EARLY POTTERY IN THE TROPICS OF PANAMA (CA. 4,500-3,200 B.P.): PRODUCTION PROCESSES, CIRCULATION, AND DIAGENESIS

by

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TABLE OF CONTENTS

TABLE OF CONTENTS - *Continued*

TABLE OF CONTENTS - *Continued*

LIST OF FIGURES

LIST OF TABLES

LIST OF TABLES - *Continued*

ABSTRACT

Despite the traditional association of the first pottery with food production and sedentism, case studies show that hunter gatherers with different degrees of sedentism commonly adopted ceramics. Monagrillo ware (~4500-3200 B.P.) of central Panama, among the earliest in Central America, was made by egalitarian slash and burn farmers, cultivating domesticated seed and root crops. People occupied inland rockshelters and coastal shell middens. However, their degree of sedentism is debated. It is unclear whether they were sedentary both in the inland and on the coast and exchanged resources or whether inland people visited the coast during the driest months. Their pottery functions are not well understood either. I provenanced and studied the production processes and diagenesis of Monagrillo pottery through a combination of the life history approach and archaeometric methods. I assessed the degree of sedentism of Monagrillo people, inferred vessel functions producers may have expected, and identified diagenesis that may affect analytical results. My study showed that pottery was produced and used in the foothills and on the coast of the seasonally dry Pacific side of Panama and also was probably made in the Pacific plains, suggesting that people may have been fairly sedentary in those areas around Parita Bay. Vessels produced in the Pacific foothills and on the coast were transported to a Pacific plains site. Pacific foothills wares were also transported to the perennially wet Caribbean slopes, where the production may have been difficult due to the precipitation. According to technical choices made, I infer that potters in the Pacific foothills may have opted for designs that were useful and dependable for cooking. Producers of the Pacific foothills also secondarily weighted the performance

characteristics of impact resistance and resistance to weathering for the use and transportation of vessels in rugged terrain as well as the consumption in the wet Caribbean slopes. Pacific coastal producers, on the other hand, produced the vessels for cooking-related attributes, but not transportation. The terrain in the Pacific coast is fairly flat and impact resistance did not need to be prioritized. The Pacific plains site, where vessels were transported both from the Pacific foothills and the coast, also had the highest number of decorated sherds; this suggested that the site may have been used for group gathering, feasting, and exchange. All producers shared the same slab and lump manufacturing techniques; this indicated that ease of manufacture and expediency were important as well as that Monagrillo vessel producers were related. Different diagenetic patterns were found in ceramics excavated from the Caribbean zone and the Pacific coast; this allowed differentiating petrographic and geochemistry of raw materials and changes that occurred post-depositionally. The diagenetic study helped better source pottery. My work contributes to knowledge about pottery origins and degrees of sedentism, technical choices made to reach functional needs, and climatic impact on production and post-depositional changes.

CHAPTER 1: INTRODUCTION

This chapter serves as an introduction to the problems and their contexts of the three journal articles I have written for this dissertation presented as Appendices A, B, and C. These appendices can be read independently, but they are inter-related. My research topic is the relationship of the origins of ceramics to sedentarization processes. My case study is Monagrillo ceramics (~4500-3200 B.P.) of Panama. The study focused on *production processes*, *circulation* patterns, and *diagenesis.*

Two major questions were pursued: (1) how sedentary were Monagrillo pottery producers?; (2) what were the intended vessel functions? These questions were posed and investigated in Appendices A and B. In order to answer question one, I needed to identify the *production* zones and *circulation* patterns. This required the provenancing of Monagrillo vessels. In order to answer question two, I studied the production processes. To minimize possible errors in the pottery provenancing and the study of production processes, I identified post-depositionally formed minerals and adsorbed or leached elements. This latter study is presented in Appendix C.

The sourcing results from Appendix A helped to form the basis for Appendix B and further the understanding of Appendix C. The identification of production zones allowed intended functions to be differentiated by production zones and sites where pottery was found. Diagenesis was better understood when possible factors of post-depositional alterations were compared by paste sources and by burial environments. I incorporated analytical methods used in archaeometry to better answer the two anthropological questions and I used the behavioral life history approach as the overarching technological theory.

The problems in Appendix A are the outgrowth of a long-standing archaeological and anthropological debate. In the early twentieth century, V. Gordon Childe (1951) proposed a hypothesis, the ‘Neolithic Revolution,’ relating pottery origins to the beginnings of food production and sedentism. This marked a dramatic transition from a hunter-gatherer economy, laying the foundation for the later appearance of complex societies. In the Middle East where complex societies emerged early, pottery vessels were first produced in a sedentary farming context (Budja 2009; Vandiver 1987, 1988). This has influenced archaeologists to have long held onto the ‘Neolithic Revolution’ concept (e.g., Jordan and Zvelebil 2009:33; Sassaman 1993:1). However, recent studies are challenging this notion.

From early ceramics case studies done both in the Old and the New Worlds (Boaretto et al. 2009; Oyuela-Caycedo and Bonzani 2005; Sassaman 1993; Wu et al. 2012; Zedeño 2002), there is evidence of hunter gatherers adopting ceramic technology. These hunting and gathering groups are inferred to have had different degrees of residential mobility. Their levels of use of floral and faunal resources, and the possibility of the existence of early forms of domesticates are debated (e.g., Boaretto et al. 2009). There is also variability in the social contexts in which the adoptions occurred.

Similarly, the origins of pottery are studied in the context of sedentarization processes: the gradual change that occurred beginning around the time of the onset of the Holocene, including food production, population growth, sedentary life, and social complexity. These processes altered human society that had consisted of small, egalitarian mobile groups that subsisted on foraging during the late Pleistocene. The causes, timing, and order of sedentarization processes are debated and pottery seems to be among the major signatures of increased degrees of sedentism. Therefore, the assessment of the timing of the adoption of pottery and degree of sedentism needs to be investigated further with case studies.

Monagrillo pottery was adopted by egalitarian slash-and-burn farmers (Cooke 2005; Cooke and Ranere 1992; Piperno and Pearsall 1998); however, the degree of residential mobility/sedentism remains uncertain. My assessment of the degree of residential mobility of the first pottery-producers in Panama thus contributes to answering the larger archaeological question.

In Appendix A, the specific problem related to the degree of residential mobility I needed to solve was the assessment of whether (1) people were living in the residential bases in the interior rockshelters, farming nearby, and were engaged in coastal activities during the driest months or (2) whether they were living both on the coast and in the interior rockshtelters and farming close to their habitational areas (e.g., Cooke 1984; Cooke and Ranere 1984; Griggs 2005; Hansell 1979; Peres 2001). I tested this by focusing on the comparisons of paleoenvironmental data and midden stratigraphic data associated with a radiocarbon chronology with the appearance of pottery having local geochemical and petrographic signatures. This is noteworthy, since the earliest use of middens occurred when the area was on an active shoreline (Hansell 1979; Ranere and Hansell 1978; Willey and McGimsey 1954) and the middens were uninhabitable. Locally produced pottery found in this context could be treated as an indicator of possible sedentariness on the coast.

In Appendix B, technological theory from behavioral archaeology (Schiffer 1995, 2011) combined with archaeometric methods is used to infer artifact producers' decision-making processes, during artifact production, that help to meet the functional requirements of the final product. The study of production steps to identify technical choices allows archaeologists to infer the *performance characteristics* of vessels. By evaluating the likely performance characteristics, inferences can be made about possible intended functions. Behavioralists (Schiffer 1995, 2011; Schiffer and Skibo 1997; Skibo 2012) suggest taking the life history approach to reconstruct each production step. The evaluation of production steps allows the detection of weighted performance characteristics which contributes to important evidence for inferring functions.

The life history of an artifact includes post-depositional formation processes. As such, it is necessary to investigate these processes in order to minimize analytical errors in reconstructing the systemic context (Schiffer 1995). Therefore, in presenting Appendix A and B on sourcing and production processes, I drew upon the findings of a diagenetic analysis, which allowed me to eliminate the major mineralogical and geochemical factors. The diagenetic signatures found in Azuero shell middens and Pacific foothills and plains as well as the Caribban foothills, presented in Appendix C, were useful in understanding the climatic differences between the two environmental zones. And thus I was enabled to reconstruct the systemic context of the ceramics. Studies in Appendix C allowed distinction of the technical steps based on production zones and pottery depositional areas (archaeological sites) laying a foundation for inferring and comparing producers' technical choices and site-based vessel functions in Appendix B.

As explained in this chapter, although the dissertation consists of stand-alone articles in each appendix, the reconstruction of the life history of Monagrillo ceramics was based on inferences developed in the two other appendices. Therefore, the dissertation is a work having inter-related articles presented in Appendices A, B, and C.

CHAPTER 2: PRESENT STUDY

This chapter further presents methods, results, and conclusions and significant findings as well as limitations in each of the appended articles in this dissertation. In Appendix A, the use of optical petrographic analyses supported by geochemical analyses, time-of-flight laser ablation inductively coupled plasma mass spectrometry (TOF-LA-ICP-MS) and portable x-ray fluorescence (P-XRF), were effective in the provenancing study. They were conducted on both sherds and raw material samples.

In the case of the He5 (Monagrillo) shell midden, pottery produced using granitic clayey soils indicating local production, was found throughout the sequence. This combined with studies of Monagrillo pottery from the Pacific plains, foothills, and the Caribbean slopes suggested that the Pacific foothills, by Parita Bay, and the northeastern Azuero coast, were the two major production zones. The Pacific plains site had vessels from the Pacific foothills and the Azuero coast, and possible local wares with signatures of mixed raw materials from the foothills and the coast. Caribbean slope pottery was transported from the Pacific foothills.

This finding suggested the possibility that people on the coast were relatively sedentary. A supporting argument came from labor organization (Hansell 1979; Young 1971). To produce pottery, slash-and-burn farmers have only about three months during the driest period of the year which are not interrupted by activities related to agriculture (e.g., Hansell 1979). Therefore, it would not have been easy for the Pacific foothills inhabitants to spend the time producing their own wares in the interior while also visiting the coast, and to make additional vessels when they engaged in coastal resource procurement.

The overall sourcing results based on thin section and geochemical ceramic analyses were compatible; however, the provenancing results are constrained by the limited sample size. Especially, raw clayey soil samples examined with thin sections from the Caribbean foothills were limited. In addition, anthropologically, assessing the degree of residential mobility requires integration of multiple lines of evidence such as fish spawning seasons and shell growth rings (e.g., Hansell 1979), fruiting season of flora, sourcing of faunal materials, and stone tools. Results from Appendix A are based only on the pottery analysis and therefore should be considered provisional.

In Appendix B, temper identification was done using the data obtained during the petrographic sourcing study. I compared the overall inclusion percentage and quickly weathering minerals, such as plagioclase, of sourced raw clayey soils and sand and pottery. Further tests showed that the pottery tended to have denser and fresher inclusions than raw clayey sediments, indicating that when necessary, temper was added to pottery. Inferences about manufacturing techniques were based on visual and xeroradiographic analytical methods in Vandiver (1987, 1988) and the analysis of pottery thin sections. Manufacturing technique analysis showed that there was little variability between production zones. In addition, thickness measurements indicated that vessels produced in the Pacific foothills were thinner than those from Azuero. However, there were no interpretable patterns of variability of vessel forms and sizes by sites; clearly there is a need for further investigation. Counts of decorated sherd compared to non-decorative sherds suggested that decorative sherds were uncommon at all sites but Ag13 (Aguadulce), a Pacific plains site, which has much higher relative frequency than other sites. Pottery produced in the foothills tended to be higher fired. Firing temperature study using SEM-EDS suggested that more samples fell in the range of ~850°C and ~950°C. Azuero wares were fired at lower temperatures, between ~650°C and ~700°C.

From the literature on technical steps and performance characteristics of ceramics (Rice 1987; Schiffer 1990; Skibo et al. 1989; Shepard 1954; Skibo 2012; Tite et al. 2001; West 1992), I inferred the following for Pacific foothills vessels: densely tempered with pyroclastics sand or having such natural inclusions, thin walled, relatively high fired vessels with somewhat open bowls, and closed jars were useful for mainly cooking; however, they were also resistant to impact and weathering. Both short- and long-distance transport from the rugged terrain of the foothills, and sometimes to the Caribbean zone, required sturdy vessels. On the other hand, densely tempered with sand, porous vessels with somewhat open bowls to closed jars, produced in Azuero, were used for cooking, for which they appear to be well suited. Their low fired characteristics show that the vessels were not sturdy. The central Panamanian Azuero to Pacific plains sites have an elevation below 100 m; compared to Cordilleran ceramic circulation, transportability was not a prioritized performance characteristic. A Pacific plains site that has pottery, perhaps some produced *in situ*, and also brought from the Pacific foothills and Azuero coast has a higher percent of decorative sherds. It could be inferred that this site had a special function, possibly a gathering location for two communities. However, the confirmation of this inference requires more investigation of this site and research of excavated non-ceramic materials. Community members of the Pacific foothills and Azuero could have been interacting, as suggested by the sharing of conservative manufacturing techniques (Arnold 1985; Gosselain 1998; Reina and Hill 1978).

In Appendix C, sherds with flat surfaces that were used to produce thin sections were used for geochemical analysis of wall sections using μ-X-ray Fluorescence (μ-XRF) following the sourcing results from Appendix A. Optical petrography was used to identify secondary minerals formed post-depositionally. Thin sections of sherds analyzed with μ-XRF were carefully examined via optical petrography in order to determine which grains overlap with the diagenetic chemical alteration; this is shown in the μ-XRF chemical map. The results demonstrate that Ba, Pb, S, and Sr that tended to co-occur on the walls of sherds with Ba-high bulk elemental composition, were excavated from rock shelters in the Pacific foothills. It is likely that the burial environment is a significant factor for this diagenesis, but the precise cause of the diagenesis is unknown.

The petrographic thin section study suggested that whereas secondary calcites are present in pores of sherds from the coastal shell middens and the Pacific plains rockshelters, secondary gibbsites are found in the rockshelter on the Caribbean slope. Secondary minerals in thin sections showed the seasonality of the depositional environment. The calcite was found in the hot and seasonally wet climate in the burial environment rich in calcite, and nearly perennially wet Caribbean slope has gibbsite that is the indicator of the extreme weathering conditions under hot and humid climate. Overall, local climate and the burial environment induced the post-depositional alterations.

Secondary calcite found in Azuero and Pacific plains sherds would have formed during seasonal wet and dry cycles in the area; gibbsite formed in the Caribbean zone because it is the aluminum hydroxide that forms due to high degrees of weathering. This climatic effect allowed me to infer that the relatively high-fired Pacific Cordilleran ceramics had the intended performance characteristic of not only the impact resistance but also the resistance to weathering for use in the high precipitation zones.

