	6	58486		Basalt	0		
O	7	58484		Basalt	0		
O	5	58025		CCS	0	X	
O	8	58053		CCS	0		
O	8	58055		CCS	0		
O	8	58056		CCS	0		
O	8	58058		CCS	0		
O	1	56635		CCS	0		
S	1	56640		Basalt	0		
S	1	56640		Basalt	0		
S	1	56636		CCS	0		
S	1	56636		CCS	0		X
S	1	56636		CCS	0	X	

S	1	56636	CCS	0	X	
S	1	56636	CCS	0		
S	1	56636	CCS	0	X	
S	1	56636	CCS	1-49%		
S	1	56636	CCS	0		
S	1	56636	CCS	0		
S	1	56636	CCS	0		
S	1	56636	CCS	0	X	
S	1	56636	CCS	0	X	
S	1	56636	CCS	0		
S	1	56636	CCS	0		
S	1	56636	CCS	0		
S	1	56636	CCS	0	X	
S	1	56636	CCS	0	X	
S	1	56636	CCS	0	X	
S	1	56636	CCS	0		
S	1	56636	CCS	0	X	
S	1	56636	CCS	0		
S	1	56636	CCS	0	X	
S	1	56636	CCS	0	X	
S	1	56636	CCS	0	X	
O	9	58063	CCS	0		
O	9	58063	CCS	0		
O	9	58063	CCS	0	X	
O	9	58063	CCS	0		
O	9	58063	CCS	0		
O	8	58052	CCS	1-49%		
O	8	58052	CCS	1-49%		
O	8	58052	CCS	0		
O	8	58052	CCS	0		
O	8	58052	CCS	0		X
O	8	58477	Basalt	0		
O	5	58026	CCS	0		X
O	5	58026	CCS	0		
O	5	58026	CCS	0		
O	5	58026	CCS	1-49%		

O	5	58026		CCS	1-49%		
O	4	58018		CCS	0		
O	4	58018		CCS	0		
O	4	58018		CCS	0	X	
O	7	58047		CCS	0		
O	7	58047		CCS	0		
O	7	58047		CCS	1-49%		
O	7	58047		CCS	0		
O	7	58047		CCS	0		
O	7	58047		CCS	0		
O	7	58047		CCS	0		
O	7	58047		CCS	0		
O	7	58047		CCS	1-49%		
O	6	58035		CCS	1-49%		
O	6	58035		CCS	0		
O	6	58035		CCS	1-49%		
O	6	58035		CCS	0		
O	6	58035		CCS	0		X
O	6	58035		CCS	0		
O	6	58035		CCS	0		
O	6	58035		CCS	0		X
O	6	58035		CCS	0		
O	6	58035		CCS	0	X	
O	6	58035		CCS	0	X	
O	6	58035		CCS	0		
O	6	58035		CCS	0		
O	6	58486		Basalt	0		
Feature	1	33516	26997	CCS	0		
Feature	1	33518	26978	CCS	0		
S	21	33377	26841	CCS	0		

Debitage Typological Analysis Cont.

Unit	Level	Catalog #	Reading #	Material	Complete Flake	Broken Flake	Flake Fragment	Unable to Orient
R	8	29498	25003	CCS	X			
R	8	29497	25002	CCS				X
Feature	1	32046	25975	CCS			X	
Wall Fall	1	32049	25978	CCS			X	
Wall Fall	1	32052	25979	CCS			X	
Feature	1	32050	25981	CCS			X	
S	1	31762	26081	CCS			X	
S	1	31763	26082	CCS			X	
S	2	31764	26105	CCS		X		
S	2	31769	26106	CCS			X	
S	2	31768	26108	CCS	X			
S	2	31767	26109	CCS			X	
S	3	29242	24857	CCS				X
S	3	29243	24858	CCS	X			
S	3	29241	24859	CCS		X		
S	3	31836	26143	Basalt		X		
S	3	31837	26144	CCS		X		
S	3	31838	26145	CCS		X		
S	3	31839	26146	CCS		X		
S	3	31835	26148	CCS		X		
S	4	29244	24883	CCS				X
S	4	29245	24884	CCS				X
S	4	29247	24896	CCS			X	
S	4	31909	26149	CCS				X
S	4	31910	26150	CCS		X		
S	4	31905	26153	CCS		X		
S	4	31907	26154	CCS			X	
S	4	31917	26155	CCS			X	
S	4	31906	26156	CCS		X		
S	4	31916	26157	CCS		X		
S	4	31915	26158	CCS			X	

S	4	31914	26159	CCS	X			
S	4	31912	26160	CCS		X		
S	4	31913	26161	CCS	X			
S	4	31911	26162	CCS				X
S	5	29326	24931	CCS				X
S	5	29327	24932	CCS			X	
S	5	29329	24933	CCS			X	
S	5	29422	24945	CCS		X		
S	5	31958	26201	CCS		X		
S	5	31959	26202	CCS				X
S	5	31957	26203	CCS			X	
S	5	31955	26169	CCS			X	
S	5	29421	24970	CCS	X			
S	5	31954	26176	CCS			X	
S	5	31956	26177	CCS			X	
S	5	31961	26195	CCS		X		
S	6	32037	26204	CCS			X	
S	6	32031	26231	CCS			X	
S	6	32034	26232	CCS			X	
S	6	32036	26233	CCS		X		
S	6	32035	26242	CCS			X	
S	6	32032	26244	CCS			X	
S	6	32038	26245	CCS				X
S	6	32033	26246	CCS			X	
S	7	29427	24973	CCS				X
S	7	29488	24983	CCS				X
S	7	32095	26271	CCS	X			
S	7	32094	26272	CCS		X		
S	7	32098	26273	CCS				X
S	7	32096	26274	CCS	X			
S	8	29496	25001	CCS				X
S	8	29499	25004	CCS			X	
S	8	29500	25005	CCS			X	
S	8	44882	25019	CCS			X	
S	8	44883	25020	CCS	X			
S	8	32122	26293	CCS		X		

S	8	32120	26294	CCS			X	
S	8	32118	26295	CCS	X			
S	8	32116	26296	CCS	X			
S	8	32113	26298	CCS			X	
S	8	32226	26330	CCS			X	
S	8	32227	26333	CCS			X	
S	8	32232	26334	CCS	X			
S	8	44881	25018	CCS		X		
S	9	29566	25025	CCS			X	
S	9	29564	25026	CCS			X	
S	9	29562	25028	CCS			X	
S	9	29616	25034	CCS				X
S	9	29612	25036	CCS	X			
S	9	29619	25037	CCS	X			
S	9	29609	25042	CCS	X			
S	9	29605	25043	CCS			X	
S	9	29608	25044	CCS			X	
S	9	32301	26355	CCS				X
S	9	32300	26356	CCS			X	
S	9	32299	26357	CCS		X		
S	9	32298	26358	CCS				X
S	9	32297	26359	CCS			X	
S	9	32294	26361	CCS			X	
S	9	32295	26360	CCS			X	
S	9	32293	26362	CCS		X		
S	9	32393	26365	CCS	X			
S	9	32392	26366	Basalt				X
S	9	32391	26367	CCS				X
S	9	32390	26369	CCS	X			
S	9	32387	26370	CCS			X	
S	9	32389	26371	CCS			X	
S	9	32382	26381	CCS			X	
S	9	32383	26382	CCS			X	
S	9	32381	26383	CCS			X	
S	9	32386	26385	CCS		X		
S	9	32378	26386	CCS			X	

S	9	32388	26388	CCS	X			
S	10	29666	25022	CCS		X		
S	10	29663	25063	CCS			X	
S	10	29661	25064	CCS		X		
S	10	29659	25065	CCS			X	
S	10	29654	25066	CCS				X
S	10	29656	25067	CCS		X		
S	10	29650	25070	CCS			X	
S	10	32410	26395	CCS	X			
S	10	32405	26396	CCS		X		
S	10	32421	26399	CCS			X	
S	10	32432	26406	CCS	X			
S	10	32428	26407	CCS		X		
S	11	29696	25089	CCS			X	
S	11	29793	25125	CCS		X		
S	11	29791	25126	CCS			X	
S	11	29835	25153	CCS	X			
S	11	32460	26447	CCS				X
S	11	32472	26448	CCS		X		
S	11	32477	26449	CCS		X		
S	11	32463	26450	CCS	X			
S	11	32476	26451	CCS		X		
S	11	32478	26453	CCS	X			
S	11	32468	26455	CCS	X			
S	11	32470	26457	CCS			X	
S	11	32459	26458	CCS	X			
S	11	32469	26460	CCS	X			
S	11	32462	26462	CCS			X	
S	11	32466	26463	CCS	X			
S	12	29953	25166	Basalt		X		
S	12	29956	25167	CCS				X
S	12	29960	25189	CCS			X	
S	12	29951	25190	CCS		X		
S	12	29962	25191	CCS		X		
S	12	29963	25192	CCS			X	
S	12	32667	26465	CCS			X	

S	12	32653	26466	CCS				X
S	12	32646	26467	CCS				X
S	12	32641	26469	CCS		X		
S	12	32638	26470	CCS		X		
S	12	32632	26471	CCS			X	
S	12	32629	26473	CCS		X		
S	12	32673	26474	CCS		X		
S	12	32669	26475	CCS			X	
S	12	32670	26476	CCS	X			
S	12	32663	26477	CCS				X
S	12	32671	26478	CCS			X	
S	12	32659	26479	CCS		X		
S	12	32655	26481	CCS	X			
S	12	32662	26482	CCS		X		
S	13	30058	25244	CCS				X
S	13	30046	25225	CCS			X	
S	13	30044	25226	CCS	X			
S	13	30045	25227	CCS	X			
S	13	30047	25228	CCS	X			
S	13	32661	26490	CCS				X
S	13	32656	26491	CCS			X	
S	13	32664	26493	CCS				X
S	13	32635	26494	CCS		X		
S	13	32648	26495	CCS	X			
S	13	32668	26496	Basalt		X		
S	13	32645	26500	CCS	X			
S	13	32666	26501	CCS			X	
S	14	32704	26528	CCS	X			
S	14	32705	26529	CCS	X			
S	14	32702	26530	Basalt		X		
S	14	32703	26531	CCS	X			
S	14	32701	26532	CCS			X	
S	14	32700	26533	CCS	X			
S	14	30123	25250	CCS	X			
S	14	30125	25252	CCS	X			
S	14	30127	25253	CCS		X		

