

Results of the 2016 Valley of Peace Archaeology Project: Cara Blanca Pool 1 Excavations and the Yalbac Salvage Archaeology Program

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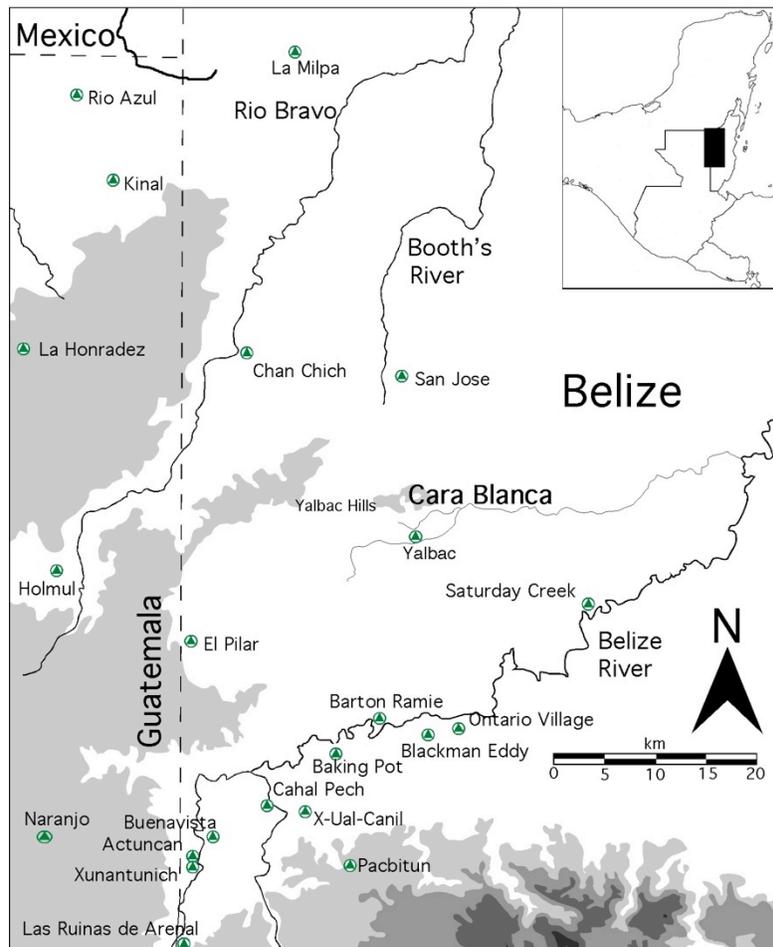
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Chapter 1
Introduction to the Results of the 2016 Valley of Peace Archaeology Project:
Cara Blanca Pool 1 Excavations and the Yalbac Salvage Archaeology Program

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Location of Cara Blanca and Yalbac

Permission was requested on behalf of the Valley of Peace Archaeology (VOPA) project to focus in two areas May 7-June 24, 2016: 1) continue excavations at Pool 1, collect sediment cores from several Cara Blanca pools, and survey and explore the final three unexplored pools (Pools 22, 23, and 25); and 2) conduct a salvage archaeology program in select areas between Yalbac and Cara Blanca in recently cleared areas. We were unable to survey the final three unexplored pools due to time constraints. These goals fit within broader VOPA goals to explore regional interaction through time, especially looking at how the Maya responded to any changes (e.g., climate instability) through time.

A University of Illinois Research Board Grant (\$26,670.95) and a Forestland donation (\$5310) funded the proposed project. The landowners of Cara Blanca, Yalbac Ranch, supported this project and provided logistical support (e.g., clearing road to Pool 1). The owners of the cleared fields, Spanish Lookout Corporation (SPLC) gave us permission to conduct salvage operations in fields they recently had cleared. The 2016 team consisted of myself (PI), three anthropology PhD students (Erin Benson, Aimée

Carbaugh, and Jean T. Larmon, one geology PhD student Melinda Higley (May 5-12), and field school students (May 14-June 25), most of whom are from the University of Illinois at Urbana-Champaign (UIUC) (Anuj Amin from U Penn, Tiyas Bhattacharya, Jaime Breckenridge, Jessica Kaye Clotfelter, and Tyler Ferree, and Adonis Holmes). My 18-year old niece, Andrea Filson, helped in the field as well for nearly two weeks (May 24-June 3). Jeannie and Erin were part of the 2014 crew at Cara Blanca Pools 1 and 20 and conducted a brief survey in the cleared fields near Yalbac; the three graduates students also served as teaching assistants for the field school. I will also hire two foreman (Ernesto Vasquez, Cleofo Choc) and field assistants from the Valley of Peace Village including Stanley Choc, Marcial Artega, Javier Artega, Juan Antonio López, Carlos Vasquez, Alejandro (Javier) Gil, and Rejolio (Antonio) Luna. Marcos Choc helped us out a few days as well. Joining us the last few days in our field lab (June 19-22) was ceramicist Dr. Laura Kosakowsky (University of Arizona), who was able to assess our ceramics.

We are also incredibly and deeply saddened to report that Miss Louisa, wife to Cleofo, friend to us, and cook extraordinaire for VOPA crew, passed away March 24, 2017. Belize will not be the same without her, her smile, her friendship, and her delicious meals. We will miss her.



Miss Louisa

After this introductory chapter, Laura Kosakowsky details the ceramic analysis in Chapter 2. Chapter 3 by Tyler Ferree and Erin Benson describes the ceramics by site and context. In Chapter 4, Erin Benson details the salvage operations in cleared fields between Cara Blanca and Yalbac. Jean T. Larmon and Anuj Amin describe the M186 sweatbath excavations in Chapter 5. Larmon, in Chapter 6, details not only Str. 3 excavations at Pool 1, but other pool projects (Pool 7 sediment core extraction, Pool 1 Str. 2 explorations, etc.). In the final chapter, Chapter 7, Aimée Carbaugh discusses the human remains found at Str. 3 Pool 1 and the salvage archaeology program.

Cara Blanca (May 10-June 17)

Cara Blanca consists of 25 pools running east-west along the base of a limestone escarpment up to c. 100 m high. We have surveyed 22 pools (nos. 1-21, 24), five of which have associated settlement: 1, 7, 8, 9, and 20 (Kinkella 2009, 2011, 2015). Most pools (nos. 1-5, 16-25) are *cenotes* up to 60+m deep, and the others are lakes c. 2 m deep (nos. 7-14) (Kinkella 2009:126-136) (Figure 1.1).

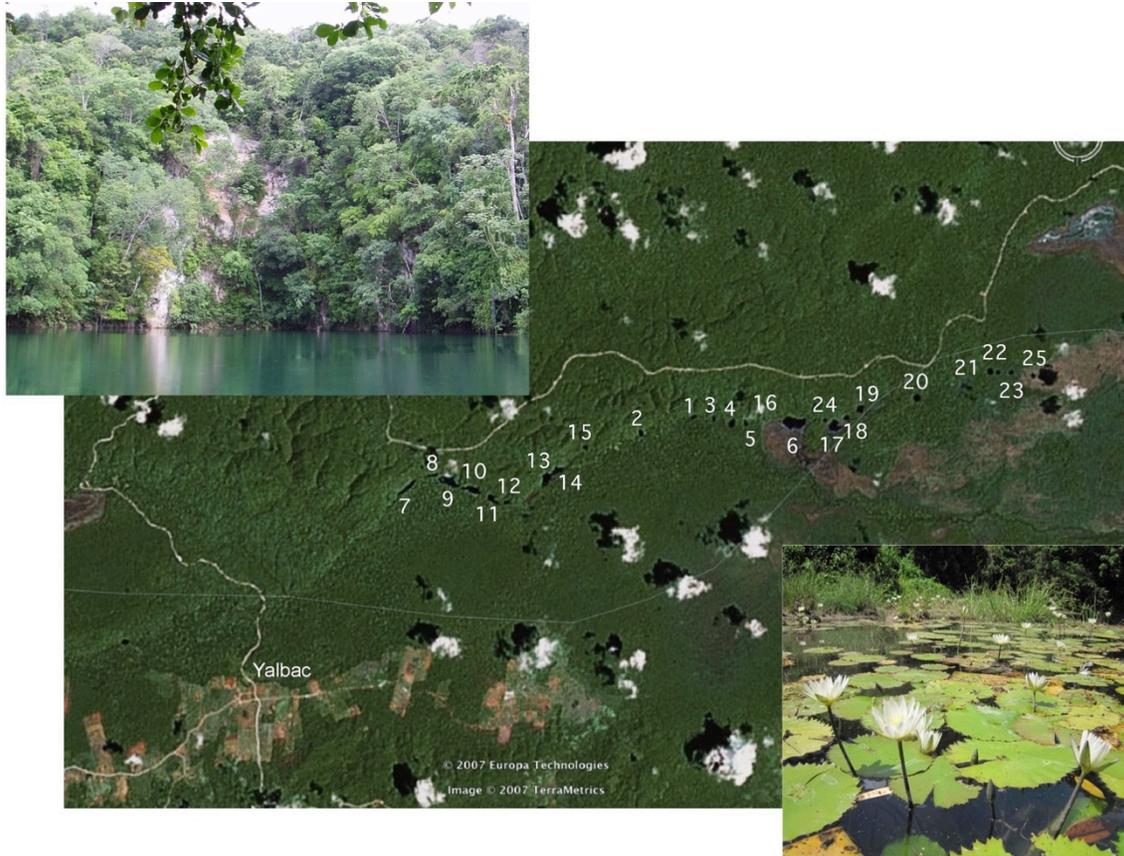


Figure 1.1 Cara Blanca pools

We had several goals in 2016 at Cara Blanca: collect sediment cores from pools, to survey the final three pools that have yet to be explored (Pools 22, 23, and 25), and continue excavations at Pool 1 (Str. 3 and testing a possible sweatbath in Group M186). We were able to complete two of the three tasks. Larmon and Higley extracted sediment cores the first week from Pool 7 and a wetland area at Banana Bank Lodge (May 9 and 10), which is described in Chapter 6 by Larmon. Cores have the potential to not only provide paleoclimate data and information on human-climate interactions in specific areas, but also to act as a reference for comparison to elsewhere in the Maya area.

In 2014 we began excavations at another possible ceremonial building in addition to the water temple (Str. 1), Str. 3, a platform oriented 12° located 22 m southeast of Str. 1 and 5 m south of Pool 1 (Larmon and Nissen 2015) (Figure 1.2).

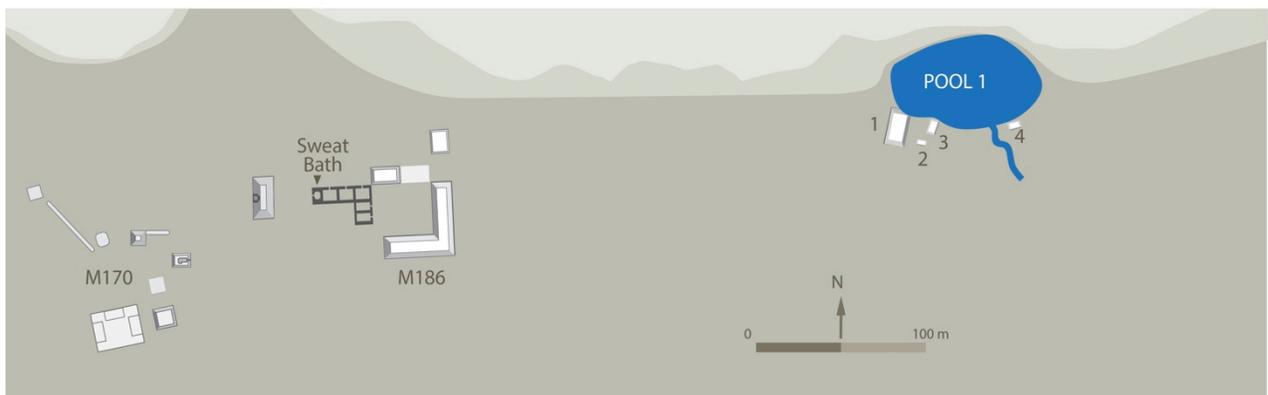
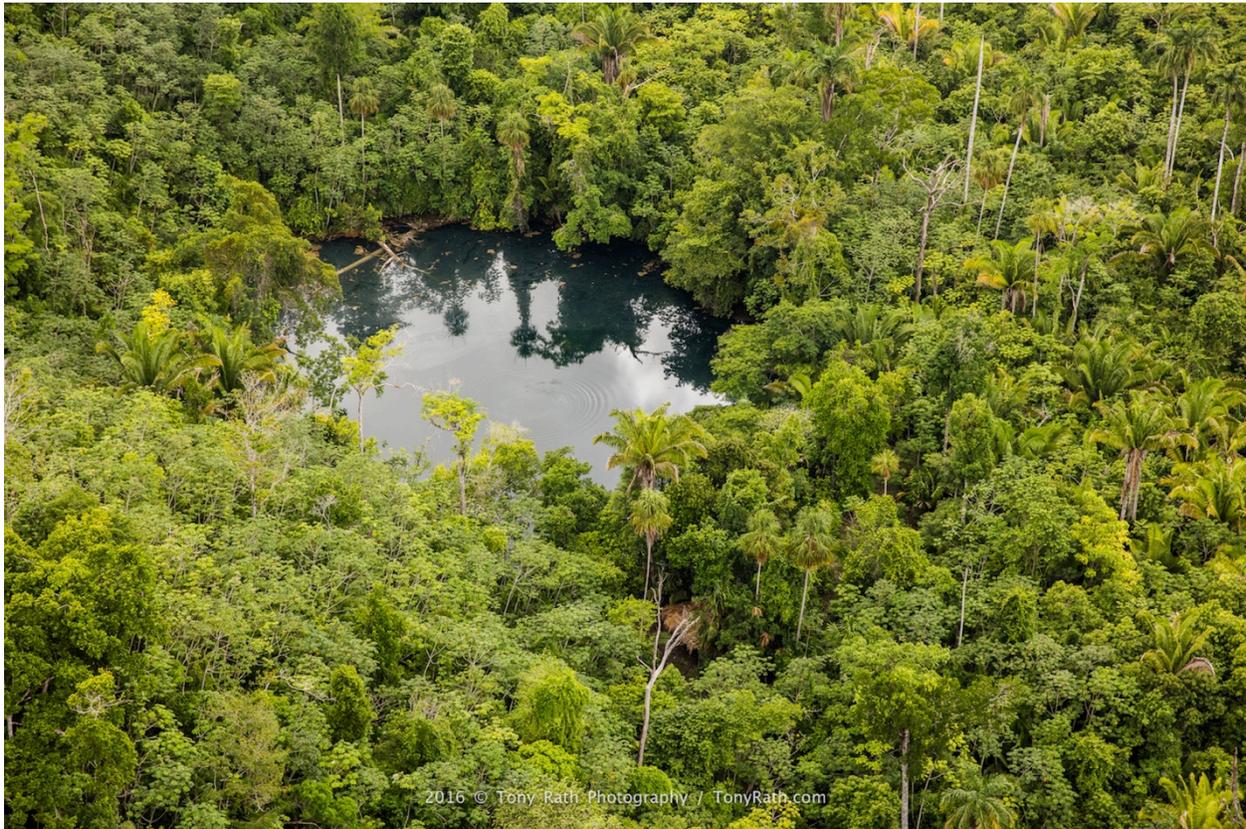


Figure 1.2 Group M 186 in relation to Pool 1

We originally thought it to be a 5.2 x 1.8 m (0.8 m tall) that turned out to be much longer and wider, as Larmon discusses in chapter 6. It is a unique building that bolsters our claim that it served as a pilgrimage destination (Lucero et al. 2016). Also, since increasing evidence suggests that Pool 1 may have been one of several visited, likely as part of a ceremonial circuit, we also focused our efforts at M186, a group of buildings c. 400 m west of Pool 1 (and c. 450 m east of Pool 2) that include a circular sweatbath, which is discussed in chapter 5 by Larmon and Amin. Sweatbaths were typically used for ritual cleansing and other purification rites (e.g., Vogt 1969:89, 446). We removed all of the looters' debris from this heavily looted room and excavated the only remaining part. This compound may have served as a staging area for pilgrims to stay, prepare, and ritually purify themselves.

At Str. 3 and the M186 sweatbath, we excavated following natural stratigraphy and use the Harris Matrix method of recording strata to highlight depositional relationships (see Harris 1989). All exposed features were drawn, photographed, and mapped; topsoil or collapse was not screened. Materials from other contexts (floors, fill, walls, burials, etc.), however, was screened using ¼" mesh. Artifacts were collected and separated by class (ceramics, chert flakes and tools, bone, obsidian, shell, jade, etc.). Upon completion, exposed architecture and feature was covered with construction plastic and backfilled. Carbon from Pool 1 excavations were exported to the U.S. for AMS radiocarbon dating (see Chapter 6 and Appendix 1.1 for all exported archaeological materials).

After the field season ended, Tony Rath was able, via a helicopter flyover of the Cara Blanca area, to take some amazing videos and photos of the Cara Blanca pools:



Pool 1 looking northeast



Looking north at cliffs above Pools 8 and 9



2016 © Tony Rath Photography / TonyRath.com

Looking southeast to Pool 6

We will use this images to plan future plans at Cara Blanca (e.g., survey, excavations, diving, coring) and to assess the impact of nearby land-clearing and intensive agricultural activities.

Yalbac Salvage Archaeology Program (May 9-June 17)

Due to the extensive damage caused by Hurricane Richard in October 2010 and subsequent wild fires to economically viable hardwoods, Yalbac Ranch sold approximately tens of thousands of acres in three blocks to the Spanish Lookout Corporation (SPLC), an agricultural business (see Benson 2015 and Chapter 4). Yalbac and associated hinterland settlement, fall in the South Block (Figure 1.3).

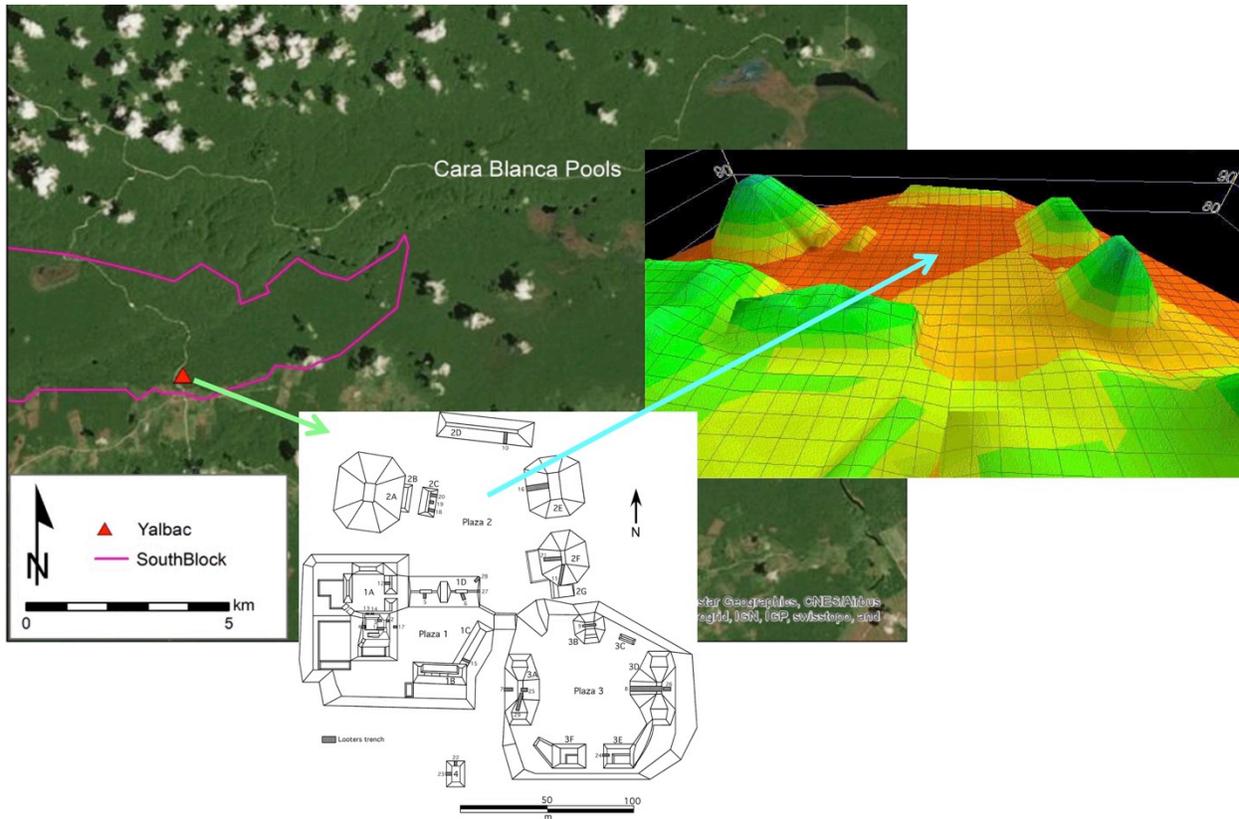


Figure 1.3. South Block prior to clearing. Inset maps are of Yalbac

We conducted a salvage archaeology project to acquire as much information as possible before plowing erases settlement between Yalbac and Cara Blanca, which will eventually provide us an idea as to the number of people who lived in the immediate area, their status, and the kinds of activities they performed. We ended up excavating eight mounds/compounds, largely relying on photographic recording, selected collecting of artifacts, and recording impressions in field journals. To save time, we did not screen. Erin Benson also conducted additional survey, which she details in Chapter 4. We had planned to use a Phantom 3D Professional drone, but it crashed the first day out on May 9 and was unusable. Burials were extracted with great care using a form especially created for this salvage program. Osteological analysis has been conducted by Aimée E. Carbaugh (see Chapter 7). Aimée, a graduate student of Tim Pauketat at UIUC, received her MSc in Human Osteoarchaeology from the University of Edinburgh (2011), after which she worked for the Illinois State Archaeological Survey (ISAS) Bioarchaeology Laboratory where she supervised and conducted osteological analyses, and obtained the Illinois State Historic Preservation Agency certification as a Human Skeletal Analyst. Aimée also has experience identifying and collecting dental and bone samples for isotope and aDNA research, which was critical as we exported human dental and bone samples for isotope and ancient DNA (aDNA) research. All open units were backfilled; we could not add construction plastic since mounds were located in agricultural fields.

In conclusion, the VOPA research area continues to yield diverse and significant data to address broad questions about landscape use, adaptation over the long-term, and regional interaction. Further

research and analyses will continue to contribute answers regarding how people in the past have adapted to climate and landscape transformation.

Acknowledgements

I would like to express my gratitude to the Institute of Archaeology, especially Dr. John Morris and Ms. Melissa Badillo, and Forestland Group for their support and permission over the years. Thanks go to Josue Ramos, who showed us recently cleared areas between Yalbac and Cara Blanca that he thought we might find of interest—which we did. We owe much to Jeff Roberson of Yalbac Ranch, who went above and beyond in clearing and maintaining Rock Cut road. We also much appreciate Spanish Lookout Corporation (SPLC) giving us permission to conduct salvage archaeology in their fields, especially Clarence Dueck (president) and Otto Penner. We also appreciate Karl Reimer sharing his drone photos of fields near Pool 7. Funding was provided by the University of Illinois Research Board and Forestland Group, which is much appreciated. As usual, everyone at Banana Bank Lodge (<http://www.bananabank.com/>) made us feel at home, which is much appreciated. Miss Louisa (Choc) provided the vital and wonderful breakfasts, lunches, and coffee for the field—and as I stated above, Belize will not be the same without her. None of our fieldwork would have been possible without the excellent assistance in the field from foreman (Ernesto Vasquez, Cleofo Choc) and field assistants Stanley Choc, Marcial Artega, Javier Artega, Juan Antonio López, Carlos Vasquez, Alejandro (Javier) Gil, Marcos Choc, and Antonio Luna. I also want to thank my niece, Andrea Filson, especially for her keen photographic skills. Our field school students were amazing and contributed much: Anuj Amin, Tiyas Bhattacharya, Jaime Breckenridge, Jessica Kaye Clotfelter, and Tyler Ferree, and Adonis Holmes. My top-notch graduate students/TAs were amazing—Jeannie, Erin, and Aimée—none of this would have been possible without your hard work and advice. I also want to thank Tony Rath for his helicopter flyover of the Cara Blanca area, which allowed him to capture some amazing aerial images. Finally, I want to express my sincere thanks to Laura Kosakowsky, ceramicist extraordinaire, for spending a few days teaching us about ceramics, and providing her keen insight on our ceramic chronology.

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Appendix 1.1 2016 Exported archaeological materials

Material	Catalog No.: Site, Context	Provenience
Sediment	2160: MF-4 Mound 1 East Str Burial 6	sediment from inside of miniature vessel near cranium
Sediment	2161: MF-4 Mound 1 North Str Burial 8	sediment from inside of miniature vessel near cranium
Sediment	2134: Pool 7 MF Mound 4 Chamber	sediment from inside empty chamber
Primate tooth	2166: Cara Blanca Pool 1 M186 Sweatbath F 104	primate tooth from rock feature
Charcoal	2166: Cara Blanca Pool 1 M186 Sweatbath F 104	charcoal from rock feature
Charcoal	2167: Cara Blanca Pool 1 M186 Sweatbath FI 105	charcoal from plaster floor
Charcoal	2168: Cara Blanca Pool 1 M186 Sweatbath Ballast 105	charcoal from floor ballast
Charcoal	2169: Cara Blanca Pool 1 Str 3 FI 102	charcoal from plaster floor
Charcoal	2170: Cara Blanca Pool 1 Str 3 Ballast 102	charcoal from floor ballast
Charcoal	2171: 2169: Cara Blanca Pool 1 Str 3 Trench 1 Fill 104	charcoal 1 from .835 mbd
Charcoal	2171: 2169: Cara Blanca Pool 1 Str 3 Trench 1 Fill 104	charcoal 2 from .85 mbd
Charcoal	2172: Cara Blanca Pool 1 Str 3 Trench 2 F 105	charcoal 4 from .305 mbd
Charcoal	2172: Cara Blanca Pool 1 Str 3 Trench 2 F 105	charcoal 3 from .29 mbd
Charcoal	2173: Cara Blanca Pool 1 Str 3 Trench 2 Fill 104	charcoal 5 from .85 mbd
Charcoal	2173: Cara Blanca Pool 1 Str 3 Trench 2 Fill 104	charcoal near Burial 3
Charcoal	2174: Cara Blanca Pool 1 Str 3 under Wall 110 and ballast	charcoal
Charcoal	2175: Cara Blanca Pool 1 Str 3 Fill 104 under Wall 110	charcoal
Bone	2151: Pool 7 MF Mound 4 BU 1 Ind A	2 left humerus fragments
Bone	2151: Pool 7 MF Mound 4 BU 1 Ind A	1 tibia fragment
Bone	2157: Pool 7 MF Mound 1 BU 2 Ind A	1 tibia fragment
Bone	2159: MF-4 Mound 1 East Str BU 5 Ind A	2 long bone fragments
Bone	2163: Cara Blanca Pool 1 Str 3 Trench 2 BU 1 Ind A	1 long bone fragment
Bone	2164: Cara Blanca Pool 1 Str 3 Trench 2 BU 3 Ind A	5 long bone fragments
Teeth	2151: Pool 7 MF Mound 4 BU 1 Ind A	4 teeth
Teeth	2152: Pool 7 MF Mound 4 BU 1 Ind B	2 teeth
Teeth	2153: Pool 7 MF Mound 4 BU 1 Ind C	3 teeth
Teeth	2154: Pool 7 MF Mound 4 BU 1 Ind D	1 tooth
Teeth	2155: Pool 7 MF Mound 4 BU 1 Ind E	4 teeth

Teeth	2156: Pool 7 MF Mound 4 BU 1 Ind F	5 teeth
Teeth	2176: Pool 7 MF Mound 4 BU 1 Ind G	1 tooth
Teeth	2157: Pool 7 MF Mound 1 BU 2 Ind A	2 teeth
Teeth	2138: Pool 7 MF Mound 4 BU 4 Ind A	1 tooth
Teeth	2159: MF-4 Mound 1 East Str BU 5 Ind A	3 teeth
Teeth	2160: MF-4 Mound 1 East Str BU 6 Ind A	2 teeth
Teeth	2161: MF-4 Mound 1 North Str BU 8 Ind A	2 teeth
Teeth	2164: Cara Blanca Pool 1 Str 3 Trench 2 BU 3 Ind A	2 teeth

Chapter 2 VOPA Ceramics 2016 General Summary

Laura J. Kosakowsky
University of Arizona

The general chronological framework that is used for the regional ceramics from the VOPA project is the following:

Late Preclassic Chicanel Ceramic Sphere	300 BCE to 100/150 CE
Terminal Preclassic Floral Park Ceramic Sphere	100/150 to 250 CE (or later in Belize)
Early Classic Tzakol Ceramic Sphere	250 to 600/650 CE
Early Late Classic Tepeu I Ceramic Sphere	600/650 to 700 CE
Late Late Classic Tepeu 2 Ceramic Sphere	700 to 830/850 CE
Terminal Classic Tepeu 3 Ceramic Sphere	830/850 to 900/1000 CE

The equivalencies between the ceramic complexes of the Belize River Valley (Gifford 1976) and those from Uaxactun (Smith 1995; Smith and Gifford 1966) are:

Petén/ Belize Valley
Chicanel/ Barton Creek
Floral Park/ Mt. Hope & Floral Park
Tzakol 1,2,3/ Hermitage
Tepeu 1/ Tiger Run
Tepeu 2/ Spanish Lookout 1
Tepeu 3/ Spanish Lookout 2

As it is not clear yet from this preliminary analysis whether the bulk of the pottery is more closely aligned with ceramics from the Petén, from the Belize Valley, or from other peripheral areas (Harrison-Buck 2007; Thompson 1939) ceramic types are described using both the Petén name (Smith and Gifford 1966) as well as the Belize Valley name (Gifford 1976).

Salvage Excavations

The earliest ceramics in the sequence come from mixed deposits and date to the Late Preclassic (300 BCE to 250 CE or slightly later in Belize) (see Chapters 3 and 4). They include Sierra Red Group and Polvero Black Group sherds. Among the Sierra Red Group sherds are the following types: Sierra Red: Sierra Variety and Laguna Verde Incised: Grooved-incised Variety. While these are ceramic type names based on the Uaxactun sequence (Smith 1955; Smith and Gifford 1966), I do not mean to imply that they were actually manufactured in the Petén. The Late Preclassic Chicanel ceramic sphere is among the most widespread in the southern Maya lowlands, and Sierra Red is generally the most ubiquitous type in any Late Preclassic ceramic complex. Since the Late Preclassic sherds are in mixed contexts, there are no securely dated Late Preclassic contexts, though this hints, at the least, to small populations in the area during the Late Preclassic.

There are Early Classic Tzakol Sphere ceramics again found only in mixed contexts, including Dos Arroyos Orange Polychrome basal flange bowls and Aguila Orange Ceramic Groups, as well as unslipped jar rims similar to Quintal Unslipped and Triunfo Striated. As with the Late Preclassic this hints at a local population present during the Early Classic and the use of Petén type names is not meant to imply trade wares.

The Early Late Classic Tepeu I ceramics include examples of Saxche Orange Polychrome (which begins in Tepeu 1 and continues into Tepeu 2 and Mountain Pine Red ridged bowls or plates, as well as Duck Run Incised and possible ceramic drums, which begin in Tepeu 1 but continue into 2 and could be similar to Gifford's (1976) Macal Orange Red. Again the use of the Petén type names (Saxche) or Belize Valley type names (Duck Run and Mountain Pine) does not mean these were traded. British Honduras Volcanic Ash Ware makes its appearance in the Early Late Classic, though I cannot say for sure what the dates are in this sequence as it continues in use through the Terminal Classic. Additionally, polychromes

should not be considered an “elite” ceramic, as they can be found in household contexts as well. There are a number of contexts with Tepeu 1 material that had nothing later in them, however, given the nature of the “salvage” excavation, I am not sure that they are representative of actual construction during the Early Late Classic, or again as with previous time periods, representative of the presence of a local population during this time period.

The bulk of the ceramic material from the “salvage” excavations dates to the Tepeu 2/3 Ceramic Sphere. This includes examples of:

Achote Black Ceramic Group (including Achote Black, Cubeta Incised)
Tinaja Red Ceramic Group (Tinaja Red, Cameron Incised and Chinja Impressed= Kaway Impressed, as well as Portia Gougged-incised)
Vaca Falls Red Ceramic Group (includes Vaca Falls Red, Roaring Creek Red and Kaway Impressed= Chinja Impressed)
Garbutt Creek Red (Garbutt Creek Red and possible Rubber Camp Brown)
Zacatel Cream Polychrome or Juleki Cream polychrome (which begins in Tepeu 1 and continues into Tepeu 2)
Daylight Orange Group (Daylight Orange begins in Tepeu 2 and continues into Tepeu 3)
British Honduras Volcanic Ash Ware (Belize Red, Benque Viejo Polychrome)
Cayo/Cambio Unslipped Jars (which become very large and thick in Tepeu 3)
Tutu Camp/ Encanto Striated Jars (which similarly get larger and thicker in Tepeu 3)

Pool 7 MF Mound 4 Burial 1 ceramics: This context contains many of the above types with the addition of incensario or stove prongs from three pronged incensarios/ stoves (see Ball and Taschek 2007). Also within the burial is a Roaring Creek Red bowl (see Gifford 1976); a Tinaja Red Group, Portia Gougged-incised pyriform vessel (see similar form in the Achote Black Group at La Milpa [Sagebiel 2005:525]); as well as a number of other late monochrome red vessels not typed; at least two Achote Black Ceramic Group vessels (Cubeta Incised) and possibly three; and a fragmentary unspecified monochrome red drum. While drums appear in Tepeu 1, in the Macal Red Orange type (Gifford 1976), they do continue into Tepeu 2 and 3. See Chapter 7 for a discussion of the human remains.

Summary: By and large the bulk of the ceramics from the salvage excavations dates to Tepeu 2-3. The ceramics include types similar to the Belize Valley as well as to Petén sites, implying (not conclusive until you have actual frequency counts) that this a region that is peripherally linked to sites to the north in Belize and the eastern Petén as well as to the Belize Valley, and more peripheral areas to the east. Again this does not imply that any of the ceramics are traded or brought in, but stylistically they overlap with these regions in the southern Maya lowlands. Additionally, it would seem that there are a full range of forms that one would find in any household assemblage (unslipped jars, slipped jars, slipped bowls/ dishes, plates etc.). There do not seem to be any major differences across the entire set of contexts.

Cara Blanca Pool 1 Structure 3 Excavated Ceramics

The most obvious aspect of the ceramics is the lack of rims among all the contexts, as well as evidence of ash and burning (see Chapters 3 and 6). While there is a minor presence of Terminal Preclassic (Undesignated Orange-on-orange trickle), some examples of Early Classic Tzakol (Dos Arroyos Orange Polychrome), and some early Late Classic (Mountain Pine Red and Saxche Orange Polychrome, though some examples of the latter continue into Tepeu I), these earlier ceramics are all in mixed contexts. There is one example of Uacho Black-on-orange (in the Saxche Orange Polychrome Ceramic Group) that has an unusually fine pinkish orange paste. Since I have not seen the entire assemblage from this region, I do not know if the Terminal Preclassic trickle vessel and/or the early Late Classic Uacho Black-on-orange vessel are actual imports, and the only definitive answers might come from petrographic and/or compositional analyses that could compare probable locally made large unslipped vessels and other probable locally made slipped bowls with some of these possible imports.

The late Late Classic into Terminal Classic (Tepeu 2-3/ Spanish Lookout 1-2) ceramics seem to include a large number of unslipped and unslipped striated jar bodies but few rims. There are also examples from the Vaca Falls Red Group, British Honduras Volcanic Ash Ware (Belize Red), and smaller amounts of Tinaja Red jars, as well as minor examples of Achote Black.

Though there are some examples of large rims from unslipped and unslipped striated jars, suggestive of a termination in the Terminal Classic, since there are so few of them it is really hard to know if they date late into the Terminal Classic. None of them appear to be very large and thick, and these types Cayo/Cambio Unslipped Jars and Tutu Camp/ Encanto Striated Jars do tend to get much larger and thicker in Tepeu 3 (Terminal Classic).

The ceramics from the Structure 3 excavations include types similar to the Belize Valley as well as to Petén sites, again implying that this is a region that is peripherally linked to sites to the north in Belize and the eastern Petén, as well as to the Belize Valley. Again, this does not imply that any of the ceramics are traded or brought in, but stylistically they overlap with these regions in the southern Maya lowlands. All in all there appears to be less variety in the Structure 3 assemblage when compared to the salvage excavations, the latter of which seem to represent a more complete “household assemblage.”

Cara Blanca Sweatbath (M186) Excavated Ceramics

There is a minor presence of Early Classic Tzakol (compact paste possibly Aguila Orange), Tepeu I Mountain Pine Red and Saxche Orange Polychrome sherds mixed in with later contexts.

The ceramics date largely to the Tepeu 2/3 time period (Spanish Lookout 1/2); however, there are no exceedingly large unslipped Cayo/ Cambio jar rims, which might be suggestive of construction dates in the late Late Classic and abandonment in the Terminal Classic (with the caveat that it could also be a sampling error). Though other common ceramic types are present in smaller quantities such as Vaca Falls Red Group, British Honduras Volcanic Ash Ware (Belize Red), some Tinaja Red and Achote Black, there seems to be less variability in the assemblage from the sweatbath, than in the salvage excavations. Given the heavy looting it is difficult to know what may have been removed from the entire assemblage.

Summary: The ceramics from both Structure 3 and the sweatbath suggest a short time span between construction and terminal use of the structures. It is possible that construction began in the late Late Classic (Tepeu 2/ Spanish Lookout) and their use ended in the Terminal Classic (Tepeu 3/ Spanish Lookout 2); however, this conclusion is somewhat preliminary pending any radiometric dating.

Future Directions for Ceramic Analyses

Salvage Excavations: An effort should be made to compare and contrast the assemblages across space with a focus on types and forms keeping in mind that with the exception of the burials these are all secondary and highly disturbed contexts. Obviously the only time period for which this is feasible is Tepeu 2/ 3, since the earlier pottery is mixed in with later material. However, one can do chronological comparisons across space to see if there are restricted loci with a presence of Late Preclassic, Early Classic and early Late Classic—i.e. are these disparate points in the settlement area or are they all over, suggestive of small populations everywhere?

Cara Blanca Structure Excavations: Given the possibility that these structures represent specialized contexts, it is necessary to compare and contrast the assemblages from what maybe these non-household contexts, with those from the salvage excavations and ultimately with prior work at Yalbac and Saturday Creek households to ascertain if there are any differences. The obvious absence of rims and all the burning certainly suggest something other than household deposition. Finally, if in fact there is large scale ritual visitation and pilgrimages to the area, there needs to be a systematic compositional sampling program of ceramics to identify local and non-local pottery.

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Chapter 3 Ceramics from the 2016 VOPA Field Season

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This chapter describes the ceramics collected from 2016 excavations at Pool 1 and from the salvage program. Ceramics were collected from thirteen structures and structure complexes as part of the 2016 Valley of Peace Archaeology (VOPA) project. Three structures were situated adjacent to Cara Blanca Pool 1 (see Chapters 5 and 6), while the rest of the structures were located within three separate Mound Fields (MF); Pool 7 MF, MF 4, and MF 2 (see Chapter 4). Ceramics were collected according to their distinct contexts and were inventoried based on vessel type and morphology (rim, neck, base, or body). Paste and presence of slip were also recorded. This chapter presents a description of these ceramics (see also Chapter 2). Chronology names used in this chapter are adapted from the Uaxactun sequence as follows: Chicanel (300 BCE- 100/150 CE), Floral Park (100/150 CE to 250 CE), Tzakol (250 CE to 600/650 CE), Tepeu 1 (600/650 CE to 700 CE), Tepeu 2 (700 CE to 830/850 CE), and Tepeu 3 (830/850 CE to 900/1000 CE).

Pool 1

Two structures were tested at Pool 1; Structure 2, a small structure near the *cenote* associated with the water temple (Str. 1) near the other tested building, Structure 3, a ceremonial platform (see Chapter 6). We also explored M186, a sweatbath, located c. 400 west of Pool 1 (see Chapter 5). A total of 3,135 ceramics were collected from 2016 excavations at the three structures (Appendix 3.1).

The M186 Sweatbath

M186 is a multi-roomed building that includes a squircle-shaped domed sweatbath from which we removed looters' debris in order to expose its interior. A total of 174 sherds were collected from test excavations. Body sherds were by far the most abundant sherd type (n=142), comprising 81.6% of the assemblage. In addition to body sherds, 16 rims (9.2%), 7 neck sherds (4%), 3 bases (1.7%), 5 plate sherds (2.9%), and 1 flange (0.6%) were recovered. Of the 16 rim sherds, 7 were identified as jars (43.8%), 4 as plates (25%), 5 as bowls (31.2%), and 1 as a dish (6.3%) (Figure 3.1). Vessel types identified in this assemblage include British Honduras Volcanic Ash Red, Achote Black, Mountain Pine Red, fire-clouded Tinaja Red, Vaca Falls Red, Saxche Orange Polychrome, and a possible Daylight Orange. Other sherds that are chronologically diagnostic include a red-slipped body sherd, a deep ring base, everted jar rims, and a large pedestal ring base.

Additionally, we recovered 29 sherds from looters' debris throughout the interior and doorway. Diagnostic materials from this context include an everted jar (Tepeu 3), a jar rim and a bowl (Tzakol), and a large pedestal ring base (Tepeu 1-2). A red-slipped body (Tepeu 1-2) was identified among 21 body sherds collected in the collapse from the east wall. In the general wall cleanup, 5 sherds were collected including a British Honduras Volcanic Ash Red bowl (Tepeu 2-3), a small, thin Achote Black pedestal base (Tepeu 2-3), and sherds from smaller jars (Tepeu 2). Sixteen sherds were collected from bulk above the floor in the southwest corner, including one Vaca Falls Red bowl sherd (Tepeu 2-3). Eight body sherds were recovered from Floor 102 in the southwest corner including Saxche Orange Polychrome and interior slipped (Tepeu 1-2). One Tinaja Red jar rim with horizontal fluting (Tepeu 2-3) was collected from the ballast on Floor 103 by the west wall. Nine sherds were collected from Feature 104 in the southwest corner which included Vaca Falls Red (Tepeu 2-3) Forty-six sherds were collected from Floor 105, including Saxche Orange Polychrome (Tepeu 1), Tinaja Red (Tepeu 1-2), small everted jars (Tepeu 2), and a monochrome red sherd (Tepeu 1-2). Ballast 105B in the southwest corner contained 24 sherds including a Mountain Pine Red ridged plate (Tepeu 1), Monochrome red bowls (Tepeu 1-2), and a Fire-clouded Tinaja Red jar sherd (Tepeu 1-2). In the northeast corner on top of Floor 106 a possible Daylight Orange (Tepeu 2) vessel was found. Below Floor 106 in the northeast corner, ten sherds were found including a possible Sibun Red neck (Tepeu 2), monochrome red (Classic), a deep ring base (Tepeu 1-2), and an over-fired sherd with interior offset with orangish paste which is possibly Vaca Falls (Tzakol).

Overall, the ceramics date from the Early Classic (Tzakol) to the Terminal Classic (Tepeu 3) period. However, since the Tzakol bowl sherd and jar rim sherds were found in the looters' debris, we feel secure stating that the sweatbath of the M186 compound was constructed during Tepeu 2 or Tepeu 3.

Structure 2

Thirty-six sherds were collected from minimal non-invasive excavations at Structure 2; 30 body sherds (83.3%), 3 neck sherds (8.3%), and 3 rim sherds (8.3%). One rim sherd was identified as a bowl, and one as a jar. Types in this assemblage include Cayo Unslipped and Achote Black. All ceramics from this structure date to Tepeu 2-3.

Structure 3

Structure 3, a ceremonial platform, was more substantial both in terms of its size and its number of ceramic materials than Structure 2. In 2014, VOPA crew partially excavated Structure 3, exposing a blanket of nearly 4,000 sherds, many of which were burnt as part of a termination ceremony (Larmon and Nissen 2015; Lucero et al. 2016). While the 2016 excavations uncovered more ceramics, they were not found in such quantity or context as the 2014 excavations. The 2016 excavations also uncovered three human caches found within the platform building, two of which have associated ceramics. In total, we recovered 2,925 sherds at Structure 3 in 2016, including 320 rims (10.9%), 171 necks (5.8%), 32 bases (1%), 2391 bodies (81.7%), 7 flanges (0.2%), 3 feet (0.1%), and 1 rattle ball (0.03%) (Figure 3.2). A total of 6,792 sherds were collected from Str. 3 in the 2014 and 2016 seasons; here we will focus on 2016 ceramics (see Larmon and Nissen 2015 for a discussion of 2014 sherds, as well as Lucero et al. 2016). As with M186 and Structure 2, body sherds represented the clear majority of ceramic materials with 81.7% of all sherds being body sherds (Figure 3.3). The predominance of body sherds and relative lack of rims at Structure 3 is consistent with the 2014 data, as only 6% of the sherds recovered in 2014 were rims. Of the 320 rim sherds, 120 were identified as jars (37.5%), 108 as bowls (33.8%), 25 as dishes (7.8%), and 21 as plates (6.6%). Ceramic types from all contexts in this assemblage include a large basin with an Inset, Belize Red, Cubeta Incised, Achote Black, Vaca Falls, Saxche, Palmar, Mountain Pine Red, Orange, Tinaja, Trickle Ware, Aguila Orange, Polverto, Dos Arroyos Polychrome, Garbutt Creek, Uacho, Sierra Red, and Tu-Tu Camp. The ceramics date from Chicanel to the Tepeu 3; however, the platform itself was in use during Tepeu 1-3.

Within the topsoil of Str. 3, 1,108 sherds were collected including large everted jars (Tepeu 3) ring bases (Classic), Mountain Pine Red ridged plates (Tepeu 1), British Honduras Volcanic Ash ridged plates (Tepeu 2-3), Orange bowls (Tzakol-Tepeu 1), a Tzakol jar, a Tzakol bowl rim, an everted jar (Tepeu 3), Tepeu 3 jar neck, a Tzakol jar rim, burnt Achote Black (Tepeu 2-3), monochrome red (Tepeu 1-2), orange on orange Trickle Ware (Floral Park-Tzakol), Vaca Falls bowl and jar (Tepeu 2-3), an Aguila Orange sherd (Tzakol), a Polverto interior black slipped outcurving bowl (Floral Park), eroded Dos Arroyos Polychrome (Tzakol), red bowls (Tepeu 1-2), and a Tinaja Red jar sherd (Tepeu 1-2). This list includes all topsoil contexts within the structure an overall date of Floral Park-Tepeu 3. Forty-six sherds were collected from the topsoil south of the structure, including an everted jar (Tepeu 3), a ring base (Classic), a Tinaja jar rim (Tepeu 1-2), a monochrome bowl/jar (Tepeu 1-2), and a Trickle jar rim (Tzakol).

Thirty-nine sherds were collected in the bulk north of Step 108, but none were chronologically diagnostic. West of the structure, 79 sherds were collected from the topsoil, 117 from above the floor west of the structure, 25 in the northwest corner, one in the cleanup of the west wall, and 80 by Trench 1. Sherds from west of the structure date from Tzakol to Tepeu 3. Cluster 5 contained 36 sherds all dating to Tepeu 2-3, including a large everted jar, a Belize Red VA slightly incurving bowl rim, Achote Black Group (Cubeta Incised), a Vaca Falls Red bowl, a badly burnt Belize Red volcanic ash plate, and a British Honduras Volcanic Ash sherd. A stack of vessels in the south-central portion of the structure contained 21 sherds including a burnt British Honduras Volcanic Ash neck (Tepeu 2-3), large everted jar rims (Tepeu 3), an unknown vessel type dating to Tepeu 1-2, and a burnt offset sherd (Tzakol).

Clusters 4, 6, and 7 were located on top of Floor 102. Cluster 4 contained 31 sherds including a British Honduras Volcanic Ash red rim (Tepeu 2-3) and a large blackened everted jar (Tepeu 3). Cluster 6 contained seven sherds including everted jars (Tepeu 2-3) and a Mountain Pine Red ridged plate (Tepeu 1). Seventeen sherds were collected from Cluster 7 including a large everted jar (Tepeu 2-3), a Tinaja Red jar sherd (Tepeu 1-2), and a Garbutt Creek monochrome red bowl (Tepeu 2-3).

Trench 1. We excavated a one-meter trench into Floor 102, uncovering a ballast, two layers of fill (Fill 104 and 109), and a Human Cache (HC) 2. The ballast from Floor 102 Trench 1 contained 100 sherds including an abundance of unslipped and unslipped striated jar body sherds that were eroded, a

large everted jar (Tepeu 2-3), monochrome red bowls (Tepeu 1-2), Achote Black (Tepeu 2-3), a ridged plate rim (Tepeu 2), Tu-Tu Camp Striated jar rims (Tepeu 2-3), and a Vaca Falls/Garbutt Creek dish/bowl rim (Tepeu 2-3). Fill 104 contained 322 sherds including eroded dish/bowl rims (Tzakol), dish/bowl rims dating from Tzakol to Tepeu 2, unknown Classic period dish/bowl rims, Uacho-Saxche Groupe black-on-orange far rim trade piece (Tepeu 1), a ridged plate rim (Tepeu 1), British Honduras Volcanic Ash (Tepeu 2-3), and Vaca Falls Red group (Tepeu 2-3). Cluster 8 was located inside Fill 104 and contained 19 sherds of unknown type dating to Tepeu 1-2. Cleanup around Cluster 8 revealed 77 body sherds including ridged plates (Tepeu 1), Tzakol bowls, a Tzakol basal flange, an unknown red-slipped bowl (Tepeu 2), British Honduras Volcanic Ash (Tepeu 2-3), a Tzakol jar, Achote black Slip (Tepeu 2-3), a Tepeu 1-2 red slipped sherd, a Saxche Polochrome/Juleki plate (Tepeu 1), Uacho black-on-orange (Tepeu 1), and a Vaca Falls jar (Tepeu 2-3). Fill 109 contained 14 sherds including Sierra Red (Chicanel), eroded polychrome (Classic), and an unknown monochrome dish (Classic). Extension of Trench 1 for the cleaning of HC 2 revealed 38 sherds including a flared jar rim (possibly Tzakol), large everted jar rims (Tepeu 3), a shallow ridged plate/dish (Tzakol), and a transitional ridged bowl (Tzakol). A tunnel in Fill 104 and above HC 2 contained 12 sherds of unknown type that date to the Classic period. A concentration of stones covered HC 2 and contained 20 sherds including a Tzakol plate rim, an Aguila Orange jar neck/rim (Tzakol), a Tzakol flange, and an unknown Classic sherd. Immediately above HC 2 in the fill was a 23 x 19 cm rimless burnt base.

Trench 2. A second trench (Trench 2) was dug into Floor 102, revealing the Floor 102 ballast, Feature 105, Fill 103, Floor 106 Ballast, Cluster 9, Fill 104, Fill 109, Step 108, and HC 1. In Floor 102 of Trench 2, ten ceramics were collected including a possible Dos Arroyos incised flange dating to the Classic period. The Floor 102 Ballast contained 80 sherds including everted jar rims (Tepeu 3). Feature 105 contained 79 sherds including Belize Red (Tepeu 2-3), an Arrowhead rim (Tzakol), a monochrome red bowl/neck (Tepeu 1-2), and a Mountain Pine Red ridged plate (Tepeu 1). Fill 103 contained 74 sherds including polychrome and monochrome red bodies (Tepeu 1-2), thick jar necks (Tepeu 2-3), a British Honduras Volcanic Ash bowl/dish rim (Tepeu 2-3), and a small striated blackened jar rim (Tepeu 1-2). The Floor 106 Ballast contained 3 rims including a possible Tinaja red (Tepeu 1-2). Cluster 9, located at the bottom of Floor 106 Ballast, contained four unknown Classic sherds. Fill 104 contained 167 sherds including an unknown ring base (Classic), unknown polychromes (Classic), jar rims dating to Tzakol to Tepeu 2, Mountain Pine Red dish/bowl (Tepeu 1), Uacho-Saxche group (Tepeu 1), a ridged bowl with a basal flange (Tzakol-Tepeu 1), a ridged plate (Tepeu 1), and Tinaja Red jar body sherds (Tepeu 2-3). Fill 109 contained 11 sherds including a rattle ball from a hollow foot (Classic), a Vaca Falls monochrome red dish (Tepeu 2-3), and an interior beveled rim (Tepeu 2-3). A mixed context of both Floor 106 and Fill 104 contained 29 sherds including possible Tepeu 2-3 forms. From Step 108 and Fill 104, 5 sherds were collected including a Tinaja Red jar (Tepeu 1-2). An extension of Trench 2 further into Floor 102, Floor 102 Ballast, and Fill 103 revealed a total of 23 sherds including a British Honduras Volcanic Ash everted jar rim (Tepeu 2-3), an everted jar rim (Tepeu 3), an Aguila Orange Sherd (Tzakol), a very small polychrome sherd with pale pink underslip (Classic), a ridge (Transition from Tzakol to Tepeu 1), and an unknown Classic red sherd. Extension to and cleanup around HC 1 uncovered three undiagnostic sherds.

Two sherds were collected from Wall 110, 24 from Ballast 102/Fill 103 under Wall 110, 208 from Fill 104 under Wall 110, and ten from the Trench 2 Wall cleanup. Sherds from Ballast 102/Fill 103 under Wall 110 included a ridged plate rim (Tepeu 1), an eroded polychrome (Tzakol-Tepeu 1), a large basin with Inset (Tzakol), an elegant jar (Tzakol), jar necks from Tepeu 2 or 3, and a monochrome red bowl rim (Tepeu 1-2). Diagnostic sherds from Fill 104 under Wall 110 consisted of a large basin (Tzakol), an everted jar (Tepeu 2-3), a polychrome bowl/dish rim (Tzakol), a possible Vaca Falls monochrome bowl/dish rim (Tepeu 1-2), a polychrome sherd of either Saxche or Palmar (Tepeu 2), an interior offset dish/bowl rim (Tzakol), Mountain Pine Red ridged plates (Tepeu 1), a Volcanic Ash dish/bowl rim (Tepeu 2-3), and a Volcanic Ash plate rim (Tepeu 2-3). The Trench 2 Wall cleanup contained a British Honduras Volcanic Ash or Belize red bowl/dish rim (Tepeu 2-3).