The vessel's intended functions were inferred from studies of the production steps. However, the samples sizes of some analytical procedures were too small to yield definitive results (e.g., scanning electron microscopy energy dispersive spectroscopy for firing temperatures (SEM-EDS)). Petrographic Type 1, vessels with granitic inclusions identified in Appendix A, from He5, had lower porosity than Type 2 vessels, with mixed igneous inclusions, produced in Azuero. However, insufficient firing temperature analysis via SEM-EDS was done on this petrographic type and so it requires further investigation. The relatedness and interaction among ceramic producers of the Pacific foothills and Azuero based on the similarity of manufacturing techniques along with the possible special function of the Ag13 site are inferences based on current ethnographic cases (Arnold 1985; Gosselain 1998; Reina and Hill 1978) and, for example, information from chronicles from much later time period (Carvajal 2010). Therefore, the conclusions are weaker than the inferences of intended functions based on technical choices correlating with climate, topography, and vessel circulation patterns of the production zone.

In this dissertation research, I was able to demonstrate that Monagrillo people were fairly sedentary, and intended that Monagrillo vessels be used for cooking. Additionally, producers altered the technical choices depending on the precipitation level and the ruggedness of the terrain where the vessels were used and transported.

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APPENDIX A
PRODUCTION AND TRANS-CORDILLERAN DISTRIBUTION: PROVENANCE STUDY OF THE FIRST POTTERY OF PANAMA (~4500-3200 14C yr BP)

(*To be submitted to Geoarchaeology*)

1. Abstract

Panama's first pottery, Monagrillo (~4500-3200 ^{14}C yr BP), is found in shell middens of the northeastern Azuero Peninsula, rock shelters in the Pacific plains and foothills, and the Caribbean slopes of central Panama. Archaeologists inferred the degree of sedentism during this time through paleobotanical, zoological, material cultural remains, and settlement patterns. However, it is uncertain whether people who occupied rock shelters and farmed nearby during the rainy season visited the coast during the dry season, or if sedentary farmers in the cordilleran foothills and the Azuero coast exchanged local resources. This project provenances Monagrillo ceramics in order to assess the degree of producer sedentism. The assessment identified locally produced and transported wares. Optical petrography, time-of-flight laser ablation inductively coupled plasma mass spectrometry (TOF-LA-ICP-MS), and portable x-ray fluorescence (P-XRF) were adopted to source the pottery. The result suggested that people produced ceramics both in the Azuero and the Pacific cordilleran foothills, and possibly, the Pacific plains. A large number of the Azuero and the Pacific Cordillera-produced vessels were also found at the Pacific plains site. However, ceramics from the Caribbean slopes were produced in the Pacific cordilleran slopes. It was concluded that people were sedentary in the Pacific foothills and on the Azuero coast. Pottery was often transported from both the Azuero

coast and the Pacific foothills to the Pacific plains. Vessels were not made in the Caribbean foothills but were transported there from the Pacific foothills.

2. Introduction

2.1. Pottery Sourcing and Residential Mobility

The emergence of pottery has often been associated with sedentism and agriculture; however, increasingly, studies suggest that the first pottery emerged in the context of hunting and gathering economies, and of some pastoral lifeways with varied degrees of residential mobility. Monagrillo pottery (~4500-3200 ^{14}C yr BP) (radiocarbon dates obtained in association with this pottery fall into this range (e.g., Cooke, 2005)) of central Panama is among the oldest in Central America (Cooke, 1995). This pottery was first described by Willey and McGimsey (1954) at shellmiddens of the northeastern Azuero coast (hereafter, Azuero). Monagrillo sherd-bearing sites were later discovered in rock shelters on the Pacific plains (Ranere & Hansell, 1978) and in the Pacific foothills (Bird & Cooke, 1978), and Caribbean slopes (Griggs, 2005) of the isthmus proper (hereafter, Cordillera) (Figure 1). The pottery emerged thousands of years after people began cultivation. By the Monagrillo period, the slash-and-burn agricultural practices of the regional population had led to the cutting, drying, and burning of considerable areas of tropical forest (Cooke, 2005; Piperno & Pearsall, 1998; Piperno, 2006). People cultivated food plants including maize, manioc, squash, and sweet potatoes (Dickau 2005, 2010; Dickau, Ranere & Cooke 2007; Piperno & Pearsall 1998). Although calories were heavily consumed from domesticated crops (Dickau 2005), people also engaged in hunting and gathering, and on the Parita Bay coast, intensive fishing and shellfish collecting (Carvajal 2010; Cooke, 1995; Cooke & Jímenez, 2004, 2008; Cooke & Ranere, 1992; Hansell, 1979; Peres, 2001). Archaeologists have identified sites and reconstructed subsistence practices, but have long debated the degree of residential mobility. They have discussed whether (1) seasonally residentially mobile people who lived in the Pacific foothills rockshelters and farmed nearby during the rainy season visited the northeastern Azuero coastal shell middens during the dry season, where they engaged in fishing and shellfish collection, or (2) whether sedentary farmers who occupied the Pacific foothills and plains, and the Azuero coast exchanged local resources (Cooke, 1984, 1995; Cooke & Ranere, 1984; Griggs, 2005; Hansell, 1979; Peres, 2001; Piperno, Bush, & Colinvaux, 1991; Piperno et al. 1985; Piperno & Pearsall 1998). Further issues of residential mobility and material circulation concern (1) whether people engaged in trans-cordilleran transportation of resources, between the Pacific and the Caribbean areas, by the Late Preceramic (~7000-4500 ^{14}C yr BP), and (2) whether there were intense agricultural land pressure and land degradation due to population growth and farming on the Pacific slope, which spilt the population toward the Pacific coast and the Caribbean slope (Griggs, 2005).

Using pottery, archaeologists have made inferences about the economy during this time, hypothesizing that (1) Monagrillo pottery is the first attempt at production, with expedient and shoddy technique, made with locally available clays at each site (Cooke, 2005; Cooke & Ranere, 1992); this would imply that non-sedentary people who were the experimental first potters had low-energy-invested pottery that was produced quickly and used *in situ;* and (2) the Caribbean slope pottery shows stylistic and technological similarity to the Pacific foothills ceramics (Griggs, 2005: 359-360), which indicates either a transcordilleran transfer of production knowledge or the transportation of the vessels themselves. The objective of this project is to better infer the degree of residential mobility through sourcing Monagrillo pottery and examinining its production and circulation patterns.

Pottery sourcing to identify locally produced ware can potentially determine whether, during the Early Ceramic period, (1) *people produced pottery in the Pacific foothills and transported vessels to the Azuero coast;* (2) *Pacific foothills and the Azuero coastal occupants both made pottery in situ and occasionally transported vessels between these zones;* and (3) *people were using local raw materials to produce pottery on the Caribbean slopes, or whether pottery was produced on the Pacific side and was transported to the Caribbean side, or vice versa.*

3. Archaeological context

Some archaeologists divide the Panamanian Early Ceramic Period into two sub-periods, the Early Ceramic A, with Monagrillo pottery (~4500-3200 ^{14}C yr BP), and Early Ceramic B (~3200-2500 ^{14}C yr BP), with Sarigua ware (Cooke, 1995, 2005; Peres, 2001). Others consider the Early Ceramics as one time period (~4500-2500 ^{14}C yr BP) (Cooke, 2005; Dickau, 2005), in which, toward the end of the Monagrillo period, additional vessel forms and associated decorations were added to pottery produced with the same paste recipe (Cooke, 1995). This paper concentrates on the study of Monagrillo pottery.

This ware is known from the following sites by type and environmental zones (Bird & Cooke, 1978; Cooke, 1995; Griggs, 2005; Sánchez Herrera, 2007; Willey & McGimsey, 1954) (Figure 1). (1) Shell middens on the northeastern Azuero or Parita Bay coast: He5 (Monagrillo), Pr14 (La Mula-Sarigua), He12, He18, Pr32/He15 (Zapotal), Ag66, and Ag88, (2) Rock shelter on the Pacific plains: Ag13 (Aguadulce), (3) Rock shelters in the Pacific foothills: Cl1 (Cueva de los Ladrones), Lp134 (Cebollal), Cl2 (Corona), and Sf9 (Carabalí), (4) Rock shelters in the Pacific Cordillera: SE201 (Río Cobre) and SE189 (los Santanas), (5) Rock shelter on the Caribbean slopes: Lp8 (Calaveras). One additional site, Cl6 (Vaca de Monte), a rock shelter in the Pacific Cordillera previously considered Monagrillo needs further investigation. Carbonized residue on one of the Monagrillo-like ceramics from the Cl6 (Vaca de Monte) from the Pacific cordillera has been dated by Iizuka (2009) to be right before and around the transition to the Colonial period, cal yr AD 1417-1515 (2σ) (AA83424).

3.1. Pottery Descriptions

Monagrillo ceramics have no appendages, handles, or feet; vessel forms include open bowls, and somewhat closed jars without necks, with the orifice diameter ranging between 19 and 29 cm at He5 and 7 and 54 cm at Cl1 (Iizuka, 2013). Average vessel body thickness, measured on thinnest and thickest areas of sherds, ranges between 7.8 to 8.6 mm at He5 and 6 to 6.5 mm at Cl1, fired with mixed reduction and oxidation atmosphere, and moh scale averaging about 3 at He5 and about 2-3 at Cl1 tested on the paste clay matrix (Iizuka, 2013; Iizuka & Vandiver, 2006; Willey & McGimsey, 1954:58). Decorations include red slip (or paint, but a limited number of thin sections showed birefringent, hematite-rich slip), incision, and punctation but are rare, He5 with 3.2% and Cl1 with 3.5% (Iizuka, 2013). Vessels have both natural and, possibly added, sand inclusions. The Monagrillo vessels are not distinct enough to conduct provenance studies with visual typology. Petrographic and geochemical comparisons of paste are required.

Vessels of Sarigua are thinner, 5 mm on average, and have greater form variability including bowls with out-flared and recurved rims (Willey & McGimsey, 1954). This type has a paste similar to Monagrillo but, in general, is not as dense (Cooke, 2005; Willey & McGimsey, 1954). Pottery with surface decorations (incised, appliqué, stemmed, punctated, and striated) accounts for about 50% of total wares (approximate calculation from Willey & McGimsey 194:107-110). Sánchez Herrera (2007) suggests that Incised and Appliqué pottery found at Lp134 (Figure 1) is contemporaneous with the Sarigua vessels; radiocarbon dates were not obtained there.

3.2. Indicators of Coastal Habitation and Pottery Production

For the objective of this research, it is important to have chronological control of sites from which pottery was excavated, especially at shell middens, because the use of middens was sporadic and such places were uninhabitable when located at the shoreline. The sporadic occupation occurred between ~2400-2000 cal yr BC or ~4400-3700 ^{14}C yr BP (Cooke, 1984, 1995; Peres 2001) at He5, and ~4000-3500 ^{14}C yr BP at Pr32 (Peres, 2001). If pottery from the bottom layers at this time period indicates *in situ* production, it will provide evidence that people were producing pottery while they lived and farmed on the coast near the shellfish collecting location, somewhat away from the shoreline. More conservatively, this can also indicate that people resided there during the dry season producing pottery while they engaged in coastal activities.

If the sourcing evidence suggests that the pottery was produced on the coast only during the major occupation of the shell middens, between ~2000 and1500 cal yr BC (Cooke, 1995), or between ~3700 - 2950 ^{14}C yr BP at He5 (Peres, 2001), and between ~3500 and 2900 ^{14}C yr BP at Pr32 (Peres, 2001:122-123), it could mean that the vessels were made at or near the shell midden either by the seasonally mobile Cordilleran foothills inhabitants, or by semi-permanent coastal inhabitants.

If there is a signature of local pottery from the time after the habitational use of the shell midden by the Monagrillo people, at He5, between ~1500 and ~1050 cal yr BC (Cooke, 1995), it would also mean that occupants were bringing pottery from nearby to the shell midden, suggesting a certain level of sedentism on the Azuero coast. The chronological control at Pr32 is less precise compared to He5, therefore, the context of He5 will be emphasized. These hypotheses should be tested by comparing identified ceramic sources and excavation levels from which samples were taken.

3.3. Signatures of Transcordilleran Pottery Distribution

If the vessels were produced on the Azuero or in the Pacific foothills and transported to the Caribbean site, petrographic and geochemical signatures of the Azuero or the Pacific foothills should be found at the Caribbean site. If the transportation was the other way round, the Caribbean signatures should be found on the Pacific side. If the Caribbean slope potters imitated the Pacific wares, local Caribbeans slope signatures should be obtained.

4. Geological setting

In order to source this pottery, heterogeneous geology is required. Central Panamanian geology, where Monagrillo sites are found, is characterized by two distinct zones: the isthmus proper (in this paper, Cordillera) with Cordillera Central mainly consisting of recent volcanic units, and the older Azuero Peninsula with plutonic, volcanic, and sedimentary units. This petrological and geochemical variation makes this a promising location for provenance studies. He5 and Pr14 are located by the mouth of the Parita River and receive sediments from the geological units of the interior Azuero via the Parita River. The remaining sites (Pr32, Ag13, Sf9, Cl1, Lp134, and Lp8) and major rivers running nearby them are situated within the Central Cordilleran geological units although we must note that Ag13 and Pr32 are located on the alluvial unit (Figure 1). Therefore, this section describes the petrography and geochemistry of those geological units that potentially include the source materials of ceramics found at these sites.

4.1. Azuero: Intrusive [TE-RIQ, TK-LM], Volcanic [K-VE], and Sedimentary [K-CHAo, TO-PE, TOE-TO] Units

Azuero Petrography and Geochemistry

Recent geological studies on the Azuero Peninsula (Buchs et al., 2011; Montes et al., 2012) have been focused on the description of the tectonic evolution of the Panamanian volcanic arc; however, detailed mineralogy and mineral chemistry of the rocks in the study area are not yet well understood.

In general terms, Azuero geology consists of sequences of Eocene to Oligocene (?) forearc sediments overlaying the volcanic/plutonic Azuero Marginal complex (Buchs et al., 2011, 32).

The Azuero Marginal complex that relates to possible Monagrillo pottery sources are K-VE, TK-LM, and TE-RIQ (Azuero Arc) and K-CHAo and TOE-TO (Ocú Formation) (Buchs et al. 2011:34) in Figure 1. The volcanic complex consists of volcanic rocks (K-VE) of the Upper Cretaceous to Middle Eocene (~71-40 Ma), including basalt, andesite, trachybasalt, trachyandesite, and dacite lavas, typically having intergranular to porphyritic textures (e.g., phenocrysts of clinopyroxene, plagioclase, olivine). Major phenocrysts in lavas are zoned plagioclase, alkali-feldspar, greenish clinopyroxene, amphibole, and quartz. Intrusive units (TK-LM and TE-RIQ ~68-71 Ma) range between silicic to mafic composition including gabbros, diorites, quartz monozonites, granodiorites, and granites with constituent minerals such as plagioclase, clinopyroxene, amphibole, biotite, titanomagnetite, quartz, and alkali-feldspar (Buchs et al., 2010, 2011; Lissinna, 2005:60). Large amphibole and zircon are often part of differentiated intrusives (Buchs et a.l,. 2011:21). In Buchs et al. (2010, 2011), the intrusives of TE-RIQ are also associated with lava flows equivalent to K-VE presented in the map (Figure 1). The sedimentary unit, the Ocú Formation (K-CHAo and TOE-TO in Figure 1), occurs along the fault zone of the northern Azuero Peninsula (Buchs et al., 2011: 35). This is a sedimentary unit with pelagic and hemipelagic limestone consisting of gray micritic limestone to a greenish dark gray colored tuffaceous limestone with a detrital component including quartz, amphibole, pumice, and zoned feldspars (Buchs et al., 2011:35). The limestone includes Campanian-Maastrichtian planktic foraminifera (del Guidice and Recchi, 1969 in Buchs et al., 2011:35).