S	14	32698	26554	CCS	X			
S	14	32697	26555	Basalt			X	
S	14	32699	26556	CCS	X			
S	14	32694	26557	CCS	X			
S	14	32693	26558	CCS	X			
S	14	32695	26570	CCS	X			
S	14	30119	25272	CCS			X	
S	14	30118	25273	CCS		X		
S	14	30121	25275	CCS	X			
S	14	30112	25276	CCS	X			
S	14	30120	25278	CCS	X			
S	14	30137	25283	CCS	X			
S	14	30138	25284	CCS			X	
S	14	30135	25285	CCS			X	
S	14	30131	25287	CCS	X			
S	15	30202	25295	CCS			X	
S	15	30201	25296	CCS				X
S	15	30206	25316	CCS	X			
S	15	30205	25317	CCS	X			
S	15	30199	25318	CCS			X	
S	15	30196	25319	CCS				X
S	15	30197	25321	CCS				X
S	15	30204	25322	CCS	X			
S	15	30200	25323	CCS				X
S	15	30194	25326	CCS	X			
S	15	30288	25333	CCS			X	
S	15	30290	25334	CCS		X		
S	15	32754	26575	CCS			X	
S	15	32752	26578	CCS	X			
S	15	32751	26579	CCS		X		
S	15	32757	26590	CCS		X		
S	15	32758	26592	CCS	X			
S	15	32755	26593	CCS			X	
S	15	32756	26594	CCS		X		
S	15	32750	26595	CCS				X
S	16	30321	25340	CCS	X			

S	16	30319	25341	CCS			X	
S	16	30315	25351	Metamorphic				X
S	16	30324	25353	CCS			X	
S	16	30323	25354	CCS	X			
S	16	30322	25355	CCS	X			
S	16	30318	25356	CCS	X			
S	16	30317	25357	CCS	X			
S	16	30436	25363	CCS			X	
S	16	30427	25376	CCS	X			
S	16	30431	25377	CCS		X		
S	16	30462	25379	CCS			X	
S	16	30424	25385	CCS	X			
S	16	30437	25386	CCS			X	
S	16	30430	25387	CCS			X	
S	16	32815	26601	CCS			X	
S	16	32814	26602	CCS				X
S	16	32818	26605	CCS				X
S	16	32819	26606	CCS	X			
S	16	32820	26607	CCS		X		
S	16	32809	26608	CCS		X		
S	16	32811	26621	CCS	X			
S	16	32812	26622	CCS				X
S	16	32813	26623	CCS			X	
S	16	32817	26604	CCS		X		
S	16	32879	26626	CCS				X
S	16	32877	26627	CCS	X			
S	16	32810	26624	CCS				X
S	16	32880	26625	CCS			X	
S	16	32876	26628	CCS			X	
S	16	32874	26629	CCS		X		
S	16	32871	26631	CCS	X			
S	17	30599	25398	CCS			X	
S	17	30588	25411	CCS			X	
S	17	30591	25412	CCS				X
S	17	30585	25416	CCS				X
S	17	30582	25445	CCS			X	

S	17	30590	25447	CCS			X	
S	17	30595	25448	CCS		X		
S	17	30600	25462	CCS		X		
S	17	33019	26668	CCS			X	
S	17	33023	26669	CCS			X	
S	17	33024	26670	CCS			X	
S	17	33016	26672	CCS		X		
S	17	33022	26671	CCS			X	
S	17	33020	26682	CCS	X			
S	17	33018	26683	CCS	X			
S	17	33015	26684	CCS				X
S	17	33017	26686	CCS				X
S	17	32995	26687	CCS				X
S	17	33001	26691	CCS		X		
S	17	33021	26692	CCS	X			
S	17	33008	26695	CCS		X		
S	17	33012	26696	CCS			X	
S	17	32999	26697	CCS			X	
S	17	33011	26698	CCS		X		
S	17	33003	26699	CCS			X	
S	17	33014	26700	CCS				X
S	17	33010	26701	CCS		X		
S	17	33007	26703	CCS		X		
S	17	32992	26706	CCS				X
S	17	33025	26716	CCS	X			
S	17	32998	26709	CCS				X
S	17	32989	26710	CCS	X			
S	17	32990	26712	CCS			X	
S	17	33028	26713	CCS	X			
S	17	33027	26714	CCS		X		
S	17	33026	26715	CCS			X	
S	17	32988	26717	CCS			X	
S	18	32063	25482	CCS		X		
S	18	32062	25483	CCS				X
S	18	32058	25484	CCS			X	
S	18	32064	25486	CCS			X	

S	18	32060	25487	CCS			X	
S	18	32059	25488	CCS				X
S	18	32061	25489	CCS	X			
S	18	32066	25501	CCS			X	
S	18	33221	26721	CCS			X	
S	18	33264	26722	CCS		X		
S	18	33238	26723	CCS	X			
S	18	33231	26724	CCS				X
S	18	33277	26728	CCS			X	
S	18	33229	26729	CCS		X		
S	18	33275	26730	CCS			X	
S	18	33259	26731	CCS			X	
S	18	33271	26732	CCS			X	
S	18	33255	26734	CCS		X		
S	18	33236	26735	CCS			X	
S	18	33250	26736	CCS				X
S	18	33249	26737	CCS				X
S	18	33262	26738	CCS	X			
S	18	33246	26739	CCS	X			
S	18	33248	26740	CCS	X			
S	18	33251	26741	CCS		X		
S	18	33252	26742	CCS	X			
S	18	33253	26743	CCS				X
S	18	33254	26744	CCS				X
S	18	33257	26745	CCS	X			
S	18	33256	26746	CCS	X			
S	18	33224	26747	CCS				X
S	18	33233	26748	CCS				X
S	18	33243	26749	CCS	X			
S	18	33205	26750	CCS			X	
S	18	33203	26751	CCS	X			
S	18	33218	26753	CCS	X			
S	18	33211	26754	CCS			X	
S	18	33208	26755	CCS		X		
S	18	33163	26784	CCS				X
S	19	30688	25530	CCS		X		

S	19	30685	25533	CCS			X	
S	19	30684	25534	CCS				X
S	19	30682	25536	CCS		X		
S	19	30710	25538	CCS		X		
S	19	30708	25540	CCS		X		
S	19	30707	25541	CCS				X
S	19	30706	25542	CCS			X	
S	19	30705	25543	CCS				X
S	19	33192	26762	CCS			X	
S	19	33196	26763	CCS			X	
S	19	33194	26765	CCS		X		
S	19	33198	26772	CCS		X		
S	19	33197	26773	CCS			X	
S	20	33179	26783	Basalt	X			
S	20	33188	26789	CCS			X	
S	20	33183	26799	CCS				X
S	20	33180	26792	CCS			X	
S	20	33178	26797	CCS		X		
S	20	33175	26794	CCS			X	
S	20	33171	26788	CCS	X			
S	20	33172	26782	CCS			X	
S	20	33191	26761	CCS				X
S	20	30739	25571	CCS	X			
S	20	30741	25570	CCS			X	
S	20	33181	26780	CCS	X			
S	20	30773	25590	CCS		X		
S	20	30745	25567	CCS	X			
S	20	30735	25574	CCS				X
S	20	30769	25592	CCS			X	
S	20	30782	25597	CCS	X			
S	20	30766	25594	CCS			X	
S	20	30786	25600	CCS				X
S	20	33174	26795	Basalt				X
S	20	33176	26790	CCS				X
S	20	33177	26791	CCS			X	
S	20	33187	26793	CCS			X	

S	20	33185	26781	CCS			X	
S	20	30774	25589	CCS		X		
S	20	33182	26798	CCS	X			
S	20	30768	25593	Basalt				X
S	20	30744	25568	CCS		X		
S	20	33169	26786	CCS				X
S	20	30738	25572	CCS		X		
S	20	30764	25595	CCS		X		
S	20	33166	26785	CCS				X
S	21	30865	25625	CCS		X		
S	21	30871	25621	CCS			X	
S	21	30867	25623	CCS	X			
S	21	30860	25628	CCS			X	
S	21	30859	25629	CCS			X	
S	21	30857	25630	CCS				X
S	21	30856	25631	CCS			X	
S	21	30893	25650	CCS			X	
S	21	30892	25651	CCS			X	
S	21	30891	25652	CCS				X
S	21	30960	25689	CCS			X	
S	21	33360	26820	CCS	X			
S	21	33379	26823	CCS				X
S	21	33382	26819	CCS				X
S	21	33352	26860	CCS				X
S	21	33383	26824	CCS				X
S	21	33370	26835	CCS		X		
S	21	33380	26836	CCS			X	
S	21	33378	26839	CCS			X	
S	21	33355	26840	CCS	X			
S	21	33367	26822	CCS		X		
S	21	33374	26837	CCS			X	
S	21	33358	26859	CCS	X			
S	22	33442	26938	CCS				X
S	22	33439	26905	CCS			X	
S	22	33441	26904	CCS	X			
S	22	33443	26907	CCS		X		

S	23	31065	25763	CCS	X			
17	23	44289	43900	Basalt				X
Feature	1	31285	25873	CCS			X	
Feature	1	31278	25861	CCS	X			
Feature	1	31268	25863	CCS		X		
Feature	1	31293	25875	CCS			X	
Feature	1	31275	25867	CCS				X
Feature	1	31260	25842	CCS		X		
Feature	1	31254	25837	CCS		X		
Feature	1	31280	25862	CCS				X
Feature	1	31257	25840	CCS			X	
Feature	1	31255	25838	CCS	X			
Feature	1	31292	25877	CCS			X	
Feature	1	31270	25868	CCS			X	
Feature	1	31273	25866	CCS			X	
Feature	1	31277	25860	CCS	X			
Feature	1	31262	25849	CCS	X			
Feature	1	31286	25879	CCS			X	
Feature	1	31256	25839	CCS				X
Feature	1	33516	26978	CCS	X			
Feature	1	33520	26979	CCS			X	
Feature	1	33521	26998	CCS		X		
Feature	1	33518	26978	CCS			X	
Feature	1	33519	26982	CCS			X	
Feature	1	33523	26977	CCS	X			
Feature	1	33515	26981	CCS				X
Feature	1	33517	26999	CCS				X
Feature	1	33522	26983	CCS			X	
Feature	1	32043	26079	CCS		X		
S	21	33377	26841	CCS	X			
Feature	1	31338	25908	CCS			X	
Feature	1	31391	25940	Basalt	X			
Feature	1	31402	25956	CCS		X		
Feature	1	31397	25939	CCS				X
Feature	1	31406	25958	CCS			X	
Feature	1	31411	25953	CCS		X		