The overall range of dates from all contexts of Structure 3 is Chicanel to Tepeu 3. However, the Chicanel period Sierra Red sherds come only from one context (Fill 109), and Floral Park period sherds only come from the topsoil. Tzakol-Tepeu 3 is the most common time period represented by this assemblage, and importantly Tepeu 1-3 is by far the most common time range in floor and fill underneath floor contexts. The ceramic evidence from this excavation and excavations from previous years allow us to assert that this was a ceremonial structure constructed around Tepeu 1-2.

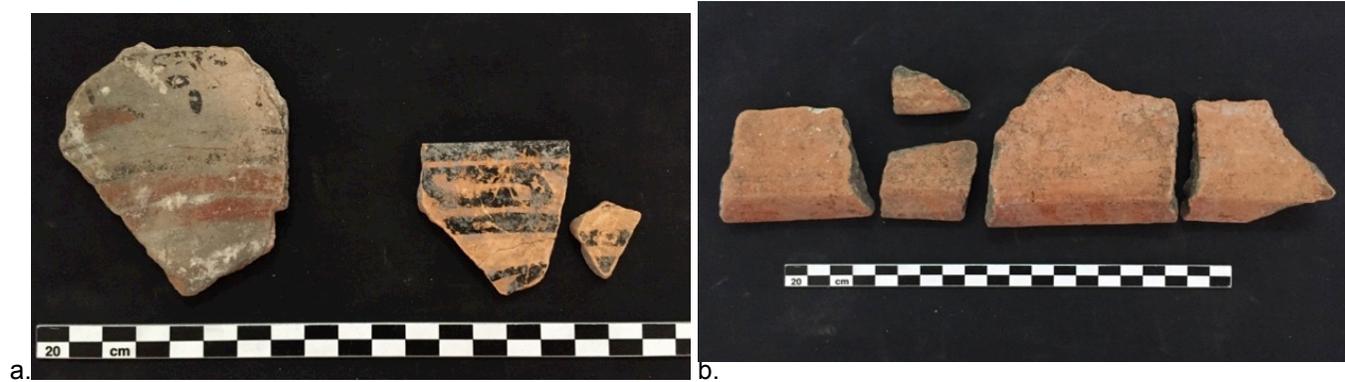


Figure 3.2: Examples of ceramics from Structure 3: a. Trench 1 Fill 104, b. Trickle Ware, c. Trench 1 Floor 102 Ballast

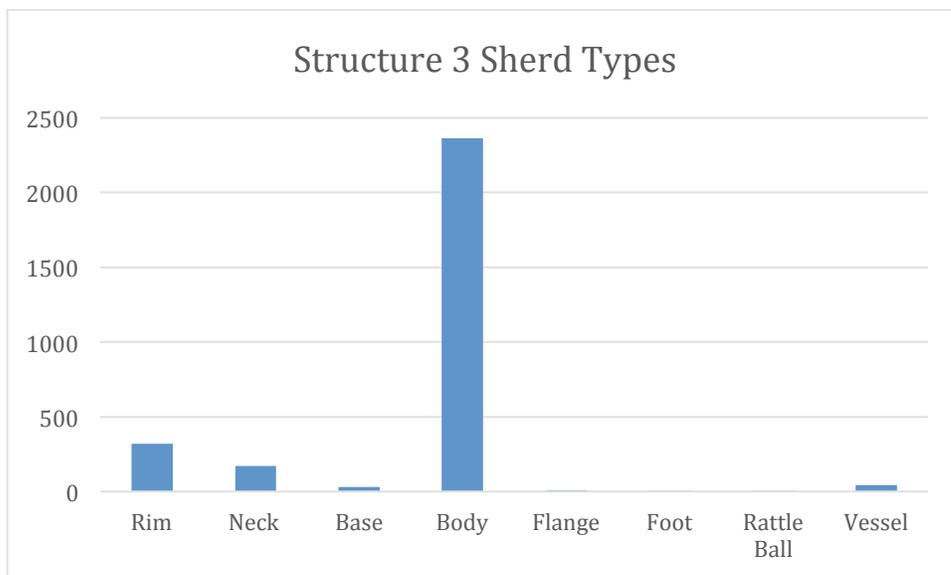


Figure 3.3: Sherd type frequencies at Structure 3

Salvage Program: Mound Field Sites

The ceramics collected from the cleared agricultural fields between Cara Blanca and Yalbac came from eight mounds in three separate fields (see Chapter 4). Due to time limitations, only a sample of diagnostic artifacts were collected from salvage excavations; however, all ceramics from burial features were collected. The ceramic counts include only these artifacts that were collected, and thus are biased towards non-body sherds. Uncollected ceramics were inventoried in the field based on vessel type and sherd morphology, as well as presence of slip, but *not* paste (Figure 3.4). Ceramics that were not collected are presented in Appendix 3.3.



Figure 3.4: Examples of uncollected sherds in the field

Pool 7 Mound Field

Four structures were excavated in Pool 7 Mound Field. A total of 2,282 ceramic artifacts were collected from all sites in this field, including 1,130 body sherds (49.5%), 290 rims (12.7%), 33 necks (1.4%), 48 bases (2.1%), 12 flanges (0.5%), 1 handle (0.04%), 124 figurine fragments (5.4%), and 644 sherds from distinct vessels (28.2%) (Appendix 3.2). Of the 290 rim sherds, 105 were identified as jars (36.2%), 47 as bowls (16.2%), 17 as dishes (5.9%), and 2 as plates (0.6%). Included in this count is an uncollected sample of 119 ceramics taken from the plowzone including 109 rims, 6 figurines, a foot, and 3 bodies. Of the 109 rims, two were identified as bowls, seven as jars, and one as a dish. Most sherds from the context date to Tepeu 3 including Volcanic Ash Belize Red, Vaca Falls Red, a slab foot, and everted jar rims. Below is a breakdown of the ceramic artifacts found at each mound within field MF Pool 7.

Mound 1

Mound 1 is a relatively small structure with at least two distinct rooms. We collected 210 ceramics, including 124 body sherds (59%), 37 rims (17.6%), 4 necks (1.9%), 3 bases (1.4%), and 32 sherds from distinct vessels (15.2%) (Figure 3.5). Of the 37 rim sherds, 10 were identified as bowls (27%), 15 as jars (40.5%), 5 as dishes (13.5%), and 1 as a plate (2.7%). Vessel types in this assemblage include Sierra Red and Mountain Pine Red. Ceramics from this mound date from Chicanel to Tepeu 2. Burial 2 was located in the eastern of the two rooms in the Mound 1 structure. The individual was beneath several ceramic clusters, which are represented by broken sherds or fragments of vessels, rather than complete vessels.

In an area north of the rooms, four sherds were found including an everted jar (Tepeu 2) and a large ring base (Tepeu 3). Ten rims were found in general fill from both rooms including Sierra Red (Chicanel), a poorly made Mountain Pine Red bowl and plate (Tzakol-Tepeu 1), a pinkish dish/bowl (Tzakol), and a thin shallow bowl (Tzakol). South and east of the East Room, two non-diagnostic neck sherds were found. Two rims and a neck found in a dark zone in the east and west rooms included a Sierra Red dish (Chicanel) and an interior grooved jar (Chicanel-Tzakol).

Seven ceramics were collected from the top zone of the East Room which included a dish and a jar rim both dating to Tzakol, as well as a sherd with an interior offset (Tzakol-Tepeu 1). In the Middle Zone of the South expansion of the East Room, three non-diagnostic rims were found including a bowl and a possible bowl or ridge plate. The deposit above Burial 2 contained 207 sherds which included sherds with

thin walls, striations, and red-orange slips representative of Tzakol-Tepeu 1. It also had an everted unslipped, striated jar (Tepeu 1-2) and an everted unslipped squat jar typical of White Cliff Striated (Tzakol-Tepeu 3). Burial 2 was associated with 26 sherds including two bowls, one red-rimmed and both dating to Tzakol; we found a rimless vessel inside an open polychrome bowl. A narrow orifice jar (9 cm diameter) was also associated with Burial 2. Loose material from the east room included 31 ceramics.



Figure 3.5: Examples of ceramics from Pool 7 Mound Field Mound 1, including the rimless plate in a polychrome bowl in a ceramic cluster above Burial 2 (top)

The top two zones of the west room contained two rims, one of which was a ridged plate dating to

Tepeu 1, the other a bowl dating to Tzakol. A cobble fill in the southern expansion of the West room contained three rims including a jar and a bowl from Tzakol-Tepeu 3). Two everted jar rims (Tepeu 2-3) and a base were found on Floor 2 of the West room.

Mound 2

Mound 2, though called a mound, was likely more of a subsurface feature. In total, 290 ceramics were collected from this structure including 40 body sherds (13.8%), 20 rims (6.9%), 3 lids (1%), 1 handle (0.3%), 101 figurine fragments (34.8%), and 127 sherds from distinct vessels (44%). Of the 20 rim sherds, 9 were identified as bowls (45%), 8 as jars (40%), and one as a dish (5%). Interestingly, one of the figurines appeared to have been painted with Maya Blue Paint, a ritually significant and relatively uncommon pigment (Figure 3.6) (Arnold et al. 2008). Included in the Mound 2 ceramics are a portion of a broken plate, as well as six clusters, including the two figurines, aligned in a row running southwest-northeast across the feature (Figure 3.7). Some of the clusters include poorly fired and/or temperless vessels. Types identified in the Mound 2 assemblage include Belize Red, Duck Run Incised, Benque Viejo, Tinaja Red, and Kaway Impressed. This ceramic assemblage dates from Tepeu 1 to Tepeu 3.



Figure 3.6: Maya Blue paint on figurine fragments



Figure 3.7: *In situ* ceramics clusters in Pool 7 Mound Field Mound 2

Mound 3

Seven ceramic artifacts were collected from plow zone of Mound 3, a pile of cobbles and boulders, including four rim sherds and three flanges. Of the four rim sherds, two were identified as jars and two as dishes. The only chronologically identifiable sherd dates this assemblage to Tzakol.

Mound 4

Mound 4 contained significantly more ceramics than any of the structures excavated in the Mound Fields, largely due to an artifact-rich burial feature, Burial 1. A total of 1,890 ceramics were collected from this mound, including 956 body sherds (50.6%), 120 rims (6.3%), 29 necks (1.5%), 45 bases (2.4%), 9 flanges (0.4%), 17 figurine fragments (0.9%), and 485 sherds from distinct vessels (25.7%) (Figure 3.8). Of the 120 rims, 26 were identified as bowls (21.7%), 73 as jars (60.8%), 8 as dishes (6.7%), and 1 as a plate (0.8%).

Burial 1 was associated with 1,752 sherds, including nine complete or nearly complete vessels. Vessel types associated with Burial 1 include at least two Achote Black Cubeta Incised with pseudoglyphs (Tepeu 2-3), a Duck Run incised vessel (Tepeu 1), a Tinaja Red Group Cameron Incised pyriform vessel with pseudoglyphs (Tepeu 2-3) (Joanne Baron, email communication, June 9, 2016), a possible Belize Valley or Roaring Creek vessel (Tepeu 2-3), Chinja Impressed/Kaway Impressed (Tepeu 2-3), a drum (Tepeu 1), a small bugle bowl (Tepeu 2-3), a large red-slipped base (Tepeu 2-3), a Vaca Falls plate (Tepeu 2-3), and eroded Belize Red and British Honduras Volcanic Ash ware (Tepeu 2-3) (Figure 3.9 and 3.10). These ceramics provide an overall date of Tepeu 1 to Tepeu 3. Burials 3 and 4 were far less artifact-dense, with Burial 3 containing no ceramics, and Burial 4 containing five sherds.

Fifteen sherds were collected from the plowzone, including a basal flange and jars dating to Chicanel-Tepeu 3. From the east edge of Mound 4, five rim sherds were found including big Tepeu 3 jars, a Roaring Creek-like red slipped plate (Tepeu 1-2), and an atypical Sierra red bugle bowl (Chicanel). The area south of the wall contained a floor with a layer of cobbles beneath. In the floor six ceramics were found including a ridged offset bowl or plate with flanges (Tzakol-Tepeu 1). Beneath the floor in a layer of cobbles, 15 more sherds were collected including a Tzakol dish and flange, a Tepeu 2-3 thick jar, an incensario, Achote Black Cubeta Incised (Tepeu 2-3), a flaring-sided plate (Tepeu 1-2), a polychrome vessel similar to Saturday Creek (Tepeu 1-2), and a very large Cayo Unslipped jar with notched rims.

In the area north of the wall, we excavated a ballast and floor. The ballast contained 36 sherds including one with a mid-ridge exterior and interior offset (Tzakol-Tepeu 2) and a thick possible jar sherd (Tepeu 2-3). Thirty-five sherds were collected from the floor including a Tinaja Red everted jar, fine grained red slipped jars, and a narrow orifice slipped jar, all which date to Tepeu 1-2.



Figure 3.8: Examples of ceramics from Pool 7 Mound Field Mound 4



Figure 3.9: Burial 1 and ceramics *in situ*



Figure 3.10: Ceramic vessels from Burial 1

Mound Field 4

One platform complex (Mound 1) and one mound (Mound 2) were excavated in Mound Field 4. A total of 876 ceramic artifacts were collected, including 408 body sherds (46.6%), 256 rims (29.2%), 41 necks (4.7%), 13 bases (1.5%), 18 flanges (2%), 11 handles (1.3%), 1 spout (0.1%), 1 incensario (0.1%), 3 ceramic blobs (0.3%), 6 complete vessels (0.7%), and 109 sherds from distinct vessels (12.4%).

Mound 1

Mound 1 was a large structure complex, with a platform and structures on the West, East, and North sides, as well as a possible hallway connecting the North and East buildings. A total of 804 ceramics were collected from the North and East structures consisting of 400 body sherds (49.8%), 219 rims (27%), 35 necks (4.4%), 13 bases (1.6%), 8 flanges (1%), 10 handles (1.4%), 1 spout (0.1%), 1 incensario (0.1%), 3 ceramic blobs (0.4%), 6 complete vessels (0.7%), and 108 sherds from distinct vessels (13.4%) (Figure 3.11). Of the 219 rims, 46 were identified as bowls (21%), 95 as jars (43.4%), 37 as dishes (6.4%), and 15 as plates (13.9%).

East Structure. The East Structure contained 462 total ceramics, 25 of which were associated with Burial 5 and six associated with Burial 6. Ceramics from Burial 5 include a cream polychrome cylinder vase (Tepeu 2), a Belize Red or British Honduras Volcanic Ash vessel (Tepeu 2-3), an everted jar with a groove on its lip (Tepeu 2-3), Augila Orange (Tzakol), and a complete red and black inverted ring-base bowl similar to Daylight Orange (Tepeu 2-3). The latter was inverted over the cranium of the individual in Burial 5 (Figure 3.12). Ceramics from Burial 6 include a Duck Run vessel, a large ring based-bowl, and a miniature jar, dating to Tepeu 1 (Figure 3.13).

A trench was dug into the east structure and was separated into an upper and a lower section. The upper section was the area with structural elements, and the purpose of the lower section was to find a plaza surface. Twelve sherds were collected from the trench topsoil including large everted jars, Kaway Impressed rims, and a Garbutt Creek Red bowl all dating to Tepeu 2-3. In the area generally west of the trench, three sherds were collected including an Achote Black sherd (Tepeu 2-3) and part of a three-pronged incensario.

We exposed four ceramic clusters in the upper trench. Cluster 1 contained 26 sherds including everted jars (Tepeu 2-3), British Honduras Volcanic Ash bowls (Tepeu 2-3), and an unknown monochrome red dish or bowl (Tepeu 1-2). Clusters 2, 3, and 4 contained a total of 112 sherds, none of which were chronologically diagnostic. Structure fill from the upper trench contained 27 sherds including an eroded Saxche Orange Polychrome (Tepeu 1), an eroded Aguila Orange bowl (Tzakol), a Vaca Falls red bowl and jar (Tepeu 2-3), everted jars (Tepeu 2-3), and an unknown red bowl with an everted rim and wide lip (Classic). Exploration of a bench in the upper trench revealed 11 sherds including a large everted jar (Tepeu 2-3), a large ring base (Tepeu 2-3), a Vaca Falls Red bowl (Tepeu 2-3), a Kaway Impressed rim (Tepeu 2-3), a ridged plate (Tepeu 2), and Mountain Pine Red rim (Tepeu 1). Under Floor 1 in the upper trench 28 sherds were found including ridged plates (Tzakol-Tepeu 1), everted jars (Tepeu 2-3), eroded Vaca Falls red bowls (Tepeu 2-3), an Achote Black Sherd (Tepeu 2-3), and a possible Tecomate or Tinaja Red sherd (Tepeu 1-2).

The lower trench revealed two ceramic concentrations as well as sherds associated with limestone stairs and from the general fill of the trench. From a ceramic concentration located on a platform, 74 sherds were collected including a small narrow orifice jar (Tepeu 1-2), a ridged plate (Tepeu 1), and Tepeu 3 jars. The other artifact concentration contained 13 sherds and one vessel, including an eroded ridged plate representing either Mountain Pine Ridge or Saxche Polychrome (Tepeu 1), an Arrowhead jar rim (Tepeu 1), and Yaha Creek Cream (Tepeu 2-3). Cleanup of the stairs revealed 21 sherds including an everted jar (Tepeu 2-3), an eroded Saxche polychrome bowl (Tepeu 1), and Tepeu 1-3 jars. General fill from the lower trench contained 20 sherds including an Aguila Orange (Tzakol), a spout (Chicanel), everted jars (Tepeu 3), Garbutt Creek Red dishes (Tepeu 2-3), and a Tzakol base.

Twenty-eight sherds were collected from below Floor 1 of the east structure including an eroded polychrome (Tepeu 1 or 2). Under Floor 2, eight sherds were collected including Dos Arroyos Orange (Tzakol), gracile jar rims (Tzakol), Sierra Red (Chicanel), and a ridged plate similar to Mountain Pine (Tzakol-Tepeu 1). Seventeen sherds were collected from under Floor 3 including Sierra Red (Chicanel), Polvero Black (Chicanel), eroded orange slip (Tzakol), an unknown red sherd (Classic), a Pita Incised jar (Tzakol), a possible Belize Red Volcanic Ash with limestone (Tepeu 2-3), and British Honduras Volcanic Ash (Tepeu 2-3). Southern rubble from the east structure contained five rim sherds including Mountain Pine Red (Tepeu 1), everted jars (Tepeu 2-3), and a large Cayo Unslipped jar (Tepeu 3).

North Structure: The northern structure contained 336 total ceramic artifacts, including two complete vessels associated with Burial 8. Ceramics associated with Burial 8 include miniature vessels and a Tau-foot dish, dating to Tepeu 1-3 (Figures 3.12 and 3.13). Like the dish associated with Burial 5, the tau-foot dish was inverted over the cranium of the individual in Burial 8. The dish was likely complete however we were unable to completely excavate it.

Like in the East Structure, a trench was dug into the North Structure, and artifacts were separated into upper and lower trench contexts. Six sherds were recovered from the trench topsoil dating to Tepeu 2. Structure fill from the upper trench contained 35 sherds including Tu-Tu Camp Striated everted jars (Tepeu 1-2), Tinaja Red with orange paste and narrow orifice jars (Tepeu 1-2), a British Honduras Volcanic Ash bowl with nubbins (Tepeu 2-3), a British Honduras Volcanic Ash everted bowl (Tepeu 2-3), a Tzakol bowl, and a light brown shallow bowl of Vaca Falls Red form (Tepeu 2-3). We recovered 22 sherds from the lower trench including Sierra Red (Chicanel). In addition to this a ceramic cluster, the lower trench yielded a complete vessel (Tzakol pink-orange eroded bowl) and 17 sherds. In a fill layer in the lower trench, we collected 41 sherds, including a pink-orange eroded bowl (Tzakol), British Honduras Volcanic Ash (Tepeu 2-3), a possible Tinaja Red jar sherd (Tepeu 1-2), and a Dos Arroyos polychrome flange (Tzakol). From a ballast underneath Floor 2, 11 sherds were collected including possible burnt Sierra Red (Chicanel), Duck Run Incised (Tepeu 1), a Tzakol flange, a Sierra Red scalloped flange (Chicanel-Tzakol), Sierra Red (Chicanel), two possible Aguila Orange jars (Tzakol), a Mountain Pine Ridge plate (Tepeu 1), a Saxche eroded polychrome ridged plate (Tepeu 1), a possible Vaca Falls Red (Tepeu 1), Tepeu 2-3 jars, a British Honduras Volcanic Ash ridged plate (Tepeu 2-3), an unknown vertical striated neck (Classic), and a possible Belize Red (Tepeu 1). The lower trench was expanded in the hopes of finding a plaza in the mound complex. We collected 158 sherds from this expansion, including Mountain Pine Ridge (Tepeu 1), an eroded bowl (Tzakol), a transitional flange to ridge (Tzakol-Tepeu 1), and an unknown eroded polychrome (Classic).



Figure 3.11: Examples of ceramics from Mound Field 4 Mound 1



Figure 3.12: Burials 5 (left) and 8 (right) inverted vessels

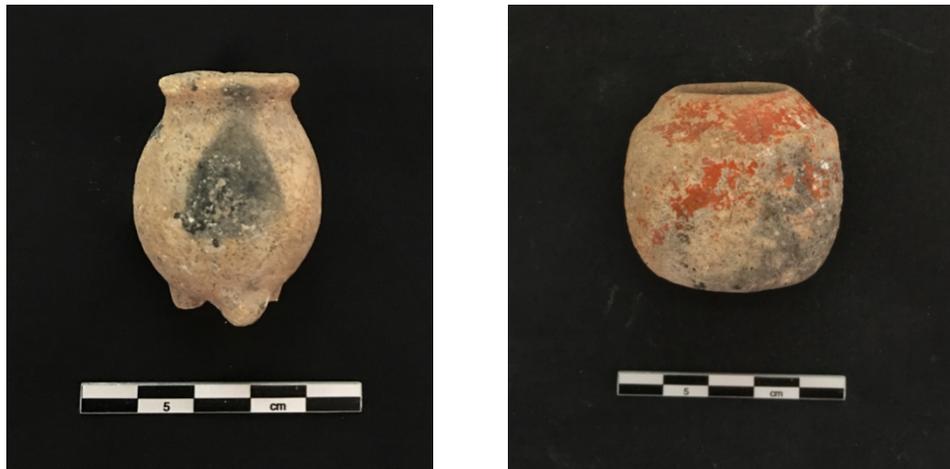


Figure 3.13: Miniature jars from Burials 6 and 8

Mound 2

Mound 2 was a small structure that lacked limestone architecture. Sixty-nine total ceramic artifacts were recovered from the topsoil of Mound 2, including 37 rims (53.6%), 8 body sherds (11.6%), 6 necks (8.7%), 10 flanges (14.5%), 2 shoulders (2.9%), 1 handle (1.4%), 8 bodies (15.6%), and 1 distinct vessel (1.4%), a Kaway Impressed plate (Tepeu 2-3) (Figure 3.14). One rim sherd was identified as a bowl (2.7%), 18 as jars (48.6%), and 17 as dishes (45.9%). Ceramic types associated with this mound include Sierra Red groove incised (Chicanel), red-slipped basal flange bowls (Tzakol), possible Dos Arroyos polychrome (Tzakol), a jar neck with a fillet (Tzakol), a ridged plate (Tepeu 1), Tepeu 2-3 jars, and Mountain Pine (Tepeu 1). Overall, these ceramics date from Chicanel to Tepeu 3.



Figure 3.14: *In situ* Kaway Impressed plate in Mound Field 4 Mound 2

Mound Field 2

Two mounds and one mound complex were excavated in MF-2. A total of 145 ceramics were collected in this field including 13 body sherds (8.9%), 111 rims (76.6%), 2 necks (1.4%), 10 bases (6.9%), 6 flanges (4.1%), 2 handles (1.4%), and 1 ceramic disk (0.7%).

Mound 33

Mound 33 was a small compound consisting of an East and South structure likely connected by a plaza. A total of 134 ceramics were recovered from Mound 33 including 13 body sherds (9.7%), 102 rims (76.1%), 2 necks (1.5%), 9 bases (6.7%), 5 flanges (3.7%), 2 handles (1.5%), and 1 ceramic disk (0.7%) (Figure 3.15). Of the 102 rim sherds, 34 were identified as bowls (33.3%), 42 as jars (41.2%), 11 as dishes (8.2%), and 12 as plates (9%). A center unit was excavated to investigate the platform.

Within the center unit, a total of eight ceramic artifacts were recovered including Kaway Impressed and a Garbutt Creek Red bowl dating to Tepeu 2-3; and a dark red bowl, an orange basal flange, and a jar dating to Tzakol.

The East Structure contained 101 ceramics. We found 16 rims from the fill north of Wall 1, including a large Roaring Creek Red bowl (Tepeu 2-3), a large British Honduras Volcanic Ash bowl (Tepeu 2-3), Garbutt Creek Red bowls (Tepeu 2-3), an everted jar (Tepeu 2-3), Tinaja Red brown-slipped tecomate with slight incisions (Tepeu 1-2), a Vaca Falls short-necked narrow jar (Tepeu 2-3), a Vaca Falls bowl (Tepeu 2-3), and Roaring Creek Red sherds (Tepeu 2-3). A north-south trench was excavated through the structure, exposing a wall (Wall 1), a porch, and a floor (Floor 1). We recovered 53 sherds from the topsoil that included Sierra Red (Chicanel), Sapote Striated jars (Chicanel), a Z-angle sherd (Floral Park-Tzakol), an 'elegant' jar (Tzakol), British Honduras Volcanic Ash (Tepeu 2-3), Garbutt Creek Red bowls (Tepeu 2-3), large jar rims (Tepeu 3), and Tepeu 1 jars. Three rims were collected from the porch, one representing a Belize Red Volcanic Ash jar (Tepeu 2-3). From under Floor 1, nine sherds were collected including Dos Arroyos Orange Polychrome (Tzakol), a Kaway Impressed ring base (Tepeu 2-3), a British Honduras Volcanic Ash base (Tepeu 2-3), Garbutt Creek bowls (Tepeu 2-3), and Tepeu 3 jars. In the structure fill, four sherds were collected including a flange (Tzakol), an over-fired red-brown slipped open bowl (Tzakol-Tepeu 1), a Benque Viejo Polychrome (Tepeu 2), and an everted jar (Tepeu 2-3). In the trench north of Wall 1 and south of where Floor 1 extends, 12 sherds were collected including an everted jar (Tepeu 2-3), a flange (Tzakol), and a Mountain Pine Ridged plate (Tepeu 1). In the northern end of the trench, outside the structure, four sherds were collected including Roaring Creek Red, a Large British Honduras Volcanic Ash bowl, and Vaca Falls all dating to Tepeu 2-3.

The South Structure contained 25 ceramic artifacts. Types from this assemblage include a Benque Viejo tripod slab-footed dish (Tepeu 2), Kaway Impressed (Tepeu 2-3), a Cayo Unslipped everted jar (Tepeu 2-3), a Garbutt Creek red bowl (Tepeu 2-3), a Rubber Camp brown bowl (Tepeu 2-3), a Vaca Falls jar (Tepeu 2-3), a Mountain Pine-like bowl (Tepeu 1), and a ceramic disk. Overall, ceramics in this assemblage date from Tepeu 1 to Tepeu 3.



Figure 3.15: Examples of ceramics from Mound Field 2 Mound 33

Mound 32

While Mound 32 had a well-preserved floor and fill below it, it did not produce many artifacts. A total of 10 ceramics were collected including eight rims, 1 base, and 1 flange (Figure 3.16). Of the rims, 1 was identified as a jar, 5 as bowls, and 2 as dishes. Ceramic types from this assemblage include Vaca Falls and British Honduras Volcanic Ash, dating from Tepeu 2 to Tepeu 3.



Figure 3.16: Examples of ceramics from Mound Field 2 Mound 32

Mound 30

While we dug test excavations into Mound 30, it did not turn out to be a cultural site. One bowl rim was collected in the excavations.

Conclusions

The excavations at Pool 1 provided further support that associated settlement served a ceremonial rather than residential purpose. Chronologically diagnostic materials continue to indicate that settlement at the locality began around Tepeu 1-3, supporting Lucero's current assertion that use of the pool began as a response to droughts in the region and an associated water cult (Lucero and Kinkella 2015). While the types of ceramics recovered are largely domestic, they consist predominantly of relatively large jars and serving dishes; further, the contexts from which they were found suggest that the structures were used primarily in a socio-ritualistic functions. Decorated polychromes and ceramics possibly associated with the burials in Structure 3 in particular provide ceramic evidence of a ritual function.

Overall, ceramics from the mound fields indicate that the area between Cara Blanca and Yalbac was utilized as a residential and farming settlement by the Maya from approximately 300 BCE to 1000 CE. Other than in burial contexts, there is little evidence that any of the structures in this area had special functions. A broader discussion of the settlement in the MFs can be found in Chapter 4, but it will suffice to say here that, despite differences in Mound sizes and locations, everyone had access to and was using largely the same types of ceramics; domestic jars, bowls, plates, and dishes.

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Appendix 3.1: Ceramic artifacts recovered from Pool 1 structures

Cat No.	Site	Artifact Class	Count	Description
2217	Pool 1 M186 Sweatbath Center Looter's debris	body	2	tan paste striated
2218	Pool 1 M186 Sweatbath West Doorway Looter's debris	rim	4	3 tan paste jar, 1 brown-slipped tan paste dish
		neck	3	tan paste
		base	1	orange paste ring base
		body	10	2 VA, 3 tan paste, 1 orange paste, 2 red-slipped tan paste, 1 red-slipped orange paste, 1 dark red-slipped orange paste w/ medial ridge
2220	Pool 1 M186 Sweatbath SE Corner Looter's debris	body	8	5 tan paste exterior striations, 1 red-slipped orange paste, 1 orange paste, 1 tan paste
		rim	1	brown-slipped tan paste bowl
2221	Pool 1 M186 Sweatbath East Wall Collapse	body	21	7 tan paste, 2 VA, 2 orange paste, 6 tan paste exterior striations, 1 red-slipped orange paste, 2 red-slipped tan paste, 1 black-slipped tan paste
2222	Pool 1 M186 Sweatbath General Wall Clean-up	rim	4	1 red-slipped tan paste bowl w/ medial ridge, 2 tan paste jars, 1 red-slipped orange paste carbon core dish/plate w/ flange
		base	1	brown-slipped tan paste ring base
2223	Pool 1 M186 Sweatbath SW Corner Bulk above floor	rim	1	red-slipped tan paste bowl
		neck	1	tan paste
		body	14	2 brown paste striated, 5 tan paste exterior striations, 3 tan paste, 1 VA, 1 brown paste, 1 brown/black-slipped brown VA, 1 red/black-slipped tan paste
2224	Pool 1 M186 Sweatbath SW Corner FL 102	body	8	1 polychrome tan paste, 1 brown-slipped tan paste, 4 tan paste striated, 2 tan paste
2225	Pool 1 M186 Sweatbath West Wall FL 103 ballast	rim	1	VA bowl
2226	Pool 1 M186 Sweatbath SW Corner Feature 104	rim	1	red-slipped tan paste bowl
		body	8	2 tan paste striated, 1 VA, 5 tan paste
2227	Pool 1 M186 Sweatbath SW Corner FL 105 (in FL plan view)	body	1	tan paste striated
2228	Pool 1 M186 Sweatbath SW Corner FL 105	rim	2	tan paste jar
		neck	2	1 tan paste, 1 brown-slipped tan paste
		body	40	3 brown-slipped tan paste, 2 orange-slipped tan paste, 1 red-slipped tan paste, 2 polychrome tan paste, 1 cream-slipped tan paste, 1 red-slipped VA, 4 VA, 9 tan paste striated, 8 tan paste, 9 tan/brown paste
2229	Pool 1 M186 Sweatbath SW Corner FL 105B	body	1	tan paste
2230	Pool 1 M186 Sweatbath SW Corner Ballast 105B	rim	1	red-slipped tan paste plate w/ ridge
		neck	1	orange-slipped orange paste
		base	1	brown-slipped tan paste
		body	21	1 VA, 2 red-slipped orange paste, 1 dark red-slipped tan paste, 5 tan paste, 7 tan/brown paste, 5 tan paste striated
2231	Pool 1 M186 Sweatbath NE Corner Top of FL 106	vessel	5	1 red/black slipped plate rim (Daylight Orange?), 4 body
2232	Pool 1 M186 Sweatbath NE Corner	body	8	2 tan paste striated, 2 tan paste, 1 VA, 3 red-slipped tan paste
		rim	1	brown-slipped tan paste plate

	Below FL 106	flange	1	brown-slipped tan paste
2163	Pool 1 Str. 3 Trench 2 Burial 1 Extension	body	1	tan paste (associated w/ burial)
2163	Pool 1 Str. 3 Trench 2 Burial 1 Clean-up	body	2	1 tan paste, 1 black paste
2234	Pool 1 Str. 3 NE Corner Topsoil	rim	33	18 tan paste jar, 1 orange/brown paste jar, 2 VA bowls, 4 red-slipped carbon core orange paste bowls, 3 tan paste bowls, 4 tan paste rims, 1 red-slipped tan paste bowl
		neck	23	5 tan paste, 1 VA, 10 tan paste, 4 orange/brown paste, 2 orange paste, 1 red-slipped carbon core tan paste
		body	214	2 VA w/ridge, 2 red-slipped tan paste w/ridge, 114 tan paste, 3 red-slipped orange paste, 6 red-slipped tan paste, 1 brown-slipped tan paste, 1 red-slipped VA, 9 burnt tan paste, 76 orange paste
		base	8	3 tan paste, 2 orange paste, 3 red-slipped tan paste
2235	Pool 1 Str. 3 South Central #3 Topsoil	rim	11	3 red-slipped orange paste jars, 3 tan paste jars, 1 brown paste jar (2 pieces), 1 orange paste jar, 1 red-slipped tan paste bowl, 1 red-slipped tan pasate rim,
		base	1	red-slipped tan paste
		neck	4	2 tan paste, 1 orange/brown paste
		flange	1	red-slipped orange paste medial flange
		body	130	2 red-slipped tan paste, 79 brown/tan paste, 2 VA, 47 tan paste
2236	Pool 1 Str. 3 SE Portion Topsoil	rim	17	6 tan paste jars, 1 red-slipped orange paste jar, 2 VA jars, 2 red slipped tan paste bowls, 1 brown-slipped tan paste bowl, 1 red-slipped orange paste bowl, 1 brown-slipped orange paste dish w/ridge, 2 tan paste bowls, 1 brown-slipped tan paste bowl w/ medial ridge
		neck	18	2 carbon core tan paste, 5 brown/tan paste, 1 orange paste, 10 tan paste
		body	292	2 dark red-slipped tan paste, 1 dark red-slipped brown paste, 6 red-slipped tan paste, 13 red-slipped orange paste, 25 burned tan paste, 64 tan/brown paste, 1 black-slipped tan paste, 105 tan paste, 75 orange paste
		flange	2	1 red-slipped tan paste, 1 red-slipped orange paste
		base	1	red-slipped tan paste
2237	Pool 1 Str. 3 North Central #2 Topsoil	rim	10	3 tan paste rims, 1 tan paste jar (2 pieces), 2 tan paste jar, 2 brown-slipped tan paste straight-sided bowl, 1 red-slipped tan paste rim, 1 polychrome tan dish w/ medial ridge (4 pieces, Mountain Pine)
		neck	11	5 tan paste, 6 tan/brown paste
		body	201	1 red-slipped VA w/ medial ridge, 1 red-slipped tan paste w/ medial ridge, 1 orange paste medial ridge, 85 orange/tan paste, 100 tan paste, 6 tan paste striated, 2 red-slipped tan paste, 1 dark red-slipped tan paste, 2 red-slipped orange paste, 2 brown-slipped tan paste
2238	Pool 1 Str. 3 NW Corner Topsoil	body	88	22 red-slipped tan paste, 2 dark red-slipped tan paste, 1 orange/red-slipped orange paste, 4 VA, 40 tan paste, 7 brown paste, 9 tan/brown paste striated, 1 polychrome tan paste (in pieces), 2 polychrome orange pasge
		rim	19	6 tan jars, 1 tan/orange paste jar, 5 brown paste jars, 1 tan/brown jar, 1 red/brown jar, 2 red-slipped tan paste bowls, 1 orange/tan paste dish, 2 red-slipped brown paste dish
		base	5	4 red-slipped tan/brown ring base, 1 tan/orange paste dimpled
		neck	19	1 red-slipped tan paste, 2 red/tan paste, 1 pinkish paste, 6 brown paste, 9 tan paste
2239	Pool 1 Str. 3 North of Step 108 Bulk	body	27	6 tan paste striated, 1 dark red-slipped tan paste, 10 tan paste, 1 brown paste, 4 red-slipped orange paste, 5 orange/brown
		neck	5	2 red-slipped tan paste, 1 tan paste, 2 dark red-slipped orange paste
		rim	7	2 red/tan jars, 1 red-slipped burnt black paste straight rim, 1 brown paste jar, 1 red-slipped tan paste bowl, 1 red-slipped brown paste dish, 1 red-slipped tan paste dis

2240	Pool 1 Str. 3 W of West Wall Topsoil	body	55	16 tan paste, 2 orange paste, 10 tan/brown paste, 14 tan paste burnt interior, 10 red-slipped tan paste, 2 red-slipped orange/brown paste, 1 VA w/medial flange
		rim	15	2 tan paste jars, 3 carbon core tan paste jars, 3 brown paste jars, 1 red-slipped brown paste jar, 1 red-slipped tan paste jar, 2 red-slipped tan paste rims, 1 red/tan paste bowl, 1 brown paste bowl, 1 brown paste dish, 1 red-slipped BHVA jar
		base	1	brown-slipped tan/orange paste ring base
		neck	8	4 dark brown/tan paste, 1 tan paste, 1 burnt, 2 red-slipped orange/tan paste
2241	Pool 1 Str. 3 W of West Wall Above FL	body	81	15 tan paste striated, 31 tan paste, 5 brown/orange paste striated, 15 orange paste, 13 red-slipped tan paste, 1 dark red-slipped brown paste, 1 orange-slipped brown paste
		foot	1	slab foot
		base	4	1 red-slipped tan paste, 1 orange paste, 1 red-slipped tan paste ring base, 1 brown/orange paste ring base
		neck	11	5 tan paste, 1 tan paste striated, 3 orange paste, 1 brown paste, 1 red-slipped orange paste finger-nail incised
		rim	20	4 red-slipped VA (Belize Red) bowls, 1 orange-slipped orange paste (Aguila Orange) jar, 2 red/brown-slipped brown paste (Mountain Pine) plates, 1 orange/red-slipped tan paste (Mountain Pine) plate, 6 tan paste jars, 2 orange/red-slipped tan paste rims, 1 orange paste jar, 1 brown-slipped orange paste jar, 1 brown-slipped brown paste jar, 1 red/brown-slipped tan paste (Vaca Falls) bowl
2242	Pool 1 Str. 3 W of West Wall NW Corner	body	13	3 burnt tan paste, 3 tan paste striated, 6 orange paste, 1 red-slipped tan paste
		neck	2	1 tan/orange paste, 1 red-slipped tan paste
		base	1	red-slipped tan paste ring base
		rim	9	4 tan paste jars, 1 orange paste rim, 3 red-slipped orange paste plates, 1 red-slipped orange paste dish
2243	Pool 1 Str. 3 West Wall Clean-up	rim	1	red-slipped tan paste plate w/ ridge
2244	Pool 1 Str. 3 W of West Wall By Trench 1	body	62	13 tan paste striated, 2 VA, 15 tan paste, 19 tan/orange paste, 3 orange paste striated, 4 red-slipped orange paste, 3 red-slipped tan paste, 3 red-slipped BHVA
		neck	8	5 tan paste, 3 orange paste
		base	1	orange-slipped orange paste ring base
		rim	9	5 tan paste jars, 1 red-slipped tan paste rim, 1 red paste rim, 2 carbon core tan/red paste bowls
2245	Pool 1 Str. 3 S of Str. 3 Topsoil	body	23	7 tan paste, 7 orange paste, 5 burnt tan paste, 2 red-slipped tan paste, 1 red-slipped orange paste, 1 tan/orange paste possible polychrome (red, black and orange)
		neck	6	4 tan paste, 2 red-slipped orange paste
		rim	16	3 tan paste jars, 2 orange paste jars, 1 red-slipped Tinaja Red jar (2 pieces), 2 red-slipped tan paste bowls, 1 red-slipped orange paste bowl, 3 orange paste bowls, 1 VA bowl, 1 dark red-slipped tan paste bowl
		base	1	tan paste ring base
2246	Pool 1 Str. 3 Clustter 5	body	30	10 burnt tan paste, 9 tan paste, 7 BHVA, 1 red-slipped tan paste, 1 red-slipped orange paste, 2 burnt Belize Red
		neck	1	tan paste
		rim	5	1 tan paste jar, 2 Belize Red bowls, 2 Vaca Falls red bowls
2247	Pool 1 Str. 3 S Central Stacked Vessel	body	15	12 tan paste, 3 BHVA
		neck	2	tan paste
		rim	4	1 BHVA bowl, 3 tan paste jars
2248	Pool 1 Str. 3 Top of FL 102, Cluster 4	vessel	24	BHVA red-slipped bowl: 9 rims, 15 body
		rim	1	tan paste jar
		neck	1	tan paste
2249	Pool 1 Str. 3 Top of FL	body	16	6 brown/red paste, 1 red-slipped orange paste Tinaja Red, 6

	102, Cluster 7			brown paste, 1 pinkish paste, 2 tan paste
		neck	1	tan paste
		rim	2	1 tan paste jar (5 pieces), 1 red/orange-slipped tan paste plate
2250	Pool 1 Str. 3 Top of FL 102, Cluster 6	body	4	2 tan paste striated, 2 tan paste
		neck	1	tan paste
		body	67	38 tan/brown paste, 9 tan/brown paste striated, 2 brown paste, 3 tan paste striated, 7 orangish paste, 2 red-slipped tan paste, 2 red-slipped pinkish paste, 2 eroded polychrome pinkish paste, 1 black-slipped orange paste Achote Black, 1 red-slipped orange paste Tinaja Red
		base	4	1 brown-slipped tan paste flat base, 3 red-slipped tan paste ring base
		neck	12	9 tan paste, 2 orange paste, 1 tan paste striated
2251	Pool 1 Str. 3 Trench 1 FL 102 Ballast	rim	17	2 tan paste Tu-Tu Camp Striated jars, 2 tan paste jars, 2 brown paste rims, 1 red-slipped tan paste Vaca Falls/Garbutt Creek bowl, 1 red-slipped tan paste plate, 1 tan paste dish/plate, 6 red-slipped tan paste bowls, 1 red-slipped orange paste bowl
		body	273	69 tan/brown striated, 105 tan paste, 36 burnt tan paste striated, 2 VA, 2 red-slipped tan paste BHVA, 23 red-slipped tan/orange paste, 12 red-slipped tan paste, 4 brown-slipped tan paste, 6 eroded polychrome orangish paste, 2 burnt orange Saxche Polychrome, 1 Uacho black-on-orange Saxche Group polychrome, 1 black/red-slipped tan paste Achote Black, 1 orange paste w/medial flange, 2 tan paste w/ decorations, 7 orange/brown paste
		neck	10	7 tan paste, 1 red-slipped tan paste, 1 red-slipped orange paste, 1 brown-slipped tan paste
		flange	1	orange paste
		foot	1	tan/orange paste nub
2252	Pool 1 Str. 3 Trench 1 Fill 104	rim	37	10 tan paste jars, 1 tan paste striated jar, 5 red-slipped orange paste bowls, 5 orange paste bowls, 1 red-slipped tan paste bowl, 2 red-slipped tan/orange paste jars, 1 brown-slipped tan paste jar, 1 orange paste dish w/ medial ridge, 1 red-slipped orange paste plate w/ medial ridge, 1 red-slipped tan paste plate w/medial flange, 1 black-slipped tan paste bowl, 2 tan paste rims, 1 polychrome tan paste bowl, 1 Uacho Black-on-orange Saxche bowl, 3 red-slipped orange paste Mountain Pien plates
		body	11	5 burnt tan paste, 2 orange paste, 1 brown-slipped tan paste, 2 red/orange slipped pinkish paste, 1 red paste
		neck	1	tan paste
2253	Pool 1 Str. 3 Trench 1 Fill 109	rim	2	1 red-slipped red paste bowl, 1 red-slipped tan paste bowl
2254	Pool 1 Str. 3 Trench 1 Fill 104 clean-up around Cluster 8	body	77	28 brown paste, 8 burnt tan paste, 4 tan paste, 10 brown-slipped tan paste, 8 red/brown-slipped orange paste, 16 red/orange-slipped tan paste, 3 polychrome orange paste
2255	Pool 1 Str. 3 Trench 1 Fill 104 Cluster 8	vessel	19	2 tan paste base, 17 body
		flange	1	polychrome orange paste
2256	Pool 1 Str. 3 Trench 2 FL 102	body	9	5 orange paste, 1 brown paste, 3 tan paste
		rim	5	4 tan paste jars, 1 ~polychrome tan paste jar/dish
		neck	2	red/brown paste
2257	Pool 1 Str. 3 Trench 2 FL 102 Ballast	body	73	1 polychrome tan paste, 1 black-slipped tan paste, 14 red-slipped tan paste, 2 black or burnt paste, 18 red/tan paste, 37 tan paste (~10 striated)
		rim	10	1 red-slipped carbon core tan/red paste jar, 2 red-slipped tan/red paste bowls, 1 tan paste striated jar, 1 red-slipped tan paste plate, 1 brown paste rim, 1 tan paste jar, 1 brown paste jar, 2 red-slipped tan paste dishes
		neck	5	1 tan paste, 1 red/tan paste, 3 brown paste striated
2258	Pool 1 Str. 3 Trench 2 F 105	body	64	11 red-slipped tan paste, 3 red paste, 6 burnt tan paste, 11 brown paste, 33 tan paste (~8 striated)
		rim	4	1 BHVA bowl, 1 tan paste striated jar, 1 red-slipped carbon core red/tan paste jar, 1 red-slipped carbon core tan paste jar
		body	67	1 red-slipped BHVA, 1 polychrome tan paste, 1 polychrome orange paste, 4 red-slipped tan paste, 7 red-slipped red/tan paste, 1 burnt, 13 burnt red/tan paste, 7 red paste, 32 tan paste (~8 striated)
2259	Pool 1 Str. 3 Trench 2 Fill 103	neck	2	1 tan paste, 1 tan/red paste

		base	1	carbon core brown paste
2260	Pool 1 Str. 3 Trench 2 FL 106 Ballast	rim	3	1 red-slipped tan paste jar, 1 red-slipped tan/red paste carbon core bowl, 1 red-slipped tan paste carbon core bowl
2261	Pool 1 Str. 3 Trench 2 Bottom of FL 106 Ballast, Cluster 9	body	4	tan paste + ~20 bits
2262	Pool 1 Str. 3 Trench 2 Fill 104	body	142	17 brown paste (1 striated), 9 burnt, 32 red/tan paste (2 striated), 52 tan pasted (~15 striated), 1 red-slipped BHVA, 5 red-slipped orange paste, 18 red-slipped tan paste, 4 red-slipped red/orange paste, 2 polychrome tan paste, 1 red-slipped red paste, 1 red-slipped brown paste
		foot	1	red paste nub
		base	1	tan/orange paste
		neck	9	6 tan paste, 2 red/tan paste, 1 red paste striated
		rim	14	1 polychrome orange paste bowl/vase, 1 tan paste jar, 2 tan/red paste jars, 1 polychrome red paste bowl, 1 tan/orange jar/dish, 1 red-slipped tan paste plate, 1 red-slipped tan paste dish, 2 red-slipped tan paste bowls, 1 tan paste bowl, 1 tan/red paste bowl, 1 red-slipped brown paste rim
2263	Pool 1 Str. 3 Trench 2 Fill 109	ceramic	1	clay rattle ball
		body	6	3 tan paste, 1 burnt black/brown paste, 1 red/brown paste, 1 burnt tan paste
		rim	4	1 brown/black paste jar, 1 red-slipped carbon core tan paste jar, 1 black paste jar, 1 red-slipped brown paste bowl
2264	Pool 1 Str. 3 Trench 2 FL 106/Fill 104	rim	1	tan paste rim
		base	1	red-slipped carbon core tan paste (7 pieces)
		neck	3	tan paste
		body	24	2 brown paste, 2 burnt tan paste, 14 tan paste, 5 red-slipped tan paste, 1 red/tan paste
2265	Pool 1 Str. 3 Trench 1 Extension of Cleaning to Bu. 2	rim	15	1 brown paste dish, 2 carbon core tan paste jars, 1 tan paste jar, 1 tan/red paste jar, 1 red-slipped red/tan paste jar, 1 red-slipped tan paste jar, 2 tan paste dishes, 1 tan/red paste dish, 1 orange-slipped tan/red bowl, 2 red-slipped tan paste dishes, 2 red-slipped tan/red paste dishes
		body	23	3 black-slipped tan/orange paste, 6 red-slipped tan paste, 1 red paste, 11 tan paste, 1 dark red-slipped tan paste, 1 red-slipped brown/orange paste
2266	Pool 1 Str. 3 Trench 1 Fill 104 tunnel above Bu. 2	neck	1	dark red-slipped brown paste
		body	11	dark red-slipped tan/red paste, 2 red paste, 6 tan paste, 2 red-slipped orange paste
2267	Pool 1 Str. 3 Trench 1 E extension above stones covering Bu. 2	rim	2	1 red/paste jar/dish, 1 dark red-slipped brown paste bowl
		~neck	1	red-slipped tan/orange paste neck or eroded jar rim
		flange	1	dark red-slipped brown paste
		body	16	5 orange-slipped black paste, 1 red-slipped tan paste, 2 tan paste, 8 burnt brown paste
2268	Pool 1 Str. 3 Trench 2 Step 108 Fill 104	body	5	2 burnt brown paste, 1 red/brown paste, 1 carbon core red paste, 1 red-slipped carbon core pinkish red paste
2269	Pool 1 Str. 3 Trench 2 FL 102 extension	body	4	3 tan paste, 1 BHVA
		rim	1	carbon core brown paste jar
2270	Pool 1 Str. 3 Trench 2 Extension Ballast 102	body	1	orange/red body
		rim	1	burnt tan paste
2271	Pool 1 Str. 3 Trench 2 Extension Fill 103	body	8	4 tan paste, 2 red-slipped tan/orange paste, 1 red/orange-slipped tan paste, 1 red-slipped brown paste
		flange	1	tan paste
2272	Pool 1 Str. 3 Trench 2 Extension ext. all	body	6	1 orange-slipped tan paste, 1 possible eroded polychrome tan/red paste, 1 tan/red paste, 1 red-slipped tan paste, 2 tan paste
2273	Pool 1 Str. 3 Wall 110	neck	1	carbon core tan paste
		body	1	brown paste
2274	Pool 1 Str. 3 Ballast 102/Fill 103 under Wall 110	neck	3	2 striated tan paste, 1 striated brown paste
		body	13	2 burnt tan paste, 4 tan paste, 4 red/tan paste, 1 red-slipped tan paste, 2 red-slipped ash paste

		rim	8	1 carbon core red paste jar, 1 tan paste rim, 1 carbon core tan paste jar, 1 tan paste jar, 1 red-slipped tan paste bowl, 1 eroded polychrome dish, 1 orange-slipped red/orange paste basin, 1 tan paste plate
2275	Pool 1 Str. 3 Fill 104 under Wall 110	rim	15	1 red-slipped brown paste bowl, 1 red-slipped (~polychrome) carbon core red paste bowl, 1 red-slipped brown paste dish, 2 red-slipped red paste plates, 2 red-slipped BHVA bowls, 1 red-slipped BHVA jar, 1 brown paste plate, 2 red-slipped red paste bowls, 3 red-slipped tan paste bowls, 1 red paste jar/dish
		base	2	1 brown/red paste, 1 polychrome
		body	191	1 BHVA, 48 red/brown paste, 65 tan paste, 49 brown paste, 19 red-slipped tan paste, 9 red-slipped dark tan/brown paste
2276	Pool 1 Str. 3 Trench 2 Wall Clean-up	rim	2	1 red-slipped BHVA bowl, 1 eroded polychrome bowl or vase
		body	8	2 red-slipped BHVA, 3 tan paste, 3 tan/red carbon core paste
2233	Pool 1 Str. 2 NW Corner Clean-up	body	30	9 red-slipped tan/brown paste, 2 black-slipped tan paste, 6 orange paste, 11 tan paste, 2 tan paste striated
		rim	3	1 tan paste jar, 1 tan paste bowl, 1 red-slipped brown/orange paste rim
		neck	3	tan paste

Appendix 3.2: Ceramic artifacts recovered from the Mound Fields

POOL 7 MOUND FIELD				
Cat No.	Site	Artifact Class	Count	Description
2142	MF-Pool 7 Plowzone Sample of Uncollected Artifacts	figurine	6	pieces of same figurine
		rim	109	2 red-slipped bowl VA, 1 narrow orifice jar or vase, 3 tannish-orange jar, 3 tan jars (1 blackened), 1 tan dish w/ remnant red slip
		foot	1	tan paste slab foot w/ ls temple
		Body	3	1 red-slipped orange paste, 1 red-slipped incised tan paste (5 pieces), 1 red-slipped VA
2140	MF-Pool 7 Mound 1 East Room Top Zone	rim	5	2 brownish tan bowl, 1 tan bowl, 1 everted tan jar, 1 tiny tan piece
		body	2	1 tan, 1 yellowish-brown w/ clear slip
2141	MF-Pool 7 Mound 1 North of Rooms	base	1	tan ring base
		rim	3	1 tan everted jar, 1 red-slipped tan dish, 1 jar w/ vertical ext. striations
2143	MF-Pool 7 Mound 1 General Fill in Rooms Fill	rim	10	3 carbon core tan jars, 1 tan jar w/short neck & vertical striations, 1 orangish-tan jar w/ ls temper, 1 tan bowl/dish, 1 tan paste dish, 1 red-slipped tan paste slightly incurving bowl, 1 red-slipped carbon core tan paste dish, 1 red-slipped tan plate
2144	MF-Pool 7 Mound 1 West Room Cobble Fill southern expansion	rim	3	1 tan-slipped reddish paste bowl, 2 tan paste jars
2145	MF-Pool 7 Mound 1 West Room Top 2 Zones	rim	2	1 red-slipped bowl tannish-orange, 1 maroon-slipped bowl
2146	MF-Pool 7 Mound 1 S&E of East Room Sample Topsoil	neck	2	1 tan paste blackened, 1 tan paste
2147	MF-Pool 7 Mound 1 E&W Rooms Dark Zone	rim	2	1 tan jar w/ ls temper, 1 red-slipped orange paste dish
		neck	1	tan paste
2148	MF-Pool 7 Mound 1 West Room Floor 2	rim	2	1 tan paste jar w/horizontal striations, 1 tan paste jar w/ vertical striations
		base	1	red-slipped ls temper tan-orange paste flat base w/ foot joint
2149	MF-Pool 7 Mound 1 East Room South	rim	3	1 red-slipped VA dish, 1 red-slipped VA bowl, 1 orange tan rim

	expansion Middle Zone			
2150	MF-Pool 7 Mound 1 East Room Deposit above Burial 2	vessel	1	Vessel 3: polychrome bowl w/ 1 rim, 10 body, c. 20 small pieces
		vessel	1	Vessel 6: same as Vessel 3: 1 small rim, 5 body, various bits
		body	4	Sherd 16: same as Vessel 3: 1 base, 3 body
		vessel	1	Vessel 4: same as Vessel 3: c. 18
		vessel	1	Vessel 5: same as Vessel 3: 2 rims, 13 bodies
		body	10	tan paste jar w/striations
		vessel	1	Vessel 7: 5 blackened tan paste, likely jar, 4 small bits
		vessel	1	Vessel 2: same as Vessel 7: 22 jar bodies-kept separate
		body	13	under Vessel 3: same as Vessel 7: tan paste jar
		body	14	same as Vessel 7: tan paste jar w/ striations
		vessel	17	Sherd 11: same as Vessel 3: 2 rims, 15 body, c. 25 bits
		body	6	Sherd 21: 6 tan paste jars w/ some blackening
		vessel	1	Vessel 1: incomplete light tan jar in pieces (c. 12)
		vessel	8	Sherds 22&33: tan paste jar: 1 rim, 1 neck, 6 bodies
		body	10	Sherds 5-8: tan paste jar: 10 body, c. 10 bits
		2150	MF-Pool 7 Mound 1 East Room w/ ceramic clusters (loose material)	body
base	1			red/tan paste
2157	MF-Pool 7 Mound 1 East Room Burial 2	rim	2	1 tan paste jar, 1 red-slipped tan paste bowl
		rim	4	1 dark red-slipped orange paste rim, 1 red-slipped orange paste jar, 1 red-slipped tan paste dish, 1 red-slipped tan paste bowl
		neck	1	tan paste
2116	MF-Pool 7 Mound 2 Plowzone Sample	body	21	1 red-slipped brown paste, 2 red-slipped tan paste, 1 orange paste, 6 brown paste, 11 tan paste, +150 bits
		figurine	1	fragment, ~part of Cluster 1
		body	2	1 cord-marked tan paste, 1 VA red slipped incised
2118	MF-Pool 7 Mound 2 Cluster 1	rim	3	2 tan paste jar, 1 VA red slipped dish
		figurine	55	3 face fragments, some w/ Maya Blue, some incised, some molded, some red slipped, c. 40 bits
		figurine	41	1 large orange paste ls temper, 40 smaller fragments, c. 15 bits
2121	MF-Pool 7 Mound 2 Cluster 2	figurine	2	orange paste maroon-slipped
		figurine	2	orange paste maroon-slipped
2122	MF-Pool 7 Mound 2 Cluster 5	rim	1	VA slightly incurving bowl
2123	MF-Pool 7 Mound 2 Cluster 7	rim	1	tan paste bowl
2124	MF-Pool 7 Mound 2 Cluster 4	body	4	tan paste w/ pinkish-orange surface
		rim	4	ls temple bowl, 3 narrow orifice jar w/feet
2126	MF-Pool 7 Mound 2 Cluster 6	body, ~feet	16	assoc w/ narrow orifice jar w/feet, ~including foot fragments

		handle	1	small handle w/ Maya Blue
		body	12	3 VA, 4 orangish paste, 5 red-slipped orange paste
		figurine	2	orange paste ~figurine fragments
2127	MF-Pool 7 Mound 2 Plowzone Sample	rim	11	3 tan paste jars, 1 VA everted bowl, 1 VA slightly incurving bowl, 1 slightly incurving bowl w/ int. remnent brown slip, 1 VA fingernal impressed bowl, 1 VA straight-sided bowl, 1 red-slipped bowl, 1 thick red-slipped bowl, 1 red-slipped VA
		body	1	orange past (~base?)
2128	MF-Pool 7 Mound 2 Plowzone Rubble	vessel	37	VA red-slipped flared dish w/ ring base: 8 rims, 5 base, 25 body, c. 50 bits
2129	MF-Pool 7 Mound 2 Cluster under rock on possible surface	vessel	90	VA red-slipped, some incised
		body	5	3 VA, 2 brown-slipped VA
		lid	3	brown-slipped lid
2130	MF-Pool 7 Mound 3 Plowzone	flange	3	1 carbon core orangish, 1 orangish, 1 orange-slipped carbon core orangish
		rim	4	1 red-slipped grayish paste w/ white underslip dish, 1 interior red-slipped tan paste plate/dish, 1 tan paste incised jar, 1 tan paste jar w/ exterior ??