On the other hand, the forearc sediments consist of turbidites and shallow marine limestones (Buchs et al., 2011:33). The Pesé Formation (TO-PE) (Figure 1) is described as part of “Late Eocene or? Early Eocene to Miocene Forearc sediments” of Tonosí Formation by Buchs et al. (2011:33). The Tonosí Formation is subdivided into lower and upper units. The lower unit (Late Eocene or younger) contains conglomerate, coarse sandstone, and shallow marine limestone. Clinopyroxene in the lower unit sandstones have augite chemistry (Krawinkel et al., 1999). The lower unit can also include monocrystalline plagioclase with oscillatory zoning (Krawinkel et al., 1999:37). The upper unit (Late Oligocene and Miocene) has deeper, marine interbedded sandstone, siltstone, shale and calcarenite (e.g., turbidites) (Buchs et al., 2011, 37; Krawinkel et al., 1999:150). Clinopyroxenes in sandstones of the upper units are augite and diopside (Krawinkel et al., 1999:159). The detrital component includes basaltic fragment, chert, alkali feldspar, clinopyroxene, hornblende, and opaque oxides.

4.2. Cordillera: Volcanic [TPLM-Y, TPLM-Yen, TPL-VA, TM-CA, TM-CAtu, TM-SP] Units

El Valle (TPL-VA) and La Yeguada (TPLM-Y, TPLM-Yen) units (Figure 1) have a similar geological history. Their middle Miocene to Quaternary volcanic units overlie the regional basement (21-71 M.a. (Hoernle et al., 2002 in Hidalgo et al., 2011)). Quaternary volcanic units have adakitic-like signatures (Defant et al., 1991a, b; Hidalgo 2007; Hidalgo et al., 2011) (e.g., pronounced depletion of heavy rare earth elements (HEE)) and are presented in detail in geological literature.

El Valle and La Yeguada volcanoes had two roughly contemporary pulses of volcanic activity. In El Valle, andesitic and dacitic lavas erupted during Miocene (~10 to

~5 M.a.) and dacitic lavas and pyroclastics extruded during Quaternary (109±7 k.a. - >~31.8 k.a.) (de Boar et al., 1988:278; Defant et al., 1991a; Hidalgo 2007; Hidalgo et al., 2011; Lissina, 2005). In La Yeguada, major eruptions occurred between the Miocene (~13 and 7.5 Ma), extruding basalts, basaltic andesites, and andesites to rhyolites, and the Quaternary (<2.5 Ma), dacites (Defant et al., 1991b; Knutsen, 2010). The two major pulses of volcanisms are called the 'old' and 'young' groups (Defant et al., 1991a, b) and the terms will be adopted here. In this section, a summary of the old and the young petrographic and geochemical information will be given.

El Valle and La Yeguada Petrography

In El Valle, Llano Tigre (5138±3 - 10190±0.037 k.a.) andesite (some have trachytic textures) of the 'old group,' are porphyritic (major phenocrysts: plagioclase, clinopyroxene, orthopyroxene, titanomagnetite) with groundmass containing glass (Defant et al., 1991a; Hidalgo et al., 2011). Most plagioclase phenocrysts display complex zoning and are embayed or resorbed, and have anhedral to euhedral shapes. Clinopyroxene and orthopyroxene are common. Pyroxenes are mainly calc-alkaline except for some pigeonite (Defant et al., 1991a:316). Amphibole phenocrysts are only present in the 'young group.' This group consists of Domes unit (109±7 k.a.) and Iguana unit (56±14 - 85±20 k.a.) (Hidalgo, 2007; Hidalgo et al., 2011). These units have porphyritic dacitic lava (major phenocrysts: amphibole and plagioclase). Domes unit dacites are crystalline and hypocrystalline and are dominated by phenocrysts of (1) plagioclase (abundance 15-17%, 0.5-3.5 mm) with discontinuous zoning or with nucleation on resorbed quartz and amphiboles, or that contains amphibole in cores, (2) amphibole (4-6%, 0.2-0.22 mm) having orthopyroxene or ghost crystals in cores or with opaque rims, (3) quartz (2-5%, 1.0-4.0 mm) which can appear embayed, (4) biotite (1-2%, 0.1-0.2 mm), (5) Fe-Ti oxides (<1%, 0.2-0.5 mm) (titanomagnetite in Defant et al., 1991) and (6) sphene (<1%, 0.1-0.3 mm) (Hidalgo, 2007; Hidalgo et al., 2011). The Iguana unit dacites have crystallinity and the phenocrysts are dominated by plagioclase (commonly zoned) (17-26%, 0.1-4.5 mm), and zoned amphibole (3-6%, 0.3-2.5 mm), and there are some Fe-Ti oxides (titanomagnetite in Defant et al., 1991) and sphene (<1%, 0.1-0.4 mm) (Hidalgo et al, 2011). Lastly, the El Hato dacitic unit (>~31.8 k.a.) of the 'young group' has angular pumice fragments but rocks are observed to be mineralogically similar to the Dome and Iguana units.

In a major difference between groups: clinopyroxenes are present only in the 'old group' and amphiboles are contained only in the 'young group;' plagioclase phenocrysts in the old group are richer in anorthite compositions.

In the La Yeguada volcanic complex, volcanic rocks are porphyritic (Defant et al., 1991b, 1119). The 'old group' consists of (1) Upper Miocene Cañazas containing lavas and tuffs to Pliocene La Yeguada Formation with ignimbrites, breccias, and tuffs (~10.53-14.70 Ma.) and it is intruded by basaltic and andesitic Los Pozos dikes (12.17 Ma.), (2) Mano de Pelon rhyodacitic pyroclastic deposit, (3) El Satro rhyolitic pyroclastic flow (Ar/Ar: 11.26 Ma, K/Ar: 9.73 Ma), and (4) andesitic unit (7.15 Ma) (Defant et al., 1991b, 1105). Major phenocrysts from this 'old group' are plagioclase (with complex zoning with embayed, resorbed, anhedral to euhedral forms), clinopyroxene (with embayment and resorption, euhedral to subhedral shapes, lamellar twinning and rare oscillatory zoning, mainly augite and scant pigeonite composition), Fe-Ti oxides (ulvöspinel-magnetite [e.g., titanomagnetite] and few ilmenite-hematite, euhedral to subhedral, can appear within pyroxene) , ± olivine, and ± orthopyroxene (bronzites or hypersthenes) (Defant et al., 1991b, 1119). There are few amphiboles in the 'old group.' The 'young group' contains (1) dacitic domes of the central caldera (4.47 Ma), (2) Cerro Esquinado dacitic dome (1.38 Ma), and (3) Media Luna lava flow (Ar/Ar: 32,000 ± 15,000, K/Ar: 0.52 Ma, < 0.1 Ma) (Defant et al., 1991b; Knutsen, 2010). The 'young group' has phenocrysts of plagioclase, amphibole (pargasite, pargasitic hornblende, ferroan pargasitic hornblende, edenitic hornblende, and edenite), Fe-Ti oxide (titanomagnetite, lower Ti than the 'old group'), quartz, ±biotite, and minor apatite and zircon. The difference between the 'old' and the 'young' groups is that only the 'old group' contains pyroxene and olivine.

El Valle and La Yeguada Geochemistry

In El Valle, both the 'old' and 'young' groups have the calc-alkaline characteristics with high large-ion lithophile element (LILE)/high-field strength element (HFSE) ratios (LILE enrichment and HFSE depletion) and low TiO_2 (Defant et al., 1991a; Hidalgo, 2011:10). The 'young group,' compared to the 'old group,' has significantly higher Sr but is depleted in other incompatible elements such as Ba, Zr, Nb, and Ni and has higher K_2O, Sr, Th, and U (Defant et al., 1991a:313). In the 'young group,' compared to other Central American ignimbrites, HFSE is extremely depleted, especially of heavy rare earth elements (HREE). Additionally LILE (e.g., Ba, Rb, Pb) are lower except for Sr (>600 ppm) (Hidalgo et al., 2011). Also, in comparisons to other Central

American ignimbrites, the El Valle ‘young group’ has low Y, high Sr, higher Sr/Y, Dy/Yb and low La/Yb and K_2O/ Na_2O ratios and depleted HREE, having the adakitic signatures. For La Yeguada, the old group has low-K basalts to andesites but high-K dacites.

The young group is higher in Al_2O_3, Na_2O, and Sr but lower in TiO_2, K_2O, Zr, and Rb compared to the old group (Defant et al., 1991b:1117). Both old and the young group have ‘calc-alkaline’ characteristics exhibiting high LILE/HFSE ratios, low TiO_2 concentrations and without the iron enrichment trends (Defant et al., 1991b:1117-1118). Incompatible elements (e.g., Nb, Zr, Rb, Ba, Th, U, and K) and LREE in the old group increase but Sr, Eu, Ti, and P decrease from basaltic to rhyolites (increasing SiO_2) (Defant et al. 1991b: 1128). In the ‘young group,’ adakites have enriched U relative to Th and U and Th relative to HREE and has low HREE and Y and high Sr/Y and La/Yb ratios (Defant et al. 1991b:1128, 1131).

Other Codilleran Volcanic Units (TM-SP, TM-CA, TM-SA)

The Middle to Late Eocene Arc (34-40 Ma) (TM-SP) has subduction-related rocks with calc alkaline affinities (Lissina, 2005:72). Cañazas group (TM-CA), the Miocene arc, is dated to 17.5±0.6 Ma and contains basaltic to andesitic lavas and tuffs (Kesler et al., 1977 in Lissinna, 2005: 51). Oligocene to Miocene (TM-SA, TM-CA) rocks west of the La Yeguada volcanic complex are basaltic to basaltic andesite with phenocrysts of olivine, plagioclase, clinopyroxene and the contemporary rocks east of La Yeguada have basaltic andesites to dacites with phenocrysts of plagioclase clinopyroxene, amphibole and minor amounts of biotite, orthopyroxene, and titanomagnetite (Lissina, 2005: 61). Rocks younger than 5 Ma were alkali basalts (4.5-0.7 Ma) and basaltic andesites to dacites (1-0.1Ma). Miocene phase (13-7 Ma, TM-CA) ranges between tholeiitic to high-K calc-calkaline composition (Lissina, 2005:75) but the samples are from previous researchers west of the Canal Zone. Tholeiitic and calc-alkaline volcanism in Cordillera Central ended in the Late Miocene (around 7 Ma) followed by adakitic (4.5-0.22 Ma) and alkaline (4.5-0.7 Ma) volcanism (Lissina, 2005:75). Adakite and alkali basalts have higher ratios of LILE/HFSE and higher SiO_2 but lower FeOt, CaO and CaO/Al_2O_3 in given MgO. Panamanian adakites have high La/Yb ratios (Lissina, 2005:76).

5. Methods

5.1. Ceramic Samples

Ceramic samples were chosen from the following sites: (1) He5 (n = 38), Pr32 (n = 49), and Pr14 (n = 3), shell middens, and (2) Ag13 (n = 51), Cl1 (n = 48), Lp134 (n = 51 of which n = 12 were assigned to Incised and Appliqué), Sf9 (n = 5), and Lp8 (n = 20), rock shelters. The samples are from the following excavations: (1) He5, Ranere’s ‘Block 2’ of 1975, (2) Pr32, Giausserand’s 1987 and Proyecto Santa María’s 1984, (3) Pr14, Hansell’s 1983, (4) Ag13, Ranere’s 1975 and 1997, (5) Cl1, Bird and Cooke’s 1974, (6) Lp134, Mayo’s 2006, (7) Sf9, Proyecto Santa María and Valerio’s 1983 and 1985, and (8) Lp8, Grigg’s 1998. All samples except for Lp8 are stored at the Smithsonian Tropical Research Institute (STRI) and samples from Lp8 were borrowed from John Griggs, the original excavator (Cooke, 1995; Griggs, 2005; Hansell, 1988; Peres, 2001; Sánchez, 2007; Valerio, 1985). Radiocarbon dates and chronological association of ceramic samples examined are given in Table 1. The Cl1 site has earlier radiocarbon dates; nevertheless, its major occupation (postdates 3680±90 ^{14}C yr BP (TEM-121) and 3770±80 ^{14}C yr BP (TEM-120) (Cooke, 1995:176)) overlaps with Lp8 and the Pacific coastal shell middens; therefore these sites can be used for the pottery circulation study.

5.2. Clayey Sediment Collection and Analyses

In general, since ethnographically known small scale pottery producers gather clayey sediment from within 1 km or less and a maximum of about 7 km distance, and temper within 1 km and maximum of 6-9 km (Arnold, 1985:56-57), local geology of these radii and their upstream geological units that carry sediments should be examined as the candidates for sources.

In this research, the locations of the sampled archeological sites were plotted on the geological map of central Panama to generate expectations for the mineral and lithic inclusions in pottery produced at each site (Figure 1). Clayey soils along major rivers as well as those from each geological unit at and nearby archaeological sites, as well as materials from the El Valle and La Yeguada volcanic eruptions were gathered (n=136) (Appendix A.1). Most clayey soil samples were gathered from the surface and subsurface; however, some samples were weathered bedrock clayey sediments. Since there are ceramic producing households and communities today in central Panama, clayey soils were also gathered from their raw material sources. Additionally, sand along rivers and streams as well as volcanic ash in the road-cuts were collected (Appendix A.1). Subsequently, plasticity tests (n = 120) and drying shrinkage tests (n = 98) were conducted on clayey soils. Plasticity tests were done via producing rings with clayey sediment coils of approximately 1 cm thickness. Coils were made into the maximally small rings right before cracks appeared and the ring size was measured. The smaller the rings, the better the plasticity. For the drying shrinkage tests, the size of the clayey slabs was measured while wet, and measured again when bone-dry. The shrinkage was then calculated. Less than 15% shrinkage meant that the clayey soil needed no addition of temper (Iizuka and Vandiver, 2006).