Feature	1	31388	25947	CCS				X
Feature	1	32045	25996	Basalt			X	
Feature	1	31333	25910	CCS				X
Feature	1	31329	25916	CCS			X	
Feature	1	31331	25911	CCS		X		
Feature	1	31326	25912	CCS				X
Feature	1	31325	25914	CCS	X			
Feature	1	31328	25917	CCS			X	
Feature	1	31327	25918	CCS				X
Feature	1	31321	25922	CCS			X	
Feature	1	31323	25920	CCS			X	
Feature	1	31395	25937	CCS				X
Feature	1	31414	25942	CCS			X	
Feature	1	31386	25945	CCS	X			
Feature	1	31400	25946	CCS	X			
Feature	1	31404	25952	CCS			X	
Feature	1	31409	25955	CCS	X			
Feature	1	32044	25997	CCS				X
S	10	29655	25062	CCS	X			
S	10	29657	25061	CCS	X			
S	1	56636		CCS				X
S	1	56637		Metamorphic				X
S	1	56640		Basalt	X			
S	1	56638		Obsidian		X		
O	6	58036		CCS	X			
O	8	58052		CCS				X
O	9	58063		CCS				X
O	7	58047		CCS				X
O	6	58035		CCS				X
O	4	58470		Basalt				X
O	5	58464		Basalt				X
O	8	58477		Basalt				X
O	9	58479		Basalt				X
O	6	58486		Basalt				X
O	7	58484		Basalt				X
O	5	58025		CCS	X			

O	8	58053	CCS				X
O	8	58055	CCS			X	
O	8	58056	CCS	X			
O	8	58058	CCS			X	
O	1	56635	CCS			X	
S	1	56640	Basalt				X
S	1	56640	Basalt				X
S	1	56636	CCS				X
S	1	56636	CCS	X			
S	1	56636	CCS	X			
S	1	56636	CCS		X		
S	1	56636	CCS				X
S	1	56636	CCS				X
S	1	56636	CCS			X	
S	1	56636	CCS			X	
S	1	56636	CCS		X		
S	1	56636	CCS	X			
S	1	56636	CCS		X		
S	1	56636	CCS		X		
S	1	56636	CCS		X		
S	1	56636	CCS	X			
S	1	56636	CCS		X		
S	1	56636	CCS	X			
S	1	56636	CCS	X			
O	9	58063	CCS				X
O	9	58063	CCS			X	
O	9	58063	CCS		X		
O	9	58063	CCS	X			
O	9	58063	CCS			X	
O	8	58052	CCS				X
O	8	58052	CCS				X
O	8	58052	CCS				X
O	8	58052	CCS			X	
O	8	58052	CCS	X			
O	5	58026	CCS	X			
O	5	58026	CCS				X

O	5	58026		CCS			X	
	5	58026		CCS			X	
O	7	58047		CCS			X	
O	7	58047		CCS		X		
O	7	58047		CCS		X		
O	7	58047		CCS		X		
O	7	58047		CCS		X		
O	6	58035		CCS				X
O	6	58035		CCS			X	
O	6	58035		CCS			X	
O	6	58035		CCS	X			
O	6	58035		CCS		X		
O	6	58035		CCS	X			
O	6	58035		CCS		X		
O	6	58035		CCS		X		
O	6	58035		CCS		X		
O	6	58035		CCS	X			
O	6	58035		CCS	X			
O	6	58486		Basalt				X
Feature	1	33516	26997	CCS			X	
Feature	1	33518	26978	CCS			X	
S	21	33377	26841	CCS				X

Appendix D

Spatial Coordinates of Lithic Materials recovered in Pit Feature 59.

Note on abbreviations: DEB= Debitage; MF= Modified Flake; FCR=Fire Cracked Rock

Unit	Level	Catalog #	RN	Tool Type	Material	Northing (m)	Easting (m)	Elevation (m)
R	8	29498	25003	DEB	CCS	59.385	129.898	427.336
R	8	29497	25002	DEB	CCS	59.348	130.03	427.334
Feature	1	32046	25975	DEB	CCS	59.242	129.363	427.16
Feature	1	32051	25976	UNIFACE	CCS	59.239	129.314	426.828
Wall Fall	1	32047	25977	DEB	CCS	59.249	129.395	427.115
Wall Fall	1	32049	25978	DEB	CCS	59.227	129.324	426.684
Wall Fall	1	32052	25979	DEB	CCS	59.321	129.455	426.919
Feature	1	32053	25980	DEB	CCS	59.286	129.564	426.898
Feature	1	32050	25981	DEB	CCS	59.458	129.593	426.995
Feature	1	32048	25982	DEB	CCS	59.422	129.644	426.919
S	1	31762	26081	DEB	CCS	58.56	129.995	427.606
S	1	31763	26082	DEB	CCS	58.822	129.78	427.638
S	2	31765	26104	FCR	Basalt	58.987	129.933	427.596
S	2	31764	26105	DEB	CCS	59.003	129.95	427.604
S	2	31769	26106	DEB	CCS	58.836	129.676	427.599
S	2	31766	26107	DEB	CCS	58.804	129.756	427.588
S	2	31768	26108	DEB	CCS	58.661	129.677	427.588
S	2	31767	26109	DEB	CCS	58.809	129.665	427.555
S	3	29242	24857	DEB	CCS	59.227	129.894	427.589
S	3	29243	24858	DEB	CCS	59.458	129.835	427.588
S	3	29241	24859	DEB	CCS	59.616	129.918	427.589
S	3	31836	26143	DEB	Basalt	58.847	129.934	427.516
S	3	31837	26144	DEB	CCS	58.872	129.929	427.507

S	3	31838	26145	DEB	CCS	58.757	129.843	427.507
S	3	31839	26146	DEB	CCS	58.725	129.831	427.507
S	3	31835	26148	DEB	CCS	58.622	129.397	427.489
S	4	29244	24883	DEB	CCS	59.315	129.872	427.524
S	4	29245	24884	DEB	CCS	59.118	129.535	427.528
S	4	29246	24895	MF	CCS	59.205	129.875	427.504
S	4	29247	24896	DEB	CCS	59.188	129.876	427.504
S	4	31909	26149	DEB	CCS	58.915	129.928	427.492
S	4	31910	26150	DEB	CCS	58.877	129.604	427.487
S	4	31908	26152	DEB	CCS	58.727	129.798	427.481
S	4	31905	26153	DEB	CCS	58.786	129.733	427.458
S	4	31907	26154	DEB	CCS	58.81	129.64	427.44
S	4	31917	26155	DEB	CCS	58.941	129.676	427.482
S	4	31906	26156	DEB	CCS	58.813	129.444	427.482
S	4	31916	26157	DEB	CCS	58.739	129.698	427.443
S	4	31915	26158	DEB	CCS	58.92	129.626	427.457
S	4	31914	26159	DEB	CCS	58.793	129.639	427.427
S	4	31912	26160	DEB	CCS	59.537	130.53	427.426
S	4	31913	26161	DEB	CCS	58.983	129.276	427.458
S	4	31911	26162	DEB	CCS	58.829	129.225	427.458
S	5	29326	24931	DEB	CCS	59.379	130.06	427.483
S	5	29327	24932	DEB	CCS	59.242	130.056	427.482
S	5	29329	24933	DEB	CCS	59.182	129.604	427.477
S	5	29332	24934	MF	CCS	59.173	129.532	427.477
S	5	29422	24945	DEB	CCS	59.038	129.611	427.437
S	5	31958	26201	DEB	CCS	58.938	129.697	427.398
S	5	31959	26202	DEB	CCS	58.803	129.351	427.421
S	5	31957	26203	DEB	CCS	58.95	129.223	427.412
S	5	31953	26168	DEB	CCS	58.759	129.452	427.424
S	5	31955	26169	DEB	CCS	58.913	129.31	427.42
S	5	29421	24970	DEB	CCS	59.391	130.114	427.445
S	5	31954	26176	DEB	CCS	58.779	129.893	427.439
S	5	31956	26177	DEB	CCS	58.833	129.577	427.412
S	5	31961	26195	DEB	CCS	58.715	129.786	427.402
S	5	31960	26196	MF	CCS	58.93	129.53	427.405
S	6	32037	26204	DEB	CCS	58.934	129.44	427.373

S	6	32031	26231	DEB	CCS	58.781	129.954	427.402
S	6	32034	26232	DEB	CCS	58.805	129.793	427.403
S	6	32036	26233	DEB	CCS	58.885	129.67	427.388
S	6	32035	26242	DEB	CCS	58.715	129.866	427.365
S	6	32030	26243	DEB	CCS	58.767	129.76	427.361
S	6	32032	26244	DEB	CCS	58.815	129.681	427.362
S	6	32038	26245	DEB	CCS	58.828	129.586	427.345
S	6	32033	26246	DEB	CCS	58.758	129.576	427.345
S	7	32092	26275	CORE	Basalt	58.911	129.715	427.307
S	7	29427	24973	DEB	CCS	59.429	129.58	427.398
S	7	29488	24983	DEB	CCS	59.56	129.782	427.411
S	7	32095	26271	DEB	CCS	58.989	130.086	427.374
S	7	32094	26272	DEB	CCS	58.739	129.836	427.315
S	7	32098	26273	DEB	CCS	58.795	129.796	427.342
S	7	32096	26274	DEB	CCS	58.901	129.858	427.343
S	8	29495	25000	DEB	CCS	59.299	130.102	427.343
S	8	29496	25001	DEB	CCS	59.386	130.109	427.341
S	8	29499	25004	DEB	CCS	59.319	129.899	427.322
S	8	29500	25005	DEB	CCS	59.284	129.8	427.322
S	8	29501	25006	MF	CCS	59.249	129.926	427.307
S	8	44882	25019	DEB	CCS	59.366	130.039	427.313
S	8	44883	25020	DEB	CCS	59.25	130.029	427.307
S	8	32124	26292	BLADE	CCS	58.748	130.064	427.303
S	8	32122	26293	DEB	CCS	58.906	129.945	427.305
S	8	32120	26294	DEB	CCS	59.044	129.918	427.284
S	8	32118	26295	DEB	CCS	58.899	129.781	427.283
S	8	32116	26296	DEB	CCS	58.997	129.814	427.284
S	8	32126	26297	FCR	Basalt	58.985	129.701	427.284
S	8	32113	26298	DEB	CCS	59.043	129.605	427.286
S	8	32263	26346	DEB	CCS	58.892	129.417	427.238
S	8	32228	26331	FCR	Basalt	58.959	129.716	427.249
S	8	32226	26330	DEB	CCS	58.969	129.739	427.249
S	8	32227	26333	DEB	CCS	58.883	129.96	427.266
S	8	32225	26335	FCR	Basalt	59.003	129.928	427.242
S	8	32229	26336	DEB	CCS	59.015	129.468	427.246
S	8	32232	26334	DEB	CCS	58.737	129.986	427.283