MOUND FIELD 4

2142	MF-Pool 7 Plowzone Sample of Uncollected Artifacts	figurine	6	pieces of same figurine
		rim	109	2 red-slipped bowl VA, 1 narrow orifice jar or vase, 3 tannish-orange jar, 3 tan jars (1 blackened), 1 tan dish w/ remnant red slip
		foot	1	tan paste slab foot w/ ls temple
		Body	3	1 red-slipped orange paste, 1 red-slipped incised tan paste (5 pieces), 1 red-slipped VA
2140	MF-Pool 7 Mound 1 East Room Top Zone	rim	5	2 brownish tan bowl, 1 tan bowl, 1 everted tan jar, 1 tiny tan piece
		body	2	1 tan, 1 yellowish-brown w/ clear slip
2141	MF-Pool 7 Mound 1 North of Rooms	base	1	tan ring base
		rim	3	1 tan everted jar, 1 red-slipped tan dish, 1 jar w/ vertical ext. striations
2143	MF-Pool 7 Mound 1 General Fill in Rooms Fill	rim	10	3 carbon core tan jars, 1 tan jar w/short neck & vertical striations, 1 orangish-tan jar w/ ls temper, 1 tan bowl/dish, 1 tan paste dish, 1 red-slipped tan paste slightly incurving bowl, 1 red-slipped carbon core tan paste dish, 1 red-slipped tan plate
2144	MF-Pool 7 Mound 1 West Room Cobble Fill southern expansion	rim	3	1 tan-slipped reddish paste bowl, 2 tan paste jars
2145	MF-Pool 7 Mound 1 West Room Top 2 Zones	rim	2	1 red-slipped bowl tannish-orange, 1 maroon-slipped bowl
2146	MF-Pool 7 Mound 1 S&E of East Room Sample Topsoil	neck	2	1 tan paste blackened, 1 tan paste
2147	MF-Pool 7 Mound 1 E&W Rooms Dark Zone	rim	2	1 tan jar w/ ls temper, 1 red-slipped orange paste dish
		neck	1	tan paste
2148	MF-Pool 7 Mound 1 West Room Floor 2	rim	2	1 tan paste jar w/horizontal striations, 1 tan paste jar w/ vertical striations
		base	1	red-slipped ls temper tan-orange paste flat base w/ foot joint
2149	MF-Pool 7 Mound 1 East Room South expansion Middle Zone	rim	3	1 red-slipped VA dish, 1 red-slipped VA bowl, 1 orange tan rim
2150	MF-Pool 7 Mound 1 East Room Deposit above Burial 2	vessel	1	Vessel 3: polychrome bowl w/ 1 rim, 10 body, c. 20 small pieces
		vessel	1	Vessel 6: same as Vessel 3: 1 small rim, 5 body, various bits
		body	4	Sherd 16: same as Vessel 3: 1 base, 3 body
		vessel	1	Vessel 4: same as Vessel 3: c. 18
		vessel	1	Vessel 5: same as Vessel 3: 2 rims, 13 bodies
		body	10	tan paste jar w/striations
		vessel	1	Vessel 7: 5 blackened tan paste, likely jar, 4 small bits

		vessel	1	Vessel 2: same as Vessel 7: 22 jar bodies-kept separate
		body	13	under Vessel 3: same as Vessel 7: tan paste jar
		body	14	same as Vessel 7: tan paste jar w/ striations
		vessel	17	Sherd 11: same as Vessel 3: 2 rims, 15 body, c. 25 bits
		body	6	Sherd 21: 6 tan paste jars w/ some blackening
		vessel	1	Vessel 1: incomplete light tan jar in pieces (c. 12)
		vessel	8	Sherds 22&33: tan paste jar: 1 rim, 1 neck, 6 bodies
		body	10	Sherds 5-8: tan paste jar: 10 body, c. 10 bits
		body	16	Sherds 1-4: tan paste jar
		rim	1	Sherd 17: red-slipped VA dish
		body	10	blackened tan paste jar w/striations
2150	MF-Pool 7 Mound 1 East Room w/ ceramic clusters (loose material)	body	28	2 brown paste, 4 red-slipped tan paste, 22 tan paste, +c. 20 bits
		base	1	red/tan paste
		rim	2	1 tan paste jar, 1 red-slipped tan paste bowl
2157	MF-Pool 7 Mound 1 East Room Burial 2	rim	4	1 dark red-slipped orange paste rim, 1 red-slipped orange paste jar, 1 red-slipped tan paste dish, 1 red-slipped tan paste bowl
		neck	1	tan paste
		body	21	1 red-slipped brown paste, 2 red-slipped tan paste, 1 orange paste, 6 brown paste, 11 tan paste, +150 bits
2116	MF-Pool 7 Mound 2 Plowzone Sample	figurine	1	fragment, ~part of Cluster 1
		body	2	1 cord-marked tan paste, 1 VA red slipped incised
		rim	3	2 tan paste jar, 1 VA red slipped dish
2118	MF-Pool 7 Mound 2 Cluster 1	figurine	55	3 face fragments, some w/ Maya Blue , some incised, some molded, some red slipped, c. 40 bits
2120	MF-Pool 7 Mound 2 Grey Cobble Fill	sherd	1	polychrome red-on-orange sherd
2121	MF-Pool 7 Mound 2 Cluster 2	figurine	41	1 large orange paste ls temper, 40 smaller fragments, c. 15 bits
		figurine	2	orange paste maroon-slipped
2122	MF-Pool 7 Mound 2 Cluster 5	rim	1	VA slightly incurving bowl
2123	MF-Pool 7 Mound 2 Cluster 7	rim	1	tan paste bowl
2124	MF-Pool 7 Mound 2 Cluster 4	body	4	tan paste w/ pinkish-orange surface
2126	MF-Pool 7 Mound 2 Cluster 6	rim	4	ls temple bowl, 3 narrow orifice jar w/feet
		body, ~feet	16	assoc w/ narrow orifice jar w/feet, ~including foot fragments
		handle	1	small handle w/ Maya Blue
		body	12	3 VA, 4 orangish paste, 5 red-slipped orange paste
		figurine	2	orange paste ~figurine fragments
2127	MF-Pool 7 Mound 2 Plowzone Sample	rim	11	3 tan paste jars, 1 VA everted bowl, 1 VA slightly incurving bowl, 1 slightly incurving bowl w/ int. remnent brown slip, 1 VA fingernal impressed bowl, 1 VA straight-sided bowl, 1 red-slipped bowl, 1 thick red-slipped bowl, 1 red-slipped VA
		body	1	orange past (~base?)
2128	MF-Pool 7 Mound 2 Plowzone Rubble	vessel	37	VA red-slipped flared dish w/ ring base: 8 rims, 5 base, 25 body, c. 50 bits
2129	MF-Pool 7 Mound 2 Cluster under rock on possible surface	vessel	90	VA red-slipped, some incised
		body	5	3 VA, 2 brown-slipped VA
		lid	3	brown-slipped lid
2130	MF-Pool 7 Mound 3 Plowzone	flange	3	1 carbon core orangish, 1 orangish, 1 orange-slipped carbon core orangish
		rim	4	1 red-slipped grayish paste w/ white underslip dish, 1 interior red-slipped tan paste plate/dish, 1 tan paste incised jar, 1 tan paste jar w/ exterior ??

MOUND FIELD 2

2212	MF-2 Mound 32	rim	5	4 red-slipped tan paste bowls, 1 red-slipped tan paste dish
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	Topsoil	flange	1	brown paste
2213	MF-2 Mound 32 Under FL 1	rim	3	1 tan paste jar, 1 tan paste bowl, 1 VA dish
		base	1	tan paste
2203	MF-2 Mound 33 East Structure, North of Wall 1	rim	16	2 tan paste jars, 1 dark red-slipped brown paste dish, 2 VA bowls, 2 tan paste bowls, 4 red-slipped tan paste bowls, 1 dark red-slipped tan paste bowl, 1 red/tan paste jar, 1 dark red-slipped tan past tecomate, 2 red-slipped tan paste dishes
2204	MF-2 Mound 33 East Str. Trench, North of Str.	rim	3	1 VA bowl, 2 red-slipped brown paste
		base	1	red-slipped tan paste
2205	MF-2 Mound 33 East of Str. Trench, North of Wall 1	rim	11	8 tan paste jars, 3 tan paste plates
		flange	1	red-slipped tan paste
2206	MF-2 Mound 33 East of Str. Trench, Porch	rim	3	1 VA rim, 2 tan paste jars
2207	MF-2 Mund 33 East of Str. Trench, Topsoil	rim	35	12 tan paste jars, 1 orange paste jar, 1 tan paste jar w/vertical striations, 3 tan paste bowls (1 w/ carbon core), 1 red-slipped tan paste impressed bowl, 1 Z-shaped tan paste carbon core dish, 3 VA bowl, 1 red-slipped VA bowl, 2 red-slipped tan paste bowls, 3 red-slipped tan paste dishes, 5 red-slipped tan paste plates, 4 tan paste plates
		neck	2	tan paste
		handle	1	red paste
		flange	2	tan paste
		body	8	1 red-slipped tan paste w/punctated ridge, 2 brown paste, 4 tan paste, 1 red-slipped tan paste
		base	5	2 tan paste, 2 red-slipped tan paste, 1 dark brown paste
2208	MF-2 Mound 33 East of Str. Trench Below Str. Fill	rim	3	1 tan paste jar, 1 polychrome bowl, 1 dark red-slipped tan paste dish
		flange	1	red-slipped brown paste
2209	MF-2 Mound 33 East Str. Trench Under FL 1	rim	2	1 tan/red paste jar, 1 polychrome orange paste bowl
		base	2	tan paste
		body	5	3 red-slipped orange paste, 1 red-slipped orange paste impressed sherd, 1 red-slipped tan paste
2210	MF-2 Mound 33 Center Unit	rim	7	1 dark red-slipped orange paste bowl, 3 red-slipped tan paste bowls, 1 tan paste jar, 1 VA dish, 1 blackened jar
		flange	1	orange-slipped tan paste
2211	MF-2 Mound 33 South Str. All	ceramic disc	1	tan paste
		base w/ flange and foot	1	red paste VA
		handle	1	carbon core red paste
2277	MF-2 Mound 30 Topsoil	rim	1	9 tan paste jars, 2 red-slipped tan paste jars, 5 red-slipped tan paste bowls, 3 red-slipped tan paste dishes, 1 brown paste bowl, 2 VA bowls
				red-slipped carbon core orange paste bowl

Appendix 3.3: Mound Field Uncollected Artifacts as Inventoried in the Field

Context	Sherd Type	Total	Description
Pool 7 MF Survey Block	body	57	30 plain tan paste, 25 plain orange paste, 1 cordmarked tan paste, 1 plain tan paste with imprints
	rim	14	1 red slip tan paste bowl, 2 tan paste jars, 4 plain orange paste bowl/plate, 7 plain tan paste bowl/plate
	neck	5	2 plain tan paste jars, 3 plain orange paste jars
	base	1	red slip tan paste bowl/plate

	flange	2	1 red slip tan paste, 1 plain orange paste
Mound 2 Plow Zone	body	444	391 plain, 53 red slip
	rim	41	14 plain jars, 16 plain bowl/plates, 10 red slip bowl/plates, 1 plain bowl with applique design
	neck	34	plain
	base	2	1 plain, 1 red slip
	flange	3	plain
Mound 1 Plow Zone	body	482	367 plain, 112 red slip, 2 possible polychrome, 1 red slip with decoration
	rim	89	29 plain jar, 28 red slip jar, 32 plain bowl/jar
	neck	44	40 plain, 4 red slip
	base	32	red slip
	flange	2	1 bowl rim, 1 plain
	foot	1	plain
Pool 7 MF Mound 1 general fill north of wall	body	8	1 red slip, 7 plain
	rim	6	2 plain jar, 1 plain jar with applique, 1 red slip bowl, 1 plain bowl, 1 cordmarked
	neck	1	plain
	base	2	plain
	flange	1	plain
Pool 7 MF mound 1 E&W rooms dark fill southern expansion	body	9	3 red slip, 6 plain
	rim	5	2 red slip bowl/plate, 3 plain jar
	neck	2	1 plain, 1 cordmarked
	base	1	plain
Pool 7 MF Mound 1 general fill south of wall	body	78	57 plain, 21 red slip
	rim	24	9 plain jar, 1 cordmarked jar, 5 plain bowl/plate, 9 red slip bowl/plate
	neck	9	5 plain, 4 red slip
	base	2	1 plain, 1 red slip
Pool 7 MF Mound 1 west room floor 2 southern expansion	body	9	7 plain, 2 red slip
	rim	5	4 plain jar, 1 red slip bowl/plate
	neck	7	5 plain, 2 red slip
	base	2	1 plain, 1 red slip bowl
Pool 7 MF Mound 1 west room top zone and 2nd zone southern expansion	body	13	10 plain, 3 red slip
	rim	4	2 plain plate/bowl, 2 red slip plate/bowl
	neck	3	plain
Pool 7 MF Mound 1 west room cobble fill southern expansion	body	6	plain
	rim	4	3 plain jar, 1 red slip bowl
	base	1	plain
Pool 7 MF Mound 1 east room top zone southern expansion	body	110	93 plain, 16 red slip, 1 with applique
	rim	13	7 plain jar, 6 plain bowl/plate
	neck	6	plain
	base	4	plain
Pool 7 MF Mound 1 east room middle southern expansion	body	35	32 plain, 3 red slip
	rim	5	3 plain bowl/plate, 2 red slip bowl/plate
	neck	4	plain
Pool 7 MF Mound 2 plow zone	body	207	164 plain, 42 red slip, 1 cordmarked
	rim	32	4 plain jar, 17 plain bowl/plate, 11 red slip bowl/plate
	neck	8	plain
	base	6	1 plain, 5 red slip

Pool 7 MF Mound 3 Plow Zone	body	38	31 plain, 7 red slip
	rim	16	5 plain jar, 4 red slip bowl/jar, 1 decorated jar, 1 red slip jar, 5 plain bowl/plate
	base	1	plain
	flange	7	plain
	foot	1	plain
Pool 7 MF Mound 4 plow zone	body	190	177 plain, 13 red slip
	rim	112	13 plain plate, 23 plain bowl, 13 plain jar, 2 red slip jar rims, 3 bowl rims, 2 red slip plate rims
	neck	45	42 plain, 3 red slip
	base	19	14 plain, 5 red slip
	flange	16	13 plain, 3 red slip
Pool 7 MF Mound 4 floor south of wall	body	28	24 plain, 4 red slip
	rim	24	5 plain jar, 7 plain plate, 7 plain bowl, 1 red slip bowl, 4 red slip plate
	neck	14	plain
	flange	2	1 plain, 1 red slip
	foot	1	plain
Pool 7 MF Mound 4 south of wall cobbles	body	94	82 plain, 11 red slip, 1 black decorated
	rim	41	29 plain jar, 7 plain bowl/plate, 3 red slip bowl, 2 red slip plate
	neck	14	plain
	base	3	plain
	flange	8	5 plain, 3 red slip
Pool 7 MF Mound 4 east edge	body	23	20 plain, 3 red slip
	rim	8	6 plain jar, 2 red slip bowl
	base	1	plain
MF 4 Mound 1 east structure southern rubble	body	46	39 plain, 7 red slip
	rim	10	5 plain jar, 2 red slip bowl, 2 plain plate/bowl, 1 red slip jar
	neck	5	plain
	base	1	red slip
MF 4 Mound 1 north structure trench topsoil	body	43	40 plain, 1 red slip, 1 black slip, 1 decorated
	rim	7	2 plain bowl, 3 plain jar, 1 red slip jar, 1 indeterminate rim
	neck	5	plain
	base	1	plain
MF 4 Mound 1 east structure trench topsoil	body	7	red slip
	rim	13	1 red slip bowl, 5 plain bowl, 7 plain jar
	neck	8	plain
	base	1	plain
	foot	1	plain
MF 4 Mound 1 east structure upper trench southward bench expansion	body	24	18 plain, 5 red slip, 1 plain/decorated
	rim	10	3 plain jar, 3 plain bowl, 2 red slip bowl, 2 red slip plate (1 incised)
	neck	9	plain
MF 4 Mound 1 east structure lower trench general fill	body	191	165 plain, 24 red slip, 2 black slip
	rim	21	6 plain jar, 3 red slip jar, 11 plain bowl, 1 plain plate
	neck	17	13 plain, 4 red slip
	base	5	4 red slip, 1 plain

	foot	1	red slip
	handle	2	plain
	spout	1	plain
MF 4 Mound 1 east structure stair cleanup	body	96	63 plain, 33 red slip
	rim	21	8 plain jar, 3 plain bowl, 6 red slip bowl, 4 red slip plate
	neck	5	plain
	base	3	plain
	handle	3	plain
MF 4 Mound 1 east structure upper trench structure fill	body	139	125 plain, 14 red slip
	rim	24	7 plain jar, 10 red slip jar, 4 plain bowl, 1 plain plate, 2 cordmarked jar
	neck	19	plain
	base	9	7 plain, 2 plain bases
	handle	2	plain
MF 4 Mound 2	body	699	572 plain, 127 red slip
	rim	112	30 plain plate/bowl rims, 35 plain jar rims, 37 red slip plate/bowl rims, 10 jar rim
MF 4 Mound 1 upper trench under floor 1	body	323	273 plain, 48 red slip, 2 cordmarked
	rim	39	5 plain bowl, 3 plain plate, 5 red slip bowl, 2 red slip plate, 1 indeterminate red slip, 23 plain jar
	neck	15	plain
	base	7	4 plain, 3 red slip
	flange	1	plain
MF 4 Mound 1 east structure below floor 2	body	26	20 plain, 6 red slip
	rim	6	3 plain jar, 1 plain plate, 2 red slip bowl
	neck	2	plain
	base	2	plain
	flange	1	red slip
	handle	1	plain
MF 4 Mound 1 north structure lower trench	body	157	149 plain, 8 red slip
	rim	4	plain indeterminate
	handle	4	plain
MF 4 Mound 1 north structure ballast under floor 2	body	146	103 plain, 37 red slip, 5 cordmarked, 1 drilled
	rim	20	2 cordmarked, 11 red slip, 7 plain
	flange	6	3 plain, 3 red slip
MF 4 Mound 1 east structure west end of trench fill	body	4	plain
	handle	2	plain
MF 4 Mound 1 east structure under floor 3	body	113	101 plain, 12 red slip
	rim	13	2 plain, 11 red slip
	flange	3	red slip
	handle	2	red slip
MF 4 Mound 1 north structure upper trench fill	body	90	83 plain, 5 red slip, 1 cordmarked, 1 decorated with raised bump
	rim	14	4 plain, 6 red slip, 4 cordmarked
	flange	3	plain
MF 2 Mound 30 topsoil	body	6	5 plain, 1 red slip
	rim	1	red slip bowl
MF 2 Mound 33 topsoil	body	195	162 plain, 30 red slipped, 1 cordmarked, 2 polychrome
	rim	24	1 polychrome rim, 3 red slipped jar, 2 red slip dish,

			12 plain dish, 16 plain jar
	neck	9	plain
	flange	7	plain
	anular rim	4	red slip
	handle	1	plain
MF 2 Mound 33 east structure north of wall	body	102	63 plain, 39 red slip
	rim	20	4 plain jar, 2 plain bowl, 1 plain tecomate, 1 red slip jar, 1 red slip dish, 10 red slip bowl, 1 red slip plate
	neck	2	plain
MF 2 Mound 33 south structure all	body	90	66 plain, 24 red slip
	rim	56	2 red slip jar, 17 plain jar, 11 red slip bowl, 1 red slip plate, 8 red slip dish, 8 plain bowl
	neck	11	plain
	base	9	6 plain, 3 red slip
	handle	1	plain
	ceramic disk	1	plain
MF 2 Mound 33 center unit all	body	42	29 plain, 13 red slip
	rim	15	6 red slip bowl, 1 red slip jar, 2 plain jar, 3 plain dish, 3 plain bowl
	neck	1	plain
	base	1	red slip
MF 2 Mound 33 east structure trench under floor 1	body	89	65 plain, 24 red slip
	rim	12	2 plain jar, 4 red bowl, 2 plain bowl, 3 red slip dish, 1 polychrome bowl
	neck	2	plain
	base	1	plain
MF 2 Mound 32 topsoil	body	25	24 plain, 1 red slip
	rim	8	4 red slip, 4 plain
	neck	5	2 red slip, red plain
	flange	1	plain
MF 2 Mound 33 east trench nother of structure	body	28	21 plain, 7 red slip
	rim	7	4 red slip, 2 plain, 1 plain jar
	neck	5	4 plain, 1 red slip
	anular ring	1	red slip
MF 2 Mound 32 under floor 1	body	18	17 plain, 1 red slip
	rim	3	plain
	base	1	plain
MF mound 2 33 east trench below structure fill	body	55	28 plain, 26 red slip, 1 bichrome
	rim	21	5 red slip, 2 red slip jar, 7 plain, 7 plain jar
	anular ring	3	red slip
MF Mound 33 east structure trench north of wall 1	body	83	56 plain, 27 red slip
	rim	13	plain
	neck	5	4 plain, 1 red slip
	anular ring	6	4 plain, 2 red slip

Chapter 4 Results of the 2016 Valley of Peace Archaeology Project Salvage Excavations

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The Valley of Peace Archaeology (VOPA) salvage project area sits within a ritually and politically important landscape situated between the center of Yalbac and the Cara Blanca pools (Figure 4.1). Yalbac is a medium sized center with several large constructions, including temples, plazas, a ballcourt and an acropolis occupied from 300 BCE through c. 900 CE (Lucero 2011). The Cara Blanca pools are a series of 25 lakes and *cenotes* running east-to-west along the base of a limestone escarpment. The VOPA project has investigated 22 of the pools thus far; however, most of the work has centered on Pool 1, the locus of a suite of ritually important, water-related buildings dating to the Late to Terminal Late Classic Period (see Chapters 5 and 6 this volume, Lucero 2015; Lucero and Kinkella 2015; Lucero et al. 2016). Though this land is rich with natural and cultural resources, it is also rich for agriculture, and it is rapidly being developed for intensive farming. Initially owned by the sustainable logging company Yalbac Ranch, much of the land (~30,000 acres) was sold to the Spanish Lookout Community Corporation (SPLC), a Mennonite community corporation, after the hardwoods of the jungle were damaged in a series of natural disasters in 2010 and 2011 (Benson 2015). The new and continued agricultural practices of SPLC are slowly erasing Maya history, thus necessitating salvage work. SPLC and Yalbac Ranch have both been very accommodating to our work, and it is in part thanks to them that we can complete these excavations.

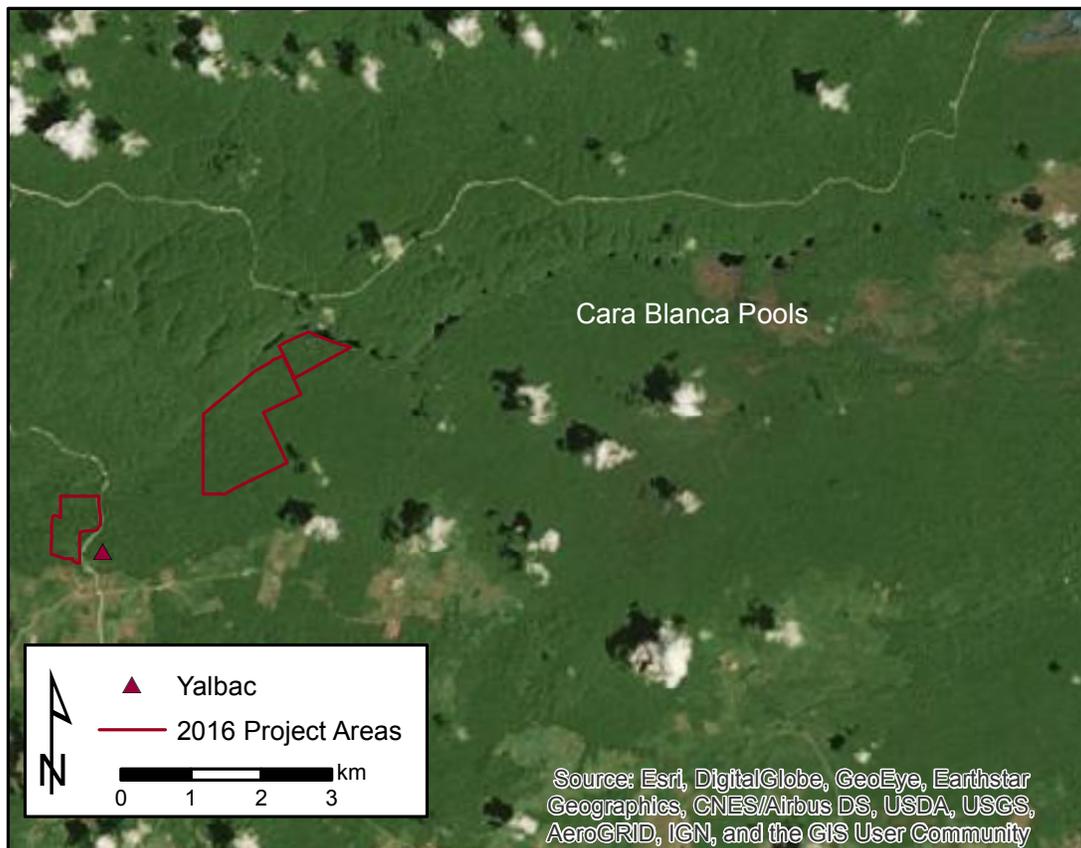


Figure 4.1: The 2016 VOPA project area showing Yalbac and the Cara Blanca pools prior to land clearing

During the 2014 field season, the VOPA project completed survey of three agricultural fields in the Yalbac Hills region at the request of Dr. John Morris of the Belize Institute of Archaeology in order to record newly uncovered Maya mounds and assess damage caused by recent mechanical clearing and exposure (Benson 2015). Over the course of four days we recorded 129 mounds, but did not collect any artifacts or excavate any mounds. After revisiting the region in 2015 and witnessing the increased degree

of agricultural development resulting in the clearing of jungle and exposure of even more mounds, project director Dr. Lisa J. Lucero determined that performing salvage excavations must become a project priority. In May and June of 2016, we conducted salvage excavations in three fields, excavating eight different mounds and recording an additional twenty-eight through survey. This chapter presents the results of these excavations and begins to place the sites in the broader context of the region, exploring potential relationships with the medium center Yalbac and the ceremonially significant Cara Blanca pools.



Figure 4.2: Mound Fields investigated in 2014 and 2016 by the VOPA project prior to land clearing

Salvage Archaeology Program

In 2014 we surveyed three fields, Mound Field (MF) 1, 2, and 3. In 2016, we visited two additional fields, MF 4 and the Pool 7 MF (Figure 4.2). We also revisited MF 2 in 2016, which had been substantially expanded in the two years since our survey. MF 1, 4, and Pool 7 MF border each other, and were all plowed and planted in corn during the 2016 field season (Figure 4.3). Also bordering these fields were areas that had undergone a lesser degree of plowing or clearing, as well as a portion of land that had not yet been cleared of jungle. The three fields sit just south of the limestone escarpment, and Pool 7 MF borders Cara Blanca Pool 7. Portions of Pool 7 MF had previously been surveyed by Andrew Kinkella (2009), and his results suggests that the area is largely residential rather than ceremonial (Figure 4.4). Of all the fields we visited, Pool 7 MF is the furthest north and east. MF 2 and 3 are located further southwest directly adjacent to Yalbac (see Figure 4.2). Both fields had been expanded between 2014 and 2016; however, we did not survey the additional cleared areas. We chose to perform our 2016 salvage archaeology program in the Pool 7 MF, MF 4, and MF 2 areas because of their location in relation to each other and to Yalbac and the Cara Blanca pools. Each field occupies a different space in the landscape; MF 2 is close to the political center, Yalbac, Pool 7 MF is next to the western end of the ceremonially significant Cara Blanca pools, and MF 4 is intermediate between the two. By excavating mounds in these areas, we hope to address broader research goals investigating whether or not there were differences in who was living where and how those people related with the surrounding political and religious landscapes.

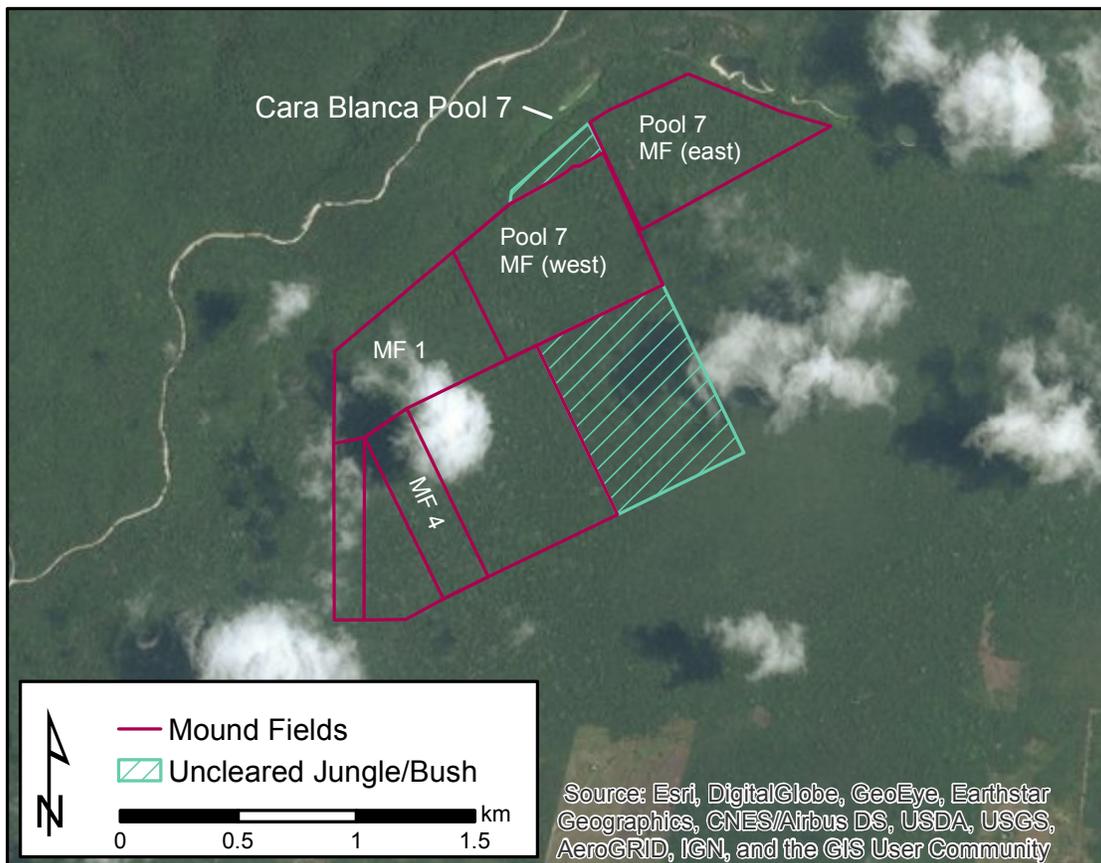


Figure 4.3: Locations of Mound Fields 1 and 4 and Pool 7 Mound Field in relation to other cleared, yet unsurveyed Mound Fields. Older Google images show area prior to clearing

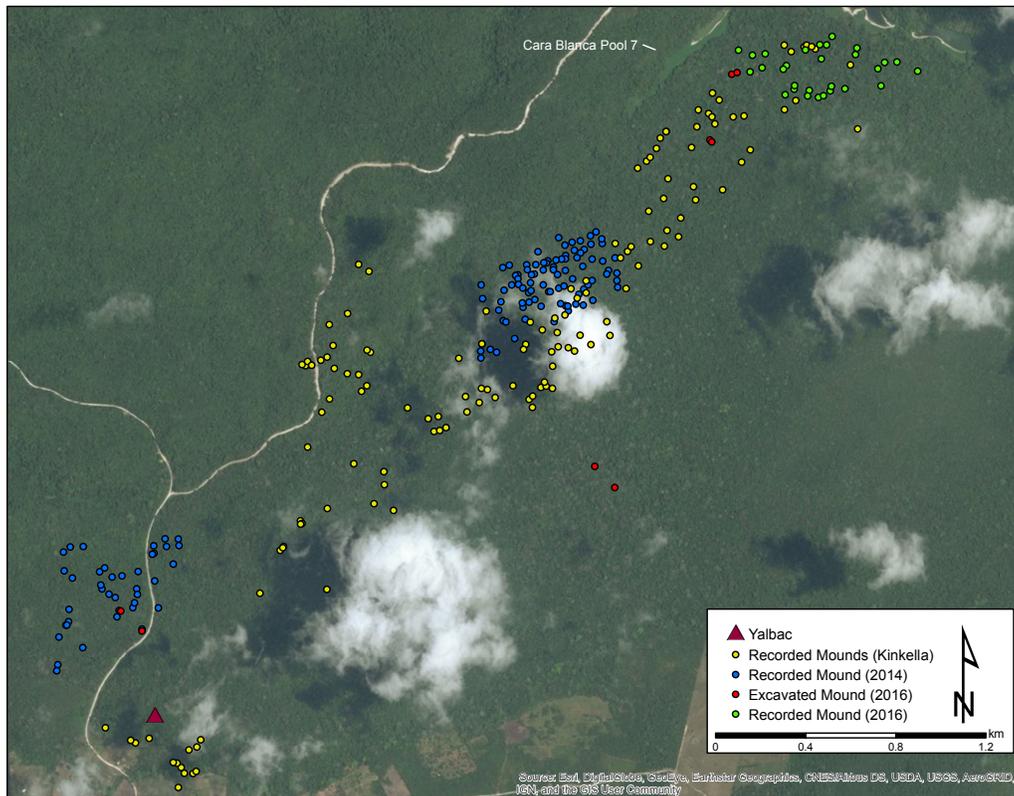


Figure 4.4: Results from Kinkella (2009), the 2014 and 2016 salvage surveys, and the 2016 salvage excavations using Google image prior to land clearing

Survey Results

As mentioned, our 2014 survey recorded 129 mounds in three different fields. Each of these mounds was categorized in system I created to expedite the survey process at the time (Tables 4.1 and 4.2) (Benson 2015). The types are largely based on size, as well as presence of cut limestone, and thus can be used to expediently estimate the relative wealth of the mound's occupants.

Survey composed a minimal part of the 2016 field plans. The initial goal was to complete aerial survey of cleared agricultural fields using a Phantom 3 Professional drone; however, the drone malfunctioned on its first flight, and we were unable to complete any of the survey. One day was spent doing pedestrian survey in the eastern section of Pool 7 MF, and 28 mounds were recorded. Types were retroactively assigned; however, some difficulty was encountered in assessing types because the continued agricultural work impacted the mounds to the extent that they appear much larger due to spreading from plowing. Additionally, of the 28 mounds, 11 were covered in moderate or heavy vegetation, making the assessment of type and number of structures difficult. Like the 2014 survey results, Type 2 mounds were most prevalent, followed by Type 1 and Type 3 (Table 4.2).

Table 4.1: Type system used in VOPA Mound Field surveys

Type	Height (m)	Cut Stone	Artifacts	Notes
1	<.5	No	Few	Generally smaller than 2x2 m in area
2	.5 - 1.5	Not Likely	Few	Vary in size
3	>1.5	Likely	Many	Relatively large, single structure
4	>1.5	Likely	Many	Multi-structure group
5	<.5	No	Few	Daub scatter

Table 4.2: Results of the 2014 and 2016 Mound Field surveys

Field	Type 1	Type 2	Type 3	Type 4	Type 5	Total
MF 1	33	34	18	3	2	90
MF 2	1	13	12	3	0	29
MF 3	1	4	4	1	0	10
Pool 7 MF (East Section)	10	14	4	0	0	28
Total	45	65	38	7	2	157

Salvage Excavation Methods

Because of the rapid pace of salvage archaeology and our goal of collecting information on as many mounds as possible before they were lost to plowing, typical systematic excavation methods were streamlined. Overall methods used in the Mound Fields were similar, but excavations varied according to each individual mound. Our initial efforts at each mound were concentrated on locating architectural features. Once these were found, excavations would follow walls or floors to garner as much information about the structure as possible, for example; number of rooms, number of floors, presence of burials, etc. In the case of mound complexes that consisted of multiple structures on a platform, two structures were sampled in the described manner, and test pits were placed into platforms. All artifacts encountered were collected in the field. Non-diagnostics were inventoried and reburied on site, and a sample of diagnostic artifacts were collected for lab analysis (see Appendix 4.1 for a list of ceramic types by context). Rather than completed formal maps, sketch maps and rough measurements were taken and recorded in the site field notebook. Photos and narrated videos were recorded to supplement the mapping. Extra care was taken where burial features were encountered. Aimée Carbaugh, an Illinois state certified skeletal analyst, oversaw all burial excavations. Skeletal elements were identified and sketch mapped, locations of intentionally placed artifacts were recorded, and extra photographs were taken. All skeletal elements encountered were collected. A total of 10 structures and two plazas on eight different mounds were tested, and nine burials and 14 individuals were encountered and excavated (see Chapter 7 for a discussion of the burials).

Salvage Archaeology Results

Pool 7 Mound Field

We began excavations in Pool 7 MF, working in both the western and eastern sections as distinguished by a north-south road leading to Pool 7. Overall mound density of this field was fairly high, and generally smaller mounds seemed to be more numerous than had been previously recorded by Kinkella (2009), which is not surprising given he surveyed when the area was covered by trees and other tropical vegetation. As described above, Pool 7 MF sits just south of the limestone escarpment on a flat expanse leading up to the rapid incline of the Yalbac Hills. The area immediately surrounding Pool 7 remains in jungle, however the MF and surrounding areas are largely cleared, or are in the beginning stages of clearing. Pool 7 MF was completely cleared and planted in corn during excavations. Four mounds were excavated in Pool 7 MF; one Type 1 and three Type 2 (Table 4.3; Figure 4.5).

Table 4.3: Metrics for mounds sampled in Pool 7 Mound Field (note: dimensions are oversized due to erosion and spreading by farm equipment)

Field Name Mound ID	Pool 7 Mound Field			
	M1	M2	M3	M4
Mound Type	2	1	2	2
Mound Height (m)	.52	0	.62	.73
Mound Dimensions (m)	11 x 12.5	11.5 x 10	11.5 x 7.3	10.8 x 12.3
Stone Architecture Present?	Yes	No	No	Yes
Burials Present?	Yes	No	No	Yes
GPS Coordinates	N1925443 E296218	N1912441 E311199	N1925735 E296315	N1925743 E296339

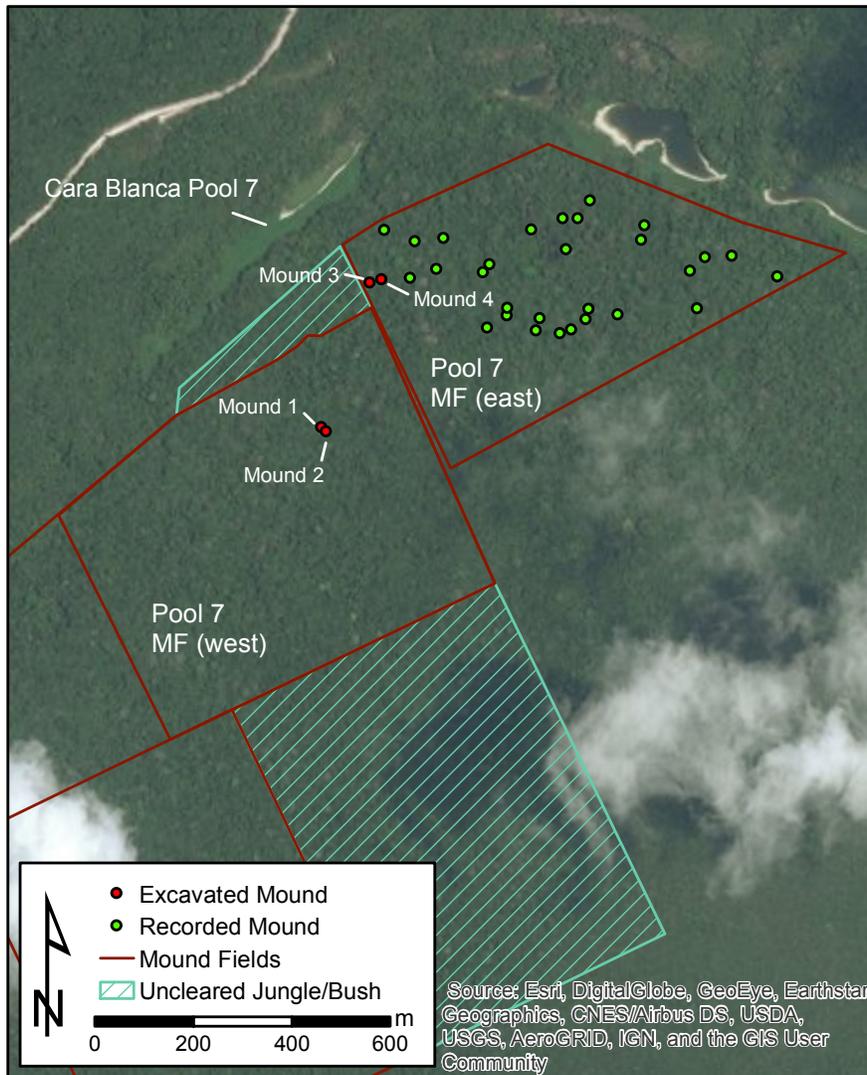


Figure 4.5: Locations of excavated and recorded mounds in Pool 7 MF on Google image prior to land clearing

Mound 1. Mound 1 (11 x 12.5 m, .52 m tall), a Type 2 mound located c. 350-400 m to the south of Pool 7 on a flat expanse of plowed field, was the first excavated of the salvage program. Compared to subsequently excavated mounds, Mound 1 had a thicker plow zone covering the main structure. We began by excavating an exploratory unit in the summit of the mound until we encountered what was at the time tentatively identified as a wall. Excavations followed that wall, ultimately exposing a structure that consisted of at least two rooms, the East Room and the West Room, separated by a relatively thin north-south wall c. 10 cm thick, and bordered to the north by a more substantial east-west wall c. 20 cm thick (Figure 4.6, 4.8). The east-west wall was only finished on the interior face with cut stone, and the exterior northern face was left unfinished with uneven limestone blocks, some of which jutted out. Because this face was unfinished, it was likely an exterior structure wall. Additionally, because it remained unfinished, it may not have been the side of the structure most visible to anyone approaching. Also to the northern exterior of the structure were several boulders, which may have been placed intentionally. Upon further investigation, the boulders were not found to be place on a floor or prepared surface of any kind, and only minimal artifacts were recovered.



Figure 4.6: Pool 7 Mound Field Mound 1 excavations, showing the East (bottom of image) and West (top of image) rooms



Figure 4.7: Pool 7 Mound Field Mound 1 sample of uncollected artifacts inventoried in the field

Both the West and East Rooms contained at least one plaster floor; they were at different elevations, with the West Room floor slightly higher. The West Room may have had a higher second floor, but it was too degraded to confirm. Non-floor fills in the West Room contained a high density of cobbles compared to East Room fills. Between the two rooms, we found an isolated dark zone, the origin and nature of which was unknown. In hindsight, I might speculate that the dark zone was the result of recent roots and associated bioturbation. Though we were not able to completely expose the structure, we did not find a doorway or passageway between the two rooms, suggesting their entry points were located further south, beyond the extent of our excavations. A small window was placed in the northwest corner of the East Room where we exposed a dark subsoil just below the floor and its thin ballast. On the eastern side of the East Room we uncovered a burial (Burial 2) beneath, but not dug into, the floor. Burial 2 had several clusters of broken ceramics placed over it, including a rimless vessel inside an open polychrome bowl, as well as a pile cobbles that may have intentionally placed on top. More details on Burial 2 and its associated ceramics are in Chapters 3 and 7. Ceramics from the Burial 2 clusters date from the Early through Terminal Classic periods. In general, artifacts noted in Mound 1 were exemplary of a residential assemblage including sherds from jars, bowls, dishes (Figure 4.7). Lithics consisted of bifaces and groundstone, including a double-sided bark beater.

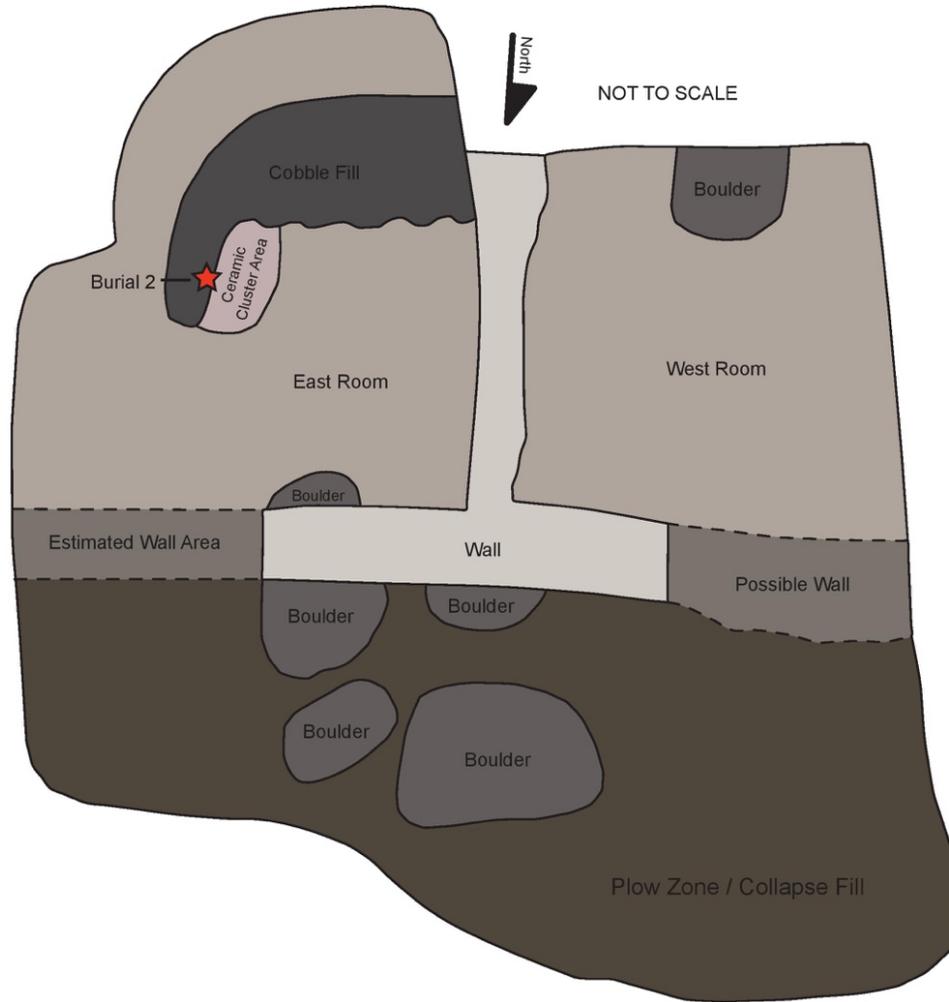


Figure 4.8: Plan map of Pool 7 Mound Field Mound 1

Mound 2. Mound 2 (11.5 x 10 m, 0 m tall) is a Type 1 mound located just to the south of Mound 1. Mound 2 had no perceptible elevation compared to the surrounding flat landscape; that said, it was well marked by surface limestone and cobbles. We did not reach sterile subsoil before ending excavations. Excavations began here as a roughly 1 x 1 m unit into the center of the mound. Interestingly, despite the presence of the limestone at the surface, no walls or architecture were found during excavations. Rather, Mound 2 may represent a feature with two possible surfaces: 1) at the bottom of our excavations, we exposed a southeast to northwest oriented line of artifacts, including several ceramic clusters (Figure 4.9; see Chapter 3 for more details); and 2) at a higher elevation above the row of artifacts. To the north of the row of artifacts was a gray cobble fill and a very dark, almost sterile fill. To the south, the fill was a lighter grey. Two Postclassic projectile points were recovered from the plow zone of this mound, the only Postclassic artifacts found during 2016 salvage excavations (Figure 4.10).