5.3. Ceramic Petrography

Olympus BX-51 and BH2 petrographic microscopes in the optical laboratory at the School of Anthropology of the University of Arizona and Nikon Eclipse 50i POL at STRI were used to identify minerals and rock fragments contained in the ceramic samples. Sherds (n = 134) derived from He5 (n = 21), Pr14 (n = 3), Pr32 (n = 21), Ag13 (n = 20), Cl1 (n = 23), Sf9 (n = 2), Lp134 (n = 24 (of which n=5, Inciso and Appliqué), and Lp8 (n = 20) were examined. Pottery was classified into petrographic types and sources were inferred based on the geological map.

5.4. Clayey Sediment and Sand Petrography

A total of 32 raw materials were analyzed via petrographic thin sections: 28 clayey soil samples suitable for pottery production, except for a few, and 4 sand and pyroclastic sand samples collected from geological locations that are potential sources (Figure 5, Appendix A.1).

5.5. TOF-LA-ICP-MS

The Institute for Integrated Research on Materials, Environment, and Society (IIRMES), at the California State University Long Beach (CSULB), has a GBC Optimass

800 orthogonal time-of-flight ICP-MS attached to a New Wave UP-213 laser ablation system. This instrument was used to characterize the bulk composition of pottery clay matrix (n= 161) and the matrix of clayey sediment (n =79) samples. Chips were flaked off the samples and analyzed without flattening and without polishing. A blank without the sample was measured first and 10 spots of clay matrix were run followed by the measurement of standards every 20 spot runs. The spot size was set to 75 µm, laser power of 80% with the repetition rate of 10 Hz was chosen. Sixty elements including major, minor, trace, and rare earth elements were measured: Li, Be, Na, Mg, Al, Si, P, S, K, Ca, Sc, Ti, V, Cr, Mn, Fe, Ni, Co, Cu, Zn, Ga, Ge, As, Rb, Sr, Y, Zr, Nb, Mo, Ag, Cd, Sn, Sb, Te, Cs, Ba, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Hf, Ta, W, Re, Au, Tl, Pb, Bi, Th, and U. Standards of three NIST glasses SRM 614, SRM 612, and SRM 610 (concentrations given by Pearce et al., 1997), Glass Buttes obsidian, and NIST SRM 679 brick clay were used.

TOF-LA-ICP-MS is useful for provenancing because it allows (1) quick acquisition of bulk compositional data; (2) obtaining most elements in the periodic table (except O and N); (3) detection of elements present at the ppm to ppt range; and (4) the use of highly sensitive microprobe (Speakman & Neff, 2005). It also allows targeting the clay matrix separate from the added inclusions.

Ceramics samples analyzed via LA-ICP-MS are: Cl1 (n = 28), Ag13 (n = 30), Pr32 (n = 38), He5 (n = 19), Pr14 (n = 3), Lp8 (n = 17), Lp134 (n = 22 of which n = 3 is Incised and Appliqué), and Sf9 (n = 4).

5.6. P-XRF

Portable x-ray fluorescence (P-XRF) on a Bruker Tracer III-V at the STRI and Bruker Tracer III-V+ at the Institute for Integrated Research on Materials, Environment and Society at California State University Long Beach (IIRMES-CSULB) were adopted to obtain semi-quantitative bulk compositional data to supplement the bulk paste matrix compositional studies from LA-ICP-MS. Voltage of 40kV and current of 16 µA, for the former, and 40 kV and 20 µA, for the latter, were opted for the analysis with the filter containing Cu, Ti, and Al. To minimize errors, each sherd was run 5 times for 300 seconds, with a beam size of about 2 x 3 mm, non-destructively, on different spots of the sherd, for example, including exterior surface, horizontal paste profile, and the interior surface. Net peak area energy intensity data of elements between iron (Fe, Z = 26) to niobium (Nb, Z = 41), of pottery (n = 263) and clayey sediments (n = 124) were obtained through the Bruker ARTAX software. Clayey soil samples were mostly made into baked briquettes with a few exceptions of dried soil.

Ceramic samples (n = 263) analyzed with P-XRF are: Cl1 (n = 48), Ag13 (n = 50), Pr32 (n = 49), He5 (n = 37), Pr14 (n = 3), Lp8 (n = 20), Lp134 (n = 51 of which n = 13 are Incised and Appliqué), and Sf9 (n = 5).

5.7. Statistical Analysis

Gauss software was used to conduct statistical analysis of geochemical data obtained via LA-ICP-MS (Table 3 to Table 10) and P-XRF (Table 11 to Table 13). For data obtained by LA-ICP-MS, log-10 based values were compared. In case of P-XRF, since two Bruker instruments, at STRI and IIRMES, were used, net peak area energy intensity data were normalized to zirconium (Zr). Zirconium was an appropriate element because (1) the study was a bulk paste analysis, as opposed to targeting only the paste matrix which potentially has little Zr, (2) zircon grains tended to be small, 0.02-0.05 mm, when observed under the petrographic microscope, (3) Zr did not have a significant inconsistency comparing different P-XRF runs per sample, (4) Zr is resistant to mobility, and (5) from previous experiments, Zr allows a better statistical discrimination of samples compared to the normalization of data to niobium (Nb) or gallium (Ga). These data were statistically studied via adoption of bivariate plot and discriminant function analyses for LA-ICP-MS and a bivariate plot analysis for P-XRF data.

For LA-ICP-MS, yttrium (Y) and thallium (Tl) were chosen as the best discriminator in the preliminary log 10-based bivariate plots. Subsequently, bivariate plot analysis and discriminant function analysis were done based on these groups. Mahalanobis distance tests of quantitative compositional groups of pottery clay matrix, at the 90% confidence level, on results from both log10 values, were conducted with a subset of variables containing Li, Al, Si, S, K, Sc, Ti, V, Fe, Ni, As, Rb, Y, Nb, Ce, Nd, Yb, Ta, Tl, Th, and U. These elements are considered to be non-diagenetically introduced or if they were, it was only to a level that does not affect the bulk compositional sourcing methods. For P-XRF, based on the preliminary bivariate plot result of the semi-quantitative data, normalized to Zr, Ga and Nb were chosen to discriminate samples into groups. These groups were used to run the bivariate plot. A Mahalanobis test was conducted with all the elements between Fe and Nb as variables except for strontium (Sr) (diagenetic), Krypton (Kr) (noble gas), and Arsenic (As) (volatile as As oxides).

Subsequently, Mahalanobis tests were carried out on pottery groups and clayey sediment samples.

6. Results

6.1. Pottery Petrography and Provenance

Three groups were recognized (Table 2, petrographic descriptions are in Appendix A.2). Type 1: granitic rock fragments and monomineralic grains of their constituent minerals. Type 2: volcanic sand with porphyritic volcanic rock fragments and fresh to weathered monomineralic phenocrysts released by weathering of these rocks, with or without igneous intrusive rock fragments. Type 3: fresh or weathered pyroclastic lavas and phenocrysts released from them by weathering of interstices. Petrographic data are summarized in Table 2.

Type 1 pottery had granite fragments, quartz and alkali-feldspars as the primary inclusions and plagioclase minerals in lesser quantity. There were minor amounts of amphibole and accessory magnetite (often altered to hematite), and biotite. The granite-based inclusions contained minor amounts of epidote and tourmaline. There were some myrmekites as well, which derived from the parental rock. There were trace to minor amounts of weathered---mainly felsic---volcanic rock inclusions. Type 1 was found only at He5 (n = 14). Type 1 pottery inclusions matched the rock characteristics in the intrusive rock unit, Valle Riquito Formation in Azuero, near He5 and Pr14 (Figure 1). In the geological literature (Buchs et al., 2010, 2011), intrusive units (Figure 1, TK-LM and TE-RIQ) in the Azuero include silicic to plutonic rocks, grandiorites and granites. This unit in Busch et al. (2010, 2011) is part of the Azuero Arc which is associated with lava flows containing basalt, trachybasalt, and dacite. Therefore, Type 1 pottery with granite and minor amounts of volcanic rock fragments (rich in quartz because feldspars and mafic minerals may have weathered away) was most likely a local product.

Type 2 pottery generally had larger amounts of volcanic rocks, often porphyritic, than minerals. More than one-third of the sherds contained trace to minor amounts of fresh to very weathered plutonic felsic to mafic rock fragments. Volcanic rocks had high variability in composition, texture, and degree of weathering. The major monomineralic grains were quartz and plagioclase, with some sherds having likely alkali-feldspars. Oscillatory zoning of feldspars was commonly noted. Minor to trace amounts of amphiboles, magnetites, biotites, epidotes, and volcanic quartz were present. A few sherds had trace amounts of pyroxenes, aragonites, and zircons.

The phenocrysts of porphyritic fresh to weathered volcanic rock fragments and their monomineralic phenocrysts, including plagioclase, possibly derived from them, tended to be fresh to weathered; sand with a mixed igneous assemblage may have been added as temper. Distinguishing the porphyritic volcanic rock-derived inclusions of Azuero and Cordillera was difficult from the geological literature. However, plutonic units and lava phenocrysts in the Azuero Arc can contain alkali-feldspars (e.g., Buchs et al., 2010, 2011) and alkali-feldspars are not usually documented in the literature of the Cordillera from La Yeguada and El Valle. Although alkali-feldspars were not confidently identified with 2V, there were possible alkali-feldspar phenocrysts in some samples from Type 2 pottery. In addition, the variability of rock types and their textures and varibaillity in mineral species were high in the Type 2 paste, compared to Type 1 or 3.

Without researching raw materials and inclusion chemistry, it was difficult to decide whether alkali-feldspars can be a characteristic of the Azuero source. Plutonic rock fragments and aragonite inclusions in pottery were the key determinants of the source. Similar to Type 1 pottery, intrusive rocks were likely to have been derived from the Valle Riquito Formation (Figure 1, TE-RIQ) of the Parita River mouth. Therefore, Type 2 was produced locally at Pr32 (n = 20) and He5 (n = 5). Since the coastal current runs in a south-to-north direction on the northeast coast of the Azuero (Clary et al., 1984), clayey sediments containing plutonic rocks near Pr32 may also have been available *in situ*. At other sites, the presence of Type 2 ceramics indicates transportation of pots from the northeastern Azuero. Type 2 ware at Ag13 (n = 9) was probably transported from Azuero sites near Parita Bay, from a production zone of Pr32 vessels, because almost all sherds of Pr32 were petrographically Type 2. All the sherds from Pr14 (n = 3) were classified as Type 2 and were also local, but the total sample (n = 3) from this site is small. All samples at Sf9 (n = 2), in the Pacific foothills in the Santa María Drainage basin, were also Type 2 vessels, but the petrographic sample was also small. Type 2 ware was present but scarce at Lp134 (n = 1) among all the thin sections studied (n=24 of which n = 5 was Incised and Appliqué), near the Río Grande drainage. Only one sherd out of 24 studied from Lp134 suggested that it was transported from the Azuero coast.

Type 3 vessels with pyroclastic inclusions consisted predominantly of fresh and angular monomineralic phenocrysts. Volcanic rock fragments, ranging from felsic to basic composition, were much lower to moderately lower in quantity compared to monomineralic phenocrysts. Monomineralic phenocrysts were mainly quartz, plagioclase, and zoned feldspars, often identified as plagioclase. Some were embayed or rounded volcanic quartz. There were minor amounts of monomineralic amphiboles and trace amounts of magnetites and hematites. Trace minerals also included epidotes, probabaly from veins, pyroxenes, zircons, and biotites. No clear indication of alkali-feldspars was detected from studies of 2V angles. Although most geological literature deals with fresh rock descriptions, since there were fresh and angular phenocrysts from pyroclastics in the pottery, it was inferred that Type 3 sherds have pyroclastic inclusions that originated from El Valle (Defant et al., 1991a; Hidalgo, 2007; Hidalgo et al., 2011) and La Yeguada volcanic eruptions (Defant et al., 1991b) in the Cordillera.

Type 3 pottery, abundantly found at Cl1 (n = 20) and Lp134 (n = 23 of which n = 4 were Incised and Appliqué), was consistent with the geological characteristics with pyroclastics in the vicinity, therefore was made locally. Pyroclastics in Type 3 were derived from volcanic units of El Valle and La Yeguada. However, distinguishing between the older (Miocene) and the younger (Quaternary) groups was difficult, since both amphiboles and pyroxenes as well as dacites, andesites, volcanic glass, and rhyolites, were found in these ceramics, although volcanic quartz is more common in the younger group. Apatites and zircons reported from the young group were found in pottery. All of Lp8 (n = 20), about half of Ag13 (n = 9), and small numbers from He5 (n = 2) also had major inclusions of monomineralic phenocrysts derived from pyroclastics. Lp8 can potentially be relatively close to the pyroclastic sources of La Yeguada unit; however, inclusion types and density were similar to some of the sherds from Cl1 and Lp134. Without the geochemical comparisons with Corilleran vessels from Cl1 and Lp134, and comparisons with raw materals gathered from Lp8, it was difficult to determine the origin. Sherds from Lp8 tended to have more gibbsite growth in pores, feldspars, and rock fragments, an indication of post-depositional intensive weathering which was not present in Cl1 and Lp134. Since pyroclastic sources are relatively distant, Type 3 pottery found in Ag13 and He5 must have been transported from the Cordillera.

In addition to Type 1, 2, and 3 ceramics, there were sherds that have such petrographically ambiguous signatures that they could be either Type 2 or 3 (n = 2 from Cl1, n = 1 from Ag13). Also, there was an Ag13 sherd with inclusions that have a plutonic rock fragment, mixed-igneous sand, as well as monomineralic inclusions that could have derived from pyroclastics. This sherd had both Cordillera and Azuero signatures.

Overall, when plagioclase feldspars were untwinned it was difficult to differentiate them from alkali-feldspars; however, as a whole, 2V that indicated possible alkali-feldpsars were identified in Type 1 and 2 from the Azuero, as part of minerals derived from granitic rock fragments or from phenocrysts in sand inclusions. This accords with the Azuero plutonic units and lava phenocrysts including alkali-feldspars (Buchs et al., 2010, 2011; Lissina, 2005). Most feldspars from Type 3 were plagioclase, which was also consistent with the materials from El Valle and La Yeguada volcanic units (Defant et al., 1991a, b; Hidalgo et al., 2011) (Figure 2).

6.2. Pottery TOF-LA-ICP-MS and Provenance

Thallium (Tl) and yttrium (Y) best discriminated the log-10-based bivariate plot-analyses of pottery clay matrices, based on the quantitative compositional data obtained from TOF-LA-ICP-MS (Table 3 through Table 10). Three compositional groups were established with subsequent discriminant function analysis (Figure 3). TOF Group1 consisted of almost all samples from Pr32 (n = 37), all from Sf9 (n = 4), three-fourths from He5 (n = 14), about one-third from Ag13 (n = 10), and small numbers from Lp134 (n = 1), and Pr14 (n = 1). TOF Group 2 contained almost three-fourths of the sherds from Lp134 (n = 16), two-thirds from Lp8 (n = 9), and a very minor amount from He5 (n = 1). TOF Group 3 consisted of most sherds studied from Cl1 (n = 23), less than half from Ag13 (n = 13), and a few from Lp8 (n = 3). Twenty-seven sherds were unassigned to the above compositional groups as follows: Ag13 (n = 7), Cl1 (n = 3), He5 (n = 3), Lp134 (n = 5), Lp8 (n = 6), Pr32 (n = 1), and Pr14 (n = 2). The results are summarized in Table 18.