S	8	44881	25018	DEB	CCS	59.518	129.949	427.323
S	9	29566	25025	DEB	CCS	59.334	130.099	427.299
S	9	29564	25026	DEB	CCS	59.479	130.107	427.315
S	9	29563	25027	DEB	CCS	59.34	129.959	427.287
S	9	29562	25028	DEB	CCS	59.556	129.89	427.315
S	9	29616	25034	DEB	CCS	59.422	129.879	427.268
S	9	29614	25035	DEB	CCS	59.384	129.8	427.266
S	9	29612	25036	DEB	CCS	59.22	129.84	427.274
S	9	29619	25037	DEB	CCS	59.361	129.703	427.277
S	9	29602	25038	DEB	CCS	59.298	129.709	427.273
S	9	29609	25042	DEB	CCS	59.452	129.844	427.258
S	9	29605	25043	DEB	CCS	59.232	129.828	427.25
S	9	29608	25044	DEB	CCS	59.486	129.686	427.277
S	9	32301	26355	DEB	CCS	58.845	129.976	427.245
S	9	32300	26356	DEB	CCS	59.025	129.987	427.247
S	9	32299	26357	DEB	CCS	59.01	129.933	427.238
S	9	32298	26358	DEB	CCS	58.957	129.875	427.25
S	9	32297	26359	DEB	CCS	58.963	129.781	427.233
S	9	32294	26361	DEB	CCS	58.848	129.768	427.232
S	9	32295	26360	DEB	CCS	58.964	129.753	427.229
S	9	32293	26362	DEB	CCS	58.956	129.513	427.227
S	9	32296	26363	FCR	Basalt	58.935	129.689	427.226
S	9	32292	26364	Manuport	Basalt	59.052	129.728	427.235
S	9	32393	26365	DEB	CCS	59.032	129.97	427.226
S	9	32392	26366	DEB	Basalt	59.059	129.795	427.216
S	9	32391	26367	DEB	CCS	58.885	129.735	427.214
S	9	32390	26369	DEB	CCS	58.954	129.549	427.2
S	9	32387	26370	DEB	CCS	59.012	129.601	427.2
S	9	32389	26371	DEB	CCS	58.947	129.103	427.204
S	9	32382	26381	DEB	CCS	59.05	129.962	427.215
S	9	32383	26382	DEB	CCS	58.806	129.85	427.192
S	9	32381	26383	DEB	CCS	58.879	129.729	427.205
S	9	32394	26384	BLADE	CCS	58.909	129.734	427.206
S	9	32386	26385	DEB	CCS	58.861	129.689	427.206
S	9	32378	26386	DEB	CCS	58.9	129.69	427.206
S	9	32388	26388	DEB	CCS	59.066	129.735	427.208

S	9	32385	26389	DEB	CCS	58.948	129.667	427.191
S	9	32384	26390	DEB	Basalt	58.856	129.451	427.181
S	10	29666	25022	DEB	CCS	79.532	107.287	426.523
S	10	29663	25063	DEB	CCS	59.37	129.919	427.234
S	10	29661	25064	DEB	CCS	59.545	129.809	427.26
S	10	29659	25065	DEB	CCS	59.327	129.731	427.224
S	10	29654	25066	DEB	CCS	59.271	129.677	427.207
S	10	29656	25067	DEB	CCS	59.387	129.594	427.247
S	10	29650	25070	DEB	CCS	59.514	130.051	427.236
S	10	29676	25074	MF	CCS	59.507	130.001	427.219
S	10	32410	26395	DEB	CCS	58.989	129.781	427.193
S	10	32405	26396	DEB	CCS	58.994	129.686	427.184
S	10	32414	26397	FCR	Basalt	59.027	129.575	427.159
S	10	32418	26398	DEB	CCS	58.875	129.599	427.173
S	10	32421	26399	DEB	CCS	58.837	129.674	427.159
S	10	32425	26405	FCR	Basalt	58.94	129.843	427.157
S	10	32432	26406	DEB	CCS	58.997	129.356	427.155
S	10	32428	26407	DEB	CCS	58.835	129.463	427.152
S	11	29696	25089	DEB	CCS	59.204	129.67	427.183
S	11	29697	25090	MF	CCS	59.247	129.562	427.184
S	11	29793	25125	DEB	CCS	59.391	129.788	427.176
S	11	29791	25126	DEB	CCS	59.126	129.688	427.14
S	11	29835	25153	DEB	CCS	59.33	130.123	427.173
S	11	32460	26447	DEB	CCS	58.938	129.98	427.15
S	11	32472	26448	DEB	CCS	58.867	129.972	427.134
S	11	32477	26449	DEB	CCS	59.056	129.863	427.145
S	11	32463	26450	DEB	CCS	59.049	129.818	427.139
S	11	32476	26451	DEB	CCS	59.026	129.733	427.147
S	11	32474	26452	DEB	CCS	58.932	129.659	427.12
S	11	32478	26453	DEB	CCS	59.021	129.53	427.111
S	11	32468	26455	DEB	CCS	58.719	130.079	427.127
S	11	32458	26456	DEB	CCS	59.024	129.825	427.134
S	11	32470	26457	DEB	CCS	59.019	129.773	427.128
S	11	32459	26458	DEB	CCS	58.814	129.801	427.113
S	11	32479	26459	DEB	CCS	58.806	129.738	427.113
S	11	32469	26460	DEB	CCS	58.795	129.64	427.114

S	11	32462	26462	DEB	CCS	59.009	129.452	427.108
S	11	32466	26463	DEB	CCS	58.862	129.371	427.093
S	11	32465	26464	DEB	CCS	58.993	129.816	427.119
S	12	29837	25152	MF	CCS	59.217	129.908	427.111
S	12	29953	25166	DEB	Basalt	59.39	129.895	427.145
S	12	29956	25167	DEB	CCS	59.206	129.78	427.126
S	12	29960	25189	DEB	CCS	59.308	130.052	427.123
S	12	29951	25190	DEB	CCS	59.252	130.043	427.122
S	12	29962	25191	DEB	CCS	59.224	129.899	427.097
S	12	29963	25192	DEB	CCS	59.161	129.901	427.098
S	12	32667	26465	DEB	CCS	58.711	130.042	427.107
S	12	32653	26466	DEB	CCS	58.827	129.981	427.104
S	12	32646	26467	DEB	CCS	59.024	129.853	427.109
S	12	32665	26468	MF	CCS	59.015	129.819	427.103
S	12	32641	26469	DEB	CCS	58.766	129.808	427.086
S	12	32638	26470	DEB	CCS	58.92	129.633	427.09
S	12	32632	26471	DEB	CCS	58.961	129.62	427.091
S	12	32629	26473	DEB	CCS	58.953	129.515	427.082
S	12	32673	26474	DEB	CCS	59.051	129.91	427.101
S	12	32669	26475	DEB	CCS	58.991	129.723	427.083
S	12	32670	26476	DEB	CCS	58.944	129.697	427.071
S	12	32663	26477	DEB	CCS	58.814	129.653	427.061
S	12	32671	26478	DEB	CCS	58.811	129.612	427.058
S	12	32659	26479	DEB	CCS	59.013	129.558	427.057
S	12	32658	26480	DEB	CCS	58.85	129.727	427.067
S	12	32655	26481	DEB	CCS	58.975	129.613	427.046
S	12	32662	26482	DEB	CCS	59.026	129.44	427.054
S	12	32660	26483	MF	CCS	59.05	129.397	427.088
S	13	30058	25244	DEB	CCS	59.337	129.825	427.07
S	13	30046	25225	DEB	CCS	59.235	130.001	427.091
S	13	30044	25226	DEB	CCS	59.162	129.959	427.065
S	13	30045	25227	DEB	CCS	59.281	129.915	427.093
S	13	30047	25228	DEB	CCS	59.305	129.887	427.101
S	13	32661	26490	DEB	CCS	58.957	129.547	427.049
S	13	32656	26491	DEB	CCS	58.966	129.898	427.048
S	13	32652	26492	DEB	CCS	58.987	129.854	427.05

S	13	32664	26493	DEB	CCS	58.809	129.908	427.065
S	13	32635	26494	DEB	CCS	58.877	129.876	427.042
S	13	32648	26495	DEB	CCS	58.831	129.62	427.042
S	13	32668	26496	DEB	Basalt	58.917	129.553	427.044
S	13	32645	26500	DEB	CCS	58.797	130.052	427.054
S	13	32666	26501	DEB	CCS	58.941	129.395	427.006
S	14	32704	26528	DEB	CCS	59.035	130.024	427.026
S	14	32705	26529	DEB	CCS	58.878	129.961	427.04
S	14	32702	26530	DEB	Basalt	58.938	129.72	426.987
S	14	32703	26531	DEB	CCS	59.016	129.738	427.01
S	14	32701	26532	DEB	CCS	59.054	129.747	427.001
S	14	32700	26533	DEB	CCS	59.058	129.702	427.002
S	14	30123	25250	DEB	CCS	59.493	130.064	427.08
S	14	30124	25251	DEB	CCS	59.424	129.925	427.068
S	14	30125	25252	DEB	CCS	59.365	129.92	427.039
S	14	30127	25253	DEB	CCS	59.35	130.066	427.047
S	14	32698	26554	DEB	CCS	59.03	130.042	427.004
S	14	32697	26555	DEB	Basalt	59.004	129.943	426.99
S	14	32699	26556	DEB	CCS	58.869	129.825	426.99
S	14	32694	26557	DEB	CCS	58.872	129.751	426.974
S	14	32693	26558	DEB	CCS	58.872	129.597	426.963
S	14	32695	26570	DEB	CCS	58.865	129.932	426.978
S	14	32696	26571	Manuport	Metamorphic	59.077	129.427	426.963
S	14	30119	25272	DEB	CCS	59.224	130.074	427.021
S	14	30118	25273	DEB	CCS	59.388	130.111	427.047
S	14	30121	25275	DEB	CCS	59.338	129.947	427.017
S	14	30112	25276	DEB	CCS	59.513	129.772	427.036
S	14	30120	25278	DEB	CCS	59.343	129.665	427.058
S	14	30137	25283	DEB	CCS	59.35	130.028	427.015
S	14	30138	25284	DEB	CCS	59.527	129.92	427.019
S	14	30135	25285	DEB	CCS	59.53	129.75	427.02
S	14	30131	25287	DEB	CCS	59.164	129.58	427.004
S	15	30202	25295	DEB	CCS	59.431	129.822	426.984
S	15	30201	25296	DEB	CCS	59.406	129.804	426.974
S	15	30206	25316	DEB	CCS	59.3	130.19	426.99
S	15	30205	25317	DEB	CCS	59.414	130.167	426.988