Figure 4.9: Pool 7 Mound Field Mound 2 excavations, showing the southeast to northwest oriented line of artifacts set upon one possible surface, and a second possible surface at a higher elevation, forming a ring around the deeper excavations

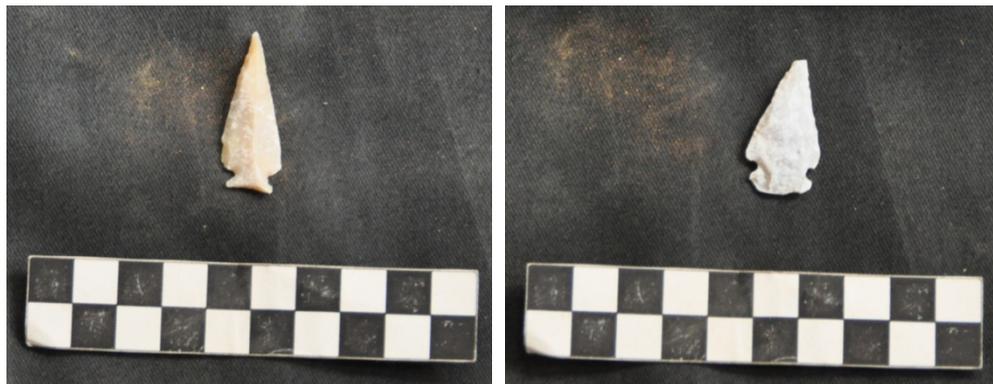


Figure 4.10: Postclassic projectile points found in Pool 7 Mound Field Mound 2

These points are significant because they indicate that there may have been Postclassic occupation that have since been stripped away by plows; “the dominant lithic tool form found in the southern lowland area by Late Post-Classic times is the small side-notched projectile point” (Simmons 2002:49), indicating bow and arrow technology prior to and during the Spanish colonial period. Within the row of ceramic artifacts, we uncovered two fragmentary figurines, one of which was decorated with “Maya Blue:”



Maya blue “consists of a unique pigment in which indigo is chemically bound to the clay polygorskite” (Arnold et al. 2008:151), and is used in ritual contexts and is “associated with sacrifice, priests and Maya deities, especially the rain god Chaak” (p. 152).

Mound 3. Only a small unit was placed in Mound 3 (11.5 x 7.3 m, .62 m tall), which was located in the eastern section of Pool 7 MF, and was the nearest mound to Pool 7 that we tested (c. 100 m south). Soon after beginning excavations, we determined that rather than a structure, Mound 3 was only a pile of dirt and boulders. A few ceramics were collected, but the nature and origins of this mound of rocks remains unknown. It likely either is due to recent agricultural activities or perhaps even historic logging activities.

Mound 4. Mound 4 (10.8 x 12.3 m, .73 m tall), the largest of the mounds excavated in Pool 7 MF (Figure 4.11), is located in the eastern section of the field and the furthest north of the mounds excavated. Almost immediately after beginning excavations, we came upon a plaster floor and a low wall running east-west. We used this wall to divide the excavations; floors were present to the north and south of the wall. The north side of the wall was dominated by burials. Two burials, Burials 3 and 4, were placed on top of the floor, and Burial 1 was dug into and below the floor. Burials 3 and 4 consisted of a fetus and an infant, respectively. Burial 3 contained no artifacts, but Burial 4 contained a piece of marine shell carved into a skull, as well as a marine shell tinkler (Figure 4.12). Burial 1 was drastically different, containing seven distinct individuals and over 1,700 ceramic sherds including nine complete or nearly complete vessels (e.g., Achote Black Cubeta Incised with pseudoglyphs, Duck Run incised vessel, Tinaja Red Group Cameron Incised pyriform vessel with pseudoglyphs, a possible Belize Valley or Roaring Creek vessel, Chinja Impressed/Kaway Impressed, a drum, a small bugle bowl, a Vaca Falls plate, etc.) (Figure 4.13). See Chapter 3 for a more in depth discussion of burial artifacts and Chapter 7 for the burials themselves. Time constraints and nature of salvage archaeology did not allow us to explore for additional burials.



Figure 4.13: Ceramic artifacts in Burial 1, which included several complete or near complete vessels; Achoate Black, Cubeta Incised Red, a drum, an incensario, and fragments of other bowls, jars, and pyriform vessels.

South of the wall was a completely different series of deposits than what was found to the north. A plaster floor was encountered at a slightly lower elevation than the northern floor; beneath floor was ballast, followed by a thick layer of cobbles, and then huge boulders (Figure 4.14). Beneath the boulders were two degraded floors, suggesting that the room was at some point filled with the boulders and cobbles before another floor was added. The most interesting discovery on the south side of the wall was the entrance to an empty chamber. The entrance to the chamber was in line with the east-west wall, but was just west of where the wall ended. The chamber itself extended north of the wall, beneath Burial 1. The chamber was not a subsurface feature, but was rather built up, surrounded by the large boulders and ballast and cobble fills, and topped with at least a partial dome. We briefly excavated within the chamber but found it to be empty; the only fill was a layer of fine fill towards the bottom, which perhaps consisted of dirt that fell or washed through the cracks (it was relatively fine). The purpose of the chamber remains unknown; however, it is possible that it was just a room that was not filled in when the upper floors were laid. We did collect a sample of the sediment from within the chamber for potential pollen or phytolith analysis.



Figure 4.14: Upper left - Image showing the Pool 7 Mound Field Mound 4 chamber entrance and south-of-wall stratigraphy. Lower right - Image showing the capstone ceiling of the chamber from the inside.

Mound Field 4

Mound Field 4 was the second location we excavated. Mound density was very low, especially when compared to MF 1. Like Pool 7 MF, MF 4 was a flat and open expanse, located further south from Cara Blanca Pool 7. One Type 1 and one large Type 4 structure complex were excavated in MF 4 (Table 4.4; Figure 4.15).

Table 4.4: Metrics for mounds sampled in Mound Field 4 (note: dimensions are oversized due to erosion and spreading by farm equipment)

Field Name Mound ID	Mound Field 4	
	M1	M2
Mound Type	4	1
Mound Height (m)	North Str. - 5.01 East Str. - 4.13	.21 - .41
Mound Dimensions (m)	North Str. - 14.5 x 6.4 East Str. - 14.6 x 6.3	7.5 x 7.5
Stone Architecture Present?	Yes	No
Burials Present?	Yes	No
GPS Coordinates	N1923893 E295796	N1923990 E295706

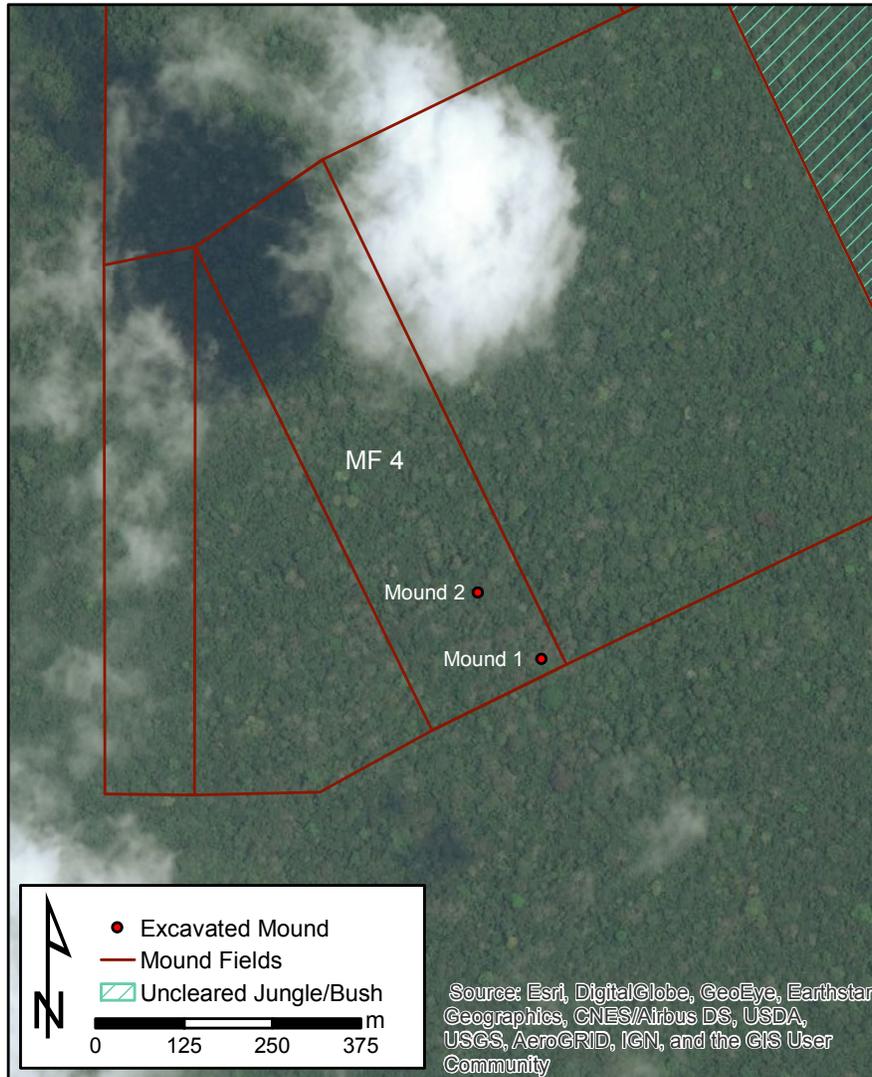


Figure 4.15: Location of excavated mounds in Mound Field 4 on Google image prior to land-clearing

Mound 1. Mound 1 is a large Type 4 platform complex, which consisted of a nearly 2.5 m tall platform, on top of which the Maya built two tall structures to the north and east, a lower structure to the west, and a possible hallway or walkway in the northeast corner that connects the North and East Structures (Figure 4.16). The structures form a U-shape, opening to the south. A large looters trench was cut in to the northwest corner of the complex, revealing nothing but solid fill.



Figure 4.16 Upper photo shows the entire platform, looking west. The lower photo is of the North Structure from the platform looking north

A north-south trench was placed through the North Structure (14.5 x 6.4 m, 5.01 m high from the ground surface). Three floors and two walls running east-west were exposed, as well as a thick layer of platform fill in the southernmost end of the trench (Figures 4.17 and 4.18). The North Structure served as a residence, as suggested by the domestic suite of artifacts uncovered. Unlike the East Structure, this structure was straightforward, with no obvious evidence for structural additions or rebuilding over

architectural features found in our excavation trench. Domestic artifacts were collected from the North Structure, including *mano* and *metate* fragments, and one burial was encountered, Burial 8. Burial 8 was just below and behind one of the walls in a cobble fill (Figure 4.17; see also Chapter 7). We were only able to partially excavate the individual but we did recover a large inverted Tau-foot dish and a miniature vessel near the cranium (see Chapter 3).

The east-west excavation trench in the East Structure (14.6 x 6.3 m, 4.13 m high from the ground surface) revealed a much more complex building sequence; there were several structural or architectural modifications over time, indicated by buried walls, floors, and a set of steps (Figures 4.17 and 4.19). We exposed at least three different floors, with an additional two possible floors; however, floors were difficult to identify because the fill was white, fine, and consistent, making it difficult to distinguish plaster from the marl. Five walls were exposed, as well as a set of steps on the inner edge of the structure. Of the walls, all but one ran north-south. Outside of burial artifacts, typical domestic jars, bowls, and dishes were recovered from the structure.

Two burials were found in the East Structure, Burials 5 and 6 (Figure 4.17; see Chapter 7). Burial 5 was found in cobble fill well below a floor, and Burial 6 was found lower in the trench, below the entire structure. The individual in Burial 6 was interred early in the life of the structure, if not at its initial construction. Both Burials 5 and 6 had associated ceramics, including several complete vessels; for example, Burial 5 ceramics included a cream polychrome cylinder vase found nearby, a Belize Red or British Honduras Volcanic Ash vessel, an everted jar with a groove on its lip, an Augila Orange and a complete red and black inverted ring-base bowl similar to Daylight Orange that was inverted over the cranium (see Chapter 3). Burial 6 was accompanied by a miniature vessel, as well pyriform vessel and a large, plain dish. One additional burial, Burial 9, represented only by a single phalanx, was found in the platform fill at the western-most edge of the East Structure excavation trench. We would have expected to find a complete burial if time had permitted us to expand the trench west.

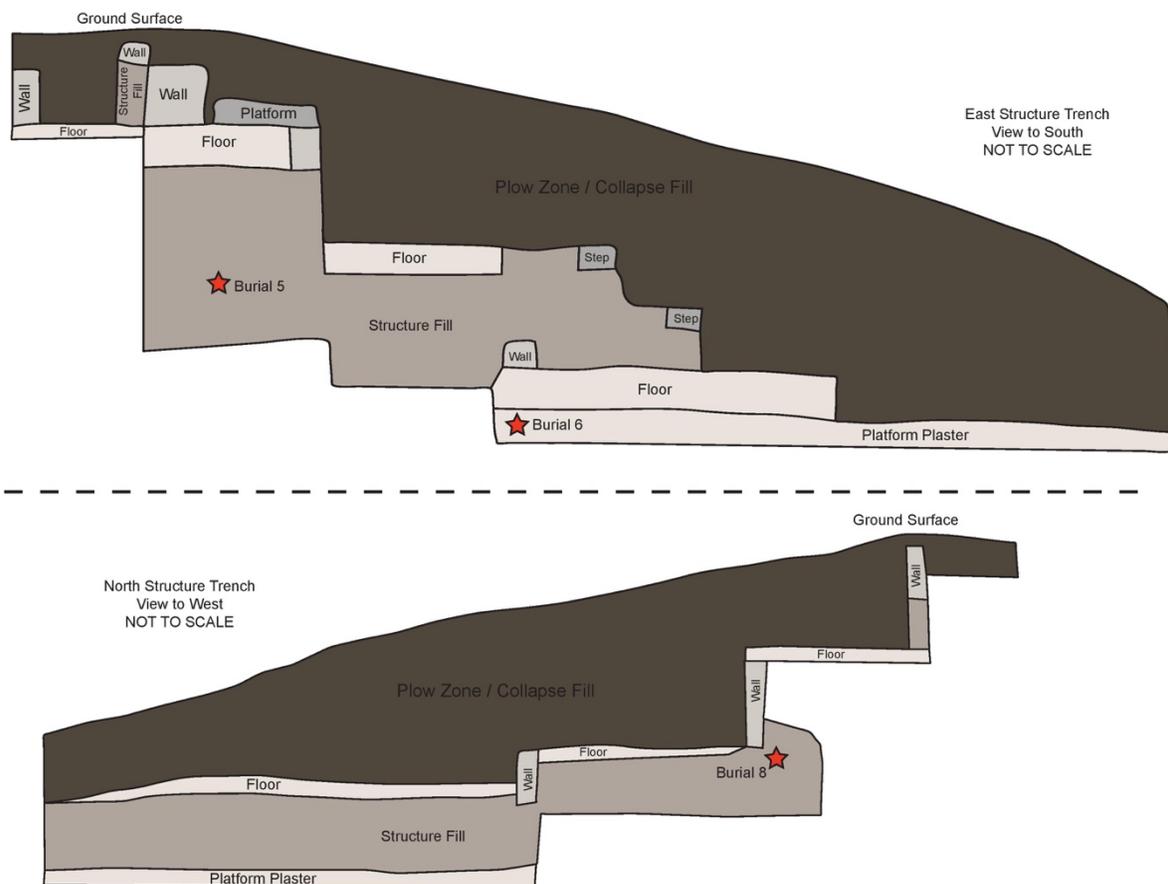


Figure 4.17: Profile maps of Mound Field 4 Mound 1 East (top) and North (bottom) structures

Another notable feature in the East Structure is what seems to be an ancient re-excitation or re-entry. The upper south edge of our excavation trench showed an area that had clearly been disturbed and filled with a cobble fill. We do not think this was a modern looting event, as there was no depression or evidence for recent intrusion. Furthermore, a large tree was growing directly over this area. There was a lack of cut stone in the collapse fill in both the East and North Structures, so it may be possible that the ancient Maya were removing the limestone for re-use elsewhere—a sort of ancient recycling, or potentially ancient looting.

A small unit was placed on the Mound 1 platform in order to investigate the nature of its construction. This unit, and the two inner ends of our structure trenches, revealed a thick, hard layer of a yellow-ish white plaster at least 30 cm thick. The plaster continued deeper, but we were unable to continue excavating due to time constraints.



Figure 4.18: Mound Field 4 Mound 1 North Structure excavation trench

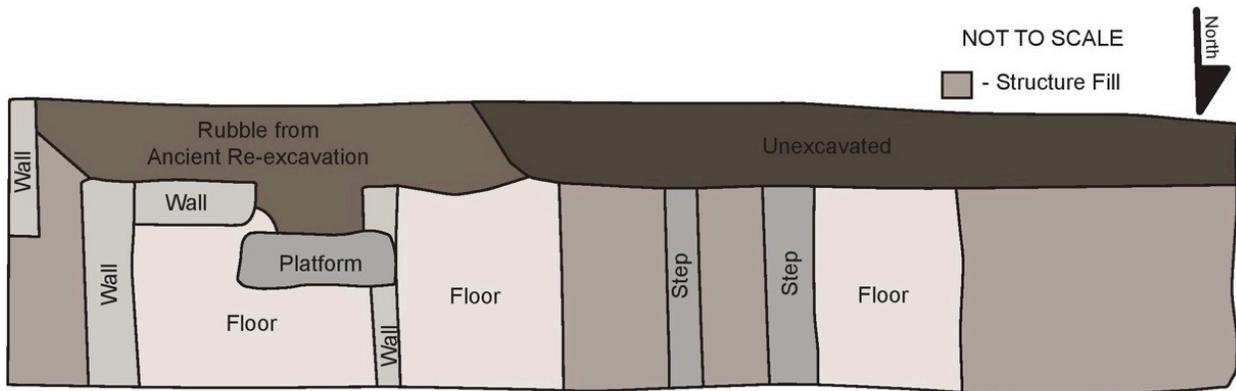


Figure 4.19: Plan of Mound Field 4 Mound 1 East Structure showing several floors and other architectural features

Mound 2. Mound 2 (7.5 x 7.5 m, .21-.41 m tall), located c. 125 m to the northwest of Mound 1, was barely perceptible at the surface, indicated only by a low mound and a scatter of cobbles. After excavations uncovered neither cut limestone nor plaster floors, we determined that the Mound 2 structure was likely a simple thatch residential building with a dirt floor. Despite its seeming simplicity, Mound 2 yielded many domestic artifacts, including a high density of jars, bowls, and dishes. Ceramics range a wide timespan reaching as far back as the Preclassic. An inverted dish was found on a probable dirt floor, however, unlike the inverted vessels in Mound 1, there were no associated human remains. We reached a sterile subsoil approximately 0.4 m below surface (Figure 4.20).



Figure 4.20: Mound Field 4 Mound 2 stratigraphy

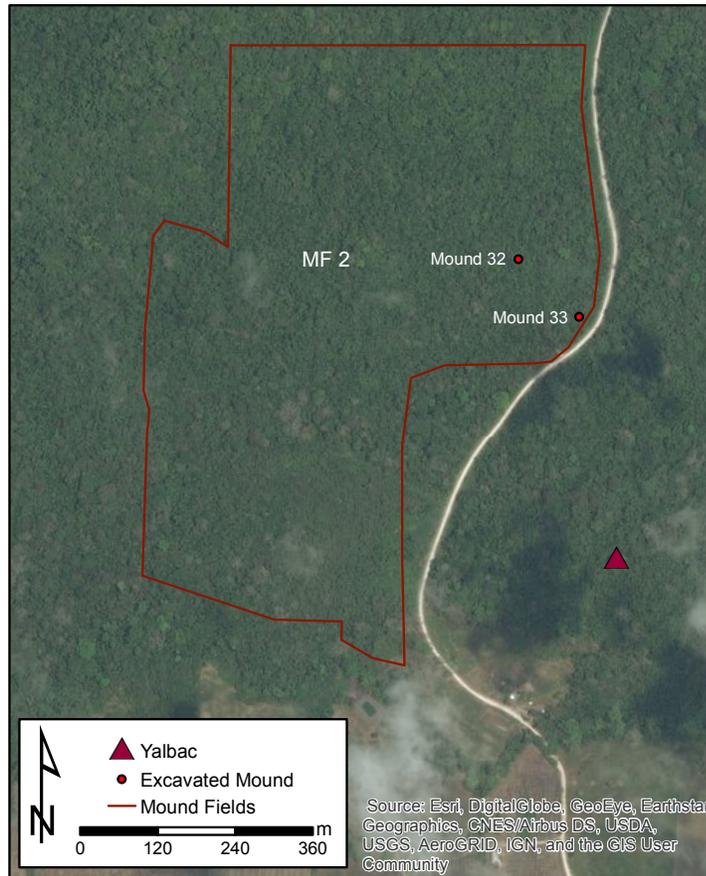


Figure 4.21: Locations of excavated mounds in Mound Field 2 prior to land clearing

Mound Field 2

Mound Field 2 was the last field visited, and was the closest to the center of Yalbac. Although land clearing had significantly expanded beyond what we surveyed in 2014, we did not perform any additional survey. The field itself was topographically flat and plowed clear; however, it is bordered by hills to the west and jungle to the south. At least one additional large Type 4 structure complex was observed to the east of the 2014 MF 2 survey area and of the mounds excavated in 2016. We excavated two Type 2 mounds in MF 2, as well as two potential Type 1 mounds that in the end turned out to be non-cultural (Table 4.5; Figure 4.21).

Table 4.5: Metrics for mounds sampled in Mound Field 2 (note: dimensions are oversized due to erosion and spreading by farm equipment)

Field Name	Mound Field 2	
Mound ID	M32	M33
Mound Type	2	2/4
Mound Height (m)	.6	East Str. - .76 South Str. - .66
Mound Dimensions	8.1 x 7.8	East Str. - 8.5 x 4 South Str. - 8.5 x 4
Stone Architecture Present?	Yes	Yes
Burials Present?	No	No
GPS Coordinates	N1923348 E293599	N1923205 E293652

Mound 32. The primary feature uncovered in Mound 32 (8.1 x 7.8 m, .6 m tall) was a well-formed solid plaster floor encountered almost immediately beneath the plow zone (Figure 4.22). Below the floor was a layer of ballast and a thick layer of cobbles, which were exposed in a T-shaped excavation trench c. 1 m wide. Although we explored the limits of the floor in order to locate any edges or walls, none were found. It seems that the edges and other architectural features had been destroyed by plowing, as the floor seemed to melt away around its edges. Alternatively, the exterior stone could have been reused elsewhere. Mound 32 had relatively few artifacts, with only a handful of ceramics and a chert biface collected.



Figure 4.22: Mound Field 2 Mound 32 looking east

Mound 33. Mound 33 is a small compound with an East Structure (8.5 x 4 m, .76 m tall) and a South Structure (8.5 x 4 m, .66 m tall), located c. 120 m southeast of Mound 32. The two structures formed a L or V shape that opened to the southeast. Three units were placed in Mound 33; one each in the East Structure, South Structure, and in the presumed central plaza area. The East Structure was fairly straightforward, with the exception of very degraded patches of plaster that made identifying floors difficult. Though floors were elusive, we were able to expose an east-west oriented wall and a stepped porch that ran along the external face of wall (Figures 4.23 and 4.24). Once the architectural features were exposed, excavators placed a north-south trench c. one meter wide through the structure. The trench was unique among the 2016 excavations because we took it completely to sterile subsoil, allowing a complete profile view, from plow zone to sterile subsoil, of what remained of the structure (Figure 4.25). The subsoil beneath the East Structure was unexpectedly sandy, and was topped by cultural fill that appears to have been purposefully deposited to create a level surface upon which to build the structure. As with other mounds, only typical domestic artifacts were collected from the structure.



Figure 4.23: Mound Field 2 Mound 33 East Structure excavations

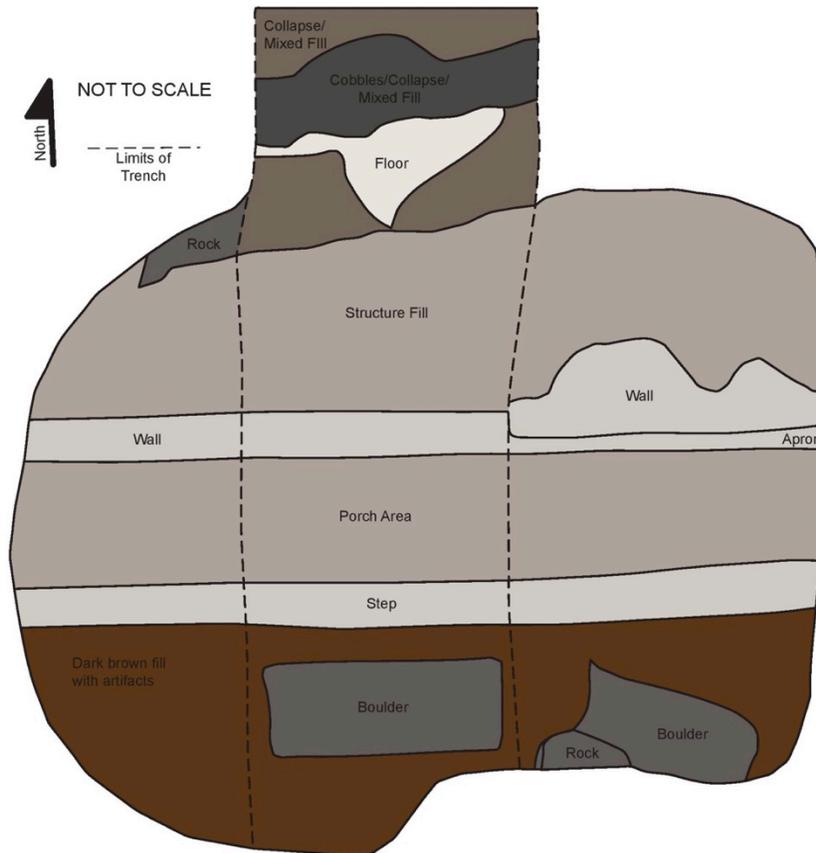


Figure 4.24: Plan map of Mound Field 2 Mound 33 East Structure

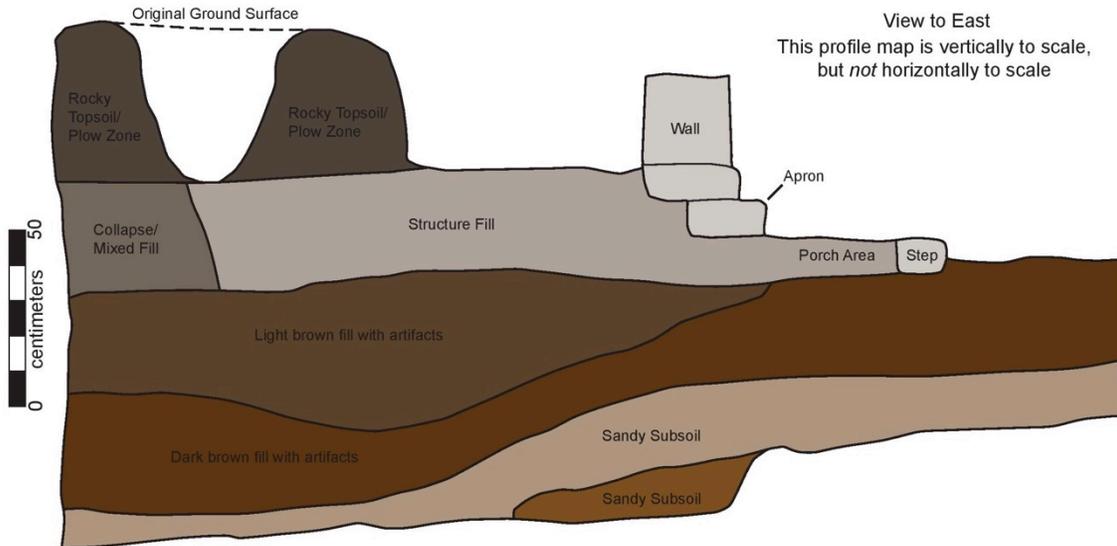


Figure 4.25: Profile of trench excavated through Mound Field 2 Mound 33 East Structure

The South Structure was less straightforward; it was initially similar in appearance and morphology to the East Structure, but it soon became clear that it was a different sort of feature. We excavated over 1.5 m deep to the sandy subsoil without hitting a floor or walls. Instead of traditional architectural features, we exposed a huge boulder (approximately 1.2 x 0.4x 0.5 m) sitting upon seemingly intentionally placed stones, which formed an arc (Figures 4.26 and 4.27). In the profile of the South Structure excavations, there is a vertical change between the soils on either side of the arced stones. Rather than an actual building, the South Structure may represent an edge to a platform, or some other feature.



Figure 4.26: Mound Field 2 Mound 33 South Structure excavations, showing large boulder perched atop an arc of stones

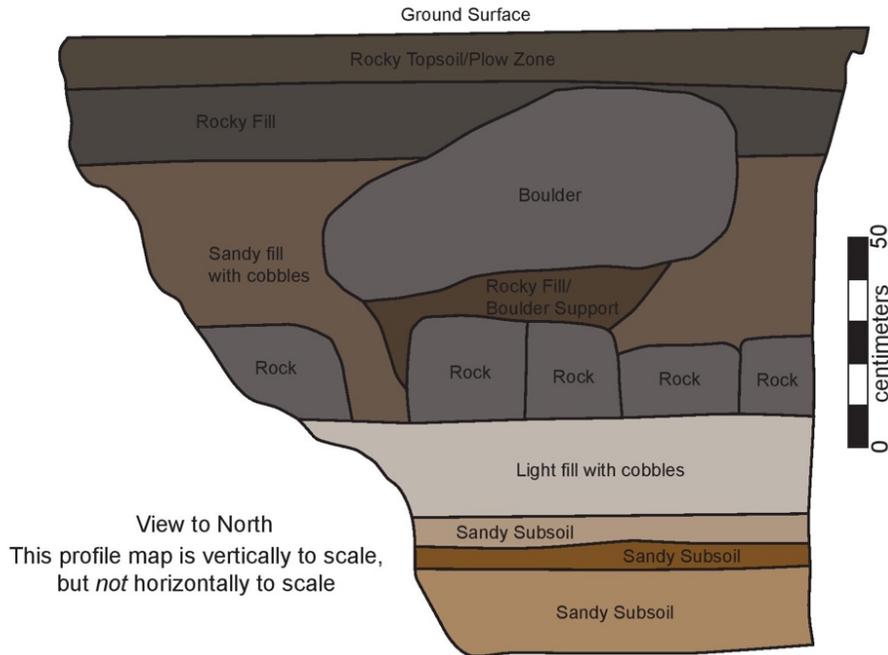


Figure 4.27: Profile map of Mound Field 2 Mound 33 South Structure excavations

Nothing of note was uncovered in the center excavation unit, and excavations halted upon reaching the same sandy subsoil seen in the East and South Structure excavations.

Discussion and Conclusions

The goals of the salvage program were twofold: 1) to recover what archaeological information we could before it is lost; and 2) to piece together information about the ancient Maya who lived in this important landscape between Yalbac and the Cara Blanca pools. With the data from the eight mounds excavated in 2016 and the 129 mounds recorded in 2014, we can begin to make some preliminary statements addressing the broader research questions of this project. First, they are all residential or have a residential component based on similar assemblages largely consisting of serving, storage, and cooking ceramics, agricultural implements (chert bifaces), groundstone (manos and metates), obsidian blades, and a general lack of less common, non-domestic or “ritual” goods. The exception may be the East Structure of Mound Field 4 Mound 1, which consisted of several burials and a complex sequence of rebuilding; instead, it may have served as an ancestral shrine, as found elsewhere in the Maya area (Becker 1999). Pool 7 Mound Field Mound 4, which may have begun as a domestic structure, may have terminated as a non-domestic building, based on the presence of the several burials, including infants and one feature consisting of a minimum of seven individuals; it might also have served as a communal and/or familial burial area.

Different mound types are relatively evenly distributed between Yalbac and the Cara Blanca pools, suggesting that wealth, as indicated by structure type and size, does not seem to play an important role in who lives where. Additionally, based on the artifact types found in the excavations, the occupants of the different structures did not have drastically stratified material culture. In other words, everyone was using essentially the same ceramics and materials (see Chapters 2 and 3). Thus, based on these excavations, we cannot say that there were any significant differences in terms of wealth in who lived where in relation to Yalbac and the Cara Blanca pools. Also of importance is the chronology of the occupations of the Mound Fields. Though the materials recovered range from the Preclassic to the Postclassic, the overall chronology of the ceramics suggests that all the sites’ main occupations dated to the Early Late Classic through the Terminal Classic, with some Late Early Classic presence (see Chapter 2). Therefore, just as proximity to the pools or to Yalbac did not seem to affect who was living where, it also did not effect when

people were living there. This is interesting, given the intensified use of certain Cara Blanca pools during the Late Classic and Terminal Classic.

There do seem to be differences in where burial features were located in relation to Yalbac or the Cara Blanca pools. Burials 1, 2, 3, and 4 were all found in Pool 7 MF, the field adjacent to Pool 7. Additionally, all of the Pool 7 MF burials were found in Type 2 mounds (that said, no large mounds were excavated in this field). Burials 5, 6, 8, and 9 were all found in the large Type 4 structure complex in MF 4, the field located in an intermediate space between Yalbac and the pools. No burials were found in MF 2, the field nearest to Yalbac. Furthermore, no burials were found in earlier work at residential units immediately to the east of the Yalbac site core (Lucero 2002). This information suggests that burials became more common as we move away from Yalbac and nearer to the pools, and also that burials are not restricted to one mound type/size. This is interesting, however the sample size is relatively small and may preclude any broader conclusions until further work can be completed.

Spatial analysis completed following the 2014 survey work can provide additional insight into the settlement of the region (Benson 2015). This analysis suggested that rather than different mound types being located on certain parts of the landscape, the ancient Maya were more concerned with where they were living in relation to each other. In other words, as mounds get larger (i.e., move up in the type scale), they become more isolated. It is important to note that the data from 2014 is somewhat flawed due to problems with visibility in MF 2 and MF 3; however, the trend continues in MF 1, which was completely cleared. I was able to informally observe this trend in MF 4; there were several isolated Type 4 mounds in this field, and they were noticeably separated from other mounds. So perhaps there is not as much of a difference in where people were living in relation to the pools or to Yalbac, but there was a difference in where they were living in relation to each other.

Between 2014 and 2016, the VOPA project recorded over 150 mounds and excavated eight; yet hundreds of mounds remain in the newly cleared agricultural fields. The SPLC will continue to clear jungle for agricultural purposes, and thus the VOPA project has its future work cut out for it. Continuing to work in these fields will further our knowledge of the ancient Mata settlement of the region, as well as contribute to the preservation of the cultural heritage of the modern Maya living in Central Belize. Additionally, by continuing to work with the SPLC we can hope to further educate and continue the discussion with the farmers who work the land, perhaps leading to better protection of the mounds. Salvage work is some of the most important work archaeologists can do, and the VOPA project will continue to recover what it can from the Cara Blanca/Yalbac region before all its history is lost to modern development.

Acknowledgements

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Appendix 4.1 2016 MF Mounds Ceramic Types

Catalog #	Site & provenience	Ceramic type, info	Time period
2212	MF-2 Mound 32 Topsoil	Vaca Falls Red bowl	Tepeu 2-3
2213	MF-2 Mound 32 Under FL 1	British Honduras Volcanic Ash jar (orange paste, black rim)	Tepeu 2-3
2210	MF-2 Mound 33 Center Unit	Orange basal flange	Early Classic
		~Kaway Impressed	Tepeu 2-3
		Garbutt Creek Red bowl	Tepeu 2-3
		Dark red bowl	Late Classic
		Jar	Early
2206	MF-2 Mound 33 E Str. Trench Porch	Belize Red VA late jars	Tepeu 2-3
2203	MF-2 Mound 33 E Str. N of Wall 1	Large Roaring Creek Red bowl	Tepeu 2-3
		Large British Honduras Volcanic Ash bowl	Tepeu 2-3
		~Garbutt Creek Red bowls	Tepeu 2-3
		Everted jar	Tepeu 2-3
		~Tinjaja Red brown-slipped tecomate w/ slight incisions (Petén)	Late Classic
		Vaca Falls short-necked narrow jar	Tepeu 2-3
		~Vaca Falls bowl (red slip to break)	Tepeu 2-3
		Roaring Creek Red	Tepeu 2-3
2208	MF-2 Mound 33 E Str. Trench Below Str. Fill	Over-fired red=> brown-slipped open bowl	~Tzakol 3/ Tepeu 1 transition
		Flange	Early Classic
		~Benque Viejo Polychrome	Tepeu 2
		Everted jar	Tepeu 2-3
2204	MF-2 Mound 33 E Str. Trench N of Str.	~Roaring Creek Red	Tepeu 2-3
		Large British Honduras Volcanic Ash bowl	Tepeu 2-3

		~Vaca Falls	Tepeu 2-3
		Roaring Creek Red	Tepeu 2/3
2205	MF-2 Mound 33 E Str. Trench N of Wall 1	Everted jar	Tepeu 2-3
		Flange	Early Classic
		Mountain Pine Ridged plate	Tepeu 1
2207	MF-2 Mound 33 E Str. Trench Topsoil	Sierra Red Group	Late Preclassic
		Sapote Striated jars	Late Preclassic
		Z-angle	Terminal Preclassic/early Early Classic; Tzakol 1/Floral Park
		'elegant' jar, flange	Early Classic
		Eroded polychrome OR(?) British Honduras Volcanic Ash/Kaway Impressed	~Tepeu 1 or Tepeu 2-3
		Garbutt Creek Red bowls	Tepeu 2-3
		Large jar rims	Terminal Classic
		Early jars	Tepeu 1
2209	MF-2 Mound 33 E Str. Trench Under FL 1	Dos Arroyos orange Polychrome	Early Classic
		Kaway Impressed ring base	Tepeu 2-3
		~British Honduras Volcanic Ash base	~ Tepeu 2-3
		Garbutt Creek bowls	Tepeu 2-3
		Jars	Terminal Classic
2211	MF-2 Mound 33 S Str. All	Benque Viejo Polychrome tripod slab-footed dish	Tepeu 2
		Kaway Impressed (ridged?)	Tepeu 2-3
		~Cayo Unslipped black-rimmed everted jar	Tepeu 2-3
		~Garbutt Creek Red bowl	Tepeu 2-3
		Rubber Camp brown bowl w/ bolstered rim	Tepeu 2-3
		Vaca Falls jar (not thin enough to be Tinaja)	Tepeu 2-3
		Jars	Tepeu 2-3
		Mountain pine-like, eroded maybe polychrome open bowl	Tepeu 1?
2159	MF-4 Mound 1 Bu. 5, Individual A	Cream Polychrome cylinder vase (~Zacatel Cream Polychrome)	Tepeu 2
		Belize Red or British Honduras Volcanic Ash ridged	Tepeu 2-3
		Everted jar w/ groove on lip	Tepeu 2-3, more Tepeu 3
		Aguila Orange—almost a Z-angle	Early Classic
		Complete red and black inverted ring-base bowl (over Bu. 5); fire-clouding quite unique and intentional; trying to create a pattern; unusual slip—bichrome—attempt of Daylight Orange?	Tepeu 2-3
2160	MF-4 Mound 1 Bu. 6, Individual A	Duck Run Incised	Starts in Tepeu 1
		Large ring-based bowl	Starts in Tepeu 1
2161	MF-4 Mound 1 Bu. 8, Individual A	Miniature vessel: ~Late Classic slip, pinch pot—not really known; anomaly	~Late Classic
		Tau foot, inverted rim; incised more rare; Roaring Creek Red Group; form more common in Belize Valley than in Petén	~Tepeu 2 (maybe 3)
2198	MF-4 Mound 1 E Str. Below FL 1	~Eroded polychrome	Tepeu 1 or 2
2201	MF-4 Mound 1 E Str. Below FL 2	~Dos Arroyos Orange ~polychrome basal flange	Early Classic
2201		[gracile] jar rims	Early Classic
		Sierra Red	Late Preclassic
		Ridged plate, Mountain Pine-like	Tepeu 1; late Early Classic/early Late Classic
2200	MF-4 Mound 1 E Str. Lower Trench	~ Aguila Orange orange-slipped base	Early Classic

		Spout	Begins in Late Preclassic (less common in Classic)
		Everted jars	~Terminal Classic
		~Garbutt Creek Red dish(es?)	Tepeu 2-3
		Base	Early Classic
2189	MF-4 Mound 1 E Str. Lower Trench artifact conc.	Ridged plate; Mountain Pine Ridge or Saxche Polychrome—very eroded	Tepeu 1
		Arrowhead rim jar (beveled)	Tepeu 1
		Yaha Creek Cream (uncommon)	Tepeu 2-3
2188	MF-4 Mound 1 E Str. Lower Trench ceramic conc. on platform	Small narrow orifice jar	~Late Classic
		Ridged plate	Begins Tepeu 1
		Jars	Terminal Classic
2191	MF-4 Mound 1 E Str. Lower Trench Stair clean-up	Everted jar	Tepeu 2-3
		~Eroded Saxche Polychrome bowl (interior)	early Late Classic
		Jars	Late/Terminal Classic
2202	MF-4 Mound 1 E Str. Sern Rubble	Mountain Pine Red bowl Plates	Tepeu 1
		Everted jars	Tepeu 2-3 (~Terminal Classic)
2196	MF-4 Mound 1 E Str. Steps	Large Cayo/ Cambio Unslipped jar, interior black rimmed	Terminal Classic
2194	MF-4 Mound 1 E Str. Under FL 3	Sierra Red	Late Preclassic
		Polvero Black	Late Preclassic
		Eroded orange slip	Early Classic
		Unknown red	Classic
		Pita Incised jar	Early Classic
		~Belize Red VA w/ limestone	Tepeu 2-3
		BHVA	Tepeu 2-3
2187	MF-4 Mound 1 E Str. Upper Trench ceramic cluster 1	Everted jars	Tepeu 2-3
		British Honduras Volcanic Ash bowls	Tepeu 2-3
		Unknown, monochrome red dish/bowl	Late Classic
2193	MF-4 Mound 1 E Str. Upper Trench S Bench exploration	Large everted jar	Tepeu 2-3
		Large ring base	~Tepeu 2-3
		Vaca Falls Red bowl	Tepeu 2-3
		~Kaway Impressed/Chinja Impressed	Tepeu 2-3
		Ridged plate, xx red	~Tepeu 2
		Mountain Pine (xx red above?)	Tepeu 1
2199	MF-4 Mound 1 E Str. Upper Trench under FL 1	Ridged plates	Tzakol 3/Tepeu 1
		Everted jars	Tepeu 2-3
		Eroded ~Vaca Falls Red bowls	Tepeu 2-3
		Achote Black sherd	Tepeu 2-3
		~Tecomate, ~Tinaja Red	Late Classic
2197	MF-4 Mound 1 E Str. Vessel under FL 3	Unknown black	Classic
		Sierra Red	Late Preclassic
2195	MF-4 Mound 1 E Str. W end of Trench, general	Achote Black sherd	Tepeu 2-3
2180	MF-4 Mound 1 N Str. Ballast under FL 2	~Burnt Sierra Red	Late Preclassic
		Duck Run Incised	Tepeu 1/Tiger Run
		Flange	Early Classic
		Late Sierra Red scalloped flange	Late Preclassic/Early Classic?
2186	MF-4 Mound 1 N Str. Below FL 2 ballast	Sierra Red	Late Preclassic
		2 ~Aguila Orange jars	Early Classic
		Mountain Pine Ridge ridged plate	Tepeu 1
		~Saxche eroded polychrome ridged plate	~early Late Classic

		~Vaca Falls Red transitional	Tepeu 1
		Jars	Tepeu 2/Tepeu 2-3
		British Honduras Volcanic Ash ridged plate	Tepeu 2-3
		Unknown vertical striated neck	Classic
		Belize Red (?)	Tepeu 1
2182	MF-4 Mound 1 N Str. Fill upper trench	Tu-Tu Camp Striated everted jars	Late Classic
		Tinaja Red orange paste narrow orifice jar w/ eroded exterior red slip, some interior	Late Classic
		British Honduras Volcanic Ash bowl w/ nubbins	Tepeu 2-3
		British Honduras Volcanic Ash everted bowl	Tepeu 2-3
		Bowl	~Early Classic
		~Vaca Falls Red form—light brown shallow bowl	Tepeu 2-3
2179	MF-4 Mound 1 N Str. Lower Trench		Early Classic
		~Sierra Red xx	Late Preclassic
2184	MF-4 Mound 1 N Str. Lower Trench ceramic cluster 1	Pink-orange eroded bowl	~Early Classic
2183	MF-4 Mound 1 N Str. Lower Trench general fill	Pink-orange eroded bowl	~Early Classic
		~British Honduras Volcanic Ash	Tepeu 2-3
		Red-slipped thin body sherd, ~Tinaja Red jar	Late Classic
		Dos Arroyos polychrome flange (others might be polychrome too)	Early Classic
2185	MF-4 Mound 1 N Str. Lower Trench plaza quest	Mountain Pine Ridge bowl/plate	Tepeu 1/Tiger Run
		Eroded bowl	~Early Classic
		Transitional flange to ridge	Early Classic/early Late Classic
		Unknown eroded polychrome	Classic
2181	MF-4 Mound 1 N Trench Topsoil		Tepeu 2
2178	MF-4 Mound 2 Topsoil	Sierra Red Groups groove incised	Late Preclassic
		Red-slipped basal flange bowls (red slip less common)	Early Classic
		Flanges (but red instead of orange) – maybe Dos Arroyos orange polychrome, possible censor?	Early Classic
		Jar neck w/ fillet	~Early Classic
		Ridged plate (and?) bowl	Tepeu 1
		Jars; ~interior striated jar sherd could be part of incensarios (LC=TC)	Tepeu 2-3
		Kaway Impressed	Tepeu 2-3
		Mountain Pine	Tepeu 1
2190	MF-4 Mound E Str. Trench Topsoil	Large everted jars	Tepeu 2-3
		~Kaway Impressed/Chinja Impressed	Tepeu 2-3
		~Garbutt Creek Red bowl; slipped on interior and exterior; over-fired	Tepeu 2-3
2192	MF-4 Mound E Str. Upper Trench Str. fill	~Eroded Saxche Orange Polychrome	Tepeu 1/Tiger Run
		Large eroded ~Aguila Orange bowl w/ interior offset	Early Classic
		Vaca Falls Red bowl, and jar	Tepeu 2-3
		Everted jars	Tepeu 2-3
		Unknown red bowl w/ everted rim, wide lip	Classic
2147	MF-Pool 7 Mound 1 E&W Rooms Dark Zone	Sierra Red waxy, flaring sided non-lustrous dish	Late Preclassic
		Interior grooved jar	~Late Preclassic to Early Classic
2157	MF-Pool 7 Mound 1 E Room Bu. 2	Bowl	Early Classic
		Red-rimmed bowl	Early Classic
2150	MF-Pool 7 Mound 1 E Room Deposit above Bu. 2	Thin-walled, striations Red-orange slips	~Late Classic Early Classic/early

			Late Classic, c. 600-750 CE
		Everted unslipped striated jar Horizontal striations (Classic), earlier red-orange slipped stiff, Early Late Classic jar (everted with squat body, similar to Petén)	Late Classic
		Everted Unslipped jar (squat); more typical of White Cliff Striated	Beginning in Late Classic, Tepeu 1 (through Terminal Classic)
2140	MF-Pool 7 Mound 1 E Room Top Zone	LeCount interior offset	Begins in Early Classic, continues into Tepeu 1
		Dish	~Early Classic
		Jar rim	Early Classic
2143	MF-Pool 7 Mound 1 General fill in rooms	Mixed context: Sierra Red	Late Preclassic
		Mixed context: exterior vertical striations on neck; Sierra Red	~Late Preclassic
		Mixed context: Mountain Pine Red ridged Plate Mountain Pine Red "shitty red bowl" (Tepeu 1). Note: poorly made LC	Tzakol-Tepeu 1
		Pinkish dish/bowl	Early Classic
		Thinner open/shallow bowl	~Early Classic
2141	MF-Pool 7 Mound 1 N of rooms	Everted jar	Mixed Tepeu 2: 750-800 CE
		Large ring base	~Terminal Classic
2144	MF-Pool 7 Mound 1 W Room Cobble Fill Sern expansion	Same jar from 2150	Beginning in Late Classic, Tepeu 1 (through Terminal Classic)
		Bowl	Late Classic, Tepeu 1 through Tepeu 2
2148	MF-Pool 7 Mound 1 W Room Floor 2	Everted jar rims	Tepeu 2-3
2145	MF-Pool 7 Mound 1 W Room Top 2 Zones	~Ridged plate	Tepeu 1
		Bowl	Late Classic
2122	MF-Pool 7 Mound 2 Cluster 5	~Eroded Belize Red, British Honduras Volcanic Ash Ware	Tepeu 2-3
2126	MF-Pool 7 Mound 2 Cluster 6	Flared bottle (see Duck Run Incised in Gifford et al. 1976)	~Tepeu 1
2129	MF-Pool 7 Mound 2 Cluster under rock on possible surface	~Eroded Belize Red, British Honduras Volcanic Ash Ware	Tepeu 2-3
2120	MF-Pool 7 Mound 2 Grey cobble fill	Benque Viejo Polychrome—ash (no ash polychromes in Petén mostly)	Tepeu 2-3
2128	MF-Pool 7 Mound 2 plowzone rubble	Belize Red, British Honduras Volcanic Ash Ware	Tepeu 2-3
2116	MF-Pool 7 Mound 2 Plowzone Sample	Mixed contexts: Tinaja slip but more open form, British Honduras Volcanic Ash, Vaca Falls/Sibun Red (slipped interior, not exterior)	Tepeu 2-3
2127	MF-Pool 7 Mound 2 Plowzone Sample	Terminal Classic Jars, Kaway Impressed	Tepeu 2/3, Terminal Classic
2130	MF-Pool 7 Mound 3 Plowzone	3 flange	Unknown and Early Classic
2214	MF-Pool 7 Mound 4 Bu. 1	Achote Black Cubeta Incised, at IE 2 vessels, ~pseudoglyphs (post-hiatus)	Tepeu 2 and 3
		Duck Run Incised bottle/vessel	Tepeu 1/Tiger Run
		Tinaja Red Group Cameron Incised pyriform w/, pseudoglyphs; figurines may have been attached to side of vessel; unnamed modeled	Tepeu 2-3
		~Belize Valley form, ~Roaring Creek large plate (form ~not Tinaja)	Spanish Lookout
		Chinja Impressed/Kaway Impressed	Tepeu 2-3
		~Drum	Begins in Tiger Run/Tepeu 1, but continues

		Small bulge bowl, weird Late Classic red slip	Tepeu 2-3
		Large red-slipped ring base	Tepeu 2-3
		Vaca Falls plate	Tepeu 2-3
		~Achote sherd	Tepeu 2-3
		Eroded Belize Red, British Honduras Volcanic Ash Ware	Tepeu 2-3
2131	MF-Pool 7 Mound 4 E Edge	Big jars	Terminal Classic
		Red-slipped plate/ Roaring Creek form but with ridge moved down	Late Classic
		Sierra Red weird bulge bowl—atypical form	Late Preclassic
2133	MF-Pool 7 Mound 4 N of wall Ballast	Basal Flange	Early Classic
		Mid-ridge exterior, LeCount interior offset	Early Classic to Late Classic
		Thick sherd, likely jar	late Late Classic to Terminal Classic
2136	MF-Pool 7 Mound 4 N of wall Floor	Tinaja Red everted jar, fine-grained Red slip jars (not common) Narrow Orifice Slipped Jar	Late Classic
2135	MF-Pool 7 Mound 4 plowzone/topsoil Sample	Mixed: basal flange, jars	Late Preclassic to Terminal Classic
2215	MF-Pool 7 Mound 4 S of Wall Cobbles below FL	Flange	Early Classic
		Dish	Early Classic
		Large, thick jar	late Late Classic to Terminal Classic
		Achote Black Cubeta Incised, black incised	Tepeu 2/3=700/750-800/830 CE
		Flaring-sided plate	Late Classic
		Polychrome ~dish/open bowl, like Saturday Creek (locally manufactured?)	Tepeu 1 to 2
		Huge jar w/ notched rims; Cayo Unslipped (BRV) = Cambio Unslipped (Petén)	Terminal Classic
2137	MF-Pool 7 Mound 4 S of wall Floor	Ridged bowl/plate, LeCount offset, flanges	Early Classic to early Late Classic, Tepeu 1
2142	MF-Pool 7 Plowzone Sample of uncollected artifacts	VA Belize Red! Slab foot.... Vaca Falls Red	Most Terminal Classic, anywhere between 800-900 CE
		Everted jar rims	Terminal Classic

Chapter 5

The Cara Blanca Sweatbath: Ritual Purification on the Ceremonial Circuit

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Understanding past climate change through the archaeological record offers great insight into possibilities for adaptation to the current climate struggle. Only recently, however, have researchers connected the implications of ancient climate change to the present (e.g., d'Alpoim Guedes et al. 2016). The Terminal Classic period (c. 800-900 CE) has long been considered a case study for exploring collapse and resiliency related to climate change (Braswell 2014). While scholars have largely focused on socio-political and environmental impacts, few have explored the ideological responses of the Maya during their decline. Here, we elucidate the role of the Cara Blanca ceremonial landscape and examine the ideological shifts taking place during a period of severe droughts.

During the Late to Terminal Classic periods in central Belize, prolonged and severe droughts struck much of Mesoamerica (Medina-Elizalde et al. 2010). Because they were an agricultural society, Maya living in the region were dependent on rainfall. During the Classic period (250-900 CE), rulers garnered power by exploiting this dependency (Lucero 2006)—the people needed rain and rulers positioned themselves to communicate with deities to provide precipitation. As the rains failed, so too did rulers' power over the people. Despite the periodic droughts, the Cara Blanca pools have remained one of the few stable resources of freshwater for humans and non-humans living in the area for millennia. The 25 pools, lakes (2-18 m deep) and *cenotes* (steep-sided karstic sinkholes up to 60 m deep), that make up the Cara Blanca pools line the base of a limestone cliff and stand in stark contrast to the dense jungle of which they are a part. Data collected over 20 years of research at Cara Blanca suggest that the 25 pools are part of a ritually prescribed path, or ceremonial circuit, which developed in part as a response to rulers' failures. As Lucero and colleagues note (Lucero et al. n.d.), ceremonial circuits are paths that Maya walked connecting built architecture in a way that makes explicit their relationship to that space—including both the architecture and sacred, natural spaces (Vogt 1969:89, 446). Because *cenotes* are considered portals to the underworld and a space in which Chahk, the rain god, resides, by reaffirming their relationship to this landscape, the Maya were also strengthening their connection to, and their ability to communicate with Chahk.