6.3. Pottery P-XRF and Groups

The above mentioned bivariate plot analysis of P-XRF data discriminated the samples into two broad groups (Figure 4). Group 1 consisted of 108 sherds, with Cl1 (n = 30), Lp8 (n = 20), and Lp134 (n = 41) having predominant numbers; Ag13 (n = 14), with about one-third; and Pr32 (n = 2) and He5 (n = 1), having a very small number relative to total sherds analyzed from each site. Group 2 constituted 122 sherds, with most of Pr32 (n = 44), most of He5 (n = 32), more than half of Ag13 (n = 27), less than one-third of Lp134 (n = 9), a scant amount from Cl1 (n = 2), and larger numbers of Sf9 (n = 5) and Pr14 (n = 3). The results are summarized in Table 18. The unassigned sherds were about one-third from Cl1 (n = 16), about 2% of Lp134 (n = 1), one-fifth from Ag13 (n = 9), less than 10% from Pr32 (n = 3), about 10% from He5 (n = 4), and none from P14, Sf9, and Lp8.

6.4. Raw Clayey Sediment Property Test

Tests of shrinkage and plasticity of raw clayey sediments (Appendix A.1) indicated that most geological units associated with the Early Ceramics sites had raw clayey soils suitable for pottery production nearby, except for Ag13. Samples from Lp8, from the Tocué Formation, were excluded because only the plasticity test was conducted (with positive results for 7 of 12 samples).

6.5. Raw Clayey Soil and Sand Petrography

The analysis of 28 petrographic thin sections of raw clayey soils and 4 sand thin section samples from 9 geological units (Table 14 through Table 17, Appendix A.2) suggested that, as predicted by the result of petrographic pottery analysis, intrusive igneous rock containing raw clayey sediments of the Azuero Peninsula (n = 5) and Pacific Cordilleran pyroclastics, including clayey sediments and pyroclastics sand of El Valle and La Yeguada volcanic complexes (n = 10), were observed in the raw materials gathered from these units and nearby (Figure 5 and Figure 6).

Raw clayey soil samples gathered from the northeastern Azuero coast (#1-17, #1-19; #2-6, #2-7, He5-SH-1) and pyroclastic inclusions found in the Pacific Cordilleran clayey sediments (La Yeguada unit: #10-16, #10-18; Río Hato unit: Muñoz 1, Muñoz 3, Quiros, Cabu 1) and sand (La Yeguada unit: #10-20; El Valle units: EV-15, EV-16, EV-22), matched pottery inclusions (Figure 6). The Azuero sample #10-17 is likely to be the source for pottery grantic inclusions found in sherds from He5; and Azuero samples #1-19, #2-17, and He5-SH-1 are likely to be the source for mixed igneous sand based inclusions containing weathered intrusive rocks, similar to sherds with mixed igneous sand inclusions found in Pr32, He5, and Ag13. The pyroclastics containing raw materials (#10-20, EV-15, EV-16, EV-22, Muñoz 1, Muñoz 3, Quiros, Cabu 1), from El Valle and La Yeguada and nearby units matched inclusions in ceramics from Cl1 and Lp134, sites near Río Grande in the Pacific foothills, and Lp8 pottery from the Caribbean slopes (Figure 6). However, there were no raw clayey sediments (Limón, Lp8-7, San Juan) containing pyroclastics with fresh and angular phenocrysts near Lp8. Clayey sediments (Cl1-TP-3, Cl1-TP-4, Cl1-B-6, and Cl1-B-7) nearest to Cl1 did not have pyroclastics containing clayey sediments either, but this type of soil was found at a lower elevation (Quiros, a clayey soil deposit used by a modern potter) (Figure 5). This led to a conclusion that pottery samples with granitic inclusions (Type 1) and mixed igneous sand-based inclusions (Type 2) were locally produced ceramics from the Azuero, and the sherds that included pyroclastics (Type 3) were produced in the Pacific *cordillera*. Lp8 pottery was probably transported from a production area in the Pacific foothills.

6.6. Raw Clayey Sediment Geochemistry and Pottery

The comparisons of raw clayey sediments and pottery geochemistry suggested that raw clayey sediments did not have compositionally distinct signatures to source pottery to geological origins, whether the samples were taken from the weathered bedrock or subsurface, and either LA-ICP-MS or P-XRF or both were compared with pottery geochemistry. In addition, as an experiment, when quantitative bedrock geochemistry of the source areas from Azuero and El Valle and La Yeguada units in literature (e.g., high Sr/Y in El Valle and La Yeguada) was compared with LA-ICP-MS pottery data, both normalized to continental crust geochemistry (Taylor and McLennan, 1995), convincing provenance results were not obtained.

7. Discussion

7.1. Petrography and Geochemistry: Combined Provenance Interpretation

Based on the above petrographic source identification, it was also concluded that LA-ICP-MS Type 1 and P-XRF Type 2 are Azuero-produced ceramics matching petrographic Group 1 and 2. LA-ICP-MS Type 2 and 3 and P-XRF Type 1 are Pacific foothills produced vessels matching petrographic Group 3 (Appendix A.3).

The combined results from petrography and geochemistry from provenance research (Appendix A.3; Table 19 and Table 20) indicated that there were two major ceramic production zones: (1) the northeastern Azuero Peninsula, which is dominated by intrusive igneous rocks (Valle Riquito Formation) and (2) the Pacific Cordillera (Miocene and Quaternary volcanic units of El Valle and La Yeguada), with pyroclastics having fresh monomineralic phenocrysts. There may have been an additional production zone in the Pacific intermediate area such as at Ag13, in the plains. This type of pottery gives mixed Azuero and Pacific Cordilleran signatures, either via petrography and geochemistry, or via pottery paste matrix geochemistry (LA-ICP-MS) and bulk composition (P-XRF). This compostion indicated that they are derived from both Cordilleran and Azuero sources.

Table 19 shows the results of all three provenance methods (petrography, LA-ICP-MS, and P-XRF) and Table 20 provides the results from petrography and at least one geochemical analytical methods (LA-ICP-MS, P-XRF, or LA-ICP-MS and P-XRF). Two sites, Cl1 and Lp134, from the Pacific Cordillera, by the Río Grande, are classified as the Cordilleran type. Probably for Cl1, local production occurred at a lower elevation where there are pyroclastics with phenocryst-containing clayey soils (e.g., Quirós in Figure 5); raw clayey soils *in situ* and the vicinity (n = 4) did not contain pyroclastics with monomineralic phenocrysts. All sherds from Lp8 which petrographically and geochemically matched Pacific Cordilleran pottery and its sources, suggested that vessels at Lp8 were produced in the Pacific Cordillera and were transported from there. They may have been made in the Río Grande area or the Cordilleran location close to Parita Bay, because sherds found at Sf9 (Table 19 and Table 20), Pacific Cordilleran site away from the bay, were all produced in the Azuero, although sherds examined from Sf9 were limited in number (n = 2) and require further tests. In terms of Azuero ceramics, all sherds except for two that came from the Pacific Cordillera, at He5, were local vessels. All sherds but one, that perhaps came from the intermediate area such as from Ag13, were locally produced ware at Pr32. Sherds (n = 3) from Pr14 were also all local (Table 19 and Table 20). Ag13 was an unusual site in that about half or more vessels had been produced and transported from the Azuero and half or less brought in from the Pacific Cordillera, with a lesser number having mixed characteristics. Lp134 contained two sherds with mixed petrographic and geochemical source characteristics. Lp134 was also the only site from which Incised and Appliqué ceramics from the possible tail-end of the Monagrillo period or the Sarigua period were studied in this project. There was no change in the source patterns from the Monagrillo period, although sources determined by combined methods from this period were small. It should be noted, however, that the only sherd assigned to the Azuero type from Lp134 was the Incised and Appliqué type.

7.2. Timing of Azuero Production, Degree of Sedentism, and Trans-Cordilleran Distribution

Although the lowest level of Block 2 at He5 from which a pottery fragment studied via thin sections (He5-76-F1 in Appendix A.3) had a Pacific Cordilleran origin, microscopic inspection of a sherd, He5-78-F1, from the bottom level (170-180 cm), had a granitic rock-based paste. Thus, from the beginning of the occupation of He5, during the pre-midden period, pottery was being produced *in situ*. Thin sectioned sherds from the excavation below the levels with the associated radiocarbon date of 2105-1205 and 2040-1530 cal yr BC (Table 1) were mostly locally produced in the Azuero, when He5 was still at the active shoreline. The same can be said for Pr32. However, the evidence of Azuero production seems to be older in He5, where the use began earlier. The first mixed igneous sand-based paste (petrographic Type 2) found at He5, in thin sections, was dated to post-3615±80 ^{14}C yr BP and pre-3385±75 ^{14}C yr BP, overlapping in time with the period of intensive occupation at Pr32.

Most pottery was produced *in situ* at He5 and Pr32 from the beginning to the end of the occupation. During the early time when the shell middens were probably uninhabitable, pottery was being produced with clayey soils mined from the same deposits as at the later time, when middens were intensively occupied. This means that people were at least sedentary enough to produce pottery on the coast, more inland than the paleo-shoreline, from the beginning of shell midden use. In addition, sherds that were excavated from levels post-dating 1500 cal yr BC, when the intensive occupation began to wane, people continued to gather raw materials from the same deposits on the coast.

This can support the hypothesis that some of the central Pacific farming population was already inhabiting the coast at the mouth of the major rivers, Santa María and Parita. Since people of this time relied heavily on domesticated crops for their calories (Dickau 2005), it can be inferred that they were living and farming somewhat inland from the shore, by the coast and the river mouth, and visiting shell pre-middens at the shoreline. Pottery was transported from the coastal habitation to the pre-midden. However, more conservatively, Pacific slope farmers could have visited those coastal habitation areas during the driest months of the dry season, producing pottery there, while engaging in coastal activities, but rarely carrying pottery during their seasonal moves.

Either way, early semi-permanent open-air habitation sites or seasonal camps on the coast have not been found. Sites could be buried under the river mouth delta which had a rapid sedimentation rate until 3000 ^{14}C yr B.P. (3.0 m/1000 years for the Santa María delta and 0.5 m/1000 years south of the Parita River delta (Clary et al., 1984)), or the exposed pottery has weathered, due to the high salinity, and is indistinguishable from the Late Preceramic stone tool scatters (Weiland, 1984).

The ceramic sourcing results did not support the inference that people only sporadically visited the shell middens of He5 and Pr32, from the Pacific Cordilleran foothills rockshelters, during the earliest phases, before the formation of lagoons and offshore bars. Neither did it support the hypothesis (Cooke & Ranere, 1992) that pottery was made expediently using clays without careful selection. For example, granitic clayey soils in pottery from He5 suggest that the clayey soil mines that people had already selected and used during this period in the Azuero continued to be mined throughout the Monagrillo period, for over a thousand years. Since other workable clayey soils are common in this area and intrusive rock types, sources for Azuero pottery raw materials, are heterogeneous, it is likely that the producers targeting specific mines were not unrelated people, but were those who had had ties for generations to the particular clay locations and the production recipe.

In addition, the inference about the seasonal residential mobility of potters between the Pacific foothills and the coast is not supported when the sourcing results are combined with the environmental and activity contexts. If potters farmed in the Pacific foothills during the wet season, clearing and burning land during some part of the dry season inland, and moved to the coast during the driest months, which was the peak time to procure marine resources (Hansell, 1979: 115-116), the optimal months for pottery production in the interior must have been spent on the coast. Today, according to a local potter (Sebastián Quirós, personal communication, 2011 (Figure 5, Quirós)), on the bottomlands near Penonomé near where Lp134 and Cl1 are located, the open firing of pottery is done only during the driest months because firing is difficult during the rainy season. It is possible that potters produced vessels in the Pacific foothills in their spare time during the period of clearing and burning of farm fields. They probably moved for a couple of months to the coast where they gathered clays and wood, and prepared clays. However, it is more likely that relatively sedentary people were producing vessels on the

Azuero coast and in the Pacific foothills, using their own selected resources during the dry season.

Cl1 has the earliest radiocarbon dates associated with ceramics among the studied sites. This could indicate either that ceramic production began in the Pacific foothills site(s) by the Río Grande earlier than at Azuero coastal sites, or that earlier coastal sites containing pottery may be buried under sediment. An alternative explanation is that people became sedentary on the coast somewhat later than the earliest ceramic use at Cl1.

With regard to the degree of sedentism, all pottery at the Caribbean slope site, Lp8, had a Pacific foothills provenance, suggesting that it had been transported from the Pacific side of the Cordillera. This can be interpreted in two ways: (1) There were no permanent Caribbean occupants, but people in the Pacific foothills sporadically visited the site seasonally, carrying pottery containing resources, without long-term sedentism; or (2) sedentary Caribbean occupants carried pottery with local resources from the Pacific foothills or they acquired vessels containing Pacific resources through exchange.

However, the second possibility seems more likely because it would not be surprising if people at Lp8 had a similar degree of sedentism to those in the Pacific foothills and plains (e.g., Cl1 and Ag13). The similarity in the high variability of their tool types, including grinding stones, cryptocrystalline silicate tools produced with a bipolar reduction technique, and microbotanical remains of food (e.g., maize, *Zea mays*) (Griggs, 2005), makes Lp8 an unlikely site for task groups, sporadic non-sedentary visitors, engaged in specific local activities (e.g., Voorhies 2004). This site may have been occupied for a relatively long term. Thus, a more likely scenario is that no local pottery was found because the Caribbean slopes are nearly perennially wet and receive high annual precipitation (at Lp8 area, 3000 mm/year (Griggs 2005). It is a difficult place to dry vessels and obtain dry wood for firing.

Early pottery production was probably affected by the seasonality and precipitation levels of central Panama. Potters of this time possibly preferred the Parita Bay zone, seasonally the driest region in central Panama, to make their vessels during the dry season when they had fewer farming tasks. By the time pottery emerged, people were relatively sedentary during the dry season both in the Pacific foothills and on the Azuero coast. Pottery was transported to the Caribbean slope, where people perhaps stayed fairly sedentary, but where I suggest precipitation inhibited vessel production. With regard to the insights about the degree of sedentism during the tail end of the Monagrillo period or Sarigua, pottery production and circulation patterns at Lp134 are useful. Patterns were perhaps similar between the Monagrillo period and the Incised and Apliqué period (Sánchez Herrera 2007). To further understand the degree of sedentism during this time, sourcing of stone tools, seasonality research using faunal remains, as well as a search for more sites surrounding the Azuero coast is necessary. Additionally, the timing of the sedentism at coastal sites, possibly buried under sediment, requires geomorphological and archaeological field investigations.