S	15	30199	25318	DEB	CCS	59.4	130.112	426.999
S	15	30196	25319	DEB	CCS	59.554	130.188	427.02
S	15	30195	25320	MF	CCS	59.508	130.113	427.003
S	15	30197	25321	DEB	CCS	59.514	130.064	427.004
S	15	30204	25322	DEB	CCS	59.571	129.815	426.991
S	15	30200	25323	DEB	CCS	59.363	129.856	426.958
S	15	30198	25325	BIFACE	CCS	59.37	129.676	426.973
S	15	30194	25326	DEB	CCS	59.228	129.659	426.995
S	15	30288	25333	DEB	CCS	59.374	130.069	426.988
S	15	30290	25334	DEB	CCS	59.342	129.878	426.966
S	15	32754	26575	DEB	CCS	58.945	130.036	426.977
S	15	32753	26576	DEB	CCS	58.797	130.047	426.974
S	15	32759	26577	FCR	Basalt	58.906	129.741	426.947
S	15	32752	26578	DEB	CCS	58.897	129.681	426.938
S	15	32751	26579	DEB	CCS	58.893	129.512	426.923
S	15	32757	26590	DEB	CCS	59.038	129.731	426.931
S	15	32758	26592	DEB	CCS	58.939	129.916	426.93
S	15	32755	26593	DEB	CCS	59.055	129.933	426.943
S	15	32756	26594	DEB	CCS	58.784	129.941	427.028
S	15	32750	26595	DEB	CCS	59.02	129.41	426.917
S	16	30321	25340	DEB	CCS	59.253	129.864	426.951
S	16	30319	25341	DEB	CCS	59.217	129.712	426.944
S	16	30315	25351	DEB	Metamorphic	59.361	129.686	426.889
S	16	30324	25353	DEB	CCS	59.137	129.942	426.954
S	16	30323	25354	DEB	CCS	59.228	130.059	426.954
S	16	30322	25355	DEB	CCS	59.41	129.984	426.947
S	16	30318	25356	DEB	CCS	59.453	129.814	426.947
S	16	30317	25357	DEB	CCS	59.375	129.731	426.924
S	16	30316	25359	CORE	CCS	59.252	129.609	426.925
S	16	30320	25360	DEB	CCS	59.239	129.55	426.93
S	16	30421	25362	MF	CCS	59.224	129.926	426.922
S	16	30436	25363	DEB	CCS	59.307	129.583	426.918
S	16	30425	25375	MF	CCS	59.418	130.011	426.926
S	16	30427	25376	DEB	CCS	59.42	129.905	426.928
S	16	30431	25377	DEB	CCS	59.124	129.765	426.895
S	16	30433	25378	DEB	CCS	59.187	129.695	426.897

S	16	30462	25379	DEB	CCS	59.273	129.669	426.9
S	16	30424	25385	DEB	CCS	59.403	130.001	426.921
S	16	30437	25386	DEB	CCS	59.275	129.536	426.896
S	16	30430	25387	DEB	CCS	59.134	129.61	426.897
S	16	32815	26601	DEB	CCS	58.874	130.057	426.922
S	16	32816	26603	DEB	CCS	58.809	129.897	426.908
S	16	32814	26602	DEB	CCS	58.8	129.93	426.92
S	16	32818	26605	DEB	CCS	58.995	129.659	426.907
S	16	32819	26606	DEB	CCS	58.966	129.556	426.908
S	16	32820	26607	DEB	CCS	58.857	129.605	426.905
S	16	32809	26608	DEB	CCS	58.965	129.709	426.906
S	16	32811	26621	DEB	CCS	58.958	129.791	426.896
S	16	32812	26622	DEB	CCS	59.06	129.76	426.92
S	16	32813	26623	DEB	CCS	58.994	129.646	426.893
S	16	32817	26604	DEB	CCS	58.946	129.753	426.913
S	16	32879	26626	DEB	CCS	58.89	130.098	426.896
S	16	32877	26627	DEB	CCS	58.827	130.07	426.91
S	16	32810	26624	DEB	CCS	58.898	129.603	426.901
S	16	32880	26625	DEB	CCS	59.059	130.078	426.904
S	16	32876	26628	DEB	CCS	58.933	130.045	426.896
S	16	32874	26629	DEB	CCS	58.91	129.955	426.881
S	16	32873	26630	DEB	CCS	58.884	129.921	426.881
S	16	32871	26631	DEB	CCS	58.765	129.873	426.903
S	16	32869	26632	FCR	Basalt	58.969	129.784	426.89
S	16	32867	26633	DEB	CCS	58.887	129.558	426.892
S	16	32864	26647	FCR	Basalt	58.846	129.432	426.843
S	17	30599	25398	DEB	CCS	59.379	130.03	426.913
S	17	30598	25399	DEB	CCS	59.172	129.517	426.881
S	17	30588	25411	DEB	CCS	59.163	130.015	426.891
S	17	30591	25412	DEB	CCS	59.289	129.901	426.884
S	17	30580	25415	BLADE	CCS	59.394	129.771	426.892
S	17	30585	25416	DEB	CCS	59.112	129.689	426.853
S	17	30582	25445	DEB	CCS	59.225	129.92	426.87
S	17	30590	25447	DEB	CCS	59.192	129.855	426.859
S	17	30595	25448	DEB	CCS	59.134	129.806	426.857
S	17	30600	25462	DEB	CCS	59.118	129.508	426.842

S	17	33019	26668	DEB	CCS	59.058	130.052	426.881
S	17	33023	26669	DEB	CCS	58.789	129.856	426.851
S	17	33024	26670	DEB	CCS	58.904	129.845	426.853
S	17	33016	26672	DEB	CCS	58.898	129.703	426.843
S	17	33022	26671	DEB	CCS	59.096	129.789	426.859
S	17	33020	26682	DEB	CCS	58.959	129.907	426.848
S	17	33018	26683	DEB	CCS	58.775	129.861	426.844
S	17	33015	26684	DEB	CCS	58.911	129.77	426.833
S	17	33017	26686	DEB	CCS	58.928	129.688	426.835
S	17	32995	26687	DEB	CCS	58.909	129.584	426.82
S	17	33001	26691	DEB	CCS	58.922	130.13	426.862
S	17	33021	26692	DEB	CCS	58.922	129.897	426.836
S	17	33005	26693	MF	CCS	58.949	130.092	426.828
S	17	32993	26694	FCR	Basalt	58.868	130.059	426.826
S	17	33008	26695	DEB	CCS	59.069	130.018	426.832
S	17	33012	26696	DEB	CCS	59.003	129.985	426.831
S	17	32999	26697	DEB	CCS	58.931	129.879	426.831
S	17	33011	26698	DEB	CCS	58.873	129.935	426.829
S	17	33003	26699	DEB	CCS	58.802	129.864	426.828
S	17	33014	26700	DEB	CCS	58.969	129.772	426.834
S	17	33010	26701	DEB	CCS	58.948	129.655	426.813
S	17	33009	26702	DEB	CCS	58.895	129.778	426.832
S	17	33007	26703	DEB	CCS	58.938	129.6	426.813
S	17	33006	26707	DEB	CCS	59.009	129.871	426.822
S	17	32992	26706	DEB	CCS	59.03	130.022	426.82
S	17	33025	26716	DEB	CCS	58.784	129.898	426.798
S	17	32998	26709	DEB	CCS	59.029	129.788	426.817
S	17	32989	26710	DEB	CCS	58.991	129.734	426.817
S	17	33004	26711	DEB	CCS	58.876	129.728	426.814
S	17	32990	26712	DEB	CCS	58.811	129.705	426.813
S	17	33028	26713	DEB	CCS	58.903	130.023	426.799
S	17	33027	26714	DEB	CCS	59.03	129.93	426.81
S	17	33026	26715	DEB	CCS	58.955	129.867	426.812
S	17	32988	26717	DEB	CCS	59.029	129.618	426.809
S	18	32063	25482	DEB	CCS	59.287	129.976	426.862
S	18	32062	25483	DEB	CCS	59.236	129.95	426.824

S	18	32058	25484	DEB	CCS	59.417	129.988	426.86
S	18	32065	25485	MF	CCS	59.438	129.71	426.816
S	18	32064	25486	DEB	CCS	59.294	129.671	426.803
S	18	32060	25487	DEB	CCS	59.226	129.608	426.813
S	18	32059	25488	DEB	CCS	59.157	129.582	426.796
S	18	32061	25489	DEB	CCS	59.313	129.584	426.83
S	18	32067	25500	BLADE	CCS	59.17	129.768	426.796
S	18	32066	25501	DEB	CCS	59.39	130.041	426.819
S	18	33232	26719	Manuport	CCS	58.969	130.061	426.805
S	18	33227	26720	MF	CCS	58.867	129.928	426.802
S	18	33221	26721	DEB	CCS	58.986	129.946	426.8
S	18	33264	26722	DEB	CCS	58.98	129.939	426.8
S	18	33238	26723	DEB	CCS	58.971	129.932	426.8
S	18	33231	26724	DEB	CCS	58.958	129.911	426.8
S	18	33234	26725	DEB	CCS	59.031	129.781	426.784
S	18	33241	26726	DEB	CCS	59.015	129.668	426.769
S	18	33277	26728	DEB	CCS	58.869	129.6	426.777
S	18	33229	26729	DEB	CCS	82.956	109.125	428.696
S	18	33275	26730	DEB	CCS	58.986	130.013	426.791
S	18	33259	26731	DEB	CCS	59.023	129.999	426.796
S	18	33271	26732	DEB	CCS	58.987	129.972	426.794
S	18	33267	26733	MF	CCS	58.791	129.92	426.79
S	18	33255	26734	DEB	CCS	58.922	129.843	426.778
S	18	33236	26735	DEB	CCS	59.001	129.82	426.775
S	18	33250	26736	DEB	CCS	59.055	129.682	426.754
S	18	33249	26737	DEB	CCS	58.863	129.678	426.759
S	18	33262	26738	DEB	CCS	58.963	129.466	426.767
S	18	33246	26739	DEB	CCS	59.025	130.019	426.796
S	18	33248	26740	DEB	CCS	58.978	129.995	426.787
S	18	33251	26741	DEB	CCS	58.919	129.874	426.769
S	18	33252	26742	DEB	CCS	58.899	129.831	426.77
S	18	33253	26743	DEB	CCS	58.969	130.024	426.786
S	18	33254	26744	DEB	CCS	58.825	129.994	426.783
S	18	33257	26745	DEB	CCS	58.853	129.918	426.766
S	18	33256	26746	DEB	CCS	59.116	129.388	426.859
S	18	33224	26747	DEB	CCS	59.017	129.983	426.782