Most often, a ceremonial circuit follows the path of the sun—moving from east to west (Astor-Aguilera 2010). Previous investigations by Lisa Lucero and the Valley of Peace Archaeology (VOPA) project (see Kinkella 2009; Lucero and Kinkella 2015; Lucero et al. 2016) identified a hypothesized sweatbath in the west-central part of the system, a place of ritual cleansing for a journey on a ceremonial circuit. During the 2007 field season, Andrew Kinkella noted “a large, enclosed plaza group of range structures 2-3 meters in height” that he labeled M186 (Kinkella 2008:53). The group is 400 meters to the west of Pool 1, where we have excavated a water temple and ceremonial platform used by the Maya during the Terminal Classic (800-900 CE) droughts (Lucero and Kinkella 2015; Lucero et al. 2016; Larmon and Nissen 2015). The 2016 Valley of Peace Archaeology (VOPA) project field team, under the directorship of Lisa J. Lucero, focused efforts on the west side of the group, where the sweatbath is located (Kinkella 2008). This structure likely acted as a space for ritual cleansing for those visiting the water temple as part of the ceremonial circuit. Here, we summarize previous explorations of M186, present the results of the 2016 excavations, and explore how the Cara Blanca sweatbath compares to other sweatbaths in the Maya region.

Previous Research: 2007-2009 Survey and Test Pit Excavations

Kinkella's 2007 (Kinkella 2008) survey of M186 and the discussion in his dissertation (Kinkella 2009:153-157) was based on surface remains. The curved walls and true arch construction of the ceiling suggested that the structure functioned as a sweatbath. He noted that the sweatbath had undergone extensive looting, disturbing much of the context. There was a single jar rim sherd, now identified as a Cayo Unslipped, recovered from wall fill that dates to Tepeu 2-3. Just to the west of M186, the field crew excavated M170, a group of low mounds and small mound groups. Excavations revealed a Late Classic burial with two inverted vessels above the skull (a Belize Red plate and an Achote Black bowl).

Kinkella also noted that during the rainy season when the area is inundated with rainwater that the only suitable path between the M186 sweatbath and Pool 1 follows along the edge of an escarpment. Those taking this path would walk directly to the Pool 1 water temple—the temple acts as a barrier to the pool. Recently Lucero and colleagues (n.d.) have suggested that the Cara Blanca pools were part of a ceremonial circuit travelled by the Maya. Kinkella’s observation is congruent with this hypothesis and connects the cleansing occurring in the sweatbath to the ritual surrounding Pool 1.

2016 Excavations

During the 2016 field season, excavations began on 12 May 2016 and were completed on 17 June 2016. Throughout the season Clefo Choc, Stanley Choc, Antonio Luna, Juan Antonio Lopes, Marcos Choc, Tyler Ferree, Anuj Amin, Adonis Homes, Jay Breckenridge, Tiyas Bhattacharya, Jess Clotfelter, Aimée Carbaugh, Erin Benson, Jeannie Larmon, and Lisa J. Lucero all worked at M186. One of the major goals of the 2016 VOPA field program was to explore the westernmost room of the M186 structure to further consider the hypothesis that it was a sweatbath. As Kinkella noted in his original survey, the room has been heavily looted, disrupting most of the floor contexts. Since his 2007 survey, the structure has fallen into further disrepair. In 2010, Hurricane Richard struck the Cara Blanca area, causing more of the true arch ceiling to collapse. Because of this, our primary objectives were to gain a better understanding of both the architecture as it may have originally been built, as well as the internal built space, hopefully clarifying the chronology of the structure. All of the measurements of the sweatbath were taken from a datum (UTM 16 Q 0300730, 1927010, 71 m above sea level) that we placed in the south wall of the structure—it is a small nail in the mortar of the wall with pink flagging tape.

The M186 sweatbath (Figures 5.1 and 5.2) has an 3.66 m x 3.66 m “squircle”-shaped interior room oriented at 10° W of north with the remnants of a low dome (or true arch) ceiling that is c. 1.8 m high (Figure 5.3). It sits at the west end of a range structure (c. 40 m in length) with 5 additional rooms (several with looters trenches) (Figure 5.4). Defining the external architecture of the sweatbath proved more difficult than we had anticipated. Much of the external wall had crumbled under the pressure of time, looting, and hurricanes. Two field assistants spent a week trying, to no avail, to find the external wall on the north or south side of the structure. We were able to assess the approximate thickness of the external wall based upon the thickness of the remnants of the west wall and entrance sidewall. If the architecture is consistently thick on all sides, the exterior walls were 0.90 m thick. On the west side, there was a porch or bench-like addition that extended an additional 0.50 m, though it is unclear if this continued on the north and the south side of the structure; the east side of the sweatbath is attached to the rest of the M186 long-range structure. The doorway on the west side of the room appears to have been the only entrance into the sweatbath—at only 0.60 m wide, access to the space was likely relatively restricted.

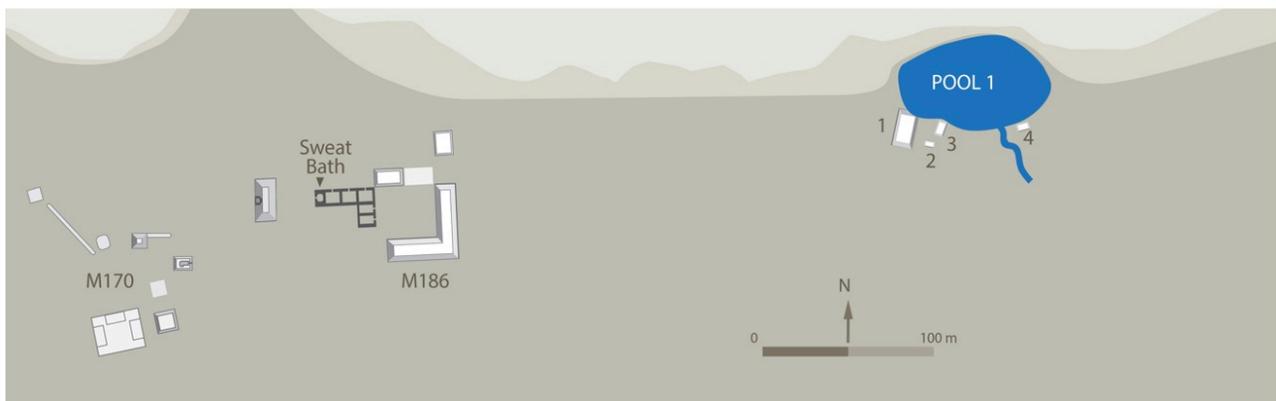


Figure 5.1 M186 and associated settlement



Figure 5.2 Overview of M186 sweatbath looking west.

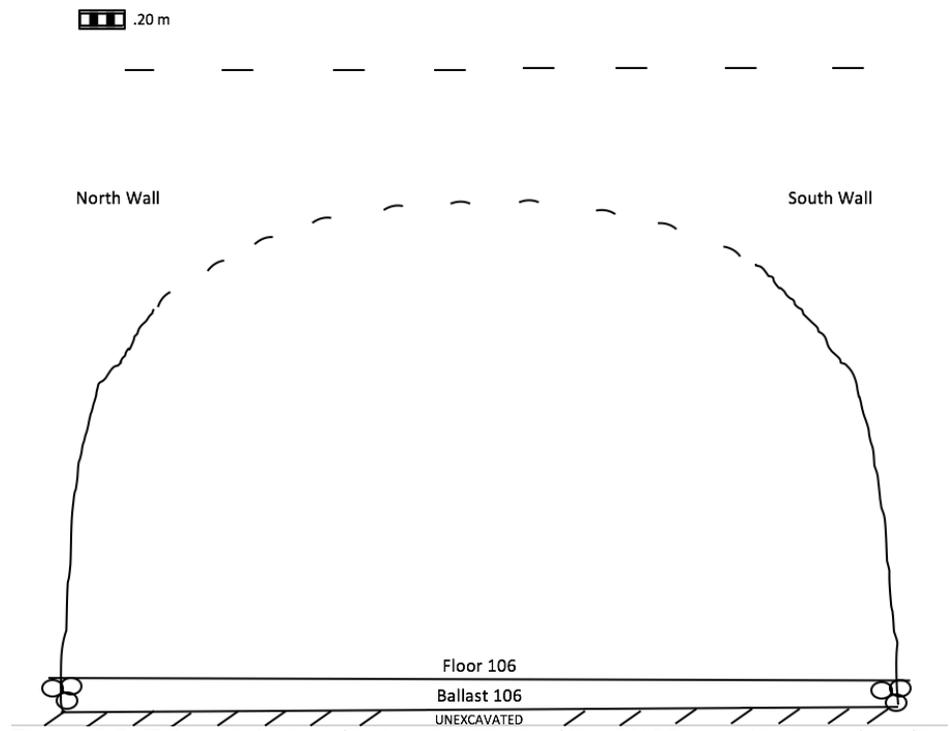


Figure 5.3 Extrapolated profile (dashed line) of the M186 sweatbath roof profile.

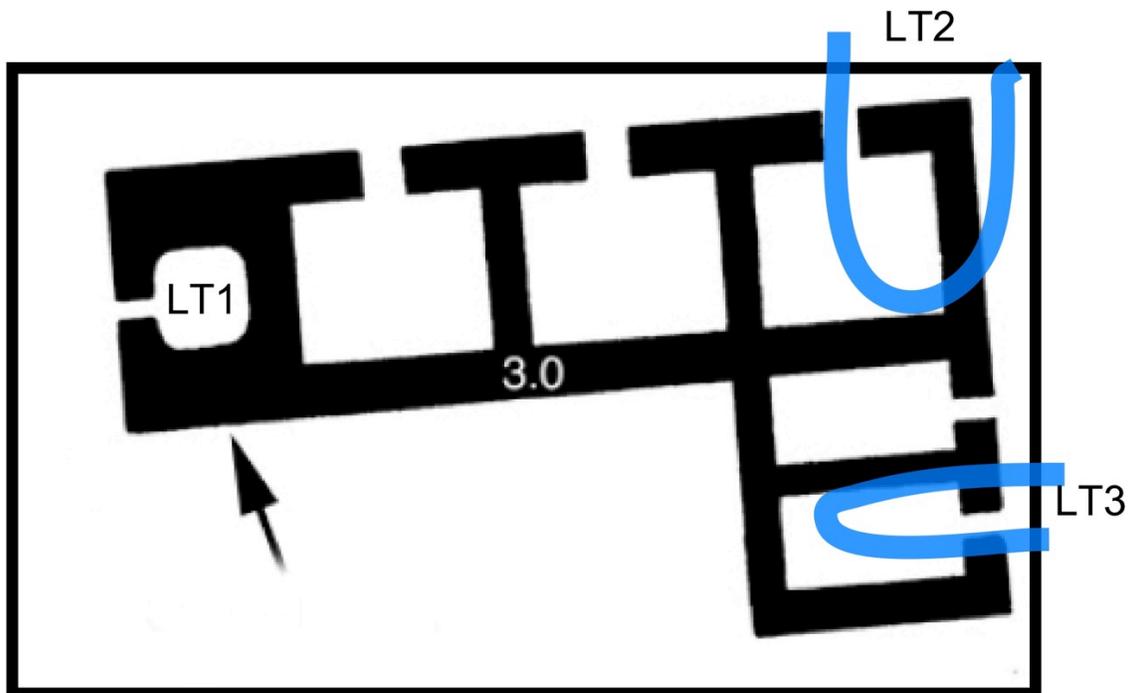


Figure 5.4 Schematic of M186 showing location of looters' trenches (adapted from Kinkella 2009:Figure 5.30)

We first cleared out looters' debris from the room and entrance and identified several plaster surfaces (Figure 5.5). Floor 106, the lowest floor (c. 0.67-0.70 m below datum) c. 4 cm in thickness, was visible around the entirety of the exposed profile. Floor 105 (c. 0.50-0.58 mbd) is just above Floor 106 (Figure 5.6). Floor 105 appears to merge with Floor 106 on the E wall, re-emerging in the northeast corner, but remaining completely absent from the northwest corner—this suggests that Floor 105 might have only been present in some portions of the interior. Though looters had removed the majority of the interior architecture, including nearly all of the floors, they left the southwest corner intact, allowing us to clarify the interior features of the room. We collected artifacts from looters' debris (c. 1 m thick), which we did not screen. Because all artifacts collected from this section were in open contexts, they did not aid much on our reconstruction of the site chronology, though they did assist in determining its function.

The plaster surfaces were clearly complex and we hoped that excavating the intact portion of the structure in the southwest corner might elucidate the stratigraphy. We screened all of this material through a ¼ inch screen. When possible, we separated artifacts from the floor contexts from artifacts from the ballast contexts, though this was not always possible. We first came to plaster surfaces and a feature that were not visible in the profile of the other corners. Floor 102 (FL 102) (c. 0.43-0.58 mbd) and Floor 103 (FL 103) (c. 0.37-0.52 mbd) abut Feature 104 (F 104) (c. 0.35-0.54 mbd) – a box-like feature that is comprised of 20-25 medium-to-large cobbles that, at its widest point, measures 1 x .95 m (Figure 5.7). Floors 102 and 103 were thin and degraded, ultimately impossible to differentiate from the ballast. Feature 104 sat atop Floor 105 (FL 105), which was just atop Floor 106 (FL 106). Interestingly, though we are unable to identify this in the profiles, it appears that Floor 106 was immediately below Floor 105, other than around the edge of the room, where it slants down at 19-20° into the wall (Figure 5.8). While Floor 105 and 106 were visible in the profile, suggesting that these floors and the exterior were constructed simultaneously, Floors 102 and 103, as well as Feature 104, were not visible in profile. This suggests that they abutted the walls and may have been later additions. Beneath Floor 106 was a c. 0.15 m thick ballast and c. 0.50 m thick fill before reaching the topsoil (10YR2/1) at c. 1.40 mbd.

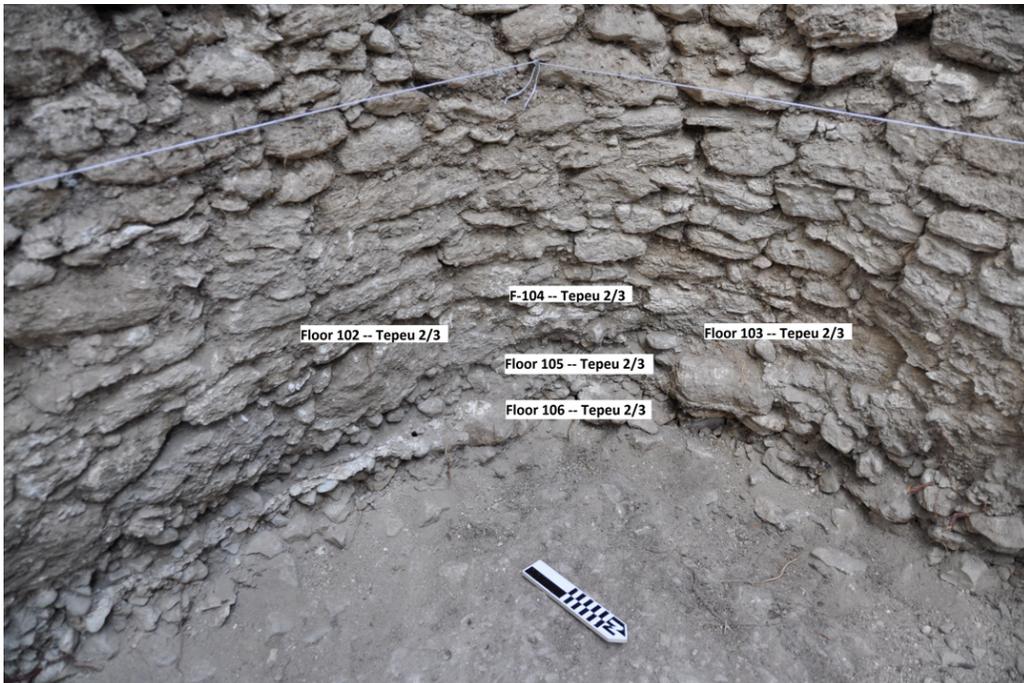
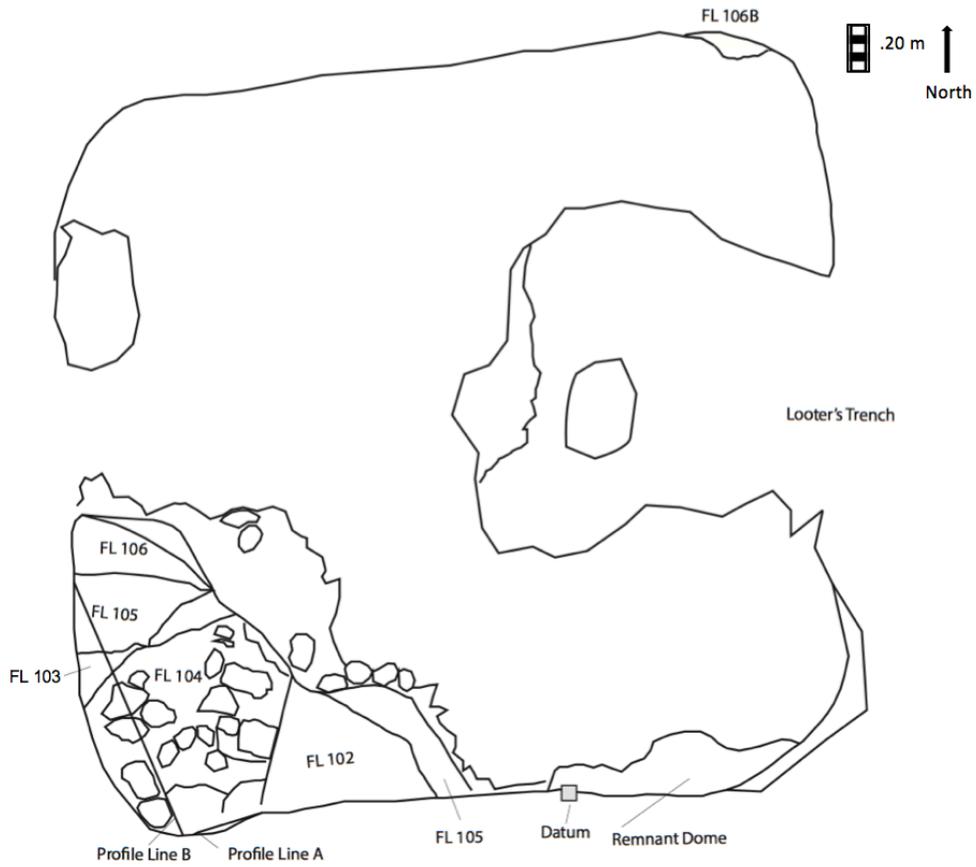


Figure 5.5 Planview (top) and southwest corner (bottom) of the sweatbath showing the chronology and location of plaster surfaces.

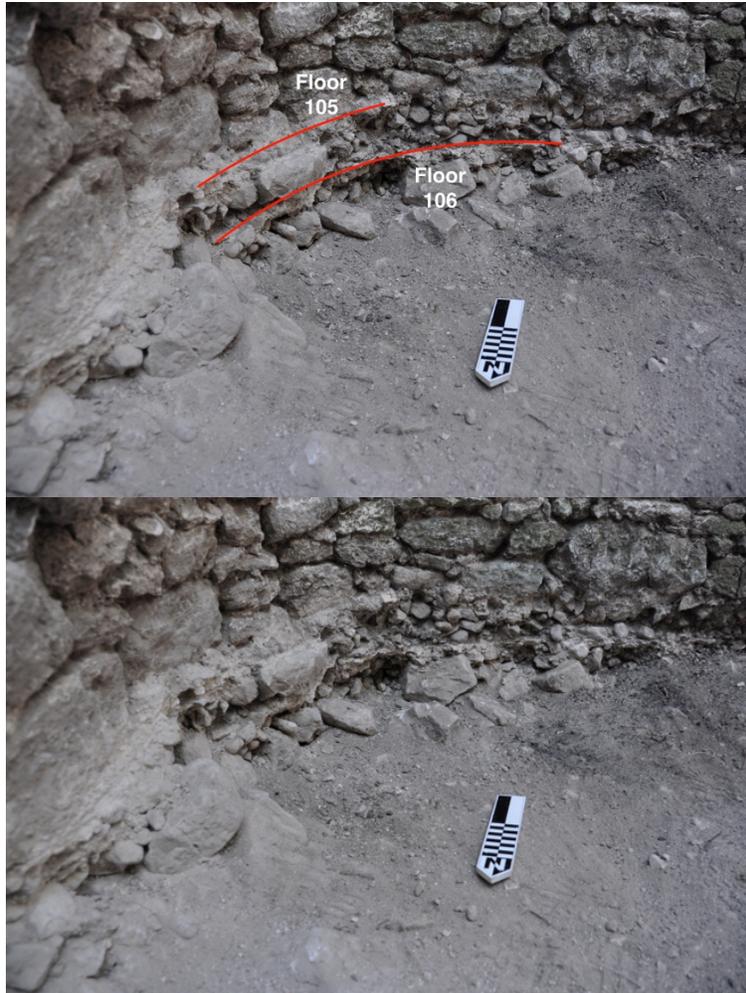


Figure 5.6 Southeast corner of the sweatbath showing Floor 105 and 106 in profile.



Figure 5.7 Feature 104 with Floors 102 and 103 abutting it on either side. The condition of the floors and the feature makes it difficult to distinguish. In this photo, water was used to outline the feature.



Figure 5.8 The slope (possible drainage feature) of Floor 106.

M186 Sweatbath Artifacts and Chronology

Just as at Structure 3 (see Chapters 2, 3, and 6), the M186 Sweatbath appears to have been constructed within a relatively short timeframe. Each excavated stratum dated to Tepeu 2/3 based on type-variety (see Chapter 2), suggesting either a single construction event or multiple, rapid construction events (see Appendix 5.1 for a list of ceramic types). Within the intact contexts we excavated, there were some artifacts of note (see Chapter 3, Table 3.1 for ceramics and Table 5.1 for the non-ceramic artifacts). In Floor 102/103 there was a Saxache Orange Polychrome, mixed in amongst later ceramic types. Floor 102 and Floor 103 abut Feature 104, in which we recovered primarily Tepeu 2/3 types (including Achote Black and volcanic ash tempered sherds), along with seven non-human bone fragments and a primate tooth. A total of nine ceramic sherds, five freshwater shell fragments, seven non-human bone fragments, and one primate tooth were recovered from within the Feature 104. Though nothing can be definitively inferred from the presence of faunal remains here, at Cerén in El Salvador it was noted that there were faunal remains and a rodent incisor recovered from a midden associated with the sweatbath (McKee 2002:93). McKee notes that these incisors have been used for bloodletting. It is worth considering that the remains were purposefully included in the feature and, perhaps, in Floor 105, as noted below.

Table 5.1 Non-ceramic artifacts recovered from the M186 sweatbath.

Catalog #	Strat. # and Description	Artifact Type	Quantity and Notes
2223	SW Corner Bulk above floor	Shell	1 fragment
2226	SW Corner, F 104	Shell	5 fragments
2226	SW Corner, F 104	Faunal Remains	7 non-human bone fragments, 1 primate tooth
2228	SW Corner, FI 105	Shell	6 fragments
2228	SW Corner, FI 105	Faunal Remains	14 non-human bone fragments, 1 unidentifiable tooth

Feature 104 sat atop Floor 105, from which we recovered Early Classic polychrome (likely Saxche Orange), small everted jars from Tepeu 2, 14 non-human bone fragments, and a non-human tooth. The

deepest in-tact context that we excavated, Floor 106, contained primarily Tepeu 2/3 ceramic types, including Daylight Orange, a Late Classic deep ring base, and a possible Sibun Red jar neck. While there was some ceramic material dating to as early as Tepeu 1, most ceramic types were dated to the Late and Terminal Classic periods. There is inevitably a sampling bias due to the extensive looting. It is notable, however, that there is a relative dearth of large, Cayo Unslipped jar rims, suggesting that the construction may have occurred in the Late Classic and abandonment in the Terminal Classic. There is also a relative dearth in the variety of the ceramic assemblage when compared to nearby domestic assemblages (see Chapters 2 and 4), suggesting that the space was repetitively used for a specific purpose.

M186 Sweatbath Features

Though they are frequently mentioned in epigraphic and iconographic data, relatively few sweatbaths have been “securely identified” archaeologically (McKee 2002). Child (2007) notes three primary features of sweathouses and some additional traits. These traits are roughly equivalent to those discussed by Satterthwaite et al. (2005) relating to drainage, heat and steam production, and heat and steam retention. As outlined by Child, all sweatbaths should have the following criterion: a domed, low roof (heat retention), a narrow doorway (heat retention), and a hearth area with hot rocks (heat production) (see also Helmke 2006). An additional trait noted by Child (2007:252) is a sloped floor or other features related to drainage.

- 1.) **Domed Roof** – The domed roof is a trait of sweatbaths meant to help keep in both heat and steam. This feature has been noted at various Maya sweatbaths, including a 1.5 m high domed roof at Structure 9 at Cerén (McKee 2002). At the Cara Blanca sweatbath, much of the roof was destroyed by looters and the 2010 Hurricane Richard. In initial surveys in 2007 and in 2016, the remnants of a low domed roof was noted. We were able to reconstruct the height of the ceiling to c. 1.8 meters from the interior plaster surface at its highest point. Both the domed architecture and low ceiling are indicative of sweatbath structures.
- 2.) **Narrow Door** – Again, a single, narrow doorway would have acted to retain heat and steam within the structure, and perhaps to restrict access to the sacred space. Doorways at recorded sweatbaths range from 0.80 m at Chichén Itzá (Ruppert 1952), 0.70-0.89 m wide at Piedras Negras (Cresson 1938:89), and 0.50 m wide at Cerén (McKee 2002). At M186, there was a single .60 m wide doorway on the west side of the room (Figure 5.9). Though there was not enough of the structure left intact to gauge the height of the doorway, the narrow entrance suggests that it, too, would have been low in order to further retain heat and steam.



Figure 5.9 The west side of the sweatbath showing the 0.60 m wide doorway.

- 3.) **Hearth Area** – The hearth area serves as the heat and steam producing space within the sweatbath. The hearth can take on a number of forms including fire chambers, fireboxes, or fireplaces (Satterthwaite 2005:251). Clearly, the presence of some space for fire or for the placement of already heated stones within the sweatbath is essential. We did uncover a box-like feature (Feature 104) in the southwest corner of the room—the only portion of the interior architecture that was left intact. The box-like feature was comprised of 20-25 medium-to-large cobbles and, at its widest point, measures 1 x .95 m. There was not extensive evidence of burning within the sweatbath, and it is most likely that cobbles were heated outside of the room and brought in to produce steam (see Helmke 2006; Satterthwaite 2005:251).
- 4.) **Additional Feature: Drainage** – Satterthwaite (2005:250) notes that sloping floors are common features of various buildings at Piedras Negras and elsewhere in the Maya region. Alone they cannot be considered an indicator of sweatbath function; however, with the presence of a small, single doorway, one can tentatively support our sweatbath identification. Though some of the sloping floors in sweatbaths gradually slope towards the doorway, Satterthwaite also discusses the “peripheral down-slope”—when there are “noticeable slopes downward to the bases of all the walls, or to some of them. The connotation is that water would collect or run out along the walls, rather than spread out...” (2005:250). At M186, we noted that Floor 106 slopes down 19-20° into the southern wall. Of course, there was not enough of the floors surfaces left intact to confirm that this is a drainage feature. In concert with the other sweatbath indicators, we can tentatively identify this feature as a method of draining excess water.
- 5.) **Additional Feature: Interior and Exterior Benches** – Satterthwaite (2005:255) notes ethnographic examples of benches within the sweatbaths and suggests that they functioned to raise users towards the ceiling where the heat and steam would have been most effective. The profile of the interior of M186, as well as what little of the plaster surfaces there was left intact, suggest that there may have been bench like surfaces (Floors 102 and 103) in at least the corners of the room based on their height off the floor and distance from the ceiling—it would have been only c. 0.25 m off the floor and c. 1.25 m from the ceiling. Their secure designation, however, is impossible with the state of disrepair within the structure. Though it is not a definite identifying feature of sweatbaths, there are examples of exterior benches extending from the outer wall of sweatbaths. Structure 9 at Cerén has a bench that lines most of the exterior of the structure (McKee 2002:90). Various ethnographic examples have benches in attached rooms that are exterior to the sweatbath itself (e.g., Cresson 1938:99; Satterthwaite et al. 2005:244). Cresson (1938) notes that these benches would have been ideal places for people to rest after/before sweatbath use, or to lay items necessary for the process of purification. Although we have not excavated the exterior of the M186 sweatbath and do not know if it has an exterior enclosure, there was an extension on the west side of the exterior just south of the entrance that extended approximately 0.50 m from the structure wall. This is the only portion of the exterior that we were able to expose, and so it is unclear if this extension continued around the remainder of the structure. It cannot be confirmed, but it is possible that this served as an exterior bench, similar to those noted in both ethnographic and archaeological examples elsewhere.

In sum, archaeological and comparative evidence strongly indicates that the squircle room on the west side of the M186 range structure is a sweatbath.

Discussion and Conclusions

Sweatbaths have been identified at a number of sites in the Maya region dating from the Preclassic to Postclassic. As noted earlier, the “secure” identification of sweatbath is problematic. They are, perhaps, most common at Maya centers during the Classic Period (250-900 CE) (Child 2007). Though they are frequently associated with larger centers, there are examples (see McKee 2002) of sweatbaths that are in rural settings and not associated with elites or centers.

Ethnographically, sweatbaths are still used by Maya in purification rituals—of their own bodies and of the structure itself. A necessary feature of sweatbaths is hearth area for hot rocks. Stuart (1998) has hypothesized that the vibrancy of the fire used in the hearth area is transferred to the structure itself. As the structure is ensouled, it is simultaneously cleansed. The heat from the hearth both brings life to the structure and sanctifies it for its ritual life. Maya, too, have used sweatbaths in the process of purification.

Child (2007) notes that there are numerous ethnographic accounts of purifying oneself before participating in rituals of any kind (see Bucko 1998:82)—but particularly being transported to the supernatural world or during transformation rituals (Bellas 1997:123-125).

Lucero et al. (n.d.) have hypothesized that the Cara Blanca pools are part of a ritual circuit that was established during the Late and Terminal Classic periods. Its use intensified in part as a response to rulers' failures to communicate with and placate the deities. As Lucero and colleagues note, ceremonial circuits are paths that Maya walked connecting built architecture in a way that makes explicit their relationship to that space—including both the architecture and sacred, natural spaces (Vogt 1969:144, 149, 390). Because *cenotes* are considered portals to the underworld and a space in which Chahk, the rain god, resides, by reaffirming their relationship to this landscape, the Maya were also strengthening their connection to, and their ability to communicate with Chahk, ancestors and other gods.

Lucero and Kinkella (2015) have suggested that Cara Blanca Pool 1, the deepest of 25 pools in the circuit at 60+ meters, acted as a space in which Maya could better carry out this communication. By approaching the *cenote* themselves and forgoing the “middlemen” of the rulers, travelers entered the liminal space of Cara Blanca where they accessed the threshold to the otherworld. The M186 sweatbath—positioned roughly 400 m to the west of Pool 1—might have been used as a place of purification for Maya before they undertook the journey of the Cara Blanca circuit. Their first stop would likely have been Pool 1, where their purification was most essential for rituals in which they communicate with the otherworld.

In conclusion, many of the features present at Cara Blanca M186 indicate that it functioned as a sweatbath. When compared to the features of other known archaeological and ethnographic sweatbaths (see Satterthwaite 2005:253 and Table 5.2), the M186 sweatbath dimensions and features—including the interior dimensions, interior height, and the doorway width—fall well within the range of other recorded sweatbaths. The presence of the sweatbath away from any center or residential space further suggests the ceremonial significance of the Cara Blanca landscape. If the hypothesis that these pools were experienced as a ceremonial circuit during a politically and environmentally tumultuous period is correct, this sweatbath represents the place of purification along the path ritual guidance and reprieve.

Table 5.2 Comparative lists of ethnographic and archaeological sweatbath dimensions, adapted from Satterthwaite (2005:253), McKee (2002:89-91) and Jones (1996:75). All dimensions in meters unless otherwise noted.

Identification	Interior length	Interior width	Maximum Height	Area (sq. m.)	Doorway Width	Doorway Height
MODERN						
San Martin Teotihuacan	?	?	?	?	0.50	0.70
Tepoztlán	1.60	1.80	1.10	2.90	0.50	0.60
Chichicastenango 1	1.80	1.80	1.50	3.10	0.60	0.60
Milpa Alta 1	2.00	2.00	1.10	3.60	0.50	0.60
Aguacatán	2.40	2.10	1.20	4.90	1.00	0.90
ANCIENT						
Str. P-7-1 st -B, Piedras Negras	3.30	2.20	2.70	7.30	0.80	1.10
Str. J-17, Piedras Negras	4.00	3.00	?	11.80	0.80	?
Str N-1-1 st -B, Piedras Negras	4.80	3.30	?	15.60	0.70	1.00
Str. 9 at Cerén	3.65	3.83	1.00 – 1.80	8.00	0.40-0.50	0.80

Str. 5E-22, Tikal	5.14	2.75	2.40	14.14	0.76	1.55
M186, Cara Blanca	3.65	3.65	1.80	13.32	0.60	?

Acknowledgements

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Appendix 5.1 Pool 1 M186 Sweatbath 2016 Ceramic Types

Catalog #	Site & provenience	Ceramic type, info	Time period
2221	M186 Sweatbath E Wall Collapse	Red-slipped body	Late Classic
2222	M186 Sweatbath General wall clean-up	British Honduras Volcanic Ash Red bowl	Tepeu 2-3
		Small pedestal base, thin=> ~Achote Black	Tepeu 2-3
		Smaller jars	Tepeu 2
2232	M186 Sweatbath NE Corner Below FL 106	Red neck jar (~Sibun Red neck)	Tepeu 2-3
		Monochrome red; over-fired or burnt	Classic
		Deep ring base	Late Classic
			Most Tepeu 2-3
2220	M186 Sweatbath SE corner Looter's debris	Over-fired, interior offset w/ orangish paste (or Vaca Falls)	~Early Classic
2231	M186 Sweatbath SE Corner Top of FL 106	Looks like trying to make Daylight Orange; goes with over-fired deep ring base (2232?)	Begins in Tepeu 2
2230	M186 Sweatbath SW Corner Ballast 105B	Mountain Pine Red ridged plate	Tepeu 1
		Monochrome red bowls	Late Classic
		~Fire-clouded Tinaja Red jar sherd	Late Classic
2223	M186 Sweatbath SW Corner Bulk above FL	Vaca Falls Red bowl	Tepeu 2-3
2226	M186 Sweatbath SW Corner Feature 104	Vaca Falls Red bowl	Tepeu 2-3
2224	M186 Sweatbath SW Corner FL 102	Same polychrome as 2228, ~Saxche Orange Polychrome; interior slipped	Tepeu 1/Tiger Run/early Late Classic—even Tepeu 2
2228	M186 Sweatbath SW Corner FL 105	~Saxche Orange Polychrome	Tepeu 1/Tiger Run/early Late

			Classic
		~Tinaja Red jar body	Late Classic
		Small everted jars	Tepeu 2
		Monochrome red sherd	Late Classic
2218	M186 Sweatbath W Doorway Looter's debris	Everted jar	Terminal Classic
		Jar rim	Early Classic
		Bowl	Early Classic
		Large pedestal ring base	Late Classic
2225	M186 Sweatbath W Wall FL 103 ballast	Tinaja Red jar rim w/ horizontal fluting (Chilan fluted? In Achote Black Group); hard to say—very eroded	Tepeu 2-3

Chapter 6 Cara Blanca Explorations: Pool 1 Structure 3 and Related Investigations

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The 25 pools of Cara Blanca each offer a unique glance into the built and unbuilt world of Terminal Classic (c. 800-900 CE) central Belize. As several prolonged and severe droughts struck much of the Maya area during this period, rulers' power started to fade and Maya increasingly sought more direct and effective communication with Chahk, the rain god. The hypothesized ceremonial circuit, within which the Cara Blanca pools fill an essential role (Lucero et al. n.d.), served as a space for Maya to engage with souls of persons, human and other-than-humans, and materials through which the Cara Blanca space is animated. Because *cenotes* are considered portals to the underworld and spaces within which Chahk resides, Lucero and Kinkella (2015) have hypothesized that Structure 1 (Str. 1) at Pool 1, the deepest of the pools (60+ meters), acted as a water temple and was a particularly ritually potent part of the ceremonial circuit. The Valley of Peace Archaeology (VOPA) 2014 excavations of the nearby Structure 3 (Str. 3) indicate that it, too, hosted frequent rituals that were likely related to Str. 1 (Larmon and Nissen 2015) (Figure 6.1). During the 2016 field season, the VOPA field crew continued excavations of Str. 3. This structure was originally identified by Kinkella (2000) and was subsequently noted in later VOPA explorations of Pool 1 (Kinkella 2008; Kinkella 2009:153-157). Lying just 22 m to the southeast of Str. 1 (see Figure 5.1), Lucero and colleagues (n.d.) have hypothesized that this platform is the staging area and focal point for rituals performed at Pool 1. Excavating this structure, and exploring the nearby Structure 2 (Str. 2), allows us to better understand the chronology and nature of site use.



Figure 6.1 Overview of Str. 3 looking north

Structure 3 Excavations

In 2014, we tested Str. 3, beginning with a test pit in the middle of the mound and eventually extending the excavation unit to expose what appeared to be a 5.2 x 1.8 m platform covered in, first, medium sized boulders, then a total of 3826 ceramic sherds (Larmon and Nissen 2015). The platform and many of the ceramic sherds were burned and there was no evidence of any complete vessels. All of these indicators (boulders, broken vessels, burning) indicated to us that the Maya took great effort to

terminate Str. 3. Due to time constraints, we did not continue excavations into the structure and were unable to clearly find the edges of the platform and collect all of the ceramic from atop the platform. Though we were unable to obtain a valid radiocarbon date, the ceramic chronology from the sheet of sherds atop the platform indicated that the platform was terminated in the Late to Terminal Classic period. Because of the established chronology of the nearby Str. 1, we hypothesized that Str. 3 was built and used in the Late to Terminal Classic period, suggesting rapid construction and relatively short-term use.

Excavations in 2016 began on 12 May and were completed on 17 June. Throughout the season Cleofo Choc, Stanley Choc, Antonio Luna, Juan Antonio Lopes, Ernesto Vasquez, Marcos Choc, Carlos Vasquez, Marcial Artega, Tyler Ferree, Anuj Amin, Adonis Homes, Jay Breckenridge, Tiyas Bhattacharya, Jess Clotfelter, Aimée Carbaugh, Erin Benson, Jeannie Larmon, and Lisa J. Lucero all worked at Str. 3. Our major goals were to complete the definition of Str. 3 and obtain a relative chronology for the structure, as well as a better idea of how the structure was used. We also hoped to briefly explore Str. 2, which is about four meters to the southwest of Str. 3, to better understand how all of the structures on the plaza at Pool 1 are connected.

We began the 2016 excavations at Str. 3 with the assumption that the platform had been nearly completely exposed in 2014—or that we at least had an accurate idea of the extent of the platform. We were, however, soon proven mistaken. On our first day, Stanley, Carlos, Marcial, Erin, and I worked on top of Str. 3 in an attempt to clearly define the east edge of the structure. We thought that we had located this edge during the 2014 field season, but it appears that that was merely a break in (or degradation of) the floor and it continued further east. Although there is a nice wall delineating the west side of the structure, this was not the case on the east. Stanley also found the wall on the west of the structure that continues further north than previously thought. Again, this inconsistency is likely due to the degradation of the plaster surface from burning and general weathering.

The expansion and clarification of the platform edges ended up taking much more time than expected. In fact, it became impossible to clearly define the east and south sides of the platform. Although we spent a week attempting to identify a clear edge and although the plaster floor was much degraded and often absent, the surface continued to expand and slope downwards on its east and south side. It became apparent to us that platform was a continuation of the natural slope and the east and south edges, melting into the landscape. The rough final dimensions (Figure 6.2) of the platform are 7.46 x 3.65 m and 0.8 m tall. With the entire building exposed, we were able to re-check the orientation and found that that structure is oriented 15° east of north.

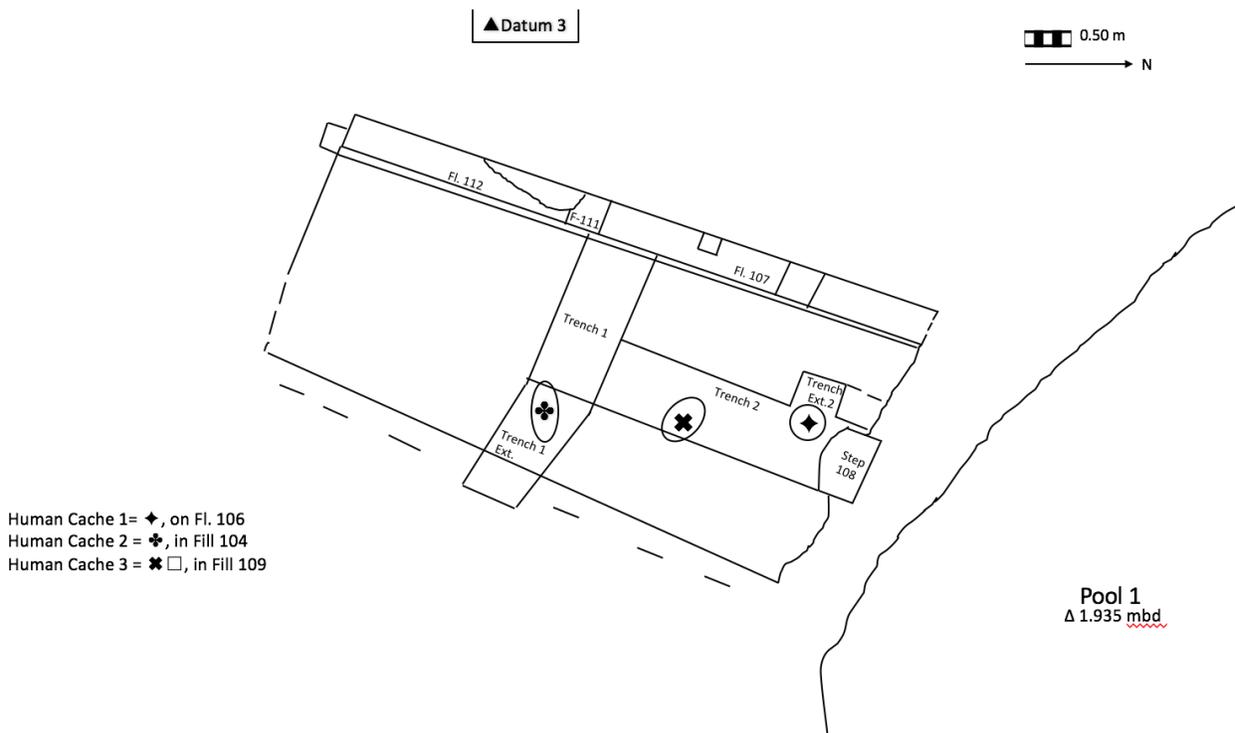


Figure 6.2 Planview of Structure 3.

While exposing the platform surface, all artifacts were left *in situ* (see Chapter 3 for a description of the ceramics). In addition to the 3826 ceramic sherds collected from the surface in 2014, we recovered 138 more sherds from directly on top of the platform (Floor 102) and 1108 more sherds from the topsoil (101) above the floor. It is likely that many of these sherds were also directly on top of the floor, but were disturbed. In total, 5,072 ceramic sherds were collected from Floor 102 and the topsoil immediately adjacent during the 2014 and 2016 field seasons. In general, more lithic materials were noted during the 2016 excavations, including a chert biface stem, an obsidian blade, from the topsoil, and two mano fragments from the topsoil, as well as 1 metate (in two pieces) from directly atop Floor 102.

In order to further understand Str. 3 construction and function, we excavated two 1-m wide trenches (1.89 m long east-west, and 4.23 m long north-south) in the northern portion of the platform that met in the center to expose any features beneath Floor 102 (Figure 6.3). Based on the ceramic chronology, the structure appears to have been constructed within a relatively short timeframe (Tepeu 2/3 or late Late Classic/Terminal Classic) (see Chapter 2 and Appendix 6.1), but there are multiple construction events (Figure 6.4). Underneath Floor 102 was another plaster floor (Floor 106), two ballasts (Ballasts 102, 106), and several fill layers (Fills 103, 104, and 109) (Figure 6.5). Important to note is that three sets of human remains were found within Str. 3 (HC on the diagram). We are referring to these interments as Human Caches (HC) rather than burials because there were very few, if any, grave goods found with them. This is unusual for Classic Maya burials and suggests that these individuals “could have served as deposits or even caches—not necessarily as sacrificial ‘victims,’ but as revered personages” (Lucero et al. n.d.:10). The Maya built Str. 3 directly on the natural topsoil surface; we exposed topsoil beneath Fill 109. They also added a step (Step 108) to the center edge on the north side c. 1 m from the water, from which the Maya likely made offerings into the pool. Between Ballasts 102 and Fill 103 in the north-south trench, we exposed a boulder feature (Feature 105, described below). We also exposed part of two plaster floors abutting the west side of Str. 3 (Floors 107 and 112), as well as a cut-limestone low wall that needs additional excavating to further our understanding the relationship between Str. 3 and the rest of Pool 1 architecture. Most floors had burned areas; either the Maya burned something on the floors, or burned areas are further evidence of termination rituals.

We placed Datum 3 (UTM 16Q 0300947E, 1927120N, 63 m above sea level) 1.75 m to the west of the structure so that we could accurately map all features. This was tied into Datum 1 on Structure 1—at 127° east of north, Datum 3 is 23.53 m from and 2.85 m below Datum 1.



Figure 6.3 Structure 3, Trench 1 and Trench 2 demarcated by orange string.

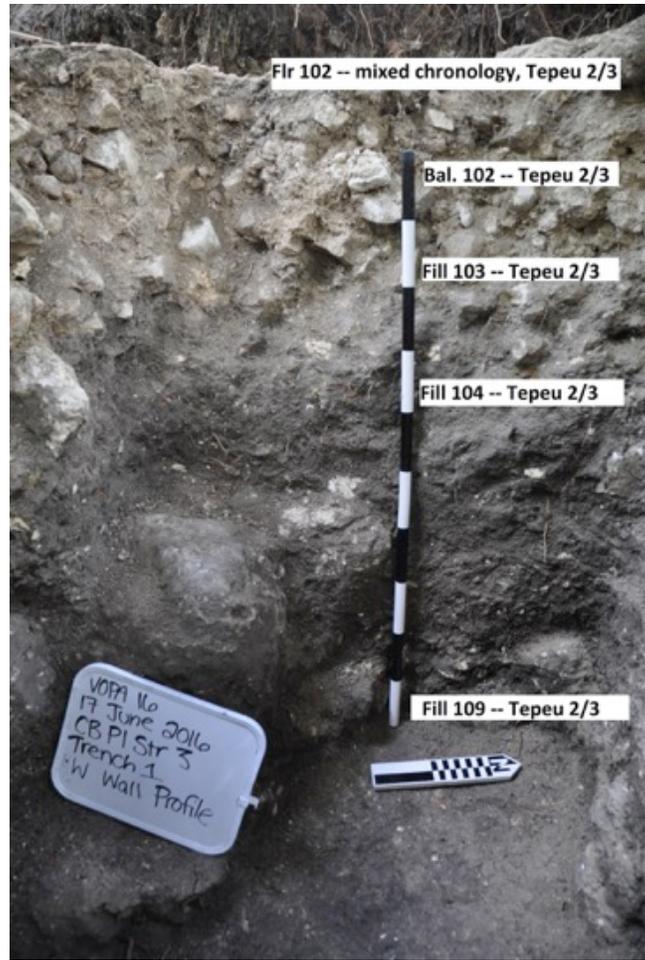


Figure 6.4. General stratigraphy and chronology of Structure 1. Trench 1 west wall profile.

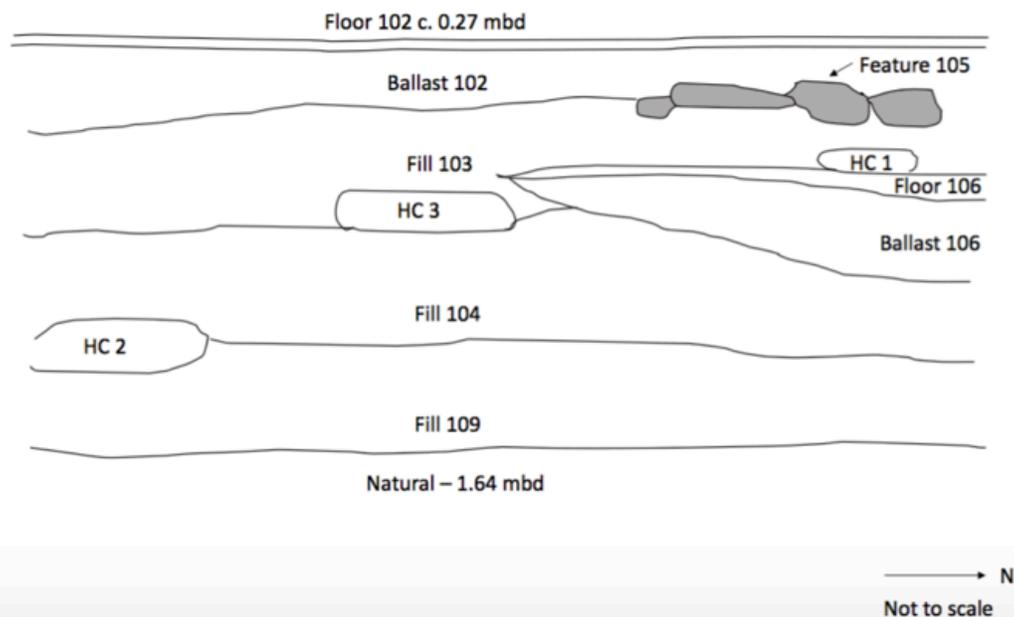


Figure 6.5 Schematic showing the stratigraphy of Str. 3 showing placement of Human Caches (HC)

Trench 1

Trench 1 (1 x 1.89 m) was placed central on the west wall and extended east towards the center of the structure. All materials were screened through a ¼ inch mesh. Floor 102 is the burned plaster surface (10YR4/1 Dark Grey, 0.20 mbd) that alternated between good preservation and nearly complete degradation. Floor 102 was roughly 0.03 m thick, followed by Ballast 102 (10YR 6/2 light brownish grey, 0.16-0.30 m thick), and Fill 103 (10YR6/2 light brownish grey, 0.15-0.30 m thick). These strata consisted of 60% angular/subangular small-to-large cobbles. The floor and ballast were undulating and rather difficult to distinguish and consequently were not separated during excavation. A total of 100 ceramic sherds and seven bone fragments were collected from these strata.

Fill 104 (10YR3/2 very dark greyish brown to 10YR5/2 grayish brown, 0.665-1.41 mbd or 1.34 meters thick) is immediately below Fill 103. Fill 104 consists of less than 10% small cobbles and a silty clay loam. A total of 418 ceramic sherds, 1 jute shell, 12 other shell fragments, 3 bone fragments (1 burned), 1 obsidian microflake, 20 chert flakes (some of which appear to be biface thinning flakes), 2 chert nodules, and two charcoal samples were collected from Feature 105 (Table 6.1). The charcoal samples (Charcoal 1 and Charcoal 2) were collected from 0.835 mbd and .850 mbd, respectively.

The final stratum in Trench 1 is Fill 109 (10YR3/1 very dark grey, 1.41-1.69 mbd or 0.28 meters thick). Fill 109 consisted of a clay silt loam and was much darker and more compact than Fill 104. Though we still found artifacts, there were generally less—only 14 ceramic sherds and a single red chert flake. Perhaps most significant about Fill 109 is that the top of a human cranium, Human Cache (HC) 2, was noted on the east side of the trench. HC 2 was placed in Fill 109, indicating that the Maya dug into this fill in order to place the remains. HC 2 is a primary interment of an adult male. His legs are tightly flexed and resting on his chest, suggesting a bundled burial. His cranium is located directly central in the platform and is cradled within lined limestone (see Chapter 7 for a more detailed discussion of the HC). The Maya had tightly pack stones around this individual, even going so far as to shape stones to fit in between other stones (e.g., removing a flake from each side, creating a triangular shaped stone inserted between two rounder stones). Though there no grave goods near the remains as with the other interments, there was a metate fragment against the right side of his face, and a 23 x 19 cm rimless burnt base in the fill immediately above HC 2 (Figure 6.6). This base had been burned, whether in use before being brought to the ceremonial space or as part of the dedication of Str. 3. Though there were not grave goods per se with this individual, his burial and dedication appears to have been quite intentional and labor intensive. We reached natural soil beneath Fill 109 and came down upon a line of vertical stones oriented roughly horizontal to the HC 2 cranium (Figure 6.7).



Figure 6.6 Rimless base in fill immediately above HC 2. The north wall is on the top of image

In order to fully expose HC 2, we had to extend the trench east c. 1 meter. To expedite excavations, and because we had a good idea of context and chronology from both trenches, we did not screen material from this extension, though we did collect some diagnostic artifacts. Artifacts include: 1 burned orange sparkly cobble, 1 possible tufa cobble, 4 bluish chert chunks, 3 chert flakes (2 fire cracked, 1 bluish), 2 annular ring bases, 1 flange, 2 sherds w/ medial ridge, 16 necks (several that appear to go with jar rims from Fill 104—everted rims including one w/ horizontal striations and 14 with vertical striations), 11 jar rims (different ones—several from the same jar); 1 dish rim, 4 plate rims (3 w/ medial ridge); 3 bowl rims (1 w/ medial ridge, 1 straight-sided), 2 narrow orifice thin-walled rims, 1 vase or narrow orifice jar rim; 23 red-slipped and 81 unclipped body sherds. From the fill above HC 2, we recovered 70 ceramic sherds, 1 shell fragment, 1 chert nodule, and 2 chert flakes (see Table 6.1 for additional provenience information).