Regarding Ag13, the rockshelter with pottery transported from both the Pacific Cordillera and the Azuero coast, it is interpreted that the place was often visited by occupants of both areas. The place could have functioned as a resource procurement site (e.g., macrobotanical remains of oil palm (*Elaeis oleifera*) are abundant at Ag13 and are only found at Ag13 in central Panama (Cooke 1995; Dickau 2005)) and/or a gathering area for both groups. An alternative explanation is that the Ag13 site occupants, who may have produced ceramics themselves, as seen in some pottery with mixed signatures, engaged in exchange of resources contained in ceramics brought in by Azuero and Cordilleran groups, or organized inter-group activities involving ceramic transportation from both production zones (Figure 7).

8. Conclusions

This research indicates that, although the result is only based on ceramic evidence, pottery producers were sedentary in the Pacific foothills and on the northeastern Azuero coast. They visited the rockshelters located on the Pacific plains site carrying vessels. The rare occurrence of ceramic transportation between the Azuero and the Pacific foothills, and local production in the Azuero beginning the pre-midden period suggest that the hypothesis of seasonal residential mobility between the Pacific foothills and the Azuero is not supported. Transcordilleran vessel distribution occurred from the Pacific foothills to the Caribbean slopes, where people were relatively sedentary, likely due to production constraints in the Caribbean areas.

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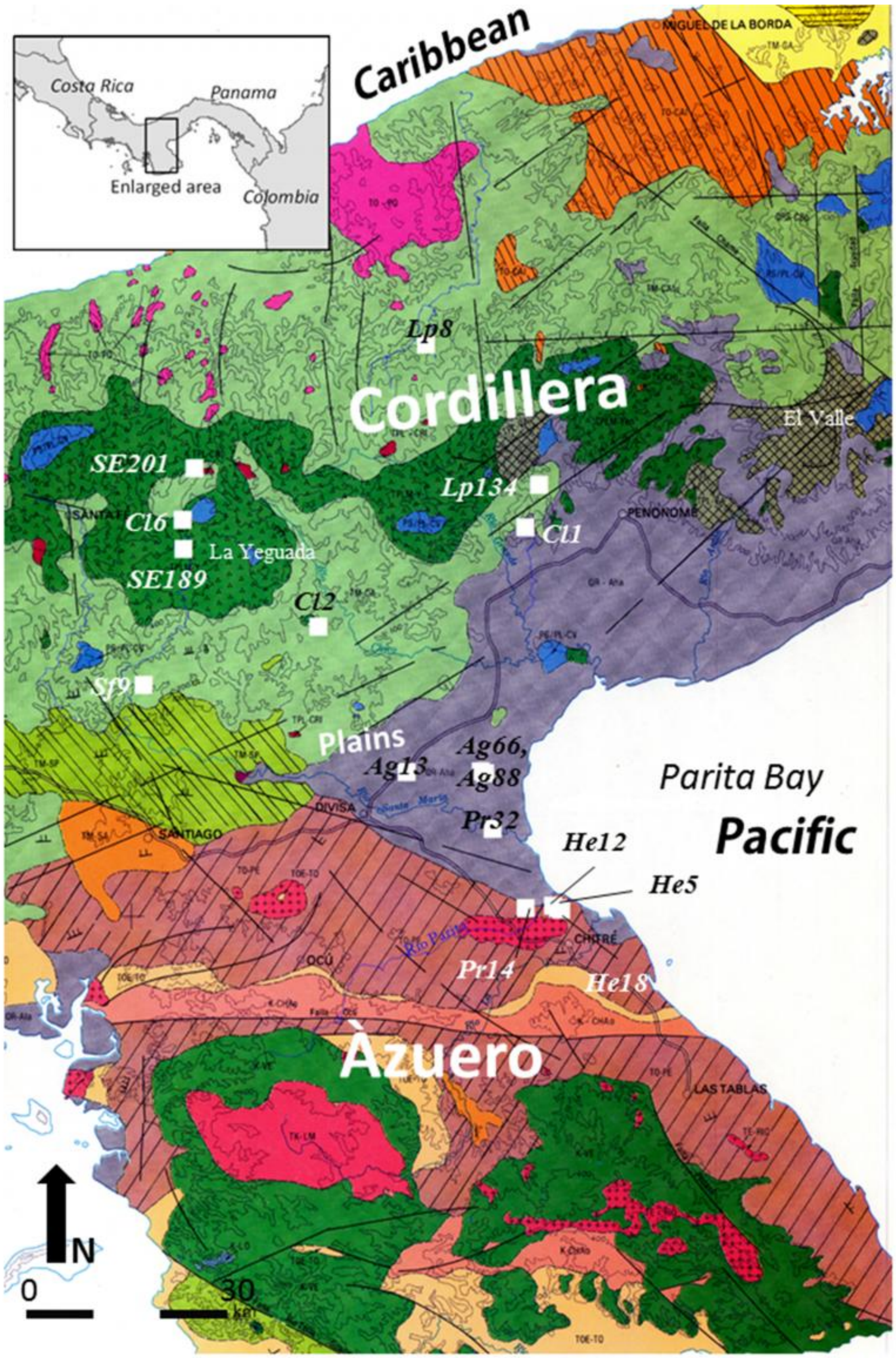


See Caption on the next page.

Intrusive Rocks

	Description
	TPL-CRI – S. Cristóbal Formation: Granodiorites and mangerites
	TO-PQ – Petaquilla Formation: Granodiorites, quartz monzonites, gabbro diorites, diorites, dacites
	TE-RIQ – Valle Riquito Formation: Quartz diorites, norites, gabbros
	TK-LM – L. Montuoso Formation: Quartz diorites, quartz gabbros, norites, granodiorites, quartz monzonite

Metamorphic Rocks

	Description
	K-LO – Lovaina Formation: Green schists (chloritic and actinolitic)

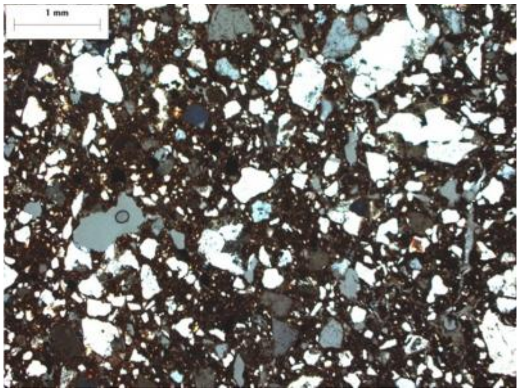
Sedimentary Rocks

	Descriptions
	QR-Aha – Río Hato Formation: Conglomerates, sandstones, siltstones, tuffs, non-consolidated sandstone, pumice
	TM-SA – Santiago Formation: Sandstone, conglomerates
	TO-CAI – Caimito Formation: Tuffaceous sandstone and siltstone, tuff, foraminiferous limestone
	TO-PE – Pesé Formation: Continental tuff, sandstone, limestone
	TOE-TO –Tonosi Formation: Siltstone, sandstone, limestone, and tuff
	TK-CHI – Chiguirí Formation: Deformed siltstones
	K-CHAo – Ocú Formation: Limestone, tuff

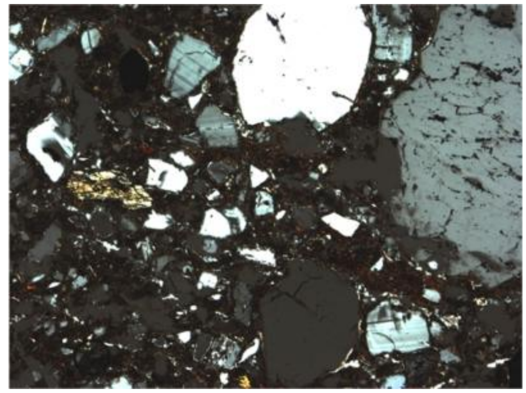
Volcanic Rocks

	Description
	QPS-CSp - Picacho Fm: Basalt/andesites, conglomerates, alluvial and colluvial deposits, mudstones
	PS/PL-CV – Viejo Fm: Amygdaloidal, vitreous basalt/andesites
	TPL-VA – El Valle Fm: Dacites, breccias, plugs, ignimbrites, pumice, fine tuff, andesites/basalts, tuff and fine-grained subintrusives
	TPLM-Y - La Yeguada Fm: Dacites, ignimbrites, tuffs
	TPLM-Yen – El Encanto Fm: Dacites/riodacites, ignimbrites, subintrusives, tuff, lavas
	TM-CA – Cañazas Fm: Lavas and tuffs
	TM-CAtu - Tucué Fm: Andesites/basalt, lavas, breccias, tuff and plugs
	TM-SP – San Pedrito Fm: Tuff, agglomerates
	TE-MAso – Sur de Sona Fm: Basalts, diabases
	K-VE – Playa Venado Fm: Basalts, pillow lavas

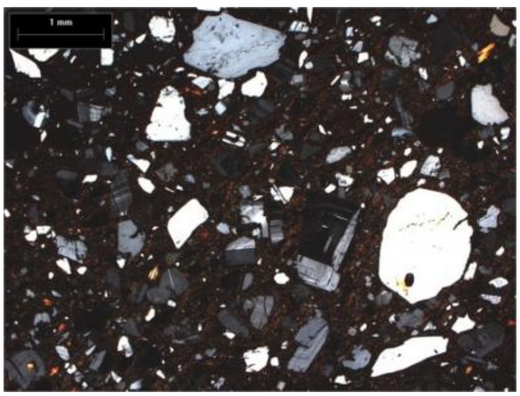
Figure 1: Geological map of central Panama with sites containing Monagrillo pottery. Legends for the geological map of Panama.
The map was produced with the assistance of Natalia Hoyos taken from the original map produced by Giudice and Ricchi (1969).



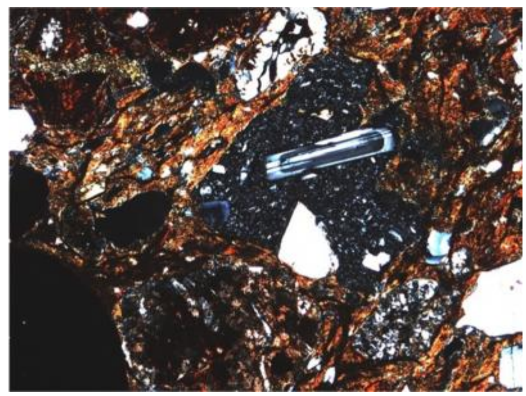
He5-69-f3 (2X)



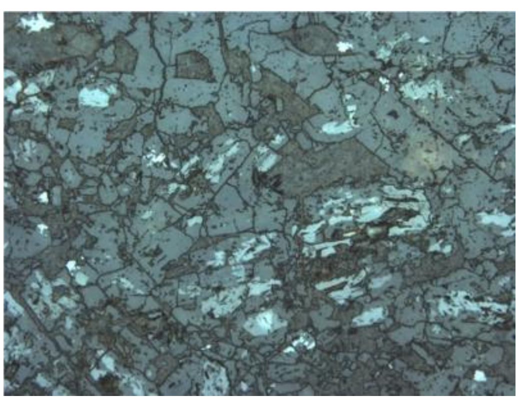
Lp8-176-1.59-2-1 (5X)



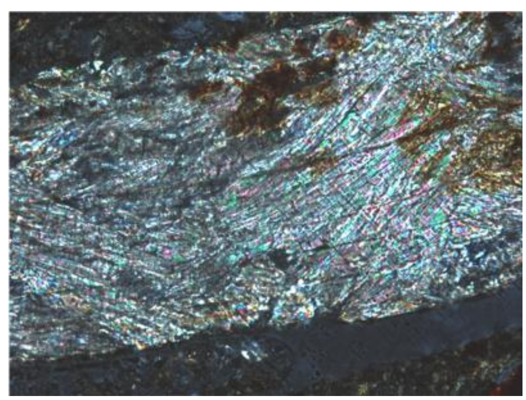
Cl1-44-f8 (2X)



Pr32-c35-n17-1 (5X)



Pr32-c35-n20-3 (20X)



He5-63-F2 (40X)

Figure 2. Photos of minerals and rocks in ceramic thin sections.
He5-69-f3, 2X, XPL, granitic rock-based paste from He5 (upper left), Lp8-176-1.59-2-1, XPL, 5X, pyroclastics of Pacific foothills in pottery from Lp8 (upper right), Cl1-44-f8, XPL, 2X, El-Valle and La-Yeguada pyroclastic inclusions in pottery from Cl1, the Pacfic foothills site (center left), Pr32-c35-N17-1, XPl, 5X, igneous sand-based inclusions in pottery from Pr32 (center right), Pr32-c35-n20-3, reflected light, 20X, intermediate to basic intrusive rock (lower left); He5-63-F2, XPL, 40X, aragonite inclusion (lower right).