S	18	33233	26748	DEB	CCS	58.983	130.009	426.781
S	18	33243	26749	DEB	CCS	59.004	130.104	426.789
S	18	33205	26750	DEB	CCS	58.958	130.133	426.78
S	18	33203	26751	DEB	CCS	59.012	130.099	426.778
S	18	33201	26752	DEB	CCS	59.044	130.039	426.78
S	18	33218	26753	DEB	CCS	59.065	129.988	426.781
S	18	33211	26754	DEB	CCS	59.057	130.078	426.774
S	18	33208	26755	DEB	CCS	59.076	129.985	426.775
S	18	33216	26756	BLADE	CCS	59.024	129.995	426.756
S	18	33214	26757	MF	CCS	59.077	130.002	426.767
S	18	33163	26784	DEB	CCS	58.899	129.741	426.677
S	19	30689	25529	DEB	CCS	59.197	130.059	426.765
S	19	30688	25530	DEB	CCS	59.297	130.029	426.803
S	19	30686	25531	DEB	CCS	59.298	129.911	426.77
S	19	30699	25532	DEB	CCS	59.416	129.825	426.787
S	19	30685	25533	DEB	CCS	59.284	129.794	426.767
S	19	30684	25534	DEB	CCS	59.219	129.854	426.763
S	19	30683	25535	FCR	Basalt	59.283	129.754	426.76
S	19	30682	25536	DEB	CCS	59.173	129.775	426.757
S	19	30710	25538	DEB	CCS	59.252	129.553	426.769
S	19	30708	25540	DEB	CCS	59.217	129.78	426.75
S	19	30707	25541	DEB	CCS	59.363	129.806	426.753
S	19	30706	25542	DEB	CCS	59.25	129.836	426.749
S	19	30705	25543	DEB	CCS	59.278	130.003	426.747
S	19	33192	26762	DEB	CCS	59.007	129.998	426.707
S	19	33196	26763	DEB	CCS	58.861	129.875	426.712
S	19	33195	26764	MF	CCS	58.893	129.775	426.707
S	19	33194	26765	DEB	CCS	58.883	129.744	426.707
S	19	33189	26766	DEB	Basalt	58.976	129.655	426.719
S	19	33193	26767	MF	CCS	59.042	129.562	426.737
S	19	33198	26772	DEB	CCS	59.048	129.922	426.699
S	19	33197	26773	DEB	CCS	59.013	129.775	426.694
S	20	33179	26783	DEB	Basalt	59.008	129.77	426.672
S	20	33188	26789	DEB	CCS	59.072	129.74	426.684
S	20	33183	26799	DEB	CCS	58.918	129.694	426.643
S	20	33180	26792	DEB	CCS	59.042	129.631	426.651

S	20	33178	26797	DEB	CCS	58.932	129.8	426.642
S	20	33175	26794	DEB	CCS	58.918	129.673	426.654
S	20	33171	26788	DEB	CCS	58.976	129.769	426.659
S	20	33172	26782	DEB	CCS	59.071	129.764	426.693
S	20	33191	26761	DEB	CCS	59.048	130.037	426.737
S	20	30739	25571	DEB	CCS	59.323	129.804	426.731
S	20	30741	25570	DEB	CCS	59.19	129.95	426.725
S	20	30785	25599	MF	CCS	59.293	129.572	426.698
S	20	33181	26780	DEB	CCS	80.027	105.078	428.85
S	20	30773	25590	DEB	CCS	59.437	129.958	426.73
S	20	30745	25567	DEB	CCS	59.424	129.976	426.75
S	20	30783	25598	MF	CCS	59.289	129.642	426.699
S	20	30735	25574	DEB	CCS	59.21	129.542	426.722
S	20	30769	25592	DEB	CCS	59.249	129.685	426.708
S	20	30782	25597	DEB	CCS	59.344	130.072	426.715
S	20	30766	25594	DEB	CCS	59.308	129.587	426.727
S	20	30786	25600	DEB	CCS	59.153	129.551	426.667
S	20	33174	26795	DEB	Basalt	58.987	129.682	426.649
S	20	30771	25591	FCR	Basalt	59.145	129.838	426.696
S	20	33184	26796	DEB	CCS	59.041	129.66	426.644
S	20	33186	26787	DEB	CCS	59.027	129.757	426.67
S	20	33176	26790	DEB	CCS	58.964	129.717	426.651
S	20	33177	26791	DEB	CCS	59.004	129.664	426.648
S	20	33187	26793	DEB	CCS	58.921	129.701	426.654
S	20	33185	26781	DEB	CCS	59.021	129.796	426.66
S	20	30742	25569	MF	CCS	59.196	130.004	426.717
S	20	30774	25589	DEB	CCS	59.454	130.024	426.75
S	20	33182	26798	DEB	CCS	58.884	129.723	426.642
S	20	30768	25593	DEB	Basalt	59.253	129.609	426.719
S	20	30737	25573	DEB	CCS	59.139	129.662	426.731
S	20	30744	25568	DEB	CCS	59.26	129.998	426.728
S	20	33169	26786	DEB	CCS	58.945	129.796	426.658
S	20	30738	25572	DEB	CCS	59.246	129.764	426.712
S	20	30764	25595	DEB	CCS	59.14	129.598	426.7
S	20	33166	26785	DEB	CCS	58.904	129.689	426.673
S	20	33190	26760	FCR	Basalt	59.034	130.137	426.709

S	21	30865	25625	DEB	CCS	59.204	129.777	426.648
S	21	30864	25626	MF	CCS	59.212	129.723	426.649
S	21	30871	25621	DEB	CCS	59.235	130.062	426.686
S	21	30867	25623	DEB	CCS	59.335	129.999	426.676
S	21	30863	25627	DEB	CCS	59.161	129.722	426.648
S	21	30860	25628	DEB	CCS	59.228	129.699	426.65
S	21	30859	25629	DEB	CCS	59.236	129.652	426.635
S	21	30872	25620	DEB	CCS	59.142	130.08	426.703
S	21	30857	25630	DEB	CCS	59.286	129.664	426.636
S	21	30856	25631	DEB	CCS	59.22	129.557	426.629
S	21	30893	25650	DEB	CCS	59.298	129.861	426.64
S	21	30892	25651	DEB	CCS	59.21	129.726	426.629
S	21	30891	25652	DEB	CCS	59.13	129.637	426.609
S	21	30960	25689	DEB	CCS	59.255	129.649	426.601
S	21	33360	26820	DEB	CCS	58.964	129.798	426.623
S	21	33379	26823	DEB	CCS	58.974	129.704	426.626
S	21	33382	26819	DEB	CCS	58.939	130.018	426.618
S	21	33352	26860	DEB	CCS	58.968	129.605	426.603
S	21	33383	26824	DEB	CCS	58.91	129.68	426.624
S	21	33370	26835	DEB	CCS	58.904	130.167	426.621
S	21	33380	26836	DEB	CCS	58.968	130.098	426.616
S	21	33363	26818	MF	CCS	59.004	130.06	426.619
S	21	33356	26861	DEB	CCS	58.937	129.61	426.602
S	21	33378	26839	DEB	CCS	58.904	129.803	426.603
S	21	33355	26840	DEB	CCS	58.905	129.822	426.603
S	21	33367	26822	DEB	CCS	59.023	129.673	426.628
S	21	33381	26838	DEB	CCS	59.026	129.66	426.61
S	21	33374	26837	DEB	CCS	59.06	130.009	426.603
S	21	33358	26859	DEB	CCS	59.042	129.586	426.596
S	22	33442	26938	DEB	CCS	58.957	129.959	426.568
S	22	33439	26905	DEB	CCS	58.918	129.981	426.58
S	22	33441	26904	DEB	CCS	59.02	130.06	426.607
S	22	33443	26907	DEB	CCS	59.028	129.615	426.584
S	23	31067	25762	DEB	CCS	59.337	130.147	426.628
S	23	31065	25763	DEB	CCS	59.384	130.027	426.612
S	23	31066	25764	MF	CCS	59.201	129.816	426.588