Figure 6.7 Line of stones nearly abutting Human Cache 2

Trench 2

Trench 2 (2.56 x 1 m) runs from the north edge of the structure south and joins Trench 1 in the center of the platform. The stratigraphy of Trench 2 is more complicated than Trench 1, with features suggesting that it was the focal point of activity on the platform. The stratigraphic layers are named in regard to Trench 1, so Fill 104 in Trench 1 is the same layer as Fill 104 in Trench 2. All materials were screened through a ¼ inch mesh. Floor 102 and Ballast 102 contexts, again, were not separated during excavations in Trench 2; however, we were able to separate the artifacts from each stratum. We recovered 10 ceramic sherds and two faunal bones from Floor 102 (10YR4/1 dark grey where burned and 10YR7/3 very pale brown where not burned, 0.125-0.600 mbd, or 0.475 m thick), a burned and semi-degraded plaster floor. We recovered 80 ceramic sherds and one burned faunal bone from Ballast 102 (10YR4/3 dark brown). Within Ballast 102 and on top of Fill 103, we uncovered Feature 105 (Figure 6.8)—a semi-circular slightly cross-shaped formation of 11, flat medium-to-large boulders. From within Feature 105, we recovered 79 ceramics, two burned faunal bones, a single chert nodule, and two charcoal fragments (from 0.29 and 0.30 mbd, or c. 0.10 m thick). The Maya constructed this feature at the north side of the structure, closest to the pool. Given its position on the structure and within the stratigraphy, it could have served as additional ballast support for multiple processions to the edge of the pool and concomitant rituals (e.g., depositing items into the pool).



Figure 6.8 Feature 105 – Top: overview, Bottom: close-up of possible floor support made of flat boulders in a roughly cross shape

Fill 103 (10YR5/2 greyish brown, 0.49-0.73 mbd, or 0.24 m thick) is a silty clay loam just below Feature 105. A total of 74 ceramic sherds, 1 chert pulley, 1 chert biface fragment, and 1 worked chert nodule were recovered from Fill 103. In the northern portion of Trench 2, plaster Floor 106 (10YR4/2 dark greyish brown, 0.62-0.90 mbd, or 0.28 m thick) is immediately beneath Fill 103. This floor disintegrates towards the southern portion of the trench. It measures 1 x 2 m (including an extension onto Step 108; see below) and has a 0.18 m ballast. We recovered three ceramic sherds from Ballast 106—the remainder of the artifacts were collected without being distinguished from Fill 104. From this mixed context we recovered 33 sherds. HC 1 was located directly on top of Floor 106 and consists of tightly flexed individual, likely in its primary place of burial. This individual is of an indeterminate sex and has an estimated age of 20-35 years old. Interestingly, the Maya dug slightly into

Table 6.1 Non-ceramic artifacts from Str. 3.

Catalog #	Strat. # and Description	Artifact Type (* = exported)	Quantity and Notes
2234	NE Corner Topsoil	Lithic	1 pink, fire-heated nodules
		Groundstone	1 metate fragment
2235	S Central (portion 3) of Str. 3 Topsoil	Lithic	Chert biface stem
2236	SE Portion of Str. 3 Topsoil	Lithic	1 blue chert biface point; 4 blue chert nodules; 5 pink, heat-treated cherts nodules; 1 worked rose chert nodule
		Obsidian	1 blade
		Bone	1 non-human fragment
2237	N Central (portion 2) of Str. 3 Topsoil	Lithic	6 white/blue chert nodules, 2 white chert flakes, 1 rose chert flake
		Shell	1 Jute
2238	NW Corner Topsoil	Groundstone	2 mano fragments
		Lithic	1 chert nodule
		Bone	1 non-human fragment
2240	W of W Wall Topsoil	Groundstone	1 mano fragment
2241	W of W Wall Above floor	Lithic	1 chert spall with worked surface
		Shell	1 Jute
2242	W of W Wall, NW Corner	Lithic	1 chert flake
2244	W of W Wall, By Trench 1	Lithic	1 shaped quartzite nodule, 1 worked blue chert nodule
2248	Top of Floor 102, Cluster 4	Groundstone	1 metate (in two re-fit pieces)
2251	Trench 1, Floor 102 Ballast	Bone	7 non-human fragments
2252	Trench 1 Fill 104	Lithic	14 brown/tan chert flakes, 4 blue chert flakes, 2 rose chert flakes, 2 brown/tan worked chert nodules
		Bone	1 burned, 2 not burned non-human fragments
		Obsidian	1 microflake
		Shell	12 shell fragments
2253	Trench 1 Fill 109	Lithic	1 rose/red chert flake
2255	Trench 1, Fill 104, Cluster 8	Shell	1 Jute
2256	Trench 2, Floor 102	Bone	2 faunal bone fragments
2257	Trench 2 Floor 102 Ballast	Bone	1 burned faunal bone fragment
2258	Trench 2 Feature 105	Bone	2 burned faunal bone fragments
		Lithic	1 chert nodule
2259	Trench 2 Fill 103	Lithic	1 chert pulley, 1 chert biface fragment, 1 worked chert nodule
2262	Trench 2 Fill 104	Shell	3 shell fragments
		Lithic	3 chert flakes
2267	Trench 1 E extension above stones covering Human Cache 2	Shell	1 Shell fragment
		Lithic	1 chert nodule, 2 chert flakes
2275	Fill 104 under Wall 110	Obsidian	2 blades
		Lithic	1 unifacially worked chert flake, 5 chert flakes
2163	Trench, Burial 2 Clean-up	Shell	1 shell fragment, 2 modified marine shell fragments
2169	Floor 102	Charcoal*	1
2170	Floor 102 Ballast	Charcoal*	1
2171	Trench 1, Fill 102	Charcoal*	Sample 1, 0.835 mbd
		Charcoal*	Sample 2 0.850 mbd
2172	Trench 2, Feature 105	Charcoal*	Sample 3, 0.290 mbd
		Charcoal*	Sample 4, 0.305 mbd
2173	Trench 2, Fill 104	Charcoal*	Sample 5, 0.850 mbd
		Charcoal*	From near HC3
2174	Trench 1, Under Wall 110 Fill and Ballast	Charcoal*	1
2175	Trench 1, Fill 104 under Wall 110	Charcoal*	1

Floor 106 and placed HC1 directly southwest of Step 108, indicating that individuals using Str. 3 and Step 108 would have had to pass over HC 1. In order to record the entirety of HC 1, we put a 0.50 x 0.50 m extension on the northwestern side of Trench 2 and excavated to just below the level of the Human Cache. This stratigraphy was congruent with the rest of Trench 2 and we recovered little material (see Chapter 3 and Table 6.1).

Floor/Ballast 106 transitions to Fill 104 in the southern portion of the Trench 2. Fill 104 (10YR3/2 very dark greyish brown to 10YR5/2 grayish brown, 0.84-1.27 mbd, or 0.43 m thick) is much the same as in Trench 1, silty clay loam with less than 10% small cobbles. We recovered 176 ceramic sherds, 3 chert flakes, 3 shell fragments, and two charcoal fragments (0.85 mbd) from Fill 104. HC 3 was just on top of Fill 104 and covered in stones that were likely part of Fill 103/Ballast 106. HC 3 is, again, the primary interment of a young adult (20-35 years old) of indeterminate sex. Though there were no artifacts directly associated with HC 3, there was what appeared to be 20 tiny pieces (Cluster 9¹) of a tan paste vessel at the bottom of Ballast 106 just above HC 3. These sherds were not diagnostic and were more associated with the ballast than the HC. Finally, Fill 109 (10YR3/1 very dark grey, 1.27-1.64 mbd, or 0.37 m thick) was beneath Fill 104 and on top of natural subsoil. Fill 109 is a clay silt loam and we only excavated to this strata in the southern portion of the trench. We recovered 10 ceramic sherds and a single clay rattle ball from Fill 109.

Step 108. The Maya added a step (Step 108) in the center edge of the structure just c. 1 m from the edge of the pool (Figure 6.9). Feature 105 was located just south of this step—likely in the location on the platform that people were standing most frequently as they approach the step. From this central location, it is possible that Maya threw offerings into the depths of Pool 1. Step 108 (10YR4/2 dark greyish brown, 0.395-0.760 mbd) measures c. 0.57 x 0.80 m and is a silt loam surrounding primarily small-to-medium sized cobbles and small boulders. It was built on top of Floor 106. Only 5 ceramic sherds were collected from Fill 104 beneath Step 108. We used snorkels to explore under Step 108 in Pool 1. We found that there was a shelf at a depth of c. 1.33 meters with ceramic sherds that likely eroded into the pool. It was difficult to get a good photograph of the shelf and the ceramics but they were non-descript body sherds and a single neck fragment (not collected).



Figure 6.9 View of Step 108 looking N towards Pool 1

¹ Nine ceramic clusters were noted during excavations. As excavations continued and during post-excavation analysis, we determined that Clusters 1-7 were part of the ceramic sheets on top of Floor 102. Cluster 8, found in Trench 1 Fill 104, was a tan paste bowl that did not have any rim sherds associated—a *jute* was associated with the vessel.

Wall 110. We began excavations on the west side of Str. 3 by removing the western wall (Wall 110) from the western edge of Trench 1. Wall 110 ran the western edge of the structure and was c. 0.35 m wide (Figure 6.10). The wall is built into Floor/Ballast 102 and abuts Wall 110. The stratigraphy beneath the wall then mirrors Trench 1. We recovered charcoal from Ballast 102 and Fill 104 under Wall 110, though no below datums were recorded for these samples. Two ceramic sherds were recovered from within Wall 110, both dating to the Classic Period.

West of the West Wall. We came upon Floor 112 just to the west of Str. 3 on the south end of the platform. We were unable to follow this out west due to time constraints. Moving north from Floor 112 and just west of Trench 1 was an interesting feature (Feature 111) composed of c. 6 large cobbles-to-small boulders (Figure 6.10). Feature 111 (F 111) is possibly part of a low wall that extends into the unexcavated bulk west of Str. 3, though we did not have time to continue exploring. Floor 107 is just west of the north part of Str. 3, but is slightly higher than Floor 112 in the south. Again, we were unable to follow this floor out to the west. In future seasons, this will be a fruitful area of exploration because it will help clarify the relationship between Strs. 1 and 3. From just above Floor 107 and Floor 112, we recovered 117 ceramic sherds. It is likely that these ceramics are temporally related to the mass of ceramics recovered from on top of Str. 3.

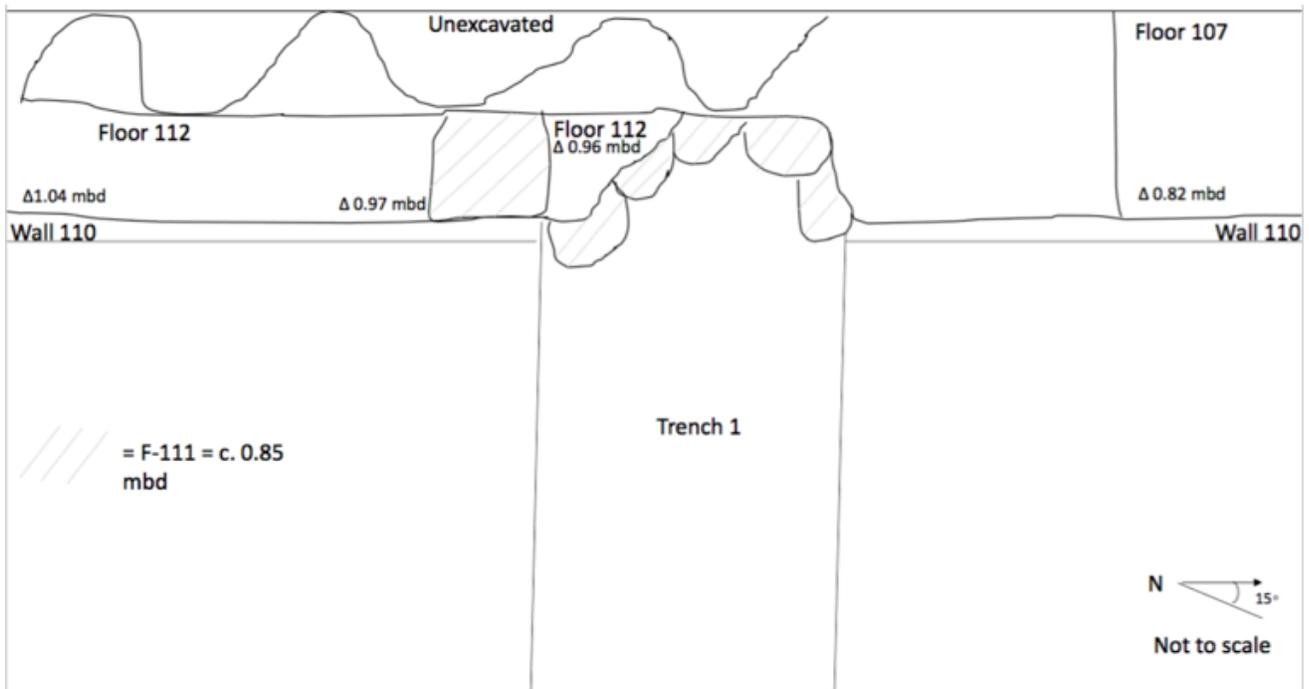


Figure 6.10 Schematic of exposed features west of Structure 3

The excavations at Str. 3 show that the Maya built the ritual structure within a short amount of time by first placing Fill 109 on topsoil, digging slightly into Fill 109 to place HC 2, covering it with Fill 104, then placing HC 3 on Fill 104, covering the north end of HC 3 and the structure in Ballast and Floor 106, on top of which put Fill 103. Feature 105 was then put on Fill 103, and finally covered in Ballast and Floor 102. Because of burning on portions of Floor 106 and on plaster floors west of the structure, it is possible that the structure was terminated multiple times throughout construction, and then reanimated with the placement of HC's and the further construction of the structure. As detailed in Larmon and Nissen (2015), their final termination consisted of smashing ceramics on top of Floor 102, burning the structure, and covering it in large, unshaped boulders. The effort invested in both the construction and termination of the structure further suggest that this was a ritually potent, animated space accessed as a threshold to the otherworld.

Structure 2

In addition to Str. 3 excavations, we attempted to locate a corner of Str. 2 to better tie it in to the surrounding architecture. Str. 2 is located c. four meters from Str. 3 and 17.75 meters from Str. 1; these three buildings are connected via a plaza (see Larmon and Nissen 2015 for results of plaza test excavation). Juan Antonio identified the possible northwest corner, but we were unable to clear enough of the structure to get a good feel for the architecture. Juan Antonio did recover 36 ceramic sherds from cleaning up the structure corner. Structure 2, as the rest of the Pool 1 architecture, appears to date to the Late-to-Terminal Classic (see Chapter 2). Measured from Datum 1 on Structure 1, the “NW Corner” of Structure 2 is at 156° east of north, 17.74 mfd, and 2.2 mbd.

Additional Cara Blanca Pool Investigations

Sediment Cores

At the beginning of the field season (May 7- 11), Jeannie Larmon, Erin Benson, Melinda Higley, and Lisa Lucero extracted sediment cores from two locations with the help of field assistants Ernesto Vasquez, Stanley Choc, Marciel Artega, and Cleofo Choc. Melinda Higley, a PhD student in geology at UIUC, has spent the last several years focusing on paleoclimate reconstructions in the central tropical Pacific. She has extensive field experience working for the Illinois State Geological Survey by studying the hydrology and chemistry of natural and constructed wetlands. She has been a part of several coring projects, most recently on Kiritimati Island in the Pacific Ocean. We used two methods for core extraction, a Livingston Corer and a Bolivia Corer; equipment was provided in part by Dr. Jessica Conroy, with whom Melinda works, and in part by LacCore National Lacustrine Core Facility Paleolimnological Research Center. Our goals were to isolate and analyze fossil pollen and isotope ratios from core sediments in order to reconstruct past environments. First, we extracted parallel cores and a surface/water interface core from Cara Blanca Pool 7. Extracting parallel cores allows me to identify disruptions in the stratigraphy of the core and provides an alternative for sub-sampling in the disturbed location and a surface/water interface core helps to preserve the most modern sediments in the core. Pool 7 is a 1.2-meter deep lake on the western edge of the pools (Figure 6.11).



Figure 6.11 Pool 7 (bottom) looking east. Courtesy of Tony Rath.

We selected Pool 7 both for ease of access for coring and potential for fossil pollen preservation. We hoped that core sediments would provide information on climatic and subsistence shifts. We

extracted the cores from within a small area in the center of Pool 7 (Figure 6.12), avoiding the edges and sloping to prevent coring accumulated runoff (Pool 7 Core 1 UTM's = 16 Q 0296132E, 1925863N; Pool 7 Core 2 UTM's = 0296190E, 1925887N; Pool 7 Surface/water interface Core UTM's = 0296160E, 1925876N). The cores were relatively short—Core 1 was the longest at 1.62 meters in total length.



Figure 6.12 Coring Pool 7.

The other location that we cored was an “offsite” wetland area, the Bird Tower (Figure 6.13). The Bird Tower is located just west of Banana Bank Lodge in Belmopan and was accessed using the road to Banana Bank. With the help of Banana Bank cowboys Stephawn Scott and Sherman Fuentes, we located the wetland area to core. Due to a long dry season, it was particularly dry, which allowed us to extract the core from the wetland center. This offsite wetland was to provide us with a comparison for Cara Blanca sediments.



Figure 6.13 The Birth Tower Coring Location

The vegetation in the wetland was incredibly dense and we could not get to the center for coring (Figure 6.14).



Figure 6.14 Core location in the Bird Tower wetland

We hacked through as much vegetation as we could to move away from the shore and extracted our three cores from 0.53-meter-deep water (Bird Tower Core 1 and Bird Tower Surface/water interface Core UTMs = 0310126E, 1912784N; Bird Tower Core 2 UTMs= 0310122E, 1912794N). Unfortunately, the clay in this area was incredibly dense and we were only able to recover c. 0.50 meters of sediment.

After we extracted the cores, we securely packaged and exported the cores with permission from the Institute of Archaeology and in observance of United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) permit number P330-16-00114. Upon returning to the University of Illinois, Larmon took the cores to the LacCore National Lacustrine Core Facility Paleolimnological Research Center in Minneapolis, Minnesota for initial processing where she recorded initial core descriptions (ICD) and extracted material for AMS dates. We selected to samples for AMS dating, from the middle and bottom of Pool 7 Core 1. The material was submitted to Hong Wang at the Illinois State Geological Survey for processing. Unfortunately, the cores appear to be more modern than expected—the deepest sample submitted for dating returned a date of 310 BP +/- 15. Because the core

sediments are more recent than we would have hoped, we have not done further work with the sediments. We do, however, expect to carry out analyses to produce a reconstruction of more recent climate fluctuation in the area and investigated the impact of agriculture more recently.

Pool 16

On May 27, Cleofo Choc, Stanley Choc, and Carlos Vasquez cut a path from the road down to Pool 6 back west towards Pool 16. On May 31, Lucero and Larmon returned to the pool with Cleofo and Stanley to assess its condition and evaluate it as a potential site for coring. Pool 16 was originally visited when Kinkella surveyed the region in 2008 (Kinkella 2009:161). In 2010, divers explored the pool and recorded a depth of 13 meters (Lucero 2011:14). The *cenote* is perfectly circular, c. 18 meters in diameter. Kinkella argues for the relatively young age of the pool based upon the “quick deterioration” (Kinkella 2009:162) of a cavern just above the waterline. The pool was much the same except that there was much more vegetation covered the pool, likely the result of 2010 Hurricane Richard. Though it might be possible to core Pool 16, it is likely not fruitful due to the potentially young age of the *cenote*.

Discussion and Conclusions

The 2016 excavations of Str. 3 further support our hypothesis that Str. 3 was a particularly potent, sacred space with which the Maya interacted via ceremonies that likely related to water and rain (Lucero et al. 2016). The ceramic chronology suggests that the structure was built and terminated within a relatively short timeframe (see Appendix 6.1). Though this is inconclusive pending radiometric dates, we can tentatively conclude that the structure was constructed during the late Late Classic (Tepeu2/Spanish Lookout) and terminated during the Terminal Classic (Tepeu 3/Spanish Lookout 2). The termination of Str. 3 would have coincided with the social, political, and environmental disruption that was occurring in the Terminal Classic period. In total, we recovered 6792 ceramic sherds from Str. 3, the majority of which came from the surface in the form of several layers of burned sherds on top of a burned plaster surface. Of these, only 8.3% (n=563) were rims, an unusually low number. The lack of complete vessels, as well as the low number of rims, suggests that the ceramic sherds were carried to the site from elsewhere and left, perhaps as offerings; alternatively, people could have broken complete vessels and removed/taken home vessel parts. As Kosakowsky notes (see Chapter 2), this observation contributes to the conclusion that the Str. 3 assemblage is non-domestic. The majority of the ceramics recovered, 57.7%, were jars. They were primarily relatively large unslipped and unslipped striated jars, likely used for containing water. When compared to the residential settlement at Saturday Creek, a minor river center in central Belize c. 11 km south of Cara Blanca, Lucero and colleagues (2016) found that the ceramic assemblages recovered from Cara Blanca Pool 1 contexts were overwhelmingly comprised of unslipped jars (Table 6.2; cf. Table 6.3). This assemblage noticeably differs from the salvage excavations that took place between Cara Blanca and Yalbac, which boasts more typical residential assemblages. In general, the Str. 3 assemblage is much less diverse in style and form, as at the M186 sweatbath, which might suggest that the structure was continuously employed for a specific purpose, namely a ceremonial one.

Identifying the details of the role of Str. 3 at Pool 1 is complicated without additional information/evidence. We should, however, consider various aspects of the structure that can help inform on its importance. First, as Kosakowsky notes (see Chapter 2), the styles of the Str. 3 ceramics overlap with those of the Belize Valley and Petén sites. This pattern does not indicate that these ceramics were produced there, nor that they were brought from that region, merely that there is some connection between Cara Blanca, northern Belize, eastern Petén, and the Belize Valley. This connection will be further explored with petrographic studies. The presence of foreign styles, however, becomes more interesting when we hypothesize that these sherds were brought to Str. 3 from various, distinct homelands, as has been recorded at other sites. Moyes (2001:75), for instance, notes that 39% of the sherds recovered from Actun Tunichil Muknal, a large cave in western Belize, could not be refitted, and thus were likely “brought in as offerings in and of themselves.” These individual sherds are an essential part of the rituals being performed in the cave. Similarly, Pool 1 visitors likely brought connections to and representations of their home and community in the form of vessels or sherds to tie them to this threshold to the otherworld. These ceramics became “sticky” (Harris 2014:91) with the memories of their home space—transporting the ceramics from different regions to Cara Blanca helped transform the space into one that incorporates or remembers different communities or households and, therefore, connects the “distinct” locales. In addition, the high frequency of jar fragments, as opposed to other ceramic forms,

Table 6.2 Comparison of Cara Blanca and Saturday Creek ceramic assemblages (adapted from Lucero et al. 2016: Table 1)

Vessel distribution (%)				
	Saturday Creek	Pool 1 Str. 1	Pool 1 Str. 3	Pool 20 M208
Jars	32 (n=204)	72.1 (n=256)	70.9 (n=170)	68 (n=101)
Plates	0.5 (n=4)	6.5 (n=23)	3.8 (n=9)	4 (n=6)
Dishes	35 (n=226)	4.5 (n=16)	10.4 (n=25)	8 (n=11)
Bowls	32 (n=210)	16.9 (n=60)	15 (n=36)	20 (n=30)
Vases	0.5 (n=3)	0	0	0
Average rim diameter (cm)				
	Saturday Creek	Pool 1 Str. 1	Pool 1 Str. 3	Pool 20 M208
Jars	24.1 (n=204)	19.3 (n=131)	20 (n=170)	24 (n=101)
Jar necks	-	25 (n=119)	23 (n=117)	-
Plates	39.5 (n=4)	35.7 (n=15)	37 (n=9)	50 (n=6)
Dishes	28.9 (n=226)	40.3 (n=13)	35 (n=25)	27 (n=11)
Bowls	26.1 (n=210)	29.8 (n=17)	32 (n=36)	34 (n=30)
Vases	16.3 (n=3)	-	-	-
Rim diameter range (cm)				
	Saturday Creek	Pool 1 Str. 1	Pool 1 Str. 3	Pool 20 M208
Jars	10-48	10-45	10-40	8-55
Jar necks	-	15-40	8-40	-
Plates	24-44	29-55	30-40	50
Dishes	16-58	25-50	20-55	15-50
Bowls	10-48	10-50	10-60	10-55
Vases	12-19	-	-	-

Table 6.3 Comparison of rim diameters (cm) at Pool 1 between 2014 and 2016 ceramics

Average rim diameter (cm)			
	Pool 1 Str. 1	Pool 1 Str. 3	Pool 1 Str. 3 2016
Jars	19.3 (n=131)	20 (n=170)	20.8 (n=82)
Jar necks	25 (n=119)	23 (n=117)	23.5 (n=102)
Plates	35.7 (n=15)	37 (n=9)	31.4 (n=19)
Dishes	40.3 (n=13)	35 (n=25)	29.8 (n=41) (dish/bowl)
Bowls	29.8 (n=17)	32 (n=36)	34.6 (n=20)
Plate/dish			34.9 (n=7)
Rim diameter range (cm)			
	Pool 1 Str. 1	Pool 1 Str. 3	Pool 1 Str. 3 2016
Jars	10-45	10-40	7-45
Jar necks	15-40	8-40	9-46
Plates	29-55	30-40	18-46
Dishes	25-50	20-55	16-47 (dish/bowl)
Bowls	10-50	10-60	14-49
Plate/dish			23-42

noted during the 2014 excavations (Harrison 2015) as well as this year, suggest that water was consistently an important part of the rituals performed at the pool. During the 2014 field season, Harrison reported that 71.2% of the rims and necks recovered from the nearby Str. 1 were jars (Harrison 2015:34). Of the rims and necks recovered from Str. 3 during the 2014 and 2016 field season, 57.7% were jars. The importance of water was a central tenet of the rituals performed at the Pool 1 space. As Harrison (2015:35) notes,

The narrow orifice of the jars suggests that they were used to contain liquids; further, there is no evidence that the vessels were used for cooking. The lack of charring or visible residues suggests that these jars were primarily used to store water, perhaps for use in water-related ceremonies in the temple. Conversely, the large rim diameter of most of the plates, bowls, and dishes indicates that these vessels were used to serve large numbers of people.

The jar rim diameters from Cara Blanca contexts during the 2014 and 2016 were not largely distinct. In particular, the rim diameters at Pool 1 Str. 1 and Str. 3 are very similar (see Tables 6.2 and 6.3). Other than jar rims, however, the diameters at Saturday Creek tend to be smaller, suggesting that the ceramic assemblage better represents individual serving dishes, again suggesting that Pool 1 filled a unique role. The slightly larger serving vessels and high number of unslipped jars further suggest that Pool 1 hosted ceremonies centered around these vessels likely used to hold water and possibly brought from their home communities.

If Maya were bringing pieces of their home to Str. 3 and Pool 1 and, perhaps, using Step 108 to throw offerings into the pool, the repeated wear on the northern part of Str. 3 could lead to platform degradation. Feature 105, the circular/semi-cross shaped boulder formation in the northern portion of Str. 3 (just below Floor 102 and south of Step 108) would have prevented damage to Floor 102 from heavy use.² This suggests that visitors to the pool were commonly following a single path (i.e., a procession) that led to Step 108 and the Pool 1 edge. Finally, when all of these points are considered in concert with the presence of three (and perhaps more upon further excavation) human caches—which need to be considered as dedicatory offerings to secure the support and approval of ancestors and gods—the ritual use of Str. 3 is most apparent. As Lucero et al. (n.d.) and Carbaugh (see Chapter 7) note, visitors to Str. 3 would have passed over the three individuals as they walked the south-to-north axis of the platform to Step 108. By traversing this axis, imbued with human souls and on the threshold of the otherworld, visitors would have crossed into the liminal space of Pool 1.

Str. 3 acted as the threshold to the otherworld for Maya who sought to communicate with deities and provide offerings into Pool 1 in search of reprieve from the climatically and political turbulent times. Because they were leaving their homes in order to more closely interact with the other world, they may have brought pieces of their home to Str. 3 to better connect the places—their ritual journey and path to reprieve was for their homes, for the ancestors venerated within, for a fruitful milpa cycle. It was, therefore, not an entirely personal journey; and the formation and securing of this connection with Str. 3/Pool 1 was essential. If Str. 3 is part of a prescribed path (or ceremonial circuit) comprised of the Cara Blanca pools (Lucero et al. n.d.), then the path along which Maya crossed Str. 3, too, appears to have been prescribed—crossing from north-to-south over human caches, each getting closer to the surface as they stepped north towards the pool, Maya visitors entered the liminal space. Str. 3, tethered to both worlds, allowed visitors to Pool 1 to more directly communicate with ancestors and deities.

In future field seasons, it will be fruitful to expand excavations to the west of Str. 3 in order to better understand its relationship with Str. 1, as well as test excavate Str. 2. On a larger scale, with the pending petrographic analysis of Str. 3 and Str. 1 ceramics, we will better understand the role that Cara Blanca played in the region. This analysis will help shed light on our hypothesis that people from various regions of the Petén, northern Belize, and the Belize Valley brought ceramics from their home on a ceremonial circuit, including a stop at Cara Blanca. Finally, the further excavation of Str. 3 will likely expose additional human caches, potentially providing additional material for DNA and isotopic analysis of the Cara Blanca remains. These analyses will help us answer questions of migration and pilgrimage. DNA will provide information regarding relatedness of the individuals interred and strontium isotope analysis will provide clues as to if those individuals migrated to the area from elsewhere. It will be most important to continue juxtaposing the remains from Str. 3 to those from the surrounding settlements.

This year's excavations at Pool 1 and nearby pools perhaps helped the VOPA crew propose more informed questions than answers. Unfortunately, the core sediments recovered during this field season are not yet helpful, though they will likely provide valuable data regarding the more recent climate in Belize. Fortunately, however, the Str. 3 excavations have provided further evidence for the ceremonial use of Pool 1 by diverse groups of people. The lack of artifacts with HC's at Str. 3, the extensive burning of the structure, the clear termination and abandonment of the structure, as well as the lack of diversity in the clearly non-residential assemblage of artifacts from the site bolsters the view that this was a ritually

² Lucero notes that crew excavated a 1 x 1 m unit in the center of Plaza 1 in Yalbac in 2004 and 2007 that exposed a cross-shaped boulder feature near the surface as well (see Lucero 2005:Figure 1.12; Lucero 2008).

central stop along the ceremonial circuit of Cara Blanca. Further investigations will provide insight into potential ideological responses of the Maya to the less stable, or more unpredictable, happenings of the Terminal Classic period. This work contributes to our understanding of sustainability in the past, specifically the distinctly human element of the more encompassing approach of landscape interactions and negotiations.

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Appendix 6.1 Pool 1 Str. 2 and Str. 3 2016 Ceramic Types

Catalog #	Site & provenience	Ceramic type, info	Time period
2233	Str. 2 NW Corner clean-up	British Honduras Volcanic Ash jar neck	Tepeu 2-3
		British Honduras Volcanic Ash dish/bowl rim	Tepeu 2-3
		Jar neck	Tepeu 2-3
		Jar rims	Tepeu 2-3
		~Cayo Unslipped /Cambio Unslipped	Tepeu 2-3
		Achote Black	Tepeu 2-3
2274	Str. 3 Ballast 102/Fill 103 under Wall 110	Ridged plate rim	Tepeu 1
		~eroded polychrome	late Early Classic/early Late Classic
		Large basin (orange=poorly made Aguila Orange) with LeCount Inset	Early Classic
		Elegant jar	Early Classic
		Jar necks	Tepeu 2 or 3
		Monochrome red bowl rim	Late Classic
2246	Str. 3 Cluster 5	Large everted jar	Tepeu 2-3
		Belize Red VA slightly incurving bowl rim	Tepeu 2-3
		~Achote Black Group (~Cubeta Incised)	Tepeu 2-3
		Vaca Falls Red bowl	Tepeu 2-3
		Badly burnt Belize Red VA plate	Tepeu 2-3
		British Honduras Volcanic Ash	Tepeu 2-3
2275	Str. 3 Fill 104 under Wall 110	Large basin	Early Classic
		Everted jar	Tepeu 2-3
		Polychrome bowl/dish rim	~Early Classic
		Monochrome (Vaca Falls?) bowl/dish rim	Late Classic
		Polychrome either Saxche or Palmar	Tepeu 2
		LeCount int. offset dish/bowl rim	Late Early Classic
		Mountain Pine Red ridged plates	Tepeu 1
		VA dish/bowl rim	Tepeu 2-3
		VA plate rim	Tepeu 2-3
2234	Str. 3 NE Corner 'Topsoil'	Large, late everted jars (note: more rims in general in topsoil)	Terminal Classic
		Ring bases	Classic
		Mountain Pine Red ridged plate	Tepeu 1
		British Honduras Volcanic Ash ridged plate	Tepeu 2-3
		Orange bowls	late Early Classic/early Late Classic (7 th c. CE)
		Jar	~Early Classic
2237	Str. 3 N Central #2 Topsoil	Everted jar	Terminal Classic
		Jar neck	Terminal Classic
		Jar rim	Early Classic
		Mountain Pine Red ridged plate	Tepeu 1
		Burnt sherds (e.g., burnt red) makes i.d. difficult; lots of body sherds	Tepeu 1 through Tepeu 3
		British Honduras Volcanic Ash	Tepeu 2-3
		~Achote Black (burnt)	~Tepeu 2-3
		Monochrome red	Late Classic
		2238	Str. 3 NW Corner Topsoil
		Large everted jar rims	Tepeu 2-3
		Bowl rim	~Early Classic
2247	Str. 3 S Central Stacked Vessel	Burnt British Honduras Volcanic Ash neck	Tepeu 2-3

		Large everted jar rims	Terminal Classic
		Unknown	Late Classic
		Burnt LeCount offset	~Early Classic
2245	Str. 3 S of Str. 3 Topsoil	Everted jar	Terminal Classic
		Ring base	Classic
		~Tinaja jar rim	Late Classic
		Monochrome bowl/jar	Late Classic
		Trickle jar rim	Early Classic
2236	Str. 3 SE Portion Topsoil	Large everted jars; some burned	Terminal Classic
		Orange on orange Trickle Ware (same vessel as 2235)—rare in Belize River Valley	Terminal Preclassic/early Early Classic (0-200 CE)
		British Honduras Volcanic Ash bowls	Tepeu 2-3
		~Vaca Falls Red bowl/jar	Tepeu 2-3
		Mountain Pine Red Ridged plate	Tepeu 1
		Aguila Orange sherd	Early Classic
		~Polverto interior black slipped outcurving bowl	Terminal Late Preclassic
2235	Str. 3 S Central #3 Topsoil	Orange on orange Trickle Ware dish (fake Usulatan)—rare in Belize River Valley	Terminal Preclassic/early Early Classic (0-200 CE)
		Eroded ~Dos Arroyos Polychrome	Early Classic
		Late everted jars	Late & Terminal Classic
		Red bowls	Late Classic
		~Tinaja Red jar sherd	Late Classic
		British Honduras Volcanic Ash (some ash bowls burnt)	Tepeu 2-3
2248	Str. 3 Top of FL 102, Cluster 4	British Honduras Volcanic Ash red rim	Tepeu 2-3
		Late large blackened everted jar	Terminal Classic
2250	Str. 3 Top of FL 102, Cluster 6	Everted jars	Tepeu 2-3
		Mountain Pine Red ridged plate	Tepeu 1
2249	Str. 3 Top of FL 102, Cluster 7	Large everted jar	Tepeu 2-3
		~Tinaja Red jar sherd	Late Classic
		~Garbutt Creek monochrome red bowl	Tepeu 2-3
2267	Str. 3 Trench 1 E extension above stones covering Bu. 2	Plate rim	Early Classic
		Aguila Orange jar neck/rim	Early Classic
		Flange	Early Classic
		Unknown	Classic
2265	Str. 3 Trench 1 Extension cleaning to Bu. 2	Flared jar rim	Early Classic?
		Narrow orifice jar rims, orange paste	Early Classic?
		Large everted jar rims	Terminal Classic
		Shallow ridged plate/dish	Early Classic
		Transitional ridged bowl	Early Classic
2252	Str. 3 Trench 1 Fill 104	Eroded dish/bowl rims	Early Classic
		Dish/bowls rims	Early to Late Classic
		Unknown dish/bowl rims	Classic
		Uacho—Saxche Group black-on-orange far rim (trade piece)	Tepeu 1
		Ridged plate rim	Tepeu 1
		BHVA	Tepeu 2-3
		Vaca Falls Red group	Tepeu 2-3
2254	Str. 3 Trench 1 Fill 104 clean-up around Cluster 8	Ridged plastes	Tepeu 1/Tiger Run
		Bowls, basal flange	Early Classic
		Unknown red-slipped bowl	Classic/Tepeu 2
		British Honduras Volcanic Ash	Tepeu 2-3
		Jar	Early Classic

		~Achote Black slip	Tepeu 2-3
		Red slip	Late Classic
		Saxche Polychrome/Juleki plate	Tepeu 1
		Uacho black-on-orange (in Saxche Group) –not commen; [need to source this one]	Tepeu 1
		~Vaca Falls jar	Tepeu 2-3
2255	Str. 3 Trench 1 Fill 104 Cluster 8	Unknown	Late Classic
2266	Str. 3 Trench 1 Fill 104 tunnel above Bu. 2	Unknown	Classic
2253	Str. 3 Trench 1 Fill 109	Sierra Red	Late Preclassic
		Eroded polychrome	Classic
		Unknown monochrome red dish	Classic
		Jar rims	
2251	Str. 3 Trench 1 FL 102 ballast	Large everted jar	Tepeu 2-3
		Monochrome red bowls	Late Classic
		Achote Black	Tepeu 2-3
		Ridged plate rim	Tepeu 2/Tiger Run
		Tu-Tu Camp Striated jar rims	Tepeu 2-3
		Vaca Falls/Garbutt Creek dish/bowl rim	Tepeu 2-3
2270	Str. 3 Trench 2 Extension Ballast 102	British Honduras Volcanic Ash; everted jar rim	Tepeu 2-3
2272	Str. 3 Trench 2 Extension ext. all	~Aguila Orange sherd	Early Classic
		Tiny polychrome sherd w/ pale pink underslip	Classic
2271	Str. 3 Trench 2 Extension Fill 103	Ridge	Transition between Early Classic & Late Classic
		Unknown red	Classic
2258	Str. 3 Trench 2 Feature 105	~Belize Red	Tepeu 2-3
		Arrowhead rim/striated=Triunfo Striated (Petén) jar rim	Early Classic
		Monochrome red bowl/neck	Late Classic
		Mountain Pine Red ridged plate	Tepeu 1
2259	Str. 3 Trench 2 Fill 103	~polychrome; monochrome red bodies	Late Classic
		Thick jar necks	~Tepeu 2-3
		British Honduras Volcanic Ash bowl/dish rim	Tepeu 2-3
		Small striated blackened jar rim	late Early Classic/early Late Classic
2262	Str. 3 Trench 2 Fill 104	Unknown ring base	Classic
		Unknown polychromes	Classic
		Jar rims	Early Classic to Late Classic
		Mountain Pine Red dish/bowl	Tepeu 1
		Uacho—Saxche Group, same as Trench 1 dish/bowl rim	Tepeu 1
		Ridged bowl w/ semi-basal flange	late Early Classic/early Late Classic
		Ridged plate	Tepeu 1/Tiger Run
		~Tinjaja Red jar bodies	Tepeu 2-3
2263	Str. 3 Trench 2 Fill 109	Rattle ball from a hollow foot	Classic
		~Vaca Falls monochrome red dish interior beveled rim	Tepeu 2-3
		Interior beveled rim	Tepeu 2-3
2256	Str. 3 Trench 2 FL 102	Incised flange, reduced in size = ~burnt polychrome (~Dos Arroyos)	late Early Classic
2269	Str. 3 Trench 2 FL 102 extension	Everted jar rim	Terminal Classic
		British Honduras volcanic ash	Tepeu 2-3
2260	Str. 3 Trench 2 FL 106 ballast	Indeterminate, Tinjaja Red (?)	Late Classic
2264	Str. 3 Trench 2 FL 106/Fill 104	Based on forms=>	~ Tepeu 2-3
2268	Str. 3 Trench 2 Step 108 Fill 104	Tinjaja Red jar	Late Classic
2276	Str. 3 Trench 2 Wall Clean-up	British Honduras Volcanic Ash/Belize Red bowl/dish rim	Tepeu 2-3

2241	Str. 3 W of W Wall Above FL	Belize Red bowls	Tepeu 2-3
		Belize Red slightly incurving bowl	Tepeu 2-3
		Large everted jar rims	Tepeu 2-3
		Jar rims	Early Classic
		Jar necks	Early Classic
		Narrow orifice jar rim	~Early Classic
		Slab foot, flange	Early Classic
		Bowl rim	~Early Classic
		Mountain Pine Red ridge plate/dish	Tepeu 1
		Ring bases (smaller)	Early Classic
		Blackened Vaca Falls Red bowl	Tepeu 2-3
		Monochrome red bowl	Late Classic
		~Tinjaja Red jar bodies	Late Classic
		Aguila Orange	Early Classic
2244	Str. 3 W of W Wall By Trench 1	British Honduras Volcanic Ash	Tepeu 2-3
		Jar rims	~Early Classic
		Few rims; no obvious large jars; striated body, monochrome	Early Classic, Late Classic
		Ridge bowl rim	Late Classic
2242	Str. 3 W of W Wall NW Corner	Mountain Pine Red ridged plate	Tepeu 1
		Large everted jar	Terminal Classic
		Monochrome red	Late Classic
2240	Str. 3 W of W Wall Topsoil	Large everted jars	Terminal Classic
		British Honduras Volcanic Ash but ridge plate	Tepeu 1
		British Honduras Volcanic Ash neck	Tepeu 1
		Most burnt	In general for 2240—Tepeu 2-3 except Tepeu 1 stuff
2273	Str. 3 Wall 110	Unknown striated jar bodies	Classic

Chapter 7 Analysis of Human Skeletal Remains from Cara Blanca Pool 1 and the Yalbac Salvage Program

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The 2016 Valley of Peace Archaeology (VOPA) field season included two components; the first was the salvage excavation of Maya mounds that had been exposed as a result of Mennonite farmers clearing the jungle for agriculture; and the second was the excavations of ceremonial buildings near Pool 1. We excavated a total of eight mounds over the six-week field season (see Chapter 4). When the salvage excavations were undertaken, the VOPA crew knew that the recovery of human skeletal remains was a possibility. Typically, the Maya kept their ancestors close by burying the dead underneath the floors of their houses with non-perishable grave goods (McAnany 1995). Therefore, the identification of 14 individuals buried within the context of four structures was not a surprise. What was unexpected were the three individuals interred within Structure 3 (Str. 3) at Cara Blanca Pool 1, a ceremonial structure on the edge of a *cenote*. The excavation of Str. 3, along with a sweat bath (M186), was the second component of the 2016 field season (see Chapters 5 and 6). This chapter discusses the human skeletal remains recovered from Str. 3 at Pool 1 and the salvage excavations in the agricultural fields.

Human skeletal remains offer individual level information about the people who previously occupied a location. Burials provide insight into a community's practices surrounding the death of family and community members. We can estimate an individual's age and sex, gain insight into their health, examine diet, and determine whether they lived in the same place their whole life. For the three individuals interred within Str. 3 at Cara Blanca Pool 1, this information may be able to determine the relationship between these individuals and the ritual structure prior to their death and then the significance of their placement within the structure as it was constructed. Were the individuals from the nearby settlement area around Yalbac? If this were the case, it would suggest that local community members built Pool 1 structures. Or are the individuals from somewhere else, suggesting that they may have visited Cara Blanca for ceremonial purposes?

For the salvage aspect of the VOPA project, skeletal analyses help to construct a picture of what life was like for the prehispanic Maya living in the settlements on the outskirts of the center of Yalbac. Who was interred within the houses? Were they healthy? What did they eat? Did they live in the area their entire life? This chapter attempts to address these questions through providing summaries for each individual that include a description of the burial context and findings of the skeletal analysis. The conclusion offers a discussion of Cara Blanca Pool 1 and the settlement area, their significance, and relationship to each other.

Bioarchaeology Methods

To learn as much as possible from the burial contexts and the individual's themselves, careful and detailed excavations and analyses are required. As a certified human skeletal analyst in Illinois, U.S.A, I supervised the excavation and laboratory analysis of all human remains. Field observations and photographs were used to document the skeletal remains prior to their removal. Bamboo tools provided by Cleofo Choc and brushes ensured the elements were not damaged during excavation.

The recovery of 14 individuals from the salvage project area was made possible by the assistance of field school students Anuj Amin, Tiyas Bhattacharya, Jay Breckenridge, Jessica Kaye Clotfelter, Tyler Ferree, and Adonis Holmes, and, with additional assistance from Andrea Filson. Field assistants Ernesto Vasquez, Carlos Vasquez and Javier Gil, were also of great assistance. The excavation of these 14 individuals was conducted under salvage conditions, meaning that no maps were drawn and three burials (MF 4 Mound 1) were not excavated completely because they fell outside of the limits of excavation. Time constraints made these measures necessary and did not allow for the extension of the trenches to document and remove all skeletal remains for the three individuals from MF 4 Mound 1. In the case of these three individuals, to deter potential looting, we decided to remove all human remains and associated artifacts from within the excavation trenches, even if this meant separating the skeletal elements of a single individual, primarily the skull from the postcrania (all skeletal elements below the skull).

The three individuals interred within Str. 3 at Cara Blanca Pool 1 were identified the last week of the field season during trenching of the structure, so were also subject to time constraints. Maps of the

individuals were not drawn, although mapping points for the cranium and long bones were taken, and the remains were left *in situ*, however, this was due primarily to their poor preservation. Removal would have merely resulted in the destruction of the remains. The three interments were excavated by Cleofo Choc, Antonio Luna, Jean Larmon, Erin Benson and me.

The final week of the field season was devoted to lab analysis at Banana Bank Lodge. In the lab, all elements were cleaned with a toothbrush and water by Tyler, Tiyas, Jessica, Anuj, and Jay. A visual analysis was then conducted according to osteological standards (Buikstra and Ubelaker 1994) and the following recorded: age and sex estimates, measurements of elements, nonmetric traits, and pathological changes. Tyler, who had taken a human osteology course previously, assisted with the documentation of human remains. The majority of skeletal elements were partially (25-75% present) to poorly (<25% present) preserved. The incomplete nature of the skeletal remains for a number of individuals and poor bone preservation limited the visual observations. The condition of the skeletons is discussed further in the individual summaries.

In addition to the visual analysis, bone and tooth samples were selected from 14 individuals for diet, strontium, and ancient DNA (aDNA) studies, to be conducted at the University of Illinois at Urbana-Champaign. The Belize Institute of Archaeology provided permission to Dr. Lisa Lucero for the samples to be exported to the U.S.A. under Permit No. IA/H/2/1/16(06) (Table 7.1). I have been conducting and overseeing the sampling of the bone fragments and teeth since their arrival at the University of Illinois at Urbana-Champaign. Tiyas has been involved in the preparation of the bone and tooth samples for diet studies. Alyssa Bader, a graduate student of ancient DNA specialist Dr. Ripan Mahli (<https://sib.illinois.edu/mahli/home/>), prepped two teeth for aDNA analysis. At the writing of this chapter, the results for the diet, migration, and aDNA studies were not yet available.

Currently, the human skeletal remains are being housed in Belize in Dr. Lucero's 20' storage container at the Yalbac Sawmill with permission of the Belize Institute of Archaeology. The skeletal remains are bagged in labelled museum quality 2 mm bags by element and individual and boxed in large plastic bins.

Table 7.1 Exported human remains, Permit No. IA/H/2/1/16(06)

Provenance	Description
Structure, burial, cache, operation, cave, lot etc.	
2138: Pool 7 MF Mound 4 BU 4 Ind A	1 tooth
2151: Pool 7 MF Mound 4 BU 1 Ind A	1 tibia fragment
2151: Pool 7 MF Mound 4 BU 1 Ind A	4 teeth
2152: Pool 7 MF Mound 4 BU 1 Ind B	2 teeth
2153: Pool 7 MF Mound 4 BU 1 Ind C	3 teeth
2154: Pool 7 MF Mound 4 BU 1 Ind D	1 tooth
2155: Pool 7 MF Mound 4 BU 1 Ind E	4 teeth
2156: Pool 7 MF Mound 4 BU 1 Ind F	5 teeth
2157: Pool 7 MF Mound 1 BU 2 Ind A	1 tibia fragment
2157: Pool 7 MF Mound 1 BU 2 Ind A	2 teeth
2159: MF-4 Mound 1 East Str BU 5 Ind A	2 long bone fragments
2159: MF-4 Mound 1 East Str BU 5 Ind A	3 teeth
2160: MF-4 Mound 1 East Str BU 6 Ind A	2 teeth
2161: MF-4 Mound 1 North Str BU 8 Ind A	2 teeth
2163: Cara Blanca Pool 1 Str 3 Trench 2 BU 1 Ind A	1 long bone fragment

Cara Blanca Pool 1 Structure 3

Cara Blanca is a region in central Belize marked by a line of white limestone cliffs and a series of 25 pools (lakes and *cenotes*). For the ancient Maya, pools and other openings into the earth were considered portals to the underworld, a place to make offerings to the gods (Lucero and Kinkella 2015). During the Late and Terminal Classic (800-900 CE) periods, as a series of multiyear droughts affected the Maya area (Haug et al. 2003), the Maya built ceremonial structures at several of the Cara Blanca pools. Lucero and Kinkella (2015) suggest that the use of these sacred landscapes was the way non-elites responded to climate change and the accompanying sociopolitical turmoil. The Maya were dependent upon the water collected during the rainy season in artificial reservoirs in centers, so as the water dried up, they made pilgrimages to portals and watery places like the Cara Blanca pools to appeal to the gods for rain.

Pool 1 (c. 100 x 70 m, 60+ m deep) sits in the middle of the Cara Blanca escarpment and appears to have been one of these sites of pilgrimage for the Maya during this time of uncertainty in the Terminal Classic (Lucero and Kinkella 2015; see Chapter 6). A number of ceremonial structures were built abutting Pool 1 and its immediate vicinity (Figure 7.1). On the southwestern edge of the *cenote* is a complex of three ceremonial structures: a water temple (Str. 1) excavated by the VOPA field crew in 2014 (Harrison 2015), a ceremonial platform (Str. 3; see Chapter 6), and an unexcavated structure (Str. 2). On the southeastern edge of the *cenote* is Str. 4, tested during the 2014 field season (Harrison 2015). Additional structures (untested Strs. 5, 6, and 7) have been identified to the east of Pool 1, as well as, several structures to the south, including a sweat bath (M186), which was excavated during the 2016 field season (see Chapter 5). Situated 8.5 km from Yalbac, the closest Maya center, Pool 1 was likely known to the inhabitants of Yalbac and the surrounding area. The excavation of the ceremonial structures will provide insight into the practices which occurred at the *cenote* and who may have been involved.

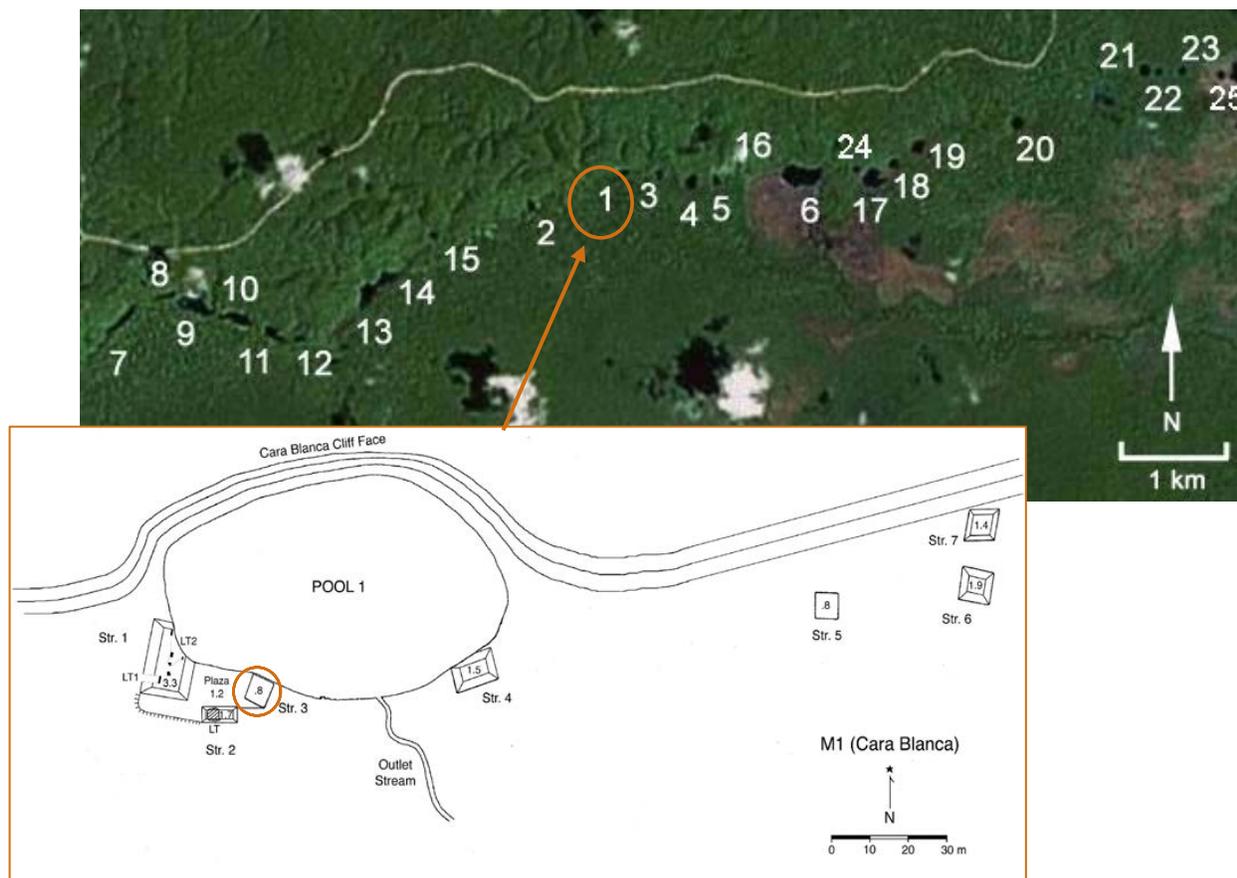


Figure 7.1 Location of Pool 1 among the Cara Blanca pools and site map of Pool 1 with Str. 3 indicated

Table 7.2 Age and sex estimates for individuals from Str. 3 at Cara Blanca Pool 1

Human Cache	Age			Sex			
	Age Estimate	Dental Attrition	Cranial Suture Closure	Sex Estimate	Skull	Ramus Angle	Pelvis
1	Adolescent 16-20 years	16-20 years	open (sagittal & lambdoid)	?	-	-	-
2	Adolescent - Young Adult 18-22 years	18-22 years	-	Male?	4/4	-	-
3	Young Adult 20-24 years	20-24 years	-	Female?	-	2/-	2/-

Dental attritional wear: Lovejoy (1985)

Cranial suture closure: Lovejoy (1985); Meindl and Lovejoy (1985); Todd and Lyon (1924)

Skeletal morphology recorded after Acsadi and Nemeskeri (1970), Buikstra and Ubelaker (1994), Milner (1992)

In 2016 we completed Str. 3 excavations that had begun in 2014 (Larmon and Nissen 2015). Constructed 22 m southeast of the water temple (Str. 1) across an open plaza, Str. 3 (5.2 x 1.8 m) is a platform sitting c. 1 m from the southern edge of Pool 1 (see Chapter 6). The Maya added a step (Step 108) to the northern end of the platform near Pool 1's edge, from where the Maya likely made offerings. The platform had clearly been deanimated by the Maya based on evidence of burning on the plaster surface (Floor 102), the presence of thousands of ceramic sherds covering the entire platform surface, and the final capping of the structure with a layer of large boulders (Larmon and Nissen 2015). In 2016 we completely exposed the platform and excavated two 1-meter wide trenches in order to determine how and when it was constructed. Trench 1 transected Str. 3 east-west, while the north-south Trench 2 bisected the north half of the platform perpendicular to Trench 1. See chapter 6 for a detailed discussion of Str. 3, the location of the two trenches, and the platforms stratigraphy.