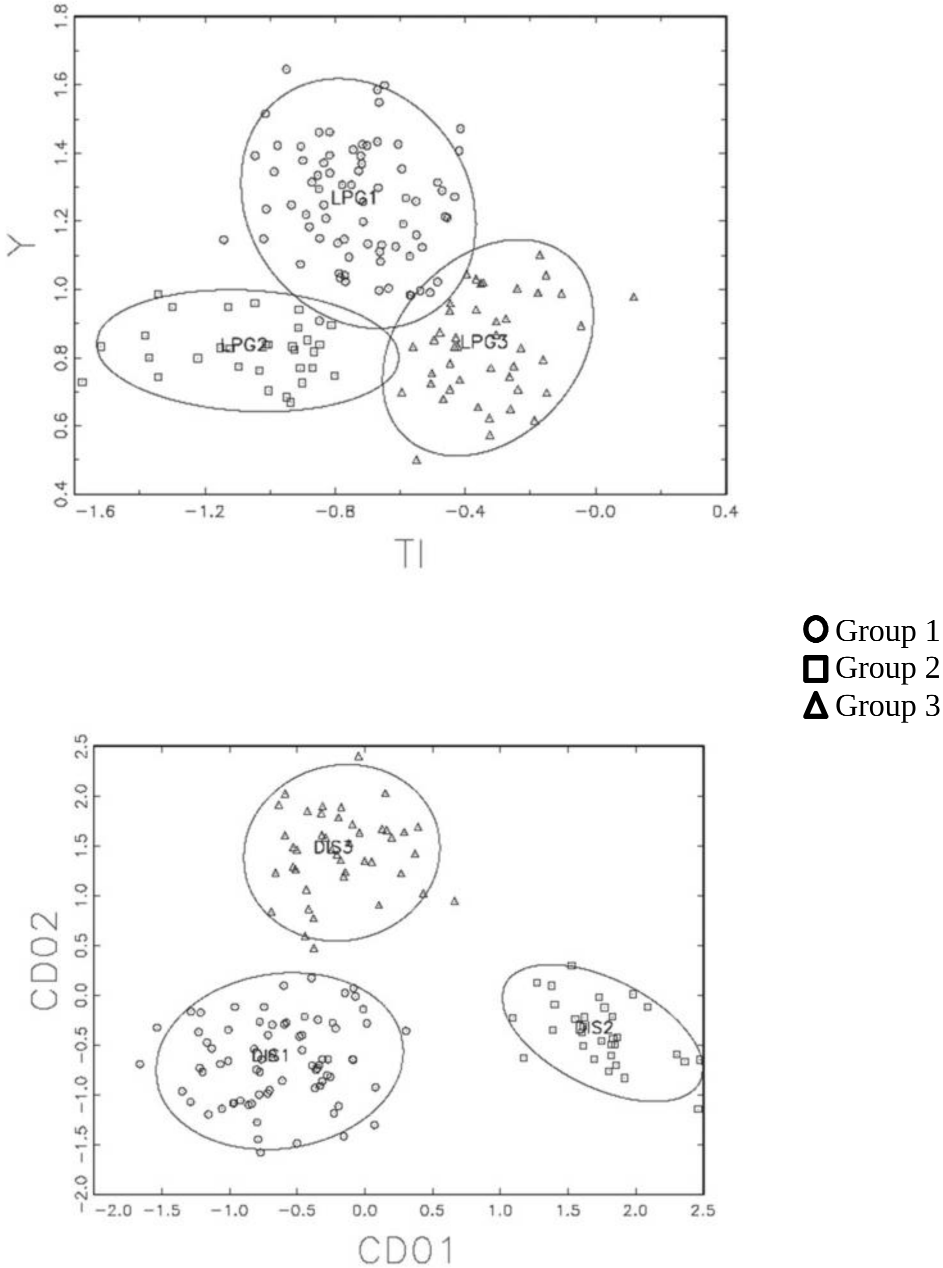


Figure 3. Statistical analytical results based on data obtained with TOF-LA-ICP-MS.
The top is the pottery clay matrix compositional groups based on the log 10-based bivariate plot of Tl and Y. The bottom shows the three groups based on the bivariate plot, as reassigned by the discriminant function analysis of all elements. Both results are based on the 90% confidence level, jack-knifed with the Mahalanobis distance measurement. ○ is Group 1/Dis 1, □ is Group 2/Dis 2, and ∆ is Group 3/Dis 3.

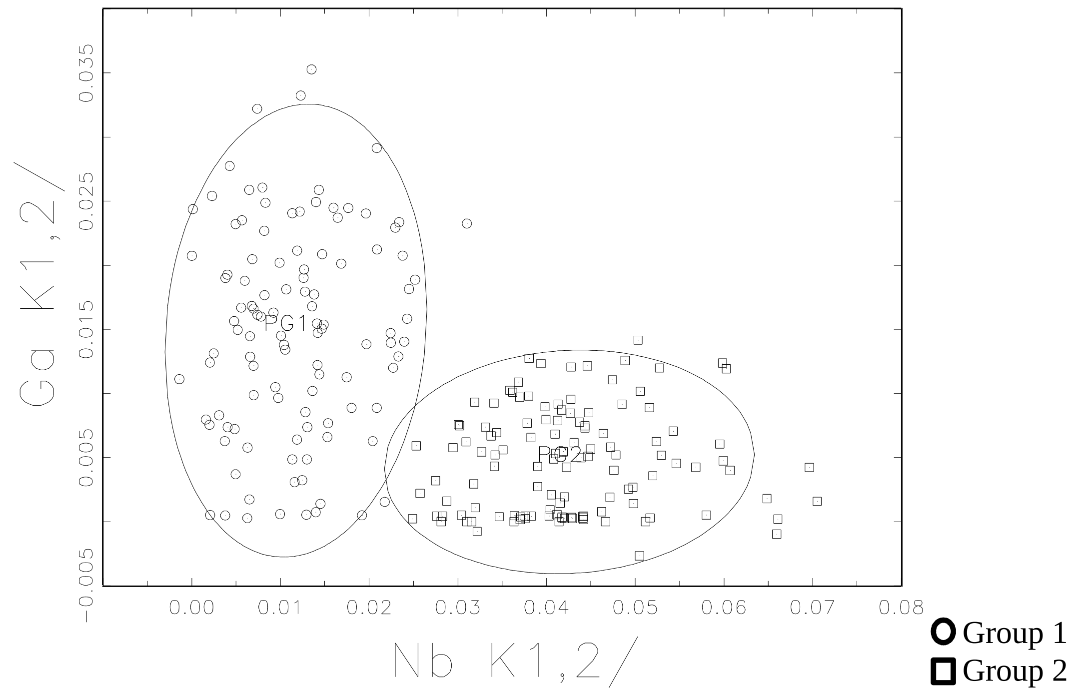


Figure 4. Bivariate plot of semi-quantitative compositional data, energy intensity-based net peak areas, of Ga and Nb obtained via P-XRF.
Group 1 and 2 were determined with the 90% confidence level, jack-knifed with the Mahalanobis distance measurement. ◯ is Group 1, ☐ is Group 2.

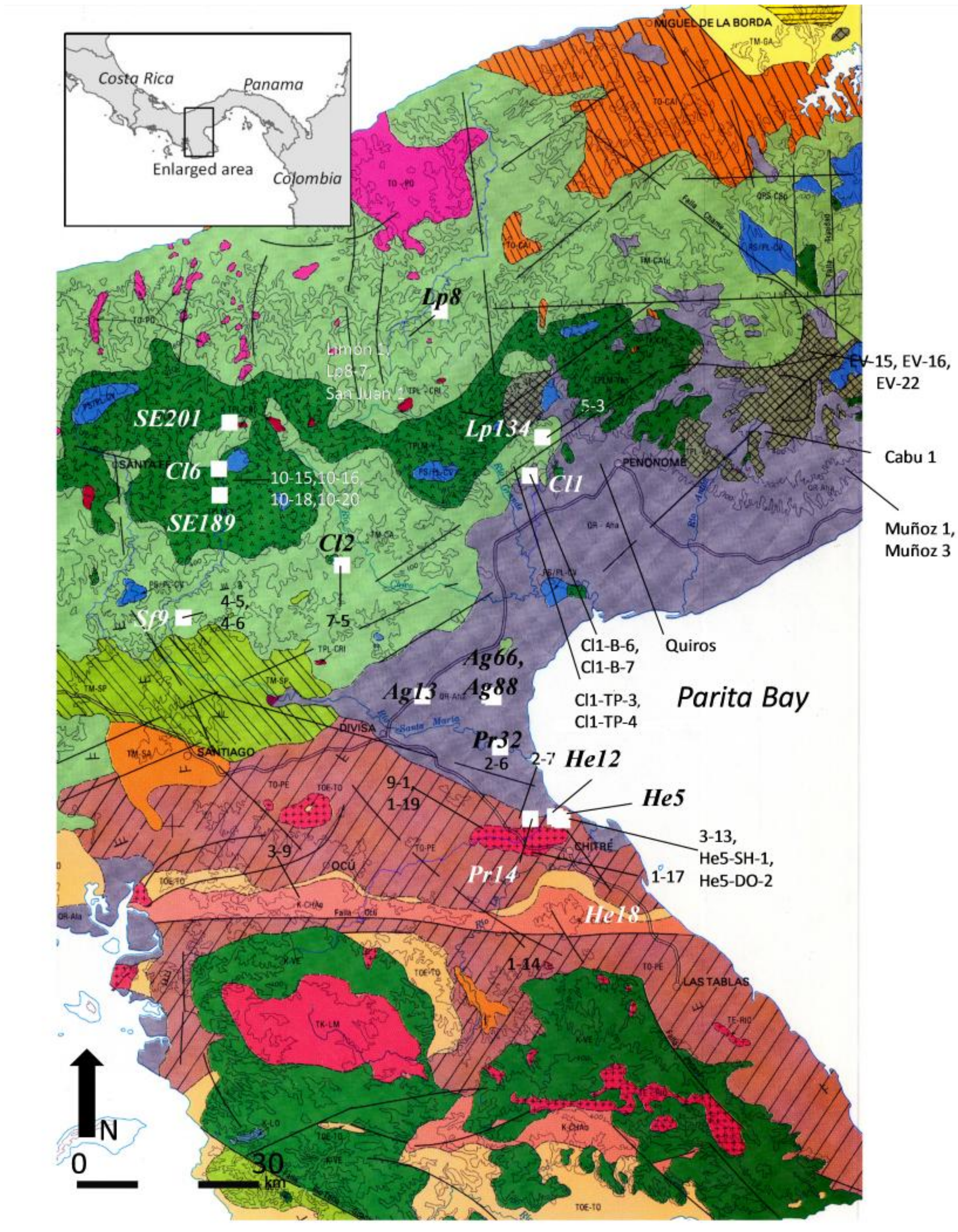


Figure 5. Geological map of central Panama with Monagrillo sites and the collection locations of raw materials made into thin sections.
The legend for this map, adopted from Giudice and Ricchi (1969), is the same as that in Figure 1.

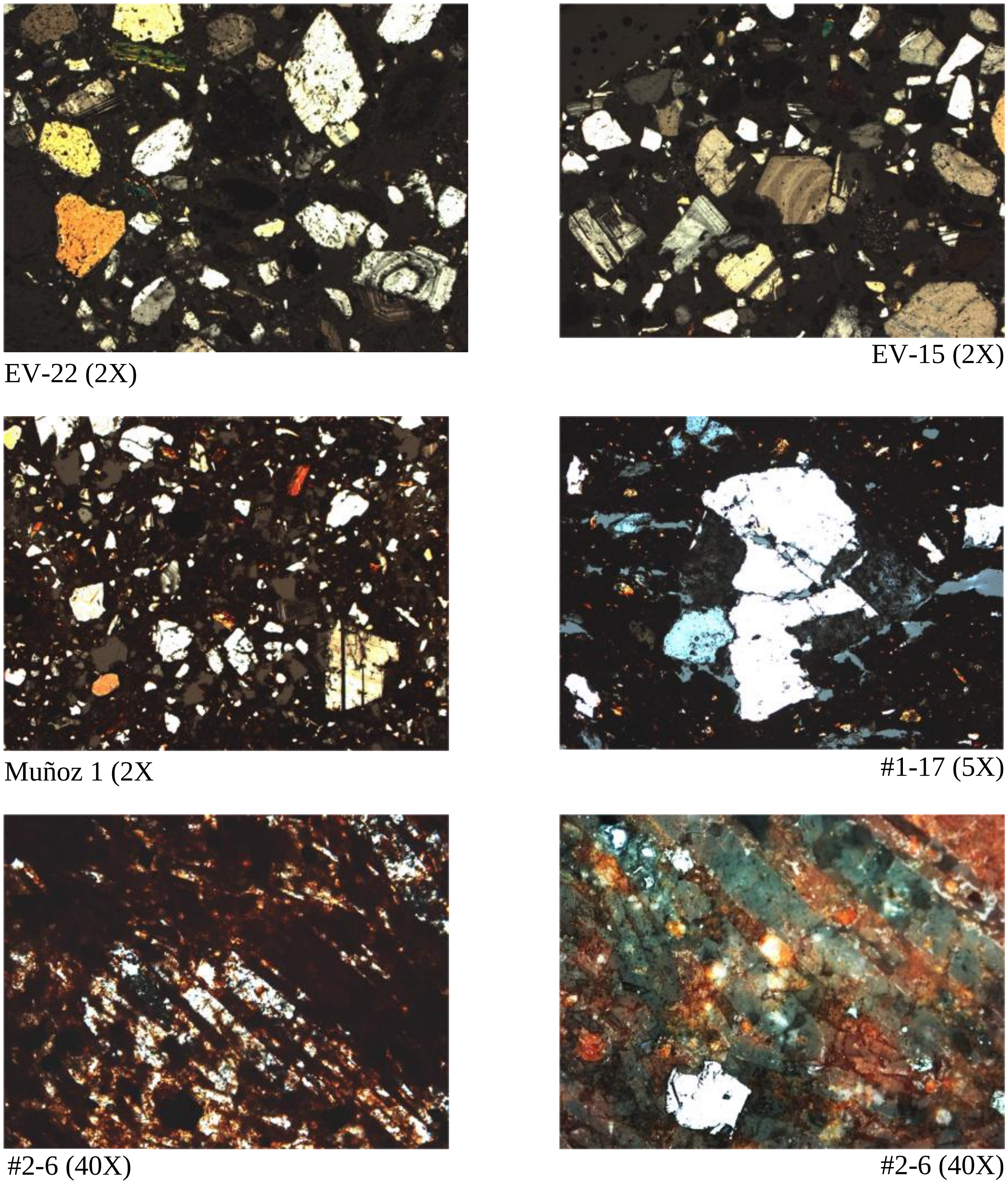


Figure 6. Petrography of potential raw materials.
EV-22, XPL 2X, pyroclastic sand (upper left), EV-15, XPL, 2X, pyroclastic sand (upper right), Muñoz 1, XPL, 2X, pyroclastics in clayey soils with monomineralic inclusions (center left), #1-17, XPL, 5X, granite (center right), #2-6, 40X, PPL, intermediate to basic intrusive rock fragment (bottom left), #2-6, 40X, reflected light, intermediate to basic intrusive rock fragment (bottom right). The collection locations are indicated in Figure 5.