17	23	44289	43900	DEB	Basalt	59.21	129.247	410.553
17	23	44247	43873	Manuport	Basalt	59.239	129.182	410.575
Feature	1	31285	25873	DEB	CCS	59.466	129.811	427.196
Feature	1	31278	25861	DEB	CCS	59.67	130.029	427.099
Feature	1	31287	25878	FCR	Basalt	59.364	129.594	427.285
Feature	1	31268	25863	DEB	CCS	59.522	129.985	427.057
Feature	1	31293	25875	DEB	CCS	59.372	129.708	427.109
Feature	1	31251	25858	DEB	CCS	59.697	129.738	427.288
Feature	1	31275	25867	DEB	CCS	59.446	129.552	427.158
Feature	1	31260	25842	DEB	CCS	59.309	129.264	427.158
Feature	1	31254	25837	DEB	CCS	59.429	129.906	427.326
Feature	1	31280	25862	DEB	CCS	59.503	129.954	427.097
Feature	1	31257	25840	DEB	CCS	59.435	129.654	426.998
Feature	1	31255	25838	DEB	CCS	59.502	129.931	427.308
Feature	1	31292	25877	DEB	CCS	59.442	129.778	427.177
Feature	1	31289	25876	MF	CCS	59.339	129.668	427.043
Feature	1	31281	25865	FCR	Basalt	59.554	129.883	427.176
Feature	1	31270	25868	DEB	CCS	59.556	129.517	427.302
Feature	1	31273	25866	DEB	CCS	59.463	129.543	427.209
Feature	1	31272	25859	DEB	CCS	59.61	130.024	427.095
Feature	1	31277	25860	DEB	CCS	59.427	130.05	427.014
Feature	1	31271	25864	DEB	CCS	59.46	129.791	427.104
Feature	1	31262	25849	DEB	CCS	59.55	129.686	427.271
Feature	1	31286	25879	DEB	CCS	59.12	129.549	427.314
Feature	1	31256	25839	DEB	CCS	59.545	129.573	427.251
Feature	1	33516	26978	DEB	CCS	58.796	129.743	426.572
Feature	1	33520	26979	DEB	CCS	58.803	129.797	426.729
Feature	1	33521	26998	DEB	CCS	58.771	129.782	426.571
Feature	1	33518	26978	DEB	CCS	59.248	129.671	426.583
Feature	1	33519	26982	DEB	CCS	58.826	129.7	426.649
Feature	1	33523	26977	DEB	CCS	58.837	129.828	426.987
Feature	1	33515	26981	DEB	CCS	58.824	129.799	426.687
Feature	1	33517	26999	DEB	CCS	58.82	129.78	426.57
Feature	1	33522	26983	DEB	CCS	58.759	129.787	426.665
Feature	1	32043	26079	DEB	CCS	59.397	129.711	427.179
S	21	33377	26841	DEB	CCS	58.835	129.926	426.598

Feature	1	31338	25908	DEB	CCS	59.224	129.579	427.191
Feature	1	31324	25915	MF	CCS	59.554	129.584	427.07
Feature	1	31391	25940	DEB	Basalt	59.343	129.719	426.945
Feature	1	31402	25956	DEB	CCS	59.204	129.484	426.589
Feature	1	31393	25941	MF	CCS	59.531	129.656	426.882
Feature	1	31397	25939	DEB	CCS	59.325	129.503	427.094
Feature	1	31406	25958	DEB	CCS	59.481	129.956	426.906
Feature	1	31390	25948	DEB	CCS	59.379	129.36	426.58
Feature	1	31411	25953	DEB	CCS	59.26	129.502	427.021
Feature	1	31412	25944	DEB	CCS	59.536	129.689	427.174
Feature	1	31388	25947	DEB	CCS	59.44	129.43	426.766
Feature	1	31408	25957	MF	CCS	59.562	129.55	427.002
Feature	1	32045	25996	DEB	Basalt	59.491	129.831	426.598
Feature	1	31336	25909	UNIFACE	CCS	59.389	129.626	427.197
Feature	1	31333	25910	DEB	CCS	59.327	129.729	427.131
Feature	1	31329	25916	DEB	CCS	59.373	129.54	427.051
Feature	1	31331	25911	DEB	CCS	59.289	129.529	427.128
Feature	1	31326	25912	DEB	CCS	59.329	129.451	426.88
Feature	1	31335	25913	MF	CCS	59.336	129.685	427.207
Feature	1	31325	25914	DEB	CCS	59.21	129.438	427.152
Feature	1	31328	25917	DEB	CCS	59.45	129.708	427.084
Feature	1	31327	25918	DEB	CCS	59.37	129.67	426.916
Feature	1	31322	25919	MF	CCS	59.456	129.705	426.978
Feature	1	31321	25922	DEB	CCS	59.598	129.912	426.791
Feature	1	31323	25920	DEB	CCS	59.532	129.925	426.884
Feature	1	31395	25937	DEB	CCS	59.492	129.483	426.832
Feature	1	31413	25938	DEB	CCS	59.385	129.624	427.178
Feature	1	31414	25942	DEB	CCS	59.518	129.715	426.923
Feature	1	31387	25943	DEB	CCS	59.465	129.664	427.097
Feature	1	31386	25945	DEB	CCS	59.271	129.712	427.17
Feature	1	31400	25946	DEB	CCS	59.307	129.545	427.017
Feature	1	31389	25949	DEB	CCS	59.584	129.597	427.013
Feature	1	31404	25952	DEB	CCS	59.56	129.334	426.992
Feature	1	31410	25954	MF	CCS	59.426	129.503	426.931
Feature	1	31409	25955	DEB	CCS	59.371	129.442	426.908
Feature	1	32044	25997	DEB	CCS	59.544	129.773	426.904

S	10	29655	25062	DEB	CCS	59.307	130.042	427.243
S	10	29652	25073	MF	CCS	59.263	129.957	427.205
S	10	29657	25061	DEB	CCS	59.477	130.033	427.257
S	14	30122	25249	BIFACE	Basalt	59.4	129.879	427.041
S	7	29435	24975	FCR	Basalt	59.411	129.991	427.419
S	14	30114	25277	FCR	Basalt	59.271	129.738	427.022
S	14	30117	25274	FCR	Basalt	59.489	130.014	427.055
S	14	30133	25286	FCR	Basalt	59.177	129.846	427.012
S	15	30203	25324	FCR	Basalt	59.435	129.733	426.953
S	16	30435	25361	FCR	Basalt	59.368	130.066	426.943
S	1	56636		DEB	CCS			
S	1	56637		DEB	Metamorphic			
S	1	56640		DEB	Basalt			
S	1	56638		DEB	Obsidian			
O	6	58036		DEB	CCS			
O	6	58033		FCR	Basalt			
O	5	58026		DEB	CCS			
O	4	58018		DEB	CCS			
O	8	58052		DEB	CCS			
O	9	58063		DEB	CCS			
O	7	58047		DEB	CCS			
O	6	58035		DEB	CCS			
O	4	58469		FCR	Basalt			
O	4	58470		DEB	Basalt			
O	5	58464		DEB	Basalt			
O	8	58477		DEB	Basalt			
O	9	58479		DEB	Basalt			
O	6	58486		DEB	Basalt			
O	7	58484		DEB	Basalt			
O	5	58025		DEB	CCS			
O	8	58053		DEB	CCS			
O	8	58055		DEB	CCS			
O	8	58056		DEB	CCS			
O	8	58058		DEB	CCS			
O	1	56635		DEB	CCS			
S	1	56640		DEB	Basalt			

S	1	56640	DEB	Basalt
S	1	56636	DEB	CCS
S	1	56636	DEB	CCS
S	1	56636	DEB	CCS
S	1	56636	DEB	CCS
S	1	56636	DEB	CCS
S	1	56636	DEB	CCS
S	1	56636	DEB	CCS
S	1	56636	DEB	CCS
S	1	56636	DEB	CCS
S	1	56636	DEB	CCS
S	1	56636	DEB	CCS
S	1	56636	DEB	CCS
S	1	56636	DEB	CCS
S	1	56636	DEB	CCS
S	1	56636	DEB	CCS
S	1	56636	DEB	CCS
S	1	56636	DEB	CCS
S	1	56636	DEB	CCS
S	1	56636	DEB	CCS
S	1	56636	DEB	CCS
S	1	56636	DEB	CCS
S	1	56636	DEB	CCS
S	1	56636	DEB	CCS
S	1	56636	DEB	CCS
O	9	58063	DEB	CCS
O	9	58063	DEB	CCS
O	9	58063	DEB	CCS
O	9	58063	DEB	CCS
O	9	58063	DEB	CCS
O	8	58052	DEB	CCS
O	8	58052	DEB	CCS
O	8	58052	DEB	CCS
O	8	58052	DEB	CCS
O	8	58052	DEB	CCS
O	8	58477	DEB	Basalt

O	5	58026		DEB	CCS			
O	5	58026		DEB	CCS			
O	5	58026		DEB	CCS			
	5	58026		DEB	CCS			
	5	58026		DEB	CCS			
O	4	58018		DEB	CCS			
O	4	58018		DEB	CCS			
O	4	58018		DEB	CCS			
O	7	58047		DEB	CCS			
O	7	58047		DEB	CCS			
O	7	58047		DEB	CCS			
O	7	58047		DEB	CCS			
O	7	58047		DEB	CCS			
O	7	58047		DEB	CCS			
O	7	58047		DEB	CCS			
O	7	58047		DEB	CCS			
O	7	58047		DEB	CCS			
O	6	58035		DEB	CCS			
O	6	58035		DEB	CCS			
O	6	58035		DEB	CCS			
O	6	58035		DEB	CCS			
O	6	58035		DEB	CCS			
O	6	58035		DEB	CCS			
O	6	58035		DEB	CCS			
O	6	58035		DEB	CCS			
O	6	58035		DEB	CCS			
O	6	58035		DEB	CCS			
O	6	58035		DEB	CCS			
O	6	58035		DEB	CCS			
O	6	58035		DEB	CCS			
O	6	58486		DEB	Basalt			
Feature	1	33516	26997	DEB	CCS	58.796	129.743	426.572
Feature	1	33518	26978	DEB	CCS	59.248	129.671	426.583
S	21	33377	26841	DEB	CCS			

Appendix E

Faunal data from F59

Unit	Level	Catalog #	Reading #	Completeness	Burnt?	Skeletal Element	Weight (g)
S	3	31834	26147	No	Yes	Unknown	0.09
S	5	38623		Yes:1	No	Mandible	0.05
S	6	32029	26230	No	Yes	Unknown	<.01
S	4	31904	26151	Yes:1	No	Phalange	<.01
S	8	32268	26347	No	No	Unknown	<.01
S	8	32265	26348	No	No	Unknown	<.01
S	8	32224	26337	No	No	Ribs	<.01
S	8	29511		No	No	Unknown	<.01
S	9	29560	25029	No	No	Unknown	0.19
S	9	32373	26368	No	No	Vertebral Spines	<.01
S	9	32375	26387	No	Yes	Unknown	0.03
S	9	38625		No	No	Unknown	<.01
S	10	29649	25071	No	No	Unknown	0.43
S	11	32457	26461	No	No	Femur	<.01
S	12	32649	26472	No	Yes	Ulna	<.01
S	14	32691	26559	No	No	Tooth	<.01
S	15	32760	26591	No	No	Unknown	0.02
S	15	32761	26596	No	No	Unknown	<.01
S	16	32866	26634	No	No	Unknown	0.01
S	17	33013	26681	No	No	Unknown	0.03
S	19	30709	25539	No	No	Unknown	0.5
S	19	30681	25537	No	No	Unknown	0.12
S	21	38622		No	No	Dentary	6.61
S	21	30959	25688	No	No	Unknown	0.15
S	21	30866	25624	No	No	Cranial, dermatocranium	0.77