During excavations of the two Str. 3 trenches, we exposed the skeletal remains of three individuals (Figure 7.2). Trench 1 contained HC 2 and Trench 2 contained HC 1 and HC 3. These individuals appear to have ranged in age from adolescent to young adult, one individual was potentially male and another possibly female, while sex was unable to be determined for the last individual (Table 7.2). Bone preservation was fair to poor, rendering measurements, non-metrics traits, and bony changes due to disease or trauma unobservable. Each individual had at least one tooth present; dental observations made, including wear, measurements, and pathologies, can be found in Appendix 7.1 at the end of this chapter. All three individuals were uncovered, photographed, and mapping points recorded. Human caches (HC) 2 and 3 were primary interments, and HC 1 potentially one. Based on positioning, HC 1 and HC 2 were probably bundled (Table 7.3). HC 2 was the earliest cache to be placed within the first layer of fill (Fill 109), and was treated more elaborately than the others, with limestone blocks placed tightly around the individual. Due to time constraints, and to preserve the skeletal remains, all three human caches were left *in situ*. HC 1 was partially removed before this decision was made. The elements of HC 1 that were removed were placed back with the rest of the remains prior to reburial. The skeletal remains were protected with buckets before the trenches were back-filled at the end of the field season.

The placement of the three interments within Str. 3, a non-residential ceremonial platform, and absence of non-perishable grave goods, indicates that these individuals may not have been considered burials per se, but rather offerings. Therefore, we refer to each individual as a human cache. For the Maya, cache burials, like caches of artifacts, were intended as dedicatory offerings to the structure the cache was associated with (Kunen et al. 2002; Welsh 1988). Perhaps the three human caches represent different building phases in the

platforms construction.

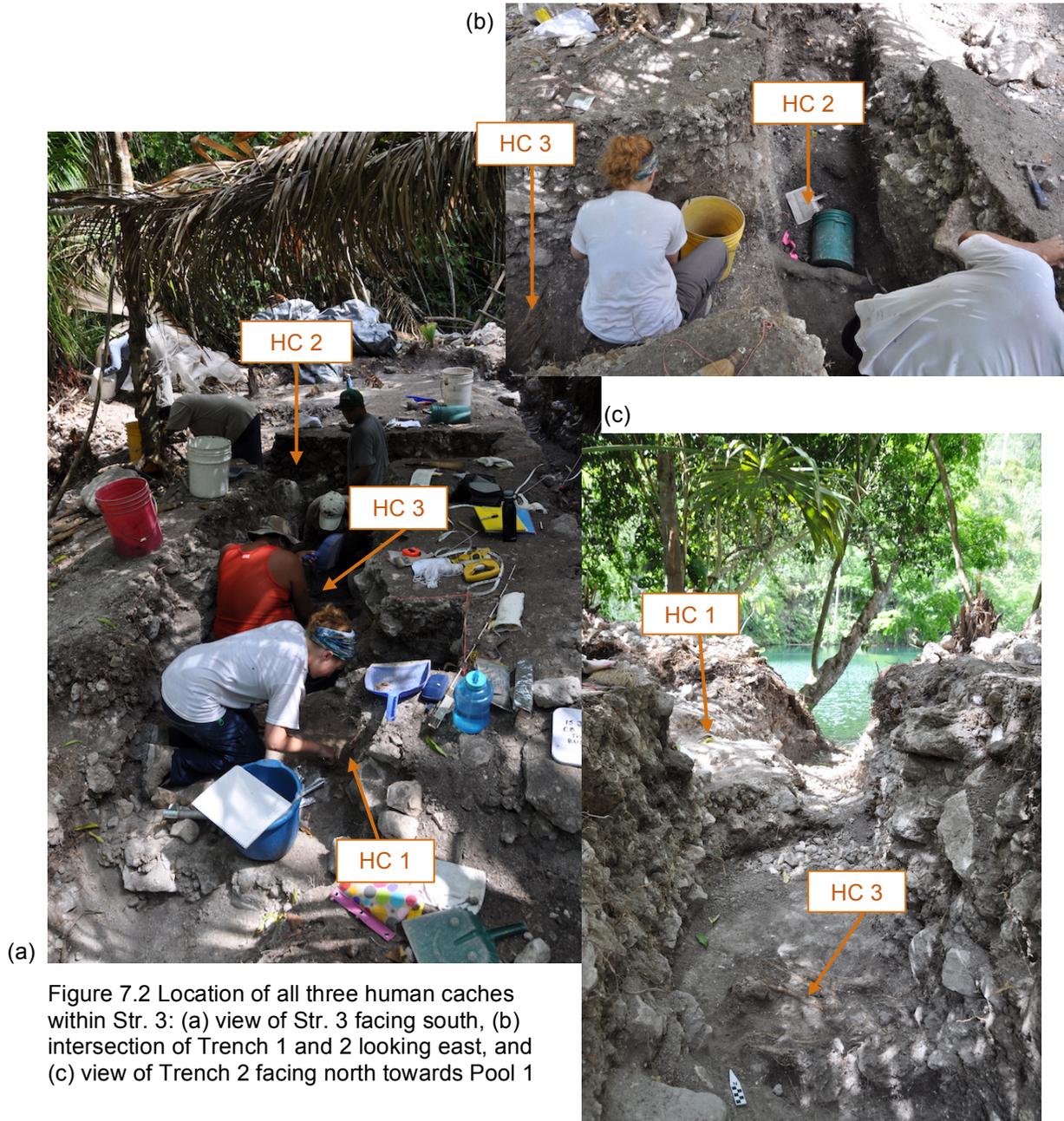


Figure 7.2 Location of all three human caches within Str. 3: (a) view of Str. 3 facing south, (b) intersection of Trench 1 and 2 looking east, and (c) view of Trench 2 facing north towards Pool 1

Human Cache 1

Age: Adolescent (16-20 years) Sex: Indeterminate

The human skeletal remains of a possible adolescent (16-20 years) individual of indeterminate sex were recovered in Str. 3 under Fill 103. The Maya had dug into Floor 106 and its ballast (Ballast 106) to enter HC 1. The cranium was uncovered just southwest of the north step (Step 108) of the platform. A small extension c. 1 meter in length was added to the west side of Trench 2 to ensure recovery of all human remains associated with HC 1. The individual was placed at a slight incline with the cranium placed on top of a pile of limestone cobbles at the level of Floor 106, while the postcranial remains extended to the north descending into Ballast 106 (Figure 7.3). The pile of cobbles varied from palm size to a hand span in size, they appear to have been placed around the cranium, potentially to keep it

propped with the top of the head oriented up. One broken shaped limestone was present among the cobbles, on the north side of the pile. An unidentified ceramic sherd was recovered among the fill and does not appear to be an intentional inclusion.



Figure 7.3 Plan view photo of HC 1
with a close-up of the piece of broken
shaped limestone and side view

The human remains were extremely fragmented, making it difficult to determine burial positioning. The individual may have been a primary interment in a tightly flexed position based on the location of the cranium and long bones (Figure 7.4, Table 7.3). A humeral shaft was positioned parallel to where the torso would have been with unidentifiable long bone fragments, possibly humerus, on the other side of the potential torso area. The individual's legs appear to have been tucked up to their chest, because an unisided (unable to determine whether element is a left or right) femur and fibula were located just north of the cranium and between the potential humerii. The vault of the cranium was crushed, portions of the parietal bones, occipital bone, and small temporal bone fragments were present. The positioning of the cranial vault suggests that the top of the cranium was oriented up with the face towards the west. Small

cranial fragments were recovered when the cranial vault was removed. These small fragments likely belonged to the more delicate facial bones, indicating that the cranium was complete when interred. A left maxillary canine (LC¹) was recovered beneath the cranial bones, along with a left clavicle. Identifiable long bone elements recovered included a possible left humeral shaft, unisided femoral shaft, and unisided fibular shaft. Unidentifiable long bone fragments were also recovered, along with an unidentified metacarpal and metatarsal. A long bone fragment was collected and exported for collagen and apatite analysis.



Figure 7.4 Plan view of HC 1 after removal of the cranium (location marked by circle)

An age of adolescent was estimated based on minimal occlusal wear on the only tooth present (LC¹, Lovejoy 1985), as well as the open sagittal and lambdoid sutures (Meindl and Lovejoy 1985). Sex was indeterminate because no sex traits were present. Due to the fragmented nature of the remains, no measurements were recorded for the remains, except for the single tooth (LC¹, see Appendix 7.1). No observable pathologies were present on the skeletal remains, although observations were hindered by fragmentation of the elements and poor preservation. The LC¹ did have two linear enamel hypoplasias (Figure 7.5), suggesting periods of stress during dental crown development (0.6-4.4 years, Smith 1991).



Figure 7.5 Two linear enamel hypoplasias on the canine (LC¹) from HC 1

Human Cache 2

Age: Adolescent - Young Adult (18-22 years) Sex: Male?

The cranium of HC 2 was recovered at the eastern end of Trench 1 (Figure 7.6). The trench was then extended further east to uncover the entirety of HC 2, a possible adolescent - young adult (18-22 years) male. HC 2 was interred with the individual's cranium at the center of Str. 3. The long axis of HC 2 was oriented west-east at 102° east of north. The Maya dug into Fill 109, the earlier fill layer for Str. 3



Figure 7.6 HC 2 was uncovered at the eastern end of Trench 1 in Fill 109

to place HC 2. Limestone cobbles and small boulders were fitted tightly together over the individual (Figure 7.7). The top of the cranium pressed up against a row of limestone blocks that delineated the western extent of the interment. A smaller limestone block crushed in part of the face and mandible (see Figure 7.7), probably because of the weight of the overlying layers of fill. This limestone block could not be removed without damaging the skull, so was left in place. A broken *metate* fragment was pressed up against the right side of the individual's face (interior towards the face); it is unclear whether this was intentionally included or not. No other potential grave goods were associated with HC 2.



Figure 7.7 Limestone cobbles and small boulders covering the body of HC 2 with smaller limestone blocks crushed into the face

HC 2 was interred in a primary, tightly-flexed position (Figure 7.8; Table 7.3). The individual was positioned supine, face oriented up, top of cranium to the west, upper arms parallel to the torso, elbows bent with forearms resting on the torso underneath the legs. The legs were bent up to the individual's chest, hips and knees flexed. This individual may have been wrapped based on how tightly the legs were flexed. The cranium had postmortem breaks, but had maintained its shape and was in good condition. Bone meal outlines of the ribs were still present. The long bones were in fair to good condition, fragmented, but held together by matrix.



Figure 7.8 HC 2 interred on their back in a tightly-flexed position with the knees drawn up to the individual's chest

HC 2 was determined to be an adolescent or young adult based on size of elements and minimal occlusal wear on the two teeth present. The individual was estimated to possibly be male based on prominent supraorbital ridges (Table 7.2). No pathological changes were observed. Two teeth were recovered, a mandibular right canine (RC_1) and a first premolar (RP_1). A moderate amount of calculus was present on the RP_1 . Both teeth were collected and exported for aDNA, strontium, and diet analyses.

Human Cache 3

Age: Young Adult (20-24 years) Sex: Female?

The human skeletal remains of a third individual, a possible young adult (20-24 years) female, were identified during the excavation of Trench 2. The remains were located on Fill 104, just below Ballast 106 (see chapter 6). Floor 106, only present in the north half of Str. 3, was not identified above HC 3, however, since Ballast 106 was present the floor likely extended over HC 3. As Floor 106 extended south it became more degraded, which was most likely why it was not identified. The long axis of the individual, southeast to northwest, was oriented 125° east of north. No grave goods were found.

HC 3 was interred in a primary, tightly-flexed position lying on their right side (Figure 7.9). The top of the cranium was oriented up with the face towards the east. Similar to HC 1, the orientation of the cranium elevated it above the postcranial remains. The crushed cranium made it difficult to identify cranial elements. Upon excavation, the left side of the mandible was present with six teeth. The left arm was flexed at the elbow with poorly preserved hand elements found in the space between the distal left forearm and right humerus. The right arm was also flexed at the elbow with poorly preserved hand elements recovered next to the cranium. The legs were tightly flexed at the hip and knees, so that the knees would have been drawn up to the chest. The right tibia and fibula, along with both sets of foot elements were not recovered, likely due to poor preservation. All postcranial elements were fragmented and fragile. Long bone fragments were collected and exported for dietary analysis.

HC 3 was a young adult based on minimal dental occlusal wear. The LP_1 had slightly heavier wear than the other teeth. Sex was indeterminate for this individual because few sex characteristics were present due to preservation and fragmentation of the remains. The angle of the mandibular ramus, greater than 90° (Figure 7.10a), and the potentially wide greater sciatic notch (Figure 7.10b), suggest that this individual could be female. Six teeth (RC_1 , LI_2 , LC_1 , LP_1 , and LP_2) with demineralized crowns were

recovered (see Appendix 7.1). Calculus was present on three of the teeth. A single linear enamel hypoplasia was recorded on both RC₁ and LC₁.



Figure 7.9 HC 3 was interred in a tightly-flexed position on their right side

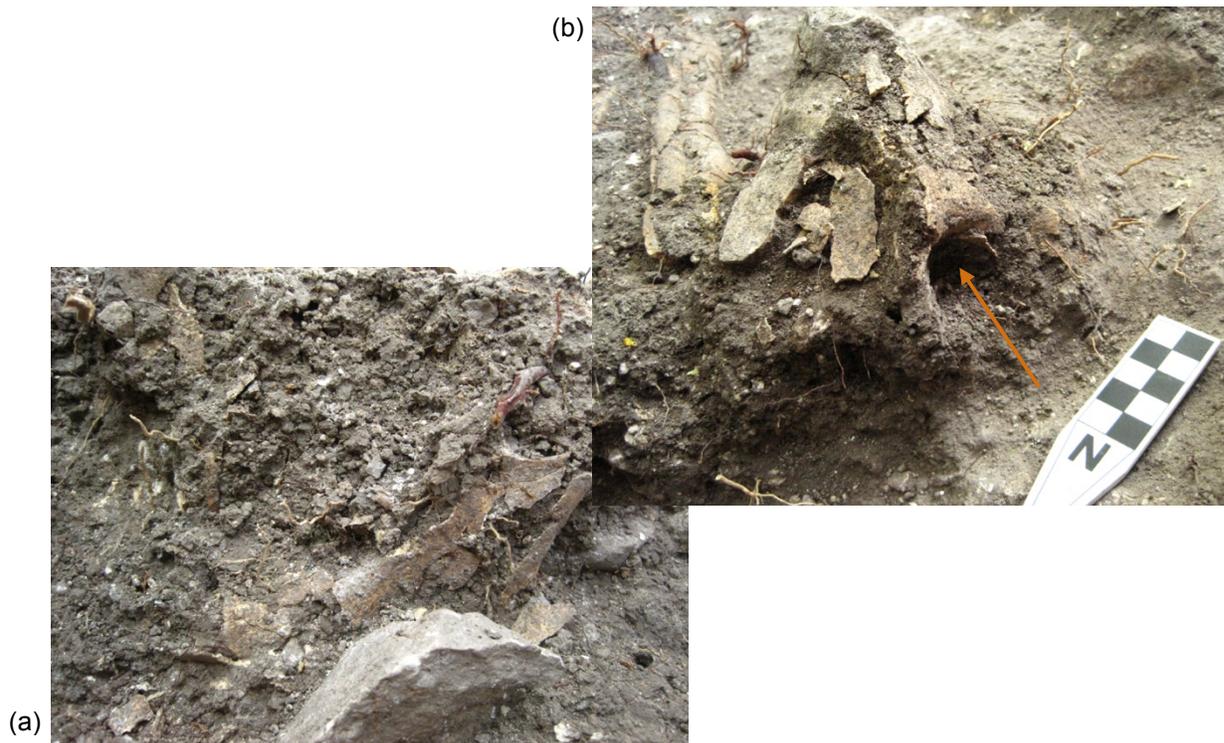


Figure 7.10 Sex estimate based on (a) angle of the ascending ramus and (b) wide sciatic notch

Table 7.3 Burial descriptions for human caches from Str. 3 at Cara Blanca Pool 1

Human Cache	Burial Position	Direction	Trench	Fill Layer	Comments
1	Primary? Tightly flexed? Supine?	south to north 145° east of north	2	Under Fill 103, on Floor 106 and dug into Floor/Ballast 106	Just southwest of Step 108, cranium surrounded by limestone cobbles, one piece of shaped limestone, 1 tan paste body sherd Artifacts in fill: 1 tan paste body sherd
2	Primary Tightly flexed Supine	west to east 102° east of north	1	Beneath Fill 104, dug into Fill 109	Cranium at center of Str. 3, limestone boulders fitted together covering individual, smaller pieces of limestone crushed into face, <i>metate</i> fragment pressed against right side of skull Artifacts in fill above HC 2: burnt rimless base, 70 ceramic sherds, 1 shell fragment, 1 chert nodule, 2 chert flakes
3	Primary Tightly flexed Right side	southeast to northwest 125° east of north	2	Between Fill 103 and Fill 104, on top of Fill 104	Covered in stones from Fill 103/Ballast 106

Discussion, Str. 3 Human Caches

The three individuals within Str. 3 appear have been incorporated as part of the construction process (Lucero et al. n.d.). Each HC could be related to different building phases and associated rituals. The placement of each individual at a transition between layers of fill recalls the layering of domestic structures that are part of the process of cycles of renewal, and indicate dedicatory ceremonies likely took place as part of the construction of Str. 3. Perhaps the human caches in Str. 3 served to imbue the platform with a soul, similar to the burial of ancestors beneath the floors of domestic structures. The inclusion of offerings, in the form of primary interments, would have ensured the platform's designation as a sacred space, a threshold to the portal to the underworld (Pool 1). Proximity to the *cenote* in combination with the dedicatory offering of human caches secured a connection between the platform and the otherworld. Visitors to the Cara Blanca ceremonial complex at Pool 1 would have walked over the three caches as they traversed the platform from south to north, before reaching the north step where they would have stood to make their offerings into the *cenote*. In this process, the visitor would have entered a liminal space beyond the current world, providing them access to the otherworld through the *cenote*. The location of the caches along the structures north-south axis suggests an intentional placement of these individuals to lie along the path visitors would traverse. This idea is further supported by Feature 105, an extra support in the ballast constructed of flat boulders in a roughly cross shape (see Chapter 6), presumably to support a frequently used path across Str. 3. The placement of the three identified human caches at different strata within Str. 3 suggests they were a crucial component of the stratigraphic and cosmological composition of the platform at Pool 1.

Salvage Excavations

The salvage aspect of the VOPA 2016 field season focused on sampling mounds exposed because of land clearing. After Hurricane Richard in 2010 and subsequent forest fires in 2011 damaged large swaths of the hardwood forest, Yalbac Ranch, a sustainable logging company, sold c. 30,000 acres of land to the Spanish Lookout Community Corporation (SPLC) for agricultural use, including a large block between the medium sized Maya center of Yalbac and the Cara Blanca pools, a valuable area to explore interaction between the two areas (Benson 2015). As the forest is cleared and the land developed, the loss of information about the ancient Maya who lived in the area is immanent. Each time machinery drives over these ancient Maya mounds, decades of information is lost. It was this reality of continual destruction of the settlement area that necessitated the 2016 salvage excavations. We appreciate SPLC allowing us to collect as much information as possible before sites are plowed away, including human remains.

The center of Yalbac, occupied 300 BCE to 900 CE (Lucero 2011), was inhabited while the region was experiencing multiyear droughts and the ceremonial structures at Cara Blanca Pool 1 were in use (800-900 CE). The settlement area between Yalbac and the Cara Blanca pools may provide

information about the interaction of the Maya non-elite with both locations during this period of instability. Therefore, mounds in Mound Field (MF) 2, 4, and Pool 7 MF were excavated (see Chapter 4). A total of eight mounds were excavated over the course of the field season. Out of these eight mounds, three contained human remains with a total of 14 individuals recovered. Going into the project, the crew knew that the presence of burials within the mounds was a possibility; the Maya interred family members under the floors of their houses as part of the dedicatory process, a means of animating and providing the house with a soul when rebuilding their homes, an event that took place about every 20 years (McAnany 1995; McAnany et al. 1999). In addition, the incorporation of ancestors into a family's residence established their stewardship of the land.

The 14 individuals recovered range in age from a fetus to mid adult (Table 7.4). Sex was unable to be estimated for the majority of the remains due to poor preservation and fragmentation, except for three individuals, who were all possibly male (Table 7.4). Bone preservation varied from good to poor, with remains tending to be extremely fragmented. Teeth were the most well-preserved elements, and were used for identifying individuals within Mound 4 Burial (BU) 1. Dental observations can be found in Appendix 7.1. Burial positioning was unable to be determined for the majority of individuals because of the heavy fragmentation of the remains or incomplete excavation of the remains. The three burials whose positioning was identifiable were primary interments, with two placed in a tightly-flexed position—that is, possible bundle burials (Table 7.5). Grave goods were identified in association with all burials except for two of them (see Table 7.5). Due to the salvage nature of the project we had to move quickly, so no maps were drawn, instead field observations were made and numerous photographs taken of the remains *in situ* before removing them.

Table 7.4 Age and sex estimates for individuals from salvage project, presence of modified teeth

Field	Mound	Burial	Individual	Age	Sex	Modified Teeth
Pool 7 MF	4	1	A	Young Adult (18-24 years)	Male	No
			B	Mid Adult (35-40 years)	?	Yes
			C	Adolescent (15-20 years)	?	Yes
			D	Young Child (3-4 years)	?	No
			E	Adolescent (12-15 years)	?	No
			F	Adolescent (16-20 years)	?	No
			G	Young Child (3-4 years)	?	No
	3	A	Fetus (c. 8 months in utero)	?	No	
	4	A	Infant (3 years (+/- 12 months))	?	No	
	1	2	A	Adolescent (16-20 years)	?	Yes
MF 4	1 East Str.	5	A	Adolescent (15 years (+/- 3 years))	?	No
		6	A	Young Adult (24-30 years)	Male?	Yes
		9	A	Adult?	?	No
	1 North Str.	8	A	Young Adult (18-22 years)	Male?	No

Table 7.5 Burial descriptions for the individuals recovered from the salvage project area

Location	Structure	Mound Type	Burial	Individual	Burial Position	Direction	Grave Goods	
							Non-ceramics	Ceramics
Pool 7	Mound 4	2	1	A	Primary Tightly flexed Right side	south - north	-	2 Achote Black Cubeta Incised vessels with pseudoglyphs, 1 Duck Run incised vessel, 1 Tinaja Red Group Cameron Incised pyriform vessel with pseudoglyphs, 1 Belize Valley or Roaring Creek vessel, 1 Chinja Impressed/Kaway Impressed vessel, 1 drum, 1 small bugle bowl, 1 large red- slipped base, 1 Vacca Falls plate, 1 Belize Red and British Honduras Volcanic Ash ware vessel
				B	Indeterminate	-	-	
				C	Indeterminate	-	1 carved faunal bone	
				D	Indeterminate	-	1 shell tinkler, 1 bird whistle, 2 modified faunal bones	
				E	Indeterminate	-	-	
				F	Indeterminate	-	-	
				G	Indeterminate	-	-	
			3	Primary Indeterminate	-	-		
			4	Indeterminate	-	1 carved shell pendant, 1 shell tinkler		
			MF 4	Mound 1	2	2	Primary Tightly flexed Right side	south - north
5	Indeterminate	-				1 cream polychrome cylinder vase, 1 Belize Red or British Honduras Volcanic Ash vessel, 1 everted jar w/ a groove on its lip, 1 Augilia Orange vessel, 1 red/black inverted ring- base bowl		
Mound 1 East Str.	4	6		Indeterminate	-	1 Duck Run vessel, 1 large ring based-bowl, 1 miniature jar		
		9		Indeterminate	-	-		
Mound 1 North Str.	4	8		Indeterminate	-	1 miniature jar, 1 Tau-foot dish		

Pool 7 MF Mound 4 Burials

Pool 7 MF is situated just southeast of Pool 7, a shallow lake (c. 2 m deep) and the westernmost pool along the Cara Blanca escarpment (Kinkella 2015). Of the mounds excavated in 2016, the ones in this field are the closest to the ceremonial site at Cara Blanca Pool 1. Yet, the people living here were likely participating in events at Yalbac as well, located four kilometers southwest of Pool 7 (Kinkella 2015). Two mounds (Mound 1 and 4) within the Pool 7 MF contained burials.

Mound 4 (10.8 x 12.3 m, 0.73 m tall) was located north of the other mounds and the closest to Pool 7 (Figure 7.11). The east half of the mound was excavated. Stone architecture was present as well as two plaster floors. A low east-west wall separated the two plaster floors identified (Figure 7.12). On the north side of the wall was a room (East Room), which was built at a slightly higher elevation. The plaster floor on the south side of the wall was at a lower elevation, wrapping around the west side of the room. Excavations below the plaster floor on the south side of the wall uncovered an empty chamber with a partial dome. Chapter 4 offers a more detailed description of Mound 4. Three burials and a total of nine individuals were uncovered during excavation of the mound (see Figure 7.12).



Figure 7.11 Mound 4 in the Pool 1 MF with the Cara Blanca cliffs in the background to the NE

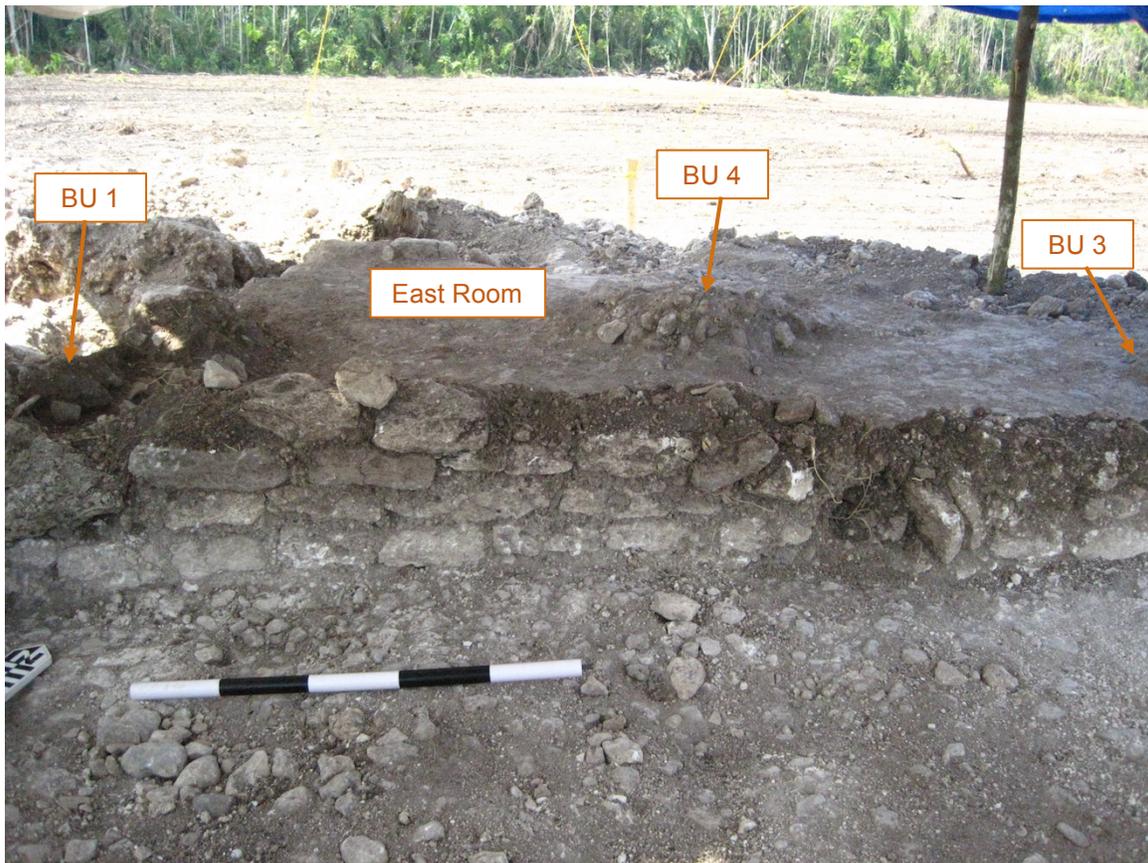


Figure 7.12 Pool 7 MF Mound 4 wall separating the two plaster floors and location of burials

Burial 1

Burial (BU) 1 (c. 1.38 x 1.05 m) was located in the center of Mound 4 and appears to be a single burial event; the Maya had dug into the plaster floor, cutting into the western edge of the East Room (Figure 7.13). There was no evidence of plaster floors or other architecture overlying BU 1, although a feature could have been removed by the farm equipment. There was no clear feature outline for BU 1; instead, the burial area was defined by the presence of human remains and grave goods. The fill within BU 1 was quite rocky, which made excavation difficult (Figure 7.14). This fill may have been the same as the fill covering the eastern half of the mound. The rocky fill, lack of overlying architecture, and extension of the burial above the plaster floor, suggests that BU 1 was created possibly as part of a termination ritual when the mound was abandoned or afterwards. Alternatively, land clearing may have removed upper architectural features.



Figure 7.13 Location of BU 1 in the center of Mound 4

Based on dental remains, seven individuals were interred within BU 1. These individuals range in age from a young child to a mid-adult (see Table 7.4). The only articulated (skeletal elements in anatomical position) individual was Individual A. The rest of the skeletal remains recovered from BU 1 were extremely fragmented. In a few cases teeth and skeletal elements were determined to be from the same individual based on age. For the remainder of the elements collected, their fragmented nature prevented them from being associated with other skeletal elements. A list of all unassociated skeletal elements recovered from BU 1 is presented in Appendix 7.1. Time did not allow for a complete analysis of these unattributed elements. Perhaps with more time, elements would be able to be associated.



Figure 7.14 BU 1 cluster of ceramics and human remains within rocky fill

There were over 1,700 ceramic sherds recovered from BU 1, representing a large collection of vessels and forms (Figure 7.15). Many of the ceramics were inverted vessels, badly fragmentary, as well as a drum and incensario (see Table 7.5). Carved bone objects were also present. The ceramics are Tepeu 2-3, or late Late Classic/Terminal Classic. In general, it was not possible to assign particular grave goods with specific individuals, but in a few cases this was possible. See Chapter 3 for a more detailed description of the ceramic grave goods recovered from BU 1.



BU 1 Individual A

Figure 7.15 Cluster of ceramic grave goods placed in BU 1

Age: Young Adult (18-24 years) Sex: Male

Individual A, a young adult (18-24 years) male, was the only identifiably articulated burial within BU 1. The individual was placed in a tightly-flexed position on their right side, indicating that Individual A may have been bundled (wrapped in cloth) before being interred (Figure 7.16). The top of the cranium was oriented toward the south. The fill was dark loose soil mixed with lots of rough rock and limestone, similar to the rocky fill of the upper portion of BU 1, but with more soil. Bone preservation was good to fair, possibly due to more soil being present. Individual A was probably one of the first people to be placed within BU 1 since no human remains were found underneath. The fragments of an Achote Black Cubeta Incised vessel were recovered from on top of and around the cranium of Individual A, indicating that an inverted vessel was placed over the individual's head.



Figure 7.16 BU 1 Individual A interred in a tightly-flexed position, close-up of cranium with vessel fragments

Age was estimated for Individual A based on the morphology of the auricular surface of the right innominate and minimal dental attrition (Table 7.6). A sex estimate of male was established using cranial and pelvic morphology (Table 7.7). The left femoral head diameter (c. 4.77 cm) is damaged, but also indicates the individual is likely male. An inventory of the skeletal remains recovered for Individual A is recorded in Appendix 7.1, along with dental observations and pathologies (Figure 7.17). All skeletal remains were excavated and removed for analysis. Four teeth (LI₂, LC₁, LM₁, LM₃) were collected and exported for isotopic and aDNA studies. Humerus and tibia fragments were also exported for dietary analysis.



Figure 7.17 Mound 4 Individual A: (a) right mandibular dentition with calculus and mental eminence (chin) and (b) shovel shaped incisors with calculus

Bony changes related to infection were observed during lab analysis. Healed porotic hyperostosis (bony reaction to inflammation of the loose connective tissue covering the bones of the cranial vault) was present on the frontal and occipital bones. Plaque-like new bone growth observed on the medial end of the inferior surface of the right clavicle, this could be related to infection. Both femora had healed periostitis (bony reaction to the inflammation of the periosteum covering the bones) and plaque-like new bone growth. The presence of both healed and active bone remodeling, along with three healed cloacae (a perforation of the bone which allows necrotic fluid to drain) on the right femur, indicates a reoccurring systemic infection, most likely osteomyelitis (Figure 7.18).



Figure 7.18 Right femur with healed periostitis, new bone growth, and a healed cloaca

BU 1 Individual B

Age: Mid Adult (35-40 years) Sex: Indeterminate

Individual B consists of portions of the maxillae and mandible and dentition (Appendix 7.1). The moderate wear observed on the premolars, combined with antemortem (prior to death) tooth loss of several molars, suggest an age of mid adult (35-40 years) despite the minimal wear on the anterior teeth (Table 7.6). Only two morphological traits indicative of sex were observable and together they were indeterminate (Table 7.7). Burial positioning was undetermined because the association between the dental and postcranial (below the cranium) remains was uncertain. There appeared to be an individual placed in a tightly-flexed position perpendicular to Individual A (see Figure 7.15), though the long bones were extremely fragmented and unable to be identified—and kept separate as unattributed elements. The right maxillary canine has been intentionally modified; grooves are present on the occlusal surface; however, moderate attrition (wear) has almost completely obscured the modification. The four maxillary incisors are missing or were lost antemortem, so we do not know if they were also modified. Two teeth (RC¹, RP₂) were exported for diet, migration, and aDNA analyses.

Table 7.6 Determination of age estimates for individuals from salvage excavations

Location	Burial	Individual	Age Estimate	Dentition		Cranial Suture Closure	Auricular Surface	Measurements
				Development	Attrition			
Pool 7 MF Mound 4	1	A	Young Adult (18-24 years)	-	18-22 years	minimal closure	30-34 years	-
		B	Mid Adult (35-40 years)	-	20-40 years	-	-	-
		C	Adolescent (15-20 years)	15 years (+/- 3 years)	16-22 years	-	-	-
		D	Young Child (3-4 years)	3-4 years	-	-	-	-
		E	Adolescent (12-15 years)	12 years (+/- 2.5 years)	12-18 years	-	-	-
		F	Adolescent (16-20 years)	-	16-20 years	-	-	-
		G	Young Child (3-4 years)	3-4 years	-	-	-	-
3	A	Fetus (c. 8 months in utero)	-	-	-	-	8 months in utero	
	A	Infant (3 years (+/- 12 months))	3 years (+/- 12 months)	-	-	-	-	
Pool 7 MF Mound 1	2	A	Adolescent (16-20 years)	-	16-20 years	-	-	-
		A	Adolescent (15 years (+/- 3 years))	15 years (+/- 3 years)	16-20 years	-	-	-
MF 4 Mound 1 East Str.	6	A	Young Adult (24-30 years)	24-30 years	-	-	-	-
		A	Adult?	-	-	-	-	-
MF 4 Mound 1	8	A	Young Adult (18-22 years)	-	18-22 years	-	-	-

Dental attritional wear: Lovejoy (1985)

Cranial suture closure: Lovejoy (1985); Meindl and Lovejoy (1985); Todd and Lyon (1924)

Table 7.7 Determination of sex estimates for individuals from salvage excavations

Location	Burial	Individual	Sex Estimate	Skull							Pelvis		
				Nuchal Crest	Mastoid Process	Supraorbital Margin	Supraorbital Ridge	Frontal Bossing	Mental Eminence	Greater Sciatic Notch	Preauricular Sulcus	Auricular Surface	
Pool 7 MF Mound 4	1	A	Male	4	-	5/-	4/-	absent	-	-/5	-/4	raised	
		B	?	-	-/3	-	-	-	2	-	-	-	
		C	?	-	-	-	-	-	-	-	-	-	-
		D	?	-	-	-	-	-	-	-	-	-	-
		E	?	-	-	-	-	-	-	-	-	-	-
		F	?	-	-	-	-	-	-	-	-	-	-
		G	?	-	-	-	-	-	-	-	-	-	-
Pool 7 MF Mound 1	3	A	?	-	-	-	-	-	-	-	-	-	
		A	?	-	-	-	-	-	-	-	-	-	
Pool 7 MF Mound 1	2	A	?	-	-	-	-	-	-	-	-	-	
		A	?	-	-	-	-	-	-	-	-	-	
MF 4 Mound 1 East Str.	5	A	?	-	-	-	-	-	-	-	-	-	
		A	Male?	-	-	-	4/4	-	-	-	-	-	
		A	?	-	-	-	-	-	-	-	-	-	
MF 4 Mound 1 North Str.	8	A	Male?	-	-	-	-	-	4	-	-	-	
		A	?	-	-	-	-	-	-	-	-	-	

Skeletal morphology recorded after Acsadi and Nemeskeri (1970), Buikstra and Ubelaker (1994), Milner (1992)

BU 1 Individual C

Age: Adolescent (15-20 years) Sex: Indeterminate

Individual C consists solely of dental remains, which were recovered directly to the southwest of Individual A's cranium. Since no other skeletal elements were recovered it was not possible to estimate sex or determine burial positioning. Based on dental attrition and absence of the third molars, which could be due to a congenital absence, Individual C was estimated to be an adolescent (15-20 years) (Table 7.6). Two humerii and a radius or ulna were uncovered beneath the cranium of Individual A near the teeth of Individual C; however, they were left as unattributed since the association was unclear. Dental observations and pathologies are recorded in Appendix 7.1. The anterior teeth and left posterior teeth have a significantly heavier accumulation of calculus (calcified plaque) than on the right side (Figure 7.19). This difference, along with almost complete destruction of the left mandibular second molar by a carious lesion, could indicate that Individual C had difficulty moving the left side of their jaw. Without further skeletal evidence, the reason for this possible mobility issue is unknown. The anterior maxillary and mandibular teeth are modified (Figure 7.20). The edge of the teeth had been filed to form patterned notches. Three teeth (LM^1 , LM^2 , RM_1) were exported for diet and aDNA studies.



Figure 7.19 Significant calculus accumulation on the left mandibular premolars for Individual C from BU 1



Figure 7.20 Modified maxillary and mandibular dentition for Individual C from BU 1

BU 1 Individual D

Age: Young Child (3-4 years) Sex: Indeterminate

Individual D consists of a fragmented cranium, four teeth, unidentified long bone fragments and several vertebrae fragments recovered at the northwestern edge of BU 1, tentatively associated with one another. Based on dental development, Individual D was a young child (3-4 years) at time of death (Table 7.6). Due to the young age of the individual, sex was unable to be determined. Two deciduous and two permanent teeth were recovered and are documented in Appendix 7.1. A single tooth (Rdm²) was exported for isotope studies. A shell tinkler, broken bird whistle and two modified faunal bones were recovered in the vicinity of Individual D, and may have been associated with this interment (Figure 7.21). A partially articulated set of vertebrae and ribs were recovered along the western edge of BU 1 between Individual D and E. These postcranial remains may be part of Individual D, but there was not enough time during the lab week to reexamine these elements so they were left unassociated.



Figure 7.21 Tinkler and broken bird whistle recovered near Individual D



Figure 7.22 Two LEHs on the maxillary central incisors and calculus on the RI¹

BU 1 Individual E

Age: Adolescent (12-15 years) Sex: Indeterminate

Individual E was an adolescent (12-15 years) based on dental development and wear for a nearly complete set of dental remains (Table 7.6). Sex was unable to be determined because the individual was too young, in addition none of the bony landmarks for determining sex were present. A very fragmented cranium (c. 140 fragments) was recovered with the teeth near the southwestern edge of BU 1. Individual E was found directly on top of a large stone, which appears to be part of the vault for the chamber below, which extends part way beneath BU 1. Multiple linear enamel hypoplasias (LEH, development lines in the crown enamel) were present on 19 of the teeth indicating repeated periods of stress during infancy and childhood (Figure 7.22). Four teeth (LI², RM₁, RM₂, LM₃) were exported for isotopic and aDNA studies.

BU 1 Individual F

Age: Adolescent (16-20 years) Sex: Indeterminate

Individual F was identified during lab analysis based on redundancy of dental remains within BU 1. Therefore, no burial positioning information is known. The observations and pathologies for the five mandibular teeth present are in Appendix 7.1. Due to time constraints during the lab week portion of the field season, information for the five maxillary teeth (RI², RC¹, LI², LC¹, LM¹) associated with Individual F were not documented. An age estimate of adolescent (16-20 years) was estimated based on dental attrition (Table 7.6). No cranial or postcranial elements were present to use for estimating sex. The right mandibular lateral incisor (RI₂) has a notch filed into the edge of the tooth. Occlusal wear has likely minimized the size of the notch. The crown of this tooth was also completely covered with calculus. Three teeth (RI₂, RC₁, LP₁) were exported for diet, migration, and aDNA analyses.

BU 1 Individual G

Age: Young Child (3-4 years) Sex:
Indeterminate

Individual G was established based on the presence of teeth within BU 1 that were redundant for Individual D. Appendix 7.1 includes documentation of these seven teeth (Figure 7.23). Based on dental development, Individual G was estimated to be a young child (3-4 years) at time of death (Table 7.6). Sex and burial positioning were indeterminate because no skeletal elements were associated with the dental remains. The skeletal elements of a child were present within BU 1, but it was unclear whether they belonged with Individual D or G, so were left unattributed. The right deciduous maxillary second molar was exported for isotope analyses.



Figure 7.23 Dental remains attributed in Individual G

Burial 3

During excavation of the East Room of Mound 4, the postcranial remains of a fetus were recovered directly on the plaster floor near the southeast corner of the room (Figure 7.24). The fill was quite rocky around BU 3 (15 x 12 cm) and throughout the east room of Mound 4. As discussed previously, perhaps the Maya terminated the structure by covering it with rocky fill after interring the individuals in BU 1 and placing the individuals from BU 3 and BU 4 on the floor. No non-perishable grave goods were associated with BU 3, although any offerings present could have been lost due to plowing.



Figure 7.24 BU 3 located on the plaster floor of the East Room in Mound 4

BU 3 Individual A

Age: Fetus (c. 8 months in utero) Sex: Indeterminate

A few cranial vault fragments were present, along with the right petrous bone and a portion of the occipital bone. The postcranial remains recovered included upper and lower long bones, scapulae, right pubis and ischium, ribs, vertebrae, metacarpal/metatarsals, and phalanges. The presence of cranial and postcranial elements indicates this was a primary burial. The elements were fragmented and burial position was unidentifiable. Due to the elements being so small and surrounded by rocky fill, part of Individual A may have been lost during excavation prior to identification of the burial. Individual A was estimated to be a fetus (c. 8 months in utero) based on the development and measurement of several elements (Figure 7.25, Table 7.6). Sex was indeterminate due to the individual's young age. The cortical bone of the humeri and lower long bones was porous (Figure 7.26). This porosity could be pathological, suggesting an infection, or normal porosity from bone development. No elements were exported for additional analyses because they are too small.



Figure 7.25 Skeletal elements used for estimating age: vertebrae, hand/foot elements, cranial elements, and innominate and pubis bones



Figure 7.26 BU 3 Individual A femora fragments showing porosity

Burial 4

While continuing to remove the rocky fill covering the plaster floor of the East Room of Mound 4, a second burial was uncovered, BU 4 (Figure 7.27). BU 4 (c. 0.57 x 0.44 m) was located halfway between BU 1 and BU 3 on top of the plaster floor of the East Room. The individual from BU 4 appears to have been placed on the floor and covered with the rocky fill found across the mound; or the Maya excavated into the rocky fill covering the mound to inter this individual. Two shell ornaments, a tinkler and carved marine shell in the shape of a baby skull with two eyelets on either side of the head for suspending the pendant, were recovered directly beneath the cranium, maxillae, and mandible; the carved marine shell was inverted (Figure 7.28; see also Figure 4.12)



Figure 7.27 BU 4 on the floor of the East Room of Mound 4

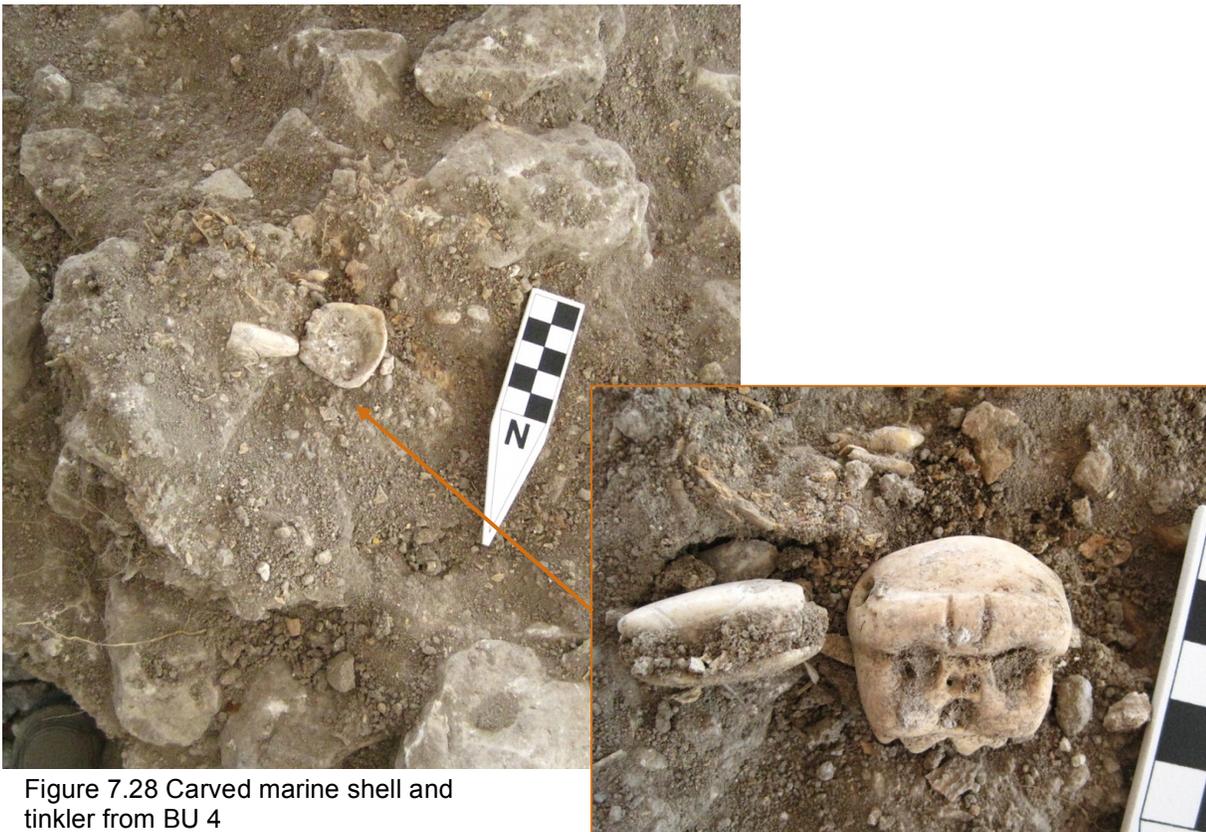


Figure 7.28 Carved marine shell and tinkler from BU 4

BU 4 Individual A
Age: Young Child (3 years (+/- 12 months))
Sex: Indeterminate

BU 4 contained the remains of a young child (3 years (+/- 12 months)) based on dental development (Figure 7.29, Table 7.6). The remains were extremely fragile and fragmentary, making excavation and identification difficult. The majority of elements recovered were highly fragmented cranial bones. A distal hand phalanx, extremely fragmented long bones, and two cervical vertebrae neural arch fragments were also recovered. Based on the presence of cranial and postcranial elements this was likely a primary burial; however, burial position was unable to be determined due to the extreme fragmentation of the remains.

Sex was indeterminate because of the individual's age. No pathological changes were observed, although this could be due to poor preservation. A nearly complete set of deciduous teeth was recovered, missing Ldc_1 , with minimal occlusal attrition (Appendix 7.1). The partially formed dental crowns of the permanent dentition were present, in crypt (see Figure 7.29). A single tooth (Ldm^2) was exported for diet and migration analyses



Figure 7.29 Deciduous and permanent dentition recovered from BU 4 Individual A

Pool 7 MF Mound 1 Burial

Mound 1 (11 x 12.5 m, 0.52 m tall) was the second mound within the Pool 7 MF in which an individual was buried (Figure 7.30). Located southwest of Mound 4 and c. 350-400 m south of Pool 7, this Type 2 mound contained stone architecture. An East and a West Room, each with a plaster floor, were defined by two stone walls. A single burial was identified in the excavated portion of the mound. See Chapter 4 for a more detailed discussion and plan map of Mound 1.



Figure 7.30 Mound 1 in Pool 7 MF looking NW

Burial 2

Beneath the floor of the East Room was a burial, BU 2. A cluster of ceramic vessels were placed on the degraded plaster floor over the burial (Figure 7.31, Table 7.5). A pile of limestone cobbles wrapped around the eastern and southern sides of the ceramics.



Figure 7.31 Cluster of ceramic vessels over BU 2



Figure 7.32 BU 2 Individual A *in situ*, interred in a tightly-flexed position

BU 2 Individual A

Age: Adolescent (16-20 years) Sex: Indeterminate

BU 2 consisted of the primary interment of Individual A, who was placed in a tightly-flexed position on their right side, that is, a possible bundle burial where the individual may have been wrapped in cloth prior to burial (Figure 7.32, Table 7.5). Bone preservation was poor, so elements had to be removed with matrix surrounding them in order to keep them intact. The matrix was clayey and stuck to the bones, making the burial difficult to excavate. The poor condition of the bones meant pathologies were unobservable.

A nearly complete set of teeth was present; however, there was not enough time during the lab week to complete the dental analysis. The information that was recorded is presented in Appendix 7.1. An age estimate of adolescent (16-20 years) was established based on minimal dental attrition (Table 7.6). Sex was indeterminate because the remains were in poor condition. The edge of the anterior maxillary teeth and the mandibular incisors were filed (Figure 7.33). In addition, the right mandibular first premolar had a deep circular depression on the buccal surface (cheek side) of the crown, which suggests Individual A may have had a stone inlay in this tooth. Two teeth (LM¹, LM³) and a tibia fragment were exported for diet and mobility studies.



Figure 7.33 Modified anterior maxillary and mandibular dentition and possible modification of RP₁ for an inlay

MF 4 Mound 1 East Structure Trench Burials

MF 4 was located further south of Pool 7, towards Yalbac, approximately halfway between Pool 7 and Yalbac. MF 4 Mound 1 sat next to a modern-day road. Mound 1 was a Type 4 platform complex, almost 2.5 m tall with three structures and a plaza constructed on top. A trench was placed through the North and East structures. Cut stone architecture was uncovered in both trenches. The trench through the North Structure is discussed below. Within the East Structure (14.6 x 6.3 m, 4.13 m tall) trench, we exposed five walls, a set of steps, and at least three floors. Besides the grave goods, the artifacts present consisted of domestic vessels. Two burials, BU 5 and BU 6, were recovered from the trench (Figure 7.34). Chapter 4 provides profile maps of the trenches and discusses the excavations at Mound 1 in greater detail.

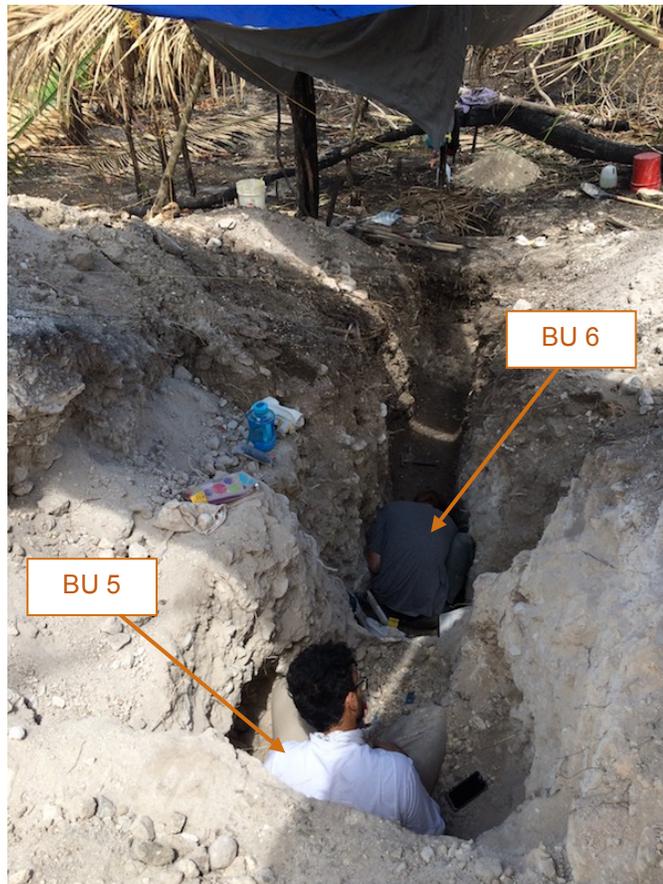


Figure 7.34 Location of BU 5 and 6, East Str. looking W

Burial 5

BU 5 was located beneath a plaster floor near the top of the East Structure. The human remains appear to extend into the north side of the trench; however, time did not allow for an expansion of the trench. The skeletal elements recovered within the boundaries of the trench were removed to protect



Figure 7.35 Inverted red and black ring based-bowl placed over the cranium of Individual from BU 5

them against potential looters, even though this meant separating them from the remainder of the postcranial remains that were likely present beyond the extent of the trench to the north. An inverted red and black ring based-bowl, similar to Daylight Orange, was placed directly over the cranium of the individual (Figure 7.35). The bowl was broken with half of it collapsed in. In addition, a cream polychrome cylindrical vessel was recovered nearby.

BU 5 Individual A

Age: Adolescent (15 years (+/- 3 years)) Sex: Indeterminate

BU 5 consisted of the interment of an adolescent (15 years (+/- 3 years) of indeterminate sex. The cranium was crushed beneath the bowl, making orientation difficult to determine. The postcranial remains recovered were north of the cranium, indicating the rest of the individual extended in that direction. Since the majority of postcranial remains were not recovered, burial positioning could not be identified, however, portions of the left arm and part of the proximal third of the left femur were present. This may indicate that the individual was a primary burial in a tightly-flexed position.

An age estimate of approximately 15 years old was determined based on dental development and minimal dental attrition (Table 7.6). Sex was indeterminate, since no identifiable sex characteristics were recovered. A nearly complete set of permanent dentition was recovered for this individual (Appendix 7.1). Minimal amounts of calculus recorded on both maxillary and mandibular dentition. A single linear enamel hypoplasia was identified on five teeth. No pathologies observed on any of the cranial or postcranial bones. Three teeth (LM₁, LM₂, LM₃) and two long bone fragments were exported for diet and mobility analyses.

Burial 6

BU 6 was located at the base of the East Structure beneath a floor and dug into the platform plaster (Figure 7.36). This individual was possibly part of the initial construction phase of the East Structure. BU 6 was uncovered close to the northern extent of the trench and the skeletal remains appear to have continued into the trench profile. The human remains exposed within the trench were collected. There are likely still skeletal elements present with the East Structure for BU 6. Non-perishable grave goods placed next to, and inverted over the head of the interred individual included a miniature vessel, pyriform vessel, and large, plain dish.



Figure 7.36 BU 6 dug into the platform plaster beneath the East structure, fragmented ceramic plate and cranial elements, and miniature vessel.

BU 6 Individual A

Age: Young Adult (24-30 years) Sex: Male?

Individual A from BU 6 was a young adult (24-30 years) based on dental attrition (Table 7.6). The only morphological trait present for assessing sex was the supraorbital ridges, which suggest male (Table 7.6). Bone preservation was poor and the elements fragmented. Cranial fragments, part of the left scapular spine, hand elements, an unisided humerus fragment, and unidentified long bone fragments were collected. The presence of cranial and postcranial elements suggests that this was a primary burial. Burial position was unable to determine since the entire individual was not exposed. The anterior maxillary teeth have been modified (Figure 7.37). The filing may be part of the reason why the anterior teeth had a heavier degree of occlusal wear than was observed on the posterior dentition. Appendix 7.1 includes the results of the dental analysis. Two teeth (RM³, LM₁) were collected for diet and mobility studies, however, the teeth ended up being too demineralized and degraded to use.



Figure 7.37 Modified anterior maxillary teeth for Individual A from BU 6

Burial 9

While excavating through the platform plaster at the western end of the east-west trench, a single human hand bone was recovered from the platform fill. If time had allowed us to expand the trench west we could probably have expected to find a complete burial. No non-perishable grave goods were recovered in the vicinity.

BU 9 Individual A

Age: Adult? Sex: Indeterminate

A single distal hand phalanx, well preserved, was collected from the west wall of the trench. The proximal epiphysis was fused, which indicates the individual may have been an adult. Sex was unable to be determined using this element. Since the phalanx was the only element recovered it was not exported for additional analyses.

MF 4 Mound 1 North Structure Trench Burial

The trench through the North Structure (14.5 x 6.4 m, 5.01 m in elevation from the ground surface) exposed two walls, three floors, and one burial, BU 8. The artifact assemblage indicated that this structure was likely residential.

Burial 8

BU 8 was located in the structure fill beneath one of the walls at the base of the structure (Figure 7.38). The cobble fill had to be excavated into in order to retrieve the human remains and burial artifacts. The loose fill was unstable and the weight of the overlying fill had fragmented the skeletal remains and artifacts. The human remains and vessel fragments that could be recovered easily without causing the fill to become unstable were collected. The skeletal remains likely continued into the fill to the east. Non-perishable grave goods included a large inverted plate and miniature vessel (see Figure 7.38). The plate was found in proximity to the cranium and appears to have been inverted over the head. The miniature vessel was recovered near the cranium as well.



Figure 7.38 Location of BU 8 within the North structure (left); Tau-foot dish covering cranium (top right); miniature vessel and cranial fragments (bottom right)

BU 8 Individual A

Age: Young Adult (18-22 years) Sex: Male?

The human skeletal remains that were recovered from BU 8 included both cranial and postcranial elements, indicating that this was likely a primary interment. Burial positioning was unable to be determined because of having to dig into the fill beneath the wall to retrieve the remains. An age estimate of young adult was determined based on minimal dental attrition (Table 7.6). The mental eminence of Individual A was prominent and robust, suggesting that this person was possibly male (Figure 7.40, Table 7.6). The results of the dental analyses are presented in Appendix 7.1. Two teeth (RC¹, LP¹) were exported for aDNA, diet, and mobility studies.

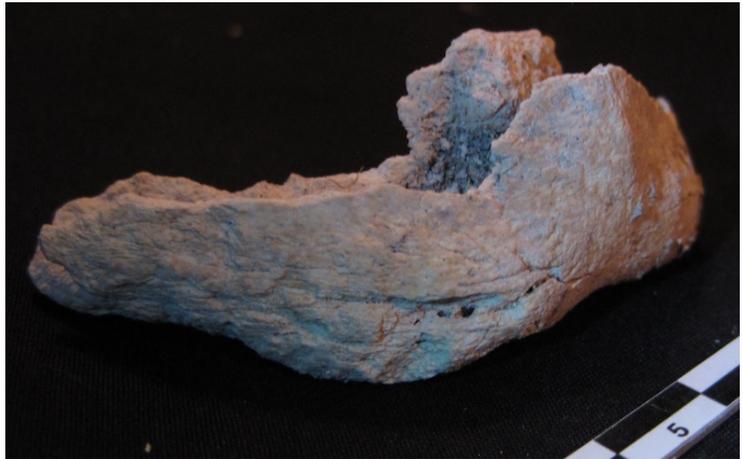


Figure 7.40 BU 8 Individual A mandible, mental eminence

Discussion and Conclusions

Based on the dental remains recovered from Pool 1 Str. 3 and the Mound Field excavations, the individuals living around Yalbac did suffer from recurring periods of stress during infancy and childhood based on the presence of linear enamel hypoplasias (LEHs) on multiple teeth for 12 out of the 15 individuals with dentition. LEHs are a general indicator of metabolic stress, which causes a disruption in

the deposition of enamel during a tooth's development (Hillson 1996). The multiyear droughts experienced by the Maya in the region during the Terminal Classic could possibly have contributed to the metabolic stress experienced by these individuals. A comparison would have to be made with the dentition of individuals living in the area prior to 800 CE in order to determine if there is a difference in prevalence of LEHs.

Four of the 12 individuals with teeth from the salvage project, ranging in age from adolescent to mid adult, had modified anterior dentition (see Table 7.4). Intentional modification, through filing of the tooth edge to form notched patterns, has been attributed to a range of reasons. Like tattoos, the permanent alteration of the teeth changes an individual's appearance and is immediately visible to everyone else. This suggests that dental modification may have been a way of expressing one's identity, membership within a group, status in the community, or even a means of imitating the elite (Mower 1999). For the Maya, modified teeth have been associated with individuals of various social standings (Mower 1999), indicating potentially everyone had access to the means of filing their teeth although the reasons for manipulating their physical appearance likely varied. Further research into potential temporal and spatial differences of dental modification is required to draw further conclusions, along with the gathering of ethnographic information.

While an examination of the human remains from the caches does not offer any indication of whether they were local or non-local, perhaps the additional analyses currently underway at the University of Illinois at Urbana-Champaign will offer further insight into the lives of these individuals and those recovered from the Maya settlement areas. The results of the strontium isotope analysis will in particular offer information about the mobility of individuals during their life, and whether or not they lived in the vicinity of Yalbac since birth. In addition, diet, including the amount of maize consumed, will be assessed using carbon and nitrogen isotope ratios. Diet analyses can potentially distinguish individuals who might have consumed different amounts or types of food, for example, elites or those whose lives have been dedicated to ritual practices. Ancient DNA studies may be able to convey familial relationships between individuals interred within the same context or between the two project locations, as well as, how long individual's lineages may have lived in the area.

As we can clearly see, there is a difference between the burial practices associated with the interment of individuals within Str. 3 at Cara Blanca Pool 1 and those recovered from the mounds in the Mound Fields. Non-perishable grave goods, primarily ceramics, were found in association with all except two of the individuals from the settlement area, while no non-perishable ceramic grave offerings were placed with the Cara Blanca human caches. This difference supports the idea that the individuals interred in Str. 3 at Pool 1 were not there to provide continuity between the past and present for a single lineage. Instead, the human caches created a way to access the underworld by turning Str. 3 into a threshold for the portal to the underworld, Pool 1. Perhaps the construction of ceremonial structures—at a place already designated as sacred within the Maya landscape as an opening in the earth through which the worlds of the gods could be accessed—was a place that the nearby inhabitants of Yalbac turned to as the continued droughts challenged their resources, and likely became a place of pilgrimage for those further away.

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Appendix 7.1 Dental Data

Appendix 7.1.1 Dental inventory for teeth recovered from the human caches in Str. 3 at Pool 1

Individual	Tooth	Inventory		Crown Measurements (cm)			Wear
		Presence	Development	Length	Width	Height	
HC 1	LC ¹	2.5	Ac	0.78	0.85	1.03	2
HC 2	RC ₁	2.5	Ac	-	-	-	4
	RP ₁	2.5	Ac	(0.80)	0.73	0.64	2
HC 3	RP ₂	2.5	-	0.67	0.71	0.40	4
	RC ₁	2.5	Ac	0.70	0.74	0.84	4
	LI ₂	2.5	Ac	0.60	0.58	0.76	3
	LC ₁	2.5	Ac	0.67	0.73	0.83	4
	LP ₁	2.5	-	0.66	0.71	0.37	5
	LP ₂	2.5	Ac	0.58	0.57	0.59	1

Inventory presence: 2.5 = Isolate, in occlusion
 Buikstra and Ubelaker 1994, Smith 1984

Appendix 7.1.2 Dental pathologies for teeth recovered from the human caches in Str. 3 at Pool

Individual	Tooth	Linear Enamel Hypoplasias		Caries	Calculus		Abscess
		Count	Location		Type	Surface	
HC 1	LC ¹	2	0.21, 0.33	0	0	-	9
HC 2	RC ₁	-	-	0	2	La, Li, M, D	9
	RP ₁	0	-	0	1	B, Li, M, D	9
HC 3	RP ₂	0	-	0	0	-	9
	RC ₁	1	0.25	0	1	La	9
	LI ₂	unobservable		0	2	La, D	9
	LC ₁	1		0	1	M	9
	LP ₁	0	-	0	0	-	9
	LP ₂	unobservable		0	0	-	9

Location of calculus: La = labial, Li = lingual, M = mesial, D = distal
 Buikstra and Ubelaker 1994

Appendix 7.1.3 Dental inventory for individuals from the salvage project

Individual	Tooth	Inventory		Crown Measurements (cm)			Wear	Noncarious Pits
		Presence	Development	Length	Width	Height		
Pool 7 MF	RM ³	2.5	-	0.95	1.09	0.6	3/3/3	1

Mound 4 Burial 1 Individual A	RM ²	2.5	Ac	0.93	1.18	0.59	4/4/4/4	0
	RM ¹	2.5	Ac	1.09	1.23	0.60	4/4/4/4	0
	RP ²	2.5	Ac	0.76	0.90	0.69	2	0
	RP ¹	2.5	Ac	0.74	0.92	0.79	2	0
	RC ¹	2.5	Ac	0.81	0.84	0.89	2	0
	RI ¹	2	Ac	0.87	(0.68)	1.01	2	0
	LI ¹	2.5	Ac	0.83	(0.70)	0.99	2	0
	LI ²	2.5	Ac	0.68	-0.63	1.03	1	0
	LC ¹	2.5	Ac	0.84	(0.84)	(0.95)	2	0
	LP ¹	2.5	Ac	0.70	0.90	0.77	1	0
	LP ²	2.5	Ac	0.69	0.90	0.76	1	0
	LM ¹	2.5	Ac	1.12	1.20	0.63	4/4/4/4	0
	LM ²	2.5	Ac	0.93	1.18	0.63	3/4/3	0
	LM ³	2.5	Ac	1.00	0.99	(0.50)	3/4/3	6
	RM ₃	2.5	Ac	1.19	1.04	0.53	3/3/3/3	4
	RM ₂	2	Ac	1.11	0.96	0.62	4/3/4/3	0
	RM ₁	2	Ac	1.20	1.09	0.62	4/3/4/3	0
	RP ₂	2	Ac	0.71	(0.79)	0.72	2	0
	RP ₁	2	Ac	0.69	(0.79)	0.84	1	0
	RC ₁	2	Ac	0.73	(0.82)	1.05	2	0
	RI ₂	2.5	Ac	0.66	-	(0.83)	2	0
	LI ₁	2.5	Ac	0.59	-	(0.87)	1	0
	LI ₂	2.5	Ac	0.67	-	(0.90)	2	0
	LC ₁	2.5	Ac	0.74	(0.83)	1.10	2	0
	LP ₁	2.5	Ac	0.68	-	0.82	2	0
	LP ₂	2.5	Ac	0.70	0.77	0.77	1	0
	LM ₁	2.5	-	1.20	1.08	0.60	4/3/4/3	0
	LM ₂	2.5	-	1.08	0.94	0.61	4/3/4/3	0
	LM ₃	2.5	Ac	1.11	1.02	0.57	4/3/4/3	5
	Pool 7 MF Mound 4 Burial 1 Individual B	RP ²	4	-	-	-	-	-
RP ¹		2	-	0.66	(0.79)	0.69	7	0
RC ¹		2	-	0.84	0.90	0.82	5	0
RI ²		4	-	-	-	-	-	-
RI ¹		4	-	-	-	-	-	-
LC ¹		2	Ac	0.76	0.91	0.85	5	0
LP ²		2	Ac	-	-	-	8	unobserv
LM ¹		4	-	-	-	-	-	-
RM ₁		4	-	-	-	-	-	-
RP ₂		2	Ac	0.71	0.79	0.38	5	0
RP ₁		2	Ac	0.67	0.76	0.33	6	0
RC ₁		2	Ac	0.70	(0.80)	0.78	3	0
RI ₁		2	Ac	0.55	-	(0.74)	3	0
LI ₂		2	Ac	0.60	(0.66)	(0.83)	3	0
LC ₁		2	Ac	0.69	0.80	0.65	4	0
LP ₁		2	Ac	0.65	0.96	0.39	6	0
LP ₂		2	Ac	0.66	0.81	0.45	6	0
LM ₁		4	-	-	-	-	-	-
LM ₃	6*	-	-	-	-	-	-	
Pool 7 MF Mound 4 Burial 1	RM ³	6*	-	-	-	-	-	-
	RM ²	2.5	-	1.03	1.16	0.58	3/3/3/3	0
	RM ¹	2.5	-	1.07	1.14	0.57	4/3/4/4	0

Individual C	RP ²	2.5	-	0.73	0.86	0.59	2	0
	RP ¹	2.5	-	0.70	0.96	(0.68)	2	0
	RC ¹	2.5	A _C	0.81	0.89	0.89	4	0
	RI ²	2.5	A _C	0.69	0.62	0.88	2	0
	RI ¹	2.5	A _C	0.83	0.76	1.06	2	0
	LI ¹	2.5	A _C	0.81	(0.80)	1.03	2	0
	LI ²	2.5	A _C	0.69	(0.60)	0.78	3	0
	LC ¹	2.5	A _C	0.80	0.88	0.89	2	0
	LP ¹	2.5	A _C	0.71	-	0.79	2	0
	LP ²	2.5	A _C	0.72	-	0.62	2	0
	LM ¹	2.5	-	1.09	-	(0.59)	3/3/3/3	0
	LM ²	2.5	-	1.06	-	(0.71)	2/3/3/3	0
	LM ³	6*	-	-	-	-	-	0
	RM ₃	6*	-	-	-	-	-	-
	RM ₂	2.5	-	1.18	1.07	0.59	3/2/-/-	0
	RM ₁	2.5	-	1.19	1.07	0.62	4/2/4/3	0
	RP ₂	2.5	-	0.74	0.80	0.75	2	0
	RP ₁	2.5	-	0.70	0.80	0.77	1	0
	RC ₁	2.5	-	0.71	0.82	1.04	2	0
	RI ₂	2.5	-	0.64	(0.62)	0.78	2	0
	RI ₁	2.5	A _C	0.52	-	0.65	3	0
	LI ₁	2.5	A _C	0.51	0.61	0.67	3	0
	LI ₂	2.5	A _C	0.61	(0.61)	0.79	2	0
	LC ₁	2.5	A _C	0.72	-	0.91	2	0
	LP ₁	2.5	A _C	0.70	-	0.74	2	0
	LP ₂	2	A _C	0.75	-	0.71	2	0
	LM ₁	2	A _C	1.17	-	0.70	10	0
	LM ₂	2	A _C	-	-	-	-	-
	LM ₃	6*	-	-	-	-	-	-
	Pool 7 MF Mound 1 Burial 1 Individual D	Rdm ²	2.5	R _C	1.00	1.10	0.61	1/1/1/1
Rdm ¹		2.5	A _C	0.74	0.99	0.62	1	0
Pool 7 MF Mound 4 Burial 1 Individual E	RM ³	6*	-	-	-	-	-	-
	RM ²	2.5	-	1.06	1.24	0.78	1/1/1/1	0
	RM ¹	2.5	-	1.18	1.22	0.75	2/2/1/3	0
	RP ²	2.5	-	0.76	0.99	0.90	1	0
	RP ¹	2.5	-	0.77	0.98	0.90	1	0
	RC ¹	2.5	-	0.83	0.91	1.27	1	0
	RI ²	2.5	-	0.72	0.69	1.10	1	0
	RI ¹	2.5	-	0.88	0.78	1.19	1	0
	LI ¹	2.5	A _C	0.87	0.73	1.18	1	0
	LI ²	2.5	A _C	0.74	0.70	1.09	1	0
	LC ¹	2.5	R _C	0.84	0.95	1.29	1	0
	LP ¹	2.5	A _C	0.76	0.98	0.87	1	0
	LP ²	2.5	R _C	0.75	0.97	0.85	1	0
	LM ¹	2.5	-	1.17	1.25	0.82	2/2/2/3	0
	LM ²	2.5	-	1.07	1.21	0.77	1/1/1/1	0
LM ³	6*	-	-	-	-	-	-	

	RM ₃	2.5	Cr _c	1.32	1.16	0.72	0	0
	RM ₂	2.5	-	1.20	1.10	0.84	2/1/2/1	1
	RM ₁	2.5	-	1.28	1.11	0.84	2/1/2/1	0
	RP ₁	2.5	-	0.75	0.81	0.92	1	0
	RC ₁	2.5	-	0.74	0.83	1.30	1	0
	RI ₂	2.5	-	0.63	0.64	1.04	1	0
	LI ₁	2.5	Ac	0.54	0.60	0.90	3	0
	LI ₂	2.5	-	0.68	0.64	0.95	1	0
	LC ₁	2.5	-	0.77	0.80	1.27	1	0
	LP ₁	2.5	-	0.74	0.79	0.92	1	0
	LP ₂	2.5	-	0.78	0.85	0.90	1	0
	LM ₁	2.5	-	1.28	1.11	0.83	2/1/2/1	1
	LM ₂	2.5	-	1.15	1.09	0.82	2/1/2/1	0
	LM ₃	2.5	R _{1/4}	1.34	1.15	0.69	0	0
Pool 7 MF Mound 4 Burial 1 Individual F	RC ¹	2.5	-	-	-	-	-	-
	RI ²	2.5	-	-	-	-	-	-
	LI ²	2.5	-	-	-	-	-	-
	LC ¹	-	-	0.90	0.95	-	-	-
	LM ¹	-	-	1.11	1.37	-	-	-
	RC ₁	2.5	Ac	0.80	0.89	1.17	1	0
	RI ₂	2.5	Ac	0.60	-	0.96	1	0
	LP ₁	2.5	Ac	0.85	0.86	0.89	1	0
	LM ₁	2.5	Ac	1.32	1.17	0.71	3/2/3/2	6
LM ₃	2.5	R _{3/4}	1.31	1.22	0.64	1/1/1/1	0	
Pool 7 MF Mound 4 Burial 1 Individual G	Rdm ²	2.5	-	0.96	1.07	0.66	1/1/1/1	0
	Rdi ²	2.5	Ac	0.56	0.48	0.60	1	0
	Rdi ¹	2.5	Ac	0.66	0.48	0.64	1	0
	Ldi ²	2.5	Ac	0.55	0.49	0.64	1	0
	Ldm ²	2.5	-	0.97	1.04	0.65	1/1/1/1	0
	Ldm ₁	2.5	-	0.84	0.69	0.63	1	0
Pool 7 MF Mound 1 Burial 2 Individual A	RM ³	2.5	-	-	-	-	-	-
	RM ²	2.5	-	-	-	-	-	-
	RM ¹	2.5	-	1.08	1.18	0.77	-	-
	RP ²	2.5	-	-	-	-	-	-
	RP ¹	2.5	-	-	-	-	-	-
	RC ¹	2.5	-	0.86	0.83	1.13	-	-
	RI ²	2.5	-	-	-	-	-	-
	RI ¹	2.5	-	-	-	-	-	-
	LI ¹	2.5	-	-	-	-	-	-
	LI ²	2.5	-	-	-	-	-	-
	LC ¹	2.5	-	0.86	0.82	1.21	-	-
	LP ¹	2.5	-	-	-	-	-	-
	LM ¹	2.5	-	1.12	1.20	0.70	3/3/3/3	0
	LM ²	2.5	-	-	-	-	-	-
	LM ³	2.5	-	0.98	1.05	0.65	2/2/1/1	0
	RM ₃	2.5	-	-	-	-	-	-
	RM ₂	2.5	-	-	-	-	-	-
	RM ₁	2.5	-	1.23	1.09	0.80	-	-
	RP ₁	2.5	-	-	-	-	-	-
RC ₁	2.5	-	0.76	0.72	1.27	-	-	
RI ₂	2.5	-	-	-	-	-	-	

	RI ₁	2.5	-	-	-	-	-	-
	LI ₁	2.5	-	-	-	-	-	-
	LI ₂	2.5	-	-	-	-	-	-
	LC ₁	2.5	-	0.78	0.74	1.16	-	-
	LP ₁	2.5	-	-	-	-	-	-
	LP ₂	2.5	-	-	-	-	-	-
	LM ₁	2.5	-	-	-	-	-	-
	LM ₂	2.5	-	-	-	-	-	-
	LM ₃	2.5	-	-	-	-	-	-
Pool 7 MF Mound 4 Burial 4 Individual A	Rdm ²	2.5	R _{3/4}	0.91	1.04	0.61	1/1/1/1	0
	Rdm ¹	2.5	R _c	0.66	0.87	0.55	1	0
	Rdc ¹	2.5	-	0.70	0.57	0.73	1	0
	Rdi ²	2.5	A _{1/2}	0.56	0.46	0.60	1	0
	Rdi ¹	2.5	-	0.67	0.46	0.63	1	0
	Ldi ¹	2.5	-	0.66	0.46	0.63	1	0
	Ldi ²	2.5	A _{1/2}	0.57	0.48	0.60	1	0
	Ldc ¹	2.5	R _c	0.70	0.56	0.75	1	0
	Ldm ¹	2.5	R _c	0.67	0.86	0.57	1	0
	Ldm ²	2.5	-	0.94	1.03	0.61	1/1/1/1	0
	Rdm ₂	2.5	-	1.07	0.92	0.61	1/1/1/1	0
	Rdm ³	2.5	-	0.76	0.68	0.55	1	0
	Rdc ₁	2.5	R _{3/4}	0.59	0.49	0.70	1	0
	Rdi ₂	2.5	R _c	0.44	0.39	0.59	1	0
	Rdi ₁	2.5	R _c	0.41	0.34	0.52	1	0
	Ldi ₁	2.5	R _c	0.41	0.34	0.52	1	0
	Ldi ₂	2.5	R _c	0.46	0.40	0.58	1	0
	Ldm ₁	2.5	R _c	0.79	0.70	0.50	1	0
	Ldm ₂	2.5	R _{3/4}	1.07	0.93	0.59	1/1/1/1	0
	RM ¹	1.5	Cr _c	1.05	1.19	-	-	-
	RI ²	1.5	Cr _{3/4}	0.62	-	-	-	-
	RI ¹	1.5	Cr _{3/4}	0.84	-	-	-	-
	LI ¹	1.5	Cr _{3/4}	0.82	-	-	-	-
	LI ²	1.5	Cr _{3/4}	0.61	-	-	-	-
	LC ¹	1.5	Cr _{1/2}	0.75	-	-	-	-
	LM ¹	1.5	Cr _c	1.09	1.19	-	-	-
	RM ₁	1.5	Cr _c	1.16	1.04	-	-	-
	RC ₁	1.5	Cr _{1/2}	0.64	-	-	-	-
RI ₂	1.5	Cr _{3/4}	0.60	-	-	-	-	
RI ₁	1.5	Cr _{3/4}	0.54	-	-	-	-	
LI ₁	1.5	Cr _{3/4}	0.52	-	-	-	-	
LI ₂	1.5	Cr _{3/4}	0.58	-	-	-	-	
LC ₁	1.5	Cr _{1/2}	0.69	-	-	-	-	
LM ₁	1.5	Cr _c	1.16	1.02	-	-	-	
MF 4 East Str. Mound 1 Burial 5 Individual A	RM ³	1.5*	-	-	-	-	0	0
	RM ²	2.5	-	-	-	-	1/1/1/1	0
	RM ¹	2.5	-	1.02	1.15	0.48	2/2/2/3	0
	RP ²	2.5	-	-	-	-	1	0
	RP ¹	2.5	A _c	-	-	-	1	0
	RC ¹	2.5	A _c	0.85	0.88	1.11	1	0
	RI ²	2.5	-	-	-	-	1	0

	RI ¹	2.5	-	0.89	0.78	1.21	1	0
	LI ¹	2.5	-	0.88	0.77	1.21	1	0
	LI ²	2.5	Ac	-	-	-	1	0
	LP ¹	2.5	-	-	-	-	1	-
	LP ²	2.5	Ac	-	-	-	1	0
	LM ¹	2.5	-	1.10	1.21	0.72	2/1/2/3	0
	LM ²	2.5	-	-	-	-	1/1/1/1	0
	LM ³	1.5*	R _{1/4}	-	-	-	0	0
	RM ₃	1.5	R _{1/4}	-	-	-	0	0
	RM ₂	2.5	Ac	-	-	-	1/1/1/1	0
	RM ₁	2.5	Ac	1.13	1.00	0.77	3/1/3/1	0
	RP ₂	3	-	-	-	-	-	0
	RP ₁	2.5	Ac	-	-	-	1	0
	RC ₁	2.5	-	0.73	0.79	1.11	1	0
	RI ₂	2.5	-	-	-	-	1	0
	RI ₁	2.5	Ac	-	-	-	1	0
	LI ₁	2.5	-	-	-	-	1	0
	LI ₂	2.5	-	-	-	-	1	0
	LP ₂	2.5	Ac	-	-	-	1	0
	LM ₁	2.5	Ac	1.16	1.07	0.75	3/2/3/1	0
	LM ₂	2.5	Ac	1.01	0.97	0.68	3/1/3/1	0
	LM ₃	1.5*	-	1.19	1.07	0.68	1/1/1/1	6
MF 4 East Str. Mound 1 Burial 6 Individual A	RM ³	2.5	-	-	-	-	-	-
	RP ²	2.5	-	(0.51)	0.81	(0.47)	4	0
	RP ¹	2.5	Ac	0.58	0.79	0.72	3	0
	RC ¹	2.5	Ac	0.72	(0.80)	(0.76)	5	0
	RI ²	2.5	Ac	0.60	(0.49)	(0.60)	4	0
	RI ¹	2.5	Ac	0.84	0.62	0.75	5	0
	LI ¹	2.5	Ac	0.84	0.62	(0.69)	5	0
	LI ²	2.5	Ac	0.52	0.47	0.59	3	0
	LC ¹	2.5	Ac	0.68	0.76	0.68	4	0
	RM ₁	4	-	-	-	-	-	-
	RP ₂	2	-	0.61	0.72	0.54	2	0
	RP ₁	2.5	-	0.57	0.68	0.59	2	0
	RC ₁	2.5	Ac	0.64	-	0.78	4	0
	RI ₁	2.5	-	0.55	-	(0.61)	5	0
	LI ₁	2.5	-	0.54	-	(0.68)	4	0
	LI ₂	2.5	-	0.59	(0.55)	(0.67)	4	0
	LC ₁	2.5	Ac	0.66	0.77	0.87	4	0
	LP ₁	2.5	-	0.58	0.72	0.61	2	0
LP ₂	2.5	-	0.61	0.72	0.57	2	0	
LM ₃	2	Ac	0.92	0.97	(0.53)	2/2/2/2	0	
MF4 North Trench Mound 1 Burial 8 Individual A	RM ³	2.5	Ac	-	-	-	1/1/1/-	-
	RM ²	2.5	-	-	-	-	5/3/3/3*	0
	RM ¹	2.5	Ac	1.03	1.31	0.72	3/3/3/4	0
	RP ²	2.5	Ac	-	-	-	2	0
	RP ¹	2.5	Ac	-	-	-	2	0
	RC ¹	2.5	Ac	0.83	0.83	0.80	3	0
	RI ²	2.5	Ac	0.77	0.67	(1.03)	-	0
LC ¹	2.5	Ac	0.83	0.84	(0.83)	2	0	

LP ¹	2.5	Ac	0.72	1.06	0.92	2	0
LP ²	2.5	-	-	-	-	4	0
LM ¹	-	Ac	1.17	1.25	(0.57)	3/3/3/3	0
RM ₃	2.5	Ac	-	-	-	4/3/4/3	0
RP ₂	2.5	Ac	-	-	-	3	0
RP ₁	2.5	-	-	-	-	2	0
LP ₂	2.5	Ac	-	-	-	2	0

Presence: 2.5 = Isolate, in occlusion

Wear: 1/2/3/4

Buikstra and Ubelaker 1994, Smith 1984, Scott 1979

() = measurement estimate, * = estimate

Appendix 7.1.4 Dental pathologies for individuals from the salvage project

Individual	Tooth	Linear Enamel Hypoplasias		Caries		Calculus		Abscess
		Count	Location	Count	Location	Type	Surface	
Pool 7 MF Mound 4 Burial 1 Individual A	RM ³	1	0.09	0	-	1	M, D, Li	9
	RM ²	-	-	0	-	1	B, M	9
	RM ¹	-	-	0	-	2	B, M, Li, D	9
	RP ²	0	-	0	-	1	B, M, Li, D	9
	RP ¹	1	0.16	0	-	1	B, M, Li, D	9
	RC ¹	1	0.12	0	-	1	La, Li, M, D	9
	RI ¹	-	-	0	-	2	La, Li, M, D	0
	LI ¹	-	-	0	-	2	La, Li, M, D	9
	LI ²	-	-	0	-	2	La, Li, M	9
	LC ¹	1	(0.20)	0	-	1	La, Li, M, D	9
	LP ¹	2	0.11, 0.28	0	-	1	Li, M, D	9
	LP ²	1	0.33	0	-	1	Li, M, D	9
	LM ¹	2	0.13, 0.32	0	-	1	B, Li, M, D	9
	LM ²	1	0.21	0	-	1	Li, M	9
	LM ³	-	-	0	-	1	Li, D	9
	RM ₃	0	-	0	-	1	B, Li, M, D	9
	RM ₂	1	0.17	0	-	1	Li, M, D	9
	RM ₁	0	-	0	-	2	Li, M, D	0
	RP ₂	0	-	0	-	3	B, Li, M, D, O	0
	RP ₁	0	-	0	-	3	B, Li, M, D, O	0
	RC ₁	1	0.27	0	-	2	La, Li, M	0
	RI ₂	-	-	0	-	3	La, Li, M, D	9
	LI ₁	-	-	0	-	3	La, Li, M, D	9
	LI ₂	-	-	0	-	3	La, Li, M, D	9
	LC ₁	1	0.29	0	-	2	La, Li, M, D	9
	LP ₁	3	0.11, 0.30, 0.50	0	-	3	B, Li, M	9
	LP ₂	0	-	0	-	1	B, Li, M, D	9
LM ₁	0	-	0	-	0	-	9	
LM ₂	1	0.19	0	-	0	-	9	
LM ₃	1 (Op)	0.12-0.33	0	-	1	B, M	9	
Pool 7 MF Mound 4 Burial 1 Individual B	RP ²	-	-	-	-	-	-	-
	RP ¹	0	-	0	-	1	-	0
	RC ¹	0	-	0	-	1	La, Li, M, D	9
	RI ²	-	-	-	-	-	-	-
	RI ¹	-	-	-	-	-	-	-

	LC ¹	0	-	1	6	0	-	0
	LP ²	-	-	1	6	unobservable		0
	LM ¹	-	-	-	-	-	-	-
	RM ₁	-	-	-	-	-	-	-
	RP ₂	1	0.08	0	-	1	B, Li, M	9
	RP ₁	0	-	1	2	1	B, Li, M	9
	RC ₁	1	0.55	0	-	3	La, Li, M	9
	RI ₁	-	-	0	-	3	La, Li, M, D	9
	LI ₂	-	-	0	-	2	La, Li, M	0
	LC ₁	1	0.51	0	-	2	Li, M	0
	LP ₁	0	-	2	2, 2	1	B, Li, M	0
	LP ₂	0	-	2	2, 2	1	B, M	0
	LM ₁	-	-	-	-	-	-	-
	LM ₃	-	-	-	-	-	-	-
	RM ³	-	-	-	-	-	-	-
	RM ²	1	0.20	1	1	1	B, D	9
	RM ¹	1 (Op)	0.10-0.24	0	-	1	B	9
	RP ²	0	-	0	-	0	-	9
	RP ¹	0	-	0	-	0	-	9
	RC ¹	0	-	0	-	2	La, D	9
	RI ²	0	-	0	-	2	La, Li, D	9
	RI ¹	0	-	0	-	2	La, Li, M	9
	LI ¹	0	-	0	-	2	La, Li, M	9
	LI ²	0	-	0	-	2	La, Li	9
	LC ¹	-	-	0	-	2	La, Li, O	9
	LP ¹	-	-	0	-	3	B, Li, M, O	9
	LP ²	-	-	0	-	3	B, Li, M, D, O	9
	LM ¹	-	-	0	-	3	B, Li, M, D, O	9
	LM ²	-	-	0	-	3	B, Li, M, D, O	9
	LM ³	-	-	0	-	-	-	-
	RM ₃	-	-	-	-	-	-	-
	RM ₂	2	0.14	1	1	0	-	9
	RM ₁	2	0.22	1	3	1	B, Li, M, D	9
	RP ₂	0	-	0	-	1	M, Li, D	9
	RP ₁	0	-	0	-	1	B, D	9
	RC ₁	1	0.19	0	-	1	La, Li	9
	RI ₂	-	-	0	-	2	La, Li, M	9
	RI ₁	-	-	0	-	3	La, Li, M, D	9
	LI ₁	-	-	0	-	3	La, Li, M, D	9
	LI ₂	-	-	0	-	3	La, Li, D	9
	LC ₁	1	0.19	0	-	3	La, M, D, Li	9
	LP ₁	-	-	0	-	3	B, M, D, Li	9
	LP ₂	-	-	0	-	3	B, M, D, Li	0
	LM ₁	1	0.14	0	-	3	B, M, O, D, Li	0
	LM ₂	-	-	1	6	1	-	9
	LM ₃	-	-	-	-	-	-	-
Pool 7 MF Mound 1 Burial 1 Individual D	Rdm ²	0	-	0	-	0	-	0
	Rdm ¹	0	-	0	-	1	M	0

Pool 7 MF Mound 4 Burial 1 Individual E	RM ³	-	-	-	-	-	-	-
	RM ²	1	0.30	0	-	0	-	9
	RM ¹	2	0.09, 0.29	0	-	1	B, M, Li	9
	RP ²	0	-	0	-	1	B	9
	RP ¹	0	-	0	-	1	B, M, D	9
	RC ¹	4	0.24, 0.35, 0.51, 0.81	0	-	1	La	9
	RI ²	3	0.12, 0.28, 0.44	0	-	1	La	9
	RI ¹	2	0.29, 0.47	0	-	1	La, M	9
	LI ¹	2	0.32, 0.60	0	-	1	Li	9
	LI ²	2	0.31, 0.49	0	-	1	La, Li	9
	LC ¹	4	0.24, 0.30, 0.46, 0.79	0	-	1	La, Li	9
	LP ¹	1	0.29	0	-	1	M	9
	LP ²	2	0.17, 0.30	0	-	1	B, D	9
	LM ¹	2	0.08, 0.26	0	-	1	B, D, M	9
	LM ²	3	0.15, 0.31, 0.39	0	-	1	M	9
	LM ³	-	-	-	-	-	-	-
	RM ₃	0	-	1	9	9	-	9
	RM ₂	1	0.38-0.55	0	-	1	M, D	9
	RM ₁	3	0.08, 0.11, 0.28	0	-	1	B, M, D	9
	RP ₁	0	-	0	-	1	B, M, Li, D	9
	RC ₁	4	0.33, 0.49, 0.82, 0.90	0	-	1	Li, La, D	9
	RI ₂	1	0.58	0	-	2	La, M, D, Li	9
	LI ₁	2	0.29, 0.44	0	-	1	La, M, D	9
	LI ₂	2	0.26, 0.52	0	-	1	La, M, D, Li	9
	LC ₁	3	0.29, 0.48, 0.78	0	-	1	La, Li, M, D	9
	LP ₁	1	0.41	0	-	1	B, Li, M	9
	LP ₂	0	-	0	-	1	M, Li	9
	LM ₁	1	0.27	1	1	1	M, Li	9
	LM ₂	1 (Op)	0.22-0.43	0	-	1	B, D	9
	LM ₃	0	-	1	9	9	-	9
	Pool 7 MF Mound 4 Burial 1 Individual F	RC ¹	-	-	-	-	-	-
RI ²		-	-	-	-	-	-	
LI ²		-	-	-	-	-	-	
LC ¹		-	-	-	-	-	-	
LM ¹		-	-	-	-	-	-	
RC ₁		2	0.34, 0.41	0	-	2	La, Li, M, D	9
RI ₂		-	-	0	-	3	La, Li, M, D	9
LP ₁		2	0.11, 0.21	0	-	1	M, D, Li	9
LM ₁		0	-	2	1, 3	1	Li	9
LM ₃	1	-	0	-	0	-	9	
Pool 7 MF Mound 4 Burial 1 Individual G	Rdm ²	1 (Op)	0.09-0.39	0	-	0	-	9
	Rdi ²	-	-	0	-	0	-	9
	Rdi ¹	0	-	0	-	0	-	9
	Ldi ²	0	-	0	-	0	-	9
	Ldm ²	0	-	0	-	0	-	9
	Ldm ₁	0	-	0	-	0	-	9
Pool 7 MF Mound 1 Burial 2 Individual A	RM ³	-	-	-	-	-	-	
	RM ²	-	-	-	-	-	-	
	RM ¹	1	-	-	-	-	-	
	RP ²	-	-	-	-	-	-	

	RP ¹	-	-	-	-	-	-	-
	RC ¹	-	-	-	-	-	-	-
	RI ²	-	-	-	-	-	-	-
	RI ¹	-	-	-	-	-	-	-
	LI ¹	-	-	-	-	-	-	-
	LI ²	-	-	-	-	-	-	-
	LC ¹	-	-	-	-	-	-	-
	LP ¹	-	-	-	-	-	-	-
	LM ¹	1 (Op), 1 (LEH)	0.18-0.43, 0.21	2	1, 1	1	M, Li	9
	LM ²	-	-	-	-	-	-	-
	LM ³	1	0.20	0	-	1	B, D, M	9
	RM ₃	-	-	-	-	-	-	-
	RM ₂	-	-	-	-	-	-	-
	RM ₁	-	-	-	-	-	-	-
	RP ₁	-	-	-	-	-	-	-
	RC ₁	-	-	-	-	-	-	-
	RI ₂	-	-	-	-	-	-	-
	RI ₁	-	-	-	-	-	-	-
	LI ₁	-	-	-	-	-	-	-
	LI ₂	-	-	-	-	-	-	-
	LC ₁	-	-	-	-	-	-	-
	LP ₁	-	-	-	-	-	-	-
	LP ₂	-	-	-	-	-	-	-
	LM ₁	-	-	-	-	-	-	-
	LM ₂	-	-	-	-	-	-	-
	LM ₃	-	-	-	-	-	-	-
Pool 7 MF Mound 4 Burial 4 Individual A	Rdm ²	0	-	0	-	0	-	9
	Rdm ¹	0	-	0	-	0	-	9
	Rdc ¹	0	-	0	-	0	-	9
	Rdi ²	0	-	0	-	0	-	9
	Rdi ¹	0	-	0	-	0	-	9
	Ldi ¹	0	-	0	-	0	-	9
	Ldi ²	0	-	0	-	0	-	9
	Ldc ¹	0	-	0	-	0	-	9
	Ldm ¹	0	-	0	-	0	-	9
	Ldm ²	0	-	0	-	0	-	9
	Rdm ₂	0	-	0	-	0	-	9
	Rdm ₃	0	-	0	-	0	-	9
	Rdc ₁	0	-	0	-	0	-	9
	Rdi ₂	0	-	0	-	0	-	9
	Rdi ₁	0	-	0	-	0	-	9
	Ldi ₁	0	-	0	-	0	-	9
	Ldi ₂	0	-	0	-	0	-	9
	Ldm ₁	0	-	0	-	0	-	9
	Ldm ₂	0	-	0	-	0	-	9
	RM ¹	-	-	-	-	-	-	-
RI ²	-	-	-	-	-	-	-	-
RI ¹	-	-	-	-	-	-	-	-

	LI ¹	-	-	-	-	-	-	-
	LI ²	-	-	-	-	-	-	-
	LC ¹	-	-	-	-	-	-	-
	LM ¹	-	-	-	-	-	-	-
	RM ₁	-	-	-	-	-	-	-
	RC ₁	-	-	-	-	-	-	-
	RI ₂	-	-	-	-	-	-	-
	RI ₁	-	-	-	-	-	-	-
	LI ₁	-	-	-	-	-	-	-
	LI ₂	-	-	-	-	-	-	-
	LC ₁	-	-	-	-	-	-	-
	LM ₁	-	-	-	-	-	-	-
MF 4 East Str. Mound 1 Burial 5 Individual A	RM ³	-	-	0	-	0	-	9
	RM ²	-	-	0	-	0	-	9
	RM ¹	-	-	0	-	0	-	9
	RP ²	-	-	0	-	1	B	9
	RP ¹	-	-	0	-	1	B	9
	RC ¹	1	0.40	0	-	1	La	9
	RI ²	-	-	0	-	1	La, M	9
	RI ¹	1	0.31	0	-	1	La	9
	LI ¹	1	0.32	0	-	1	La	9
	LI ²	-	-	0	-	1	La	9
	LP ¹	-	-	0	-	0	-	9
	LP ²	-	-	0	-	1	B	9
	LM ¹	0	-	0	-	1	B, Li, D, M	9
	LM ²	-	-	0	-	0	-	9
	LM ³	-	-	0	-	0	-	9
	RM ₃	-	-	0	-	0	-	9
	RM ₂	-	-	0	-	0	-	9
	RM ₁	-	-	0	-	0	-	9
	RP ₂	-	-	-	-	-	-	-
	RP ₁	-	-	0	-	0	-	9
	RC ₁	1	0.38	0	-	0	-	9
	RI ₂	-	-	0	-	1	La	9
	RI ₁	-	-	0	-	1	Li, La	9
	LI ₁	-	-	0	-	1	La	9
	LI ₂	-	-	0	-	1	La	9
	LP ₂	-	-	0	-	0	-	9
	LM ₁	0	-	0	-	1	M	9
LM ₂	0	-	0	-	1	M, D	9	
LM ₃	1	0.07	0	-	0	-	9	
MF 4 East Str. Mound 1 Burial 6 Individual A	RM ³	-	-	-	-	-	-	-
	RP ²	-	-	0	-	0	-	9
	RP ¹	-	-	0	-	0	-	9
	RC ¹	-	-	0	-	2	La, M	9
	RI ²	-	-	0	-	3	La	9
	RI ¹	2	0.23, 0.44	0	-	1	D, M	9
	LI ¹	2	0.18, 0.35	0	-	1	Li	9
	LI ²	-	-	0	-	2	La, M	9
LC ¹	-	-	0	-	0	-	9	

	RM ₁	-	-	-	-	-	-	-	
	RP ₂	-	-	1	2	1	O	0	
	RP ₁	-	-	1	2	1	O, B	9	
	RC ₁	-	-	0	-	3	Li, La, M	9	
	RI ₁	-	-	0	-	3	Li, M	9	
	LI ₁	-	-	0	-	3	La, Li, D	9	
	LI ₂	-	-	0	-	2	La, M, Li, D	9	
	LC ₁	-	-	0	-	1	M, Li	9	
	LP ₁	-	-	0	-	1	O	9	
	LP ₂	-	-	0	-	0	-	9	
	LM ₃	-	-	0	-	0	-	9	
MF4 North Trench Mound 1 Burial 8 Individual A	RM ³	-	-	0	-	-	-	9	
	RM ²	-	-	0	-	0	-	9	
	RM ¹	0	-	0	-	0	-	9	
	RP ²	-	-	0	-	0	-	9	
	RP ¹	-	-	0	-	1	B, Oc, Li, M, D	9	
	RC ¹	1	0.57	0	-	1	La, Li	9	
	RI ²	0	-	-	-	1	La, Li, M	9	
	LC ¹	3	0.06, 0.19, 0.37	0	-	0	-	9	
	LP ¹	0	-	0	-	1	B, Li, M, D	9	
	LP ²	-	-	0	-	0	-	9	
		LM ¹	0	-	0	-	1	M, Li, O, D	9
		RM ₃	-	-	0	-	1	O, B	9
		RP ₂	-	-	0	-	1	Li	9
		RP ₁	-	-	0	-	1	O	9
	LP ₂	-	-	0	-	3	Li, O, M, D	9	

Location of calculus: La = labial, Li = lingual, M = mesial, D = distal

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() = measurement estimate, * = estimate

Appendix 7.1.5 Maxillary dental non-metric traits for individuals from salvage project

Individual	Tooth	Winging	Shoveling	Double Shoveling	Premolar Root No.	Hypocone	Metaconule	Carabelli's Trait	Enamel Extension
Pool 7 MF Mound 4 BU 1 Ind A	RM ³	-	-	-	-	9	9	0	9
	RM ²	-	-	-	-	9	9	9	9
	RM ¹	-	-	-	-	4	0	0	9
	RP ¹	-	-	-	1	-	-	-	-
	RI ¹	3	4	4	-	-	-	-	-
	LI ¹	3	4	4	-	-	-	-	-
	LI ²	-	5	3	-	-	-	-	-
	LP ¹	-	-	-	1	-	-	-	-
	LM ¹	-	-	-	-	3.5	0	0	0
	LM ²	-	-	-	-	9	9	0	1
LM ³	-	-	-	-	9	9	0	1	
Pool 7 MF	RM ²	-	-	-	-	(3.5)	0	0	0
	RM ¹	-	-	-	-	4	0	3	1

Mound 4 BU 1 Ind C	RI ²	-	4	9	-	-	-	-	-
	RI ¹	1B	5	6	-	-	-	-	-
	LI ¹	1B	5	5	-	-	-	-	-
	LI ²	-	3	9	-	-	-	-	-
	LP ¹	-	-	-	1	-	-	-	-
	LM ¹	-	-	-	-	3.5	0	9	2
	LM ²	-	-	-	-	3.5	0	9	2
Pool 7 MF Mound 4 Bu 1 Ind E	RM ²	-	-	-	-	3.5	0	0	1
	RM ¹	-	-	-	-	4	2	4	1
	RP ¹	-	-	-	1	-	-	-	-
	RI ²	-	3	3	-	-	-	-	-
	RI ¹	3	5	3	-	-	-	-	-
	LI ¹	3	4	3	-	-	-	-	-
	LI ²	-	3	3	-	-	-	-	-
	LP ¹	-	-	-	1	-	-	-	-
Pool 7 MF Mound 1 BU 2 Ind A	LM ¹	-	-	-	-	4	0	0	2
	LM ³	-	-	-	-	2	0	0	0
MF East Structure Mound 1 BU 5 Ind A	RM ³	-	-	-	-	1	0	0	2
	RM ²	-	-	-	-	2	0	0	9
	RM ¹	-	-	-	-	3.5	0	0	9
	RP ¹	-	-	-	1	-	-	-	-
	RI ²	-	4	4	-	-	-	-	-
	RI ¹	9	4	4	-	-	-	-	-
	LI ¹	9	4	4	-	-	-	-	-
	LI ²	-	4	4	-	-	-	-	-
	LM ¹	-	-	-	-	3.5	0	0	0
	LM ²	-	-	-	-	2	0	0	2
MF4 East Structure Mound 1 BU 6 Ind A	LM ³	-	-	-	-	0	0	0	1
	RP ¹	-	-	-	1	-	-	-	-
	RI ²	-	7	0	-	-	-	-	-
	RI ¹	9	4*	0	-	-	-	-	-
	LI ¹	9	4*	0	-	-	-	-	-
MF4 North Trench Mound 1 BU 8 Ind A	LI ²	-	7	0*	-	-	-	-	-
	LP ¹	-	-	-	1	-	-	-	-

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* = estimate

Appendix 7.1.6 Mandibular dental morphology for individuals from the salvage project

Individual	Tooth	Premolar Root No.	Groove Pattern	Cusp No.	Protostylid	Cusp 5	Cusp 6	Cusp 7	Molar Root No.	Enamel Extension
Pool 7 MF Mound 4 BU 1 Ind A	RM ₃	-	9	9	0	9	9	9	2	0
	RM ₂	-	+	4	0	9	9	0	2	2
	RM ₁	-	9	5	0	3	0	-	2	0
	RP ₁	1	-	-	-	-	-	-	-	-
	LP ₁	1	-	-	-	-	-	-	-	-
	LM ₁	-	Y	5	0	3	0	0	2	9
	LM ₂	-	X	4	1	9	9	0	2	2
LM ₃	-	9	9	9	0	9	0	0	2	3
Pool 7 MF Mound 4 BU 1 Ind C	RM ₂	-	9	9	0	9	9	0	2	3
	RM ₁	-	+	5	1	3	0	0	2	3
	RP ₁	1	-	-	-	-	-	-	-	-
	LP ₁	1	-	-	-	-	-	-	-	-
	LM ₁	-	+	5	9	3	0	0	2	2
	LM ₂	-	9	9	9	9	9	9	9	9
Pool 7 MF Mound 4 Bu 1 Ind E	RM ₃	-	X	6	0	3	2	0	-	9
	RM ₂	-	+	6	1	3	1	0	9	1
	RM ₁	-	+	6	0	4	1	0	9	9
	LM ₁	-	Y	6	0	4	1	0	9	9
	LM ₂	-	+	5	0	5	0	0	2	1
	LM ₃	-	X	5	1	5	0	0	9	9
Pool 7 MF Mound 4 BU 1 Ind F	LP ₁	1	-	-	-	-	-	-	-	-
	LM ₁	-	X	5	1	5	0	0	2	3
	LM ₃	-	X	5	1	5	0	0	2	3
MF East Structure Mound 1 BU 5 Ind A	RM ₃	-	X	6	0	1	4	0	2	1
	RM ₂	-	X	4	0	0	0	0	1	9
	RM ₁	-	+	4+	1*	9	0	0	2	9
	RP ₁	1	-	-	-	-	-	-	-	-
	LM ₁	-	Y	5	1	3	0	0	2	9
	LM ₂	-	+	4	1	0	0	0	1	9
	LM ₃	-	X	6	0	2	2	0	2	3
MF4 East Structure Mound 1 BU6 Ind A	RP ₁	1	-	-	-	-	-	-	-	-
	LP ₁	1	-	-	-	-	-	-	-	-
	LM ₃	-	X	4	0	0	0	0	1	9

* = estimate

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