S	22	33444	26917	Yes:1	No	Dentary	0.05
S	22	33445	26916	No	No	Shell	0.03
S	22	31069	25715	No	No	Rib	1.99
S	22	31070	25738	No	No	Rib	1.11
S	22	31068	25759	No	No	Rib	0.63
S	22	33440	26906	No	No	Unknown	0.12
S	21	30958	25687	Yes:1	No	Shell	0.39
S	23	32055	25784	Yes:1	No	Shell	0.48
Wall Fall	1	38627		No	No	Rib	1.36
Feature	1	31392	25936	No	No	Unknown	1.05
Feature	1	31415	25951	No	No	Ulna	1.23
S	1	33514	27007	No	No	Rib	1.36
Feature	1	31248	25848	No	Yes	Tooth	0.08
S	10	38624		No	Yes	Ulna	<.01
S	12	38626		No	No	Unknown	<.01
S	21	33349	26851	No	No	Rib	0.81
S	21	33387	26849	Yes:1	No	Dentary	<.01
S	21	33386	26821	No	No	Unknown	0.13
S	21	33346	26850	Yes:1	No	Humerus	<.01
Feature	1	31253	25841	No	Yes	Unknown	1.25
S	1	56642		Yes:1	No	Shell	0.14
S	1	56635		No/Yes:4	No	7.87	
S	23	56783	25786	No	No	Teeth and Mandible	19.73
S	23	56782	25811	No	No	Humerus	5.23
S	23	56781	25816	No	No	Teeth and Mandible, and scapula	9.06
S		29969		No		Vertebra	0.03
S		30043		No		Vertebra	0.03
S		30140		No		Vertebra	0.03
S		30287		No		0.03	
S		30577		No		0.05	
S		30593		No		Unknown	0.1
S		30869		No		Vertebra	0.09
S		32054		No		0.03	
S	23	32056	25761	N/A		Rib	-
S	22	33433	26937	N/A		Unknown	-

S	22	33434	26918	N/A		Rib	-
S	22	33435	26943	N/A		Rib	-
S	22	33437	26862	N/A		Rib	-
O	4	58743		No	No	Unknown	0.09
O	7	58045		No		Vertebra	0.03
O	8	58475		No	Yes	Unknown	0.11
O	4	58020		No	No	Unknown	0.23
O	7	58046		No	Yes	Unknown	0.5
O	9	58065		No	No	Unknown	0.1
O	6	58032		No	No	Unknown	0.03
O	6	58034		No	Yes	Unknown	0.05
O	7	58043		No	No	Tooth	0.11

Faunal Data (Continued)

Unit	Level	Catalog Number	RN	Siding	Count	Class	Order	Family	Genus
S	3	31834	26147		1				
S	5	38623		Right	1	Mammalia	Rodentia	Cricetidae	Microtus
S	6	32029	26230		1				
S	4	31904	26151		1	Amphibia			
S	8	32268	26347		1				
S	8	32265	26348		2				
S	8	32224	26337		1				
S	8	29511			2				
S	9	29560	25029		1	Mammalia			
S	9	32373	26368		1				
S	9	32375	26387		1				
S	9	38625			1				
S	10	29649	25071		1	Mammalia			
S	11	32457	26461	Right	1	Mammalia	Rodentia	Cricetidae	
S	12	32649	26472	Right	1	Mammalia	Rodentia	Cricetidae	
S	14	32691	26559		1	Mammalia	Rodentia	Cricetidae	

S	15	32760	26591		1	Mammalia			
S	15	32761	26596		2				
S	16	32866	26634		1				
S	17	33013	26681		1	Mammalia			
S	19	30709	25539		1				
S	19	30681	25537		1				
S	21	38622			2	Mammalia	Carnivora	Mustelidae	Gulo
S	21	30959	25688		1	Mammalia			
S	21	30866	25624		8	Mammalia			
S	22	33444	26917	Right	1	Mammalia	Rodentia	Cricetidae	Peromyscus
S	22	33445	26916		1	Gastropoda			
S	22	31069	25715	Left	2	Mammalia			
S	22	31070	25738	Right	1	Mammalia			
S	22	31068	25759	Right	2	Mammalia			
S	22	33440	26906		1	Mammalia			
S	21	30958	25687		1	Gastropoda	Littorinimorpha	Hydrobiidae	Taylorconcha
S	23	32055	25784		1	Gastropoda	Stylommatophor a	Polygyridae	Cryptomastix
Wall Fall	1	38627		Right	1	Mammalia			
Feature	1	31392	25936		1	Mammalia			
Feature	1	31415	25951	Left	1	Mammalia	Lagomorpha	Leporidae	Lepus
S	1	33514	27007	Left	3	Mammalia			
Feature	1	31248	25848		1	Mammalia			
S	10	38624		Left	1	Mammalia	Rodentia	Cricetidae	
S	12	38626			1				
S	21	33349	26851	Right	1	Mammalia			
S	21	33387	26849	Left	1	Mammalia	Rodentia	Cricetidae	Peromyscus
S	21	33386	26821		1	Mammalia			
S	21	33346	26850	Right	1	Mammalia	Rodentia	Heteromyidae	Perognathus
Feature	1	31253	25841		1	Mammalia			
S	1	56642			2	Gastropoda	Littorinimorpha	Hydrobiidae	Taylorconcha
S	1	56635			53	Mammalia			
S	23	56783	25786		42	Mammalia	Carnivora	Mustelidae	Gulo
S	23	56782	25811		1	Mammalia	Carnivora	Mustelidae	Gulo
S	23	56781	25816		4	Mammalia	Carnivora	Mustelidae	Gulo
S		29969			1	Actinopterygii	Cypriniformes	Cyprinidae/Catostomid	

S		30043		1	Actinopterygii	Cypriniformes	Cyprinidae/Catostomid
S		30140		1	Actinopterygii	Cypriniformes	Cyprinidae/Catostomid
S		30287		1	Actinopterygii	Cypriniformes	Cyprinidae/Catostomid
S		30577		1	Actinopterygii	Cypriniformes	Cyprinidae/Catostomid
S		30593		1			
S		30869		1	Actinopterygii	Cypriniformes	Cyprinidae/Catostomid
S		32054		1	Actinopterygii	Cypriniformes	Cyprinidae/Catostomid
S	23	32056	25761				
S	22	33433	26937				
S	22	33434	26918				
S	22	33435	26943				
S	22	33437	26862				
O	4	58743		2			
O	7	58045		1	Actinopterygii	Cypriniformes	Cyprinidae/Catostomid
O	8	58475		3			
O	4	58020		1			
O	7	58046		10			
O	9	58065		3			
O	6	58032		4			
O	6	58034		1			
O	7	58043		1	Mammalia		

Appendix F

Faunal Artifact Spatial Coordinates from F59

Unit	Level	Catalog Number	Reading Number	Northing (m)	Easting (m)	Elevation (m)
S	3	31834	26147	58.725	129.34	427.49
S	5	38623		0	0	427.5
S	6	32029	26230	58.762	130.126	427.412
S	4	31904	26151	58.892	129.927	427.488
S	8	32268	26347	58.938	129.508	427.238
S	8	32265	26348	59.057	129.268	427.265
S	8	32224	26337	59.048	129.501	427.247
S	8	29511				
S	9	29560	25029	59.527	130.075	427.322
S	9	32373	26368	59.052	129.681	427.217
S	9	32375	26387	58.919	129.704	427.206
S	9	38625		0	0	427.3
S	10	29649	25071	59.526	129.996	427.243
S	11	32457	26461	58.919	129.605	427.116
S	12	32649	26472	58.961	129.561	427.082
S	14	32691	26559	59.054	129.619	426.974
S	15	32760	26591	58.819	129.849	426.931
S	15	32761	26596	58.961	129.394	426.924
S	16	32866	26634	58.998	129.402	426.897
S	17	33013	26681	59.022	130.057	426.873
S	19	30709	25539	59.174	129.606	426.738
S	19	30681	25537	59.249	129.629	426.768
S	21	38622		0	0	426.7
S	21	30959	25688	59.224	129.768	426.597
S	21	30866	25624	59.477	129.743	426.657

S	22	33444	26917	58.999	129.461	426.573
S	22	33445	26916	59.039	129.595	426.572
S	22	31069	25715	59.167	130.114	426.634
S	22	31070	25738	59.353	129.761	426.594
S	22	31068	25759	59.374	129.752	426.596
S	22	33440	26906	59.089	129.848	426.591
S	21	30958	25687	59.243	129.984	426.632
S	23	32055	25784	59.187	129.959	426.541
Wall Fall	1	38627				
Feature	1	31392	25936	59.411	129.559	426.768
Feature	1	31415	25951	59.337	129.488	426.692
S	1	33514	27007	58.815	129.78	426.517
Feature	1	31248	25848	59.686	129.975	427.222
S	10	38624		0	0	427.25
S	12	38626				
S	21	33349	26851	58.971	129.645	426.606
S	21	33387	26849	59.033	129.536	426.623
S	21	33386	26821	59.044	129.703	426.628
S	21	33346	26850			
Feature	1	31253	25841	59.448	129.356	427.186
S	1	56642				
S	1	56635				
S	23	56783	25786	59.4	129.728	410.164
S	23	56782	25811	59.445	129.664	410.144
S	23	56781	25816	59.507	129.74	410.197
S		29969		59.273	130.039	427.111
S		30043		59.257	129.762	427.09
S		30140		59.198	129.624	427.004
S		30287		59.149	129.604	426.948
S		30577		59.227	129.677	426.852
S		30593		59.416	129.709	426.858
S		30869		59.178	130.014	426.686
S		32054		59.208	129.943	426.543
S	23	32056	25761	59.371	130.073	426.615
S	22	33433	26937	58.876	129.923	426.569
S	22	33434	26918	58.969	129.494	426.568

S	22	33435	26943	58.828	129.945	426.506
S	22	33437	26862	58.915	129.628	426.601
O	4	58743				
O	7	58045				
O	8	58475				
O	4	58020				
O	7	58046				
O	9	58065				
O	6	58032				
O	6	58034				
O	7	58043				