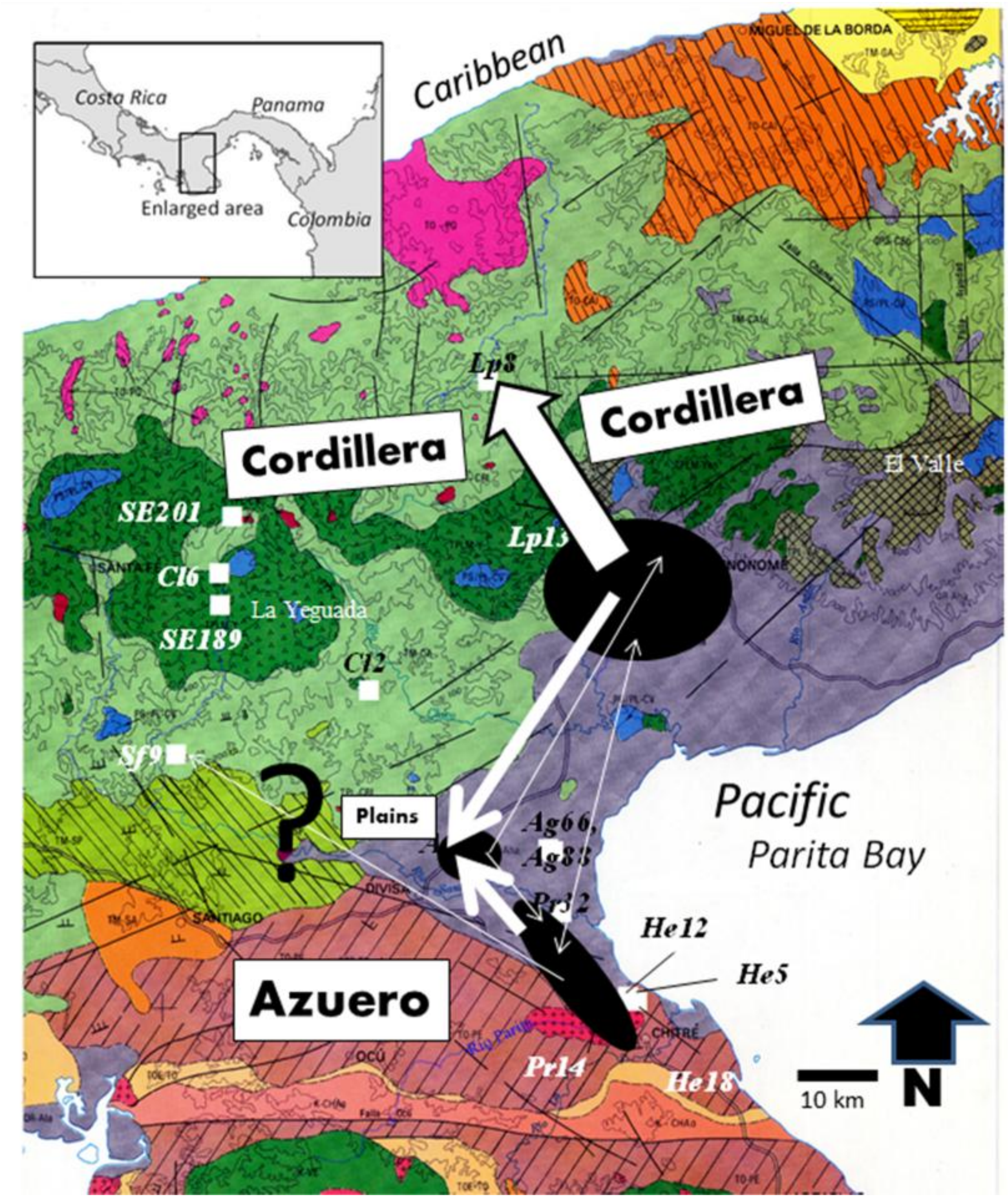


Figure 7. Geological map of central Panama with the reconstructed ceramic production and distribution patterns.

Ovals and circular shapes in black are production locations. Arrows in white are the direction of transportation of pottery. The question mark in black is the circulation reconstructed for this research but that needs to be investigated further. Thickness of arrows indicates relative intensities of circulation. The legend for this map is the same as that in Figure 1. The map was adopted from Giudice and Ricchi (1969).

SITE	DATE	CONTEXT	LAB.NO.	MATERIAL	Cal Age 2s	SD	BP	SD
Aguadulce	1997	Zone B, 12-17 cm bs	UCR-3418	Phytoliths in milling stone	cal BC 3017 - 2833	60	4250	60
Carabalí	1987	CP20, Lev 9 (40-45cm)	Beta-19101	Charcoal	cal BC 1530 - 785	180	2920	180
La Mula-Sarigua	1983	Feature 242S417E	Beta-21898	Shell	cal BC 500-200	60	2640	60
La Mula-Sarigua	1983	Feature 242S417E	Beta-6016	Shell-o	cal BC 760-415	50	2820	50
Ladrones	1974	A0, Lev7/8, 71-76 cm	TEM-122	Charcoal	cal BC 2570-2130	80	3880	80
Ladrones	1974	A1, Lev2b, on rock	TEM-124	Charcoal	cal BC 3520-2910	100	4520	100
Ladrones	1974	A1, Lev3, 30-45 cm	TEM-119	Shell-o	cal BC 3780-3355	100	5180	100
Ladrones	1974	A2A, Lev 4	TEM-120	Shell-o	cal BC 2495-2100	80	3770	80
Ladrones	1974	A2A, Lev 5	TEM-121	Shell-o	cal BC 2655-2180	90	3860	90
Ladrones	1974	A2A, Lev 6	TEM-123	Charcoal	cal BC 5900-5620	90	6860	90
Monagrillo	1975	B2East, 20-30 cm	SI-2838	Charcoal	cal BC 1885-1510	75	3385	75
Monagrillo	1975	B2East, 50-60 cm	SI-2839	Charcoal	cal BC 2105-1205 & 2040-1530	100	3485	100
Monagrillo	1975	B2East, 95-100 cm	SI-2840	Charcoal	cal BC 2200-1750	80	3615	80
Monagrillo	1975	B2East, 100-100 cm	TEM-109	Charcoal	cal BC 4520-4060	100	5495	100
Monagrillo	1975	B2East, 110-120 cm	SI-2841	Charcoal	cal BC 4375-3980	95	5385	95
Monagrillo	1975	B2East, 164-169 cm	TEM-208	Shell-o	cal BC 2920-2110	160	4350	165
Zapotal	1987	C32 Ext	Beta-20849	Shell-p	cal BC 2025-1675	70	3850	70
Zapotal	1987	C35	Beta-21389	Shell-n	cal BC 2345-1800 & 1790-1785	100	4010	100
Zapotal	1987	C2/3, Grey Zone	Beta-20850	Shell-p	cal BC 1635-1275	80	3520	80
Zapotal	1987	TP, Ext, L3	Beta-9574	Shell-o	cal BC 1615-1255	80	3500	80
Zapotal	1987	C22	Beta-21388	Shell-a,n	cal BC 1725-1400	70	3610	70
Calaveras	1998	unit 1.47, feature 4, 55-60 cm	Beta-131423	Carbonized wood	cal BC 1540-1395	50	3200	50
Calaveras	1998	unit 1.45, feature 1, 70-80 cm	Beta-131421	Carbonized wood	cal BC 1620-1390	60	3210	60
Calaveras	1998	unit 1.59, feature 2, 40-45 cm	Beta-131425	Carbonized wood	cal BC 1695-1450	50	3300	50
Calaveras	1998	unit 2.01, 80-90 cm	Beta-143855	Carbonized wood	cal BC 1770-1620	40	3410	40

Table 1. Radiocarbon ages of the Early Ceramic sites studied in this project.
The radiocarbon dates are from Richard Cooke (personal communication 2006); en.ancientmaize.com/micro_samples/379; Griggs (2005); Piperno et al. (2000); Anthony Ranere (personal communication 2012). The calibration of Aguadulce radiocarbon date was done by Iizuka using CALIB radiocarbon calibration program 6.1.1

Petrg group	Inclusion %			Litho Type		
	Incl% (Avr)	Lith % (Avr)	Minr% (Avr)	Plutonic	Volcanic	Sedimentary
Granite	37.9	15.1	22.7	Grnit	rhy, poly-qz, vlc-chrt?, tff, glss, dcit, trcyt	sed-chrt?
Mixd Igneous	37.5	22.4	15.1	mic-grnit, mic-gbbr, grnit, grndirit, bsc-int, gbbr/dirit	tff, trcyt, int-bsc vlc, ply-qz, glss, rhy, porphy-rhy, andst/bslt, vlc-chrt, dcit	possible sed-chrt, sandstne, chlcdny
Pyroclastics	39.4	6.6	32.4		int-bsc vlc rhy, tff, prph anst/bslt, dcit, epdt+qz, glss, trcyt, pl--qz, prph-rhy, sphr-aggrgt, weld-tff	

A

Petrg grp	Qz		Plg		K-fld		Zn-fd		Amph		Px		Mg	
	Ab	Sz	Ab	Sz	Ab	Sz	Ab	Sz	Ab	Sz	Ab	Sz	Ab	Sz
Granite	≥20-<50	0.02-1.2	<1-<20	0.07-1	<1-<20	0.03-0.75	<1-<5	0.2-0.7	<1-<5	0.05-0.8			<1-<5	0.03-0.5
Mxd Igneous	≥1-≥50	0.01-2.2	<1-<50	0.03-1.5	<1-<50	0.04-1.1	<1-<20	0.1-1.4	<1-<5	0.05-0.6	<1	0.1-0.8	<1-<5	0.02-1
Pyrclstcs	≥1 -≥50	0.02-2.7	<1-≥50	0.05-1.8			<1-<50	0.05-2.2	<1-<20	0.05-1.8	<1	0.05-0.6	<1-<5	0.02-1

Petrg grp	Zr		Bt		Epd		Trml		Myrm		Argnit	
	Ab	Sz	Ab	Sz	Ab	Sz	Ab	Sz	Ab	Sz	Ab	Sz
Granite	<1	0.03-0.18	<1	0.05-0.15	<1-<5	0.05-0.4	<1	0.03-0.25	<1	0.15-0.3		
Mxd Igneous	<1	0.02-1	<1-<5	0.03-0.9	<1-<5	0.01-0.4					<1	2.1
Pyrclstcs	<1	0.03-0.25	<1	0.05-0.9	<1	0.02-0.25						

B

Table 2. Pottery petrography: inclusions % and rock type variability (A) and pottery mineral abundance (%) ranges and size (mm) ranges (B).
In this table, abbreviations stand for Mxd Igneous is mixed igneous, Pyrclstcs is pytoclastics, Petrg grp is petrographic group, Incl is inclusion, Lith is lithic, Minr is mineral, and Var is variability. Rocks fragments are: grnit, granite; rhy, rhyolite; poly-qz, polycrystalline quartz; vlc, volcanic; chrt, chert; sed, sedimentary, mic, micro; gbbr, gabbro, bsc, basic; int, intrusive; dirit, diorite; tff, tuff; trcyt, trachyte; dcit, dacite; andst, andesite; bslt, basalt; weld, welded; aggrgt, aggregate; glss, glass; sandstne, sandstone; chlcdy, chalcedony; prh, porphyritic. Minerals are: Qz is quartz, Plg is plagioclase, K-fld is K-feldspar, Zn-fd is zoned feldspar, Amph is amphibole, Px is pyroxene, Mg is magnetite, Zr is zircon, Bt is biotite, Hmt is hematite, Vc-Qz is volcanic quartz, Epd is epidote, Trml is tourmaline, Myrm is myrmekite, Argnit is aragonite.

Samples	Li	Be	Na	Mg	Al	Si	P
Cl1-2-f3	19.50	2.00	10021.47	486.23	160923.59	253223.55	3487.77
Cl1-2--f11	9.75	2.07	6516.92	696.36	163435.43	260754.25	1979.91
Cl1-2-f13	16.33	0.40	11651.56	2216.56	149490.77	260822.57	1613.41
Cl1-2-f17	21.55	1.46	13598.80	619.21	138627.25	238722.80	6477.77
Cl1-3-f11	28.19	0.86	14411.33	671.43	142199.18	276386.86	4283.48
Cl1-3-f14	12.64	1.39	11758.75	1719.39	142062.57	285932.55	686.58
Cl1-3-f18	24.61	1.09	22097.79	1305.41	124709.17	297769.31	0.00
Cl1-3-f19	10.49	2.71	3823.02	1324.93	126856.72	251903.29	0.00
Cl1-3-f120	20.63	1.87	5932.60	315.97	187685.92	239062.70	4034.07
Cl1-3-f122	18.36	2.43	9791.15	679.78	156453.65	282668.99	0.00
Cl1-3-f124	2.54	0.57	17186.64	507.64	157497.85	283524.21	0.00
Cl1-3-f137	18.08	2.21	6902.34	256.73	187581.91	254699.32	0.00
Cl1-44-f2	21.19	1.58	19024.52	563.85	158968.87	256188.00	2916.99
Cl1-44-f8	19.12	1.24	20773.20	1373.59	131531.22	248619.24	5716.25
Cl1-44-f10	20.93	1.27	12491.32	1160.27	114180.84	287841.19	1372.98
Cl1-44-f17	23.83	1.53	6215.03	742.55	170596.60	255849.00	433.91
Cl1-45-f2	17.12	1.23	11014.42	1087.10	156977.18	248084.61	7901.13
Cl1-45-f4	5.86	1.35	7397.47	1150.07	174748.58	251108.19	1684.46
Cl1-45-f10	26.14	0.71	21332.80	388.20	147446.54	273901.49	2602.21
Cl1-45-f13	17.05	1.46	10093.58	948.44	153343.89	259626.35	2328.82
Cl1-45-f16	20.98	1.28	19903.55	689.78	145268.15	284099.66	1499.58
Cl1-4-f11	23.30	1.96	11011.89	414.76	172018.34	257024.86	1001.76
Cl1-4-f35	21.87	1.88	6506.08	297.86	163222.98	261735.60	93.98
Cl1-4-f44	9.28	0.97	6678.13	1350.45	211642.90	204041.45	6136.95
Cl1-4-f50	27.91	1.48	17473.11	1043.52	116616.65	305761.91	0.00
Cl1-4-f56	18.95	1.69	10946.15	241.75	183938.19	238383.37	638.77
Cl1-4-f60	15.32	1.39	15618.39	702.44	170196.86	243033.80	1279.85
Cl1-4-f82	42.43	0.46	21449.18	6392.50	118876.41	238483.41	752.49
Ag13-2-U1-f1	16.17	1.50	8355.85	2287.05	133753.45	279664.17	2746.19
Ag13-5-U1-f1	23.10	1.36	5506.26	1483.40	129017.56	279813.51	257.44
Ag13-6-U1-f1	22.33	2.74	5838.32	1220.69	199518.41	227721.99	0.00
Ag13-6-U1-f2	9.74	2.16	7503.33	1527.55	127332.22	272223.73	450.33
Ag13-6-U1-f3	25.56	4.86	2948.59	1952.55	209433.88	198361.79	9606.85
Ag13-8-U1-f1	33.64	3.46	3614.95	1189.35	187381.19	229179.11	7061.73
Ag13-8-U1-f2	11.39	0.76	6776.24	798.69	192028.82	209570.21	28080.11
Ag13-8-U1-f3	28.64	3.06	5726.47	1695.43	181414.83	240220.18	6471.89
Ag13-9-U1-f1	20.90	2.62	4797.34	821.59	193537.26	236200.60	4053.76
Ag13-22-U2-f1	17.07	1.77	12362.51	829.30	142038.37	287372.77	1200.56
Ag13-30-U3-f3	13.83	1.36	25429.28	1058.97	130214.20	273291.39	1350.47
Ag13-31-U3-f8	22.45	1.69	22167.24	1312.22	122645.67	281802.91	2207.06
Ag13-32-U3-f1	16.80	3.36	6650.09	1548.73	156723.69	273503.85	460.58
Ag13-32-U3-f2	13.85	2.09	6943.82	683.41	163118.11	266749.45	1231.94
Ag13-32-U3-f3	10.03	2.97	4440.53	637.72	203840.67	232459.90	0.00
Ag13-32-U3-f12	15.99	2.05	19439.07	1110.32	135380.39	270443.75	100.69
Ag13-32-U3-f5	34.02	2.12	13344.51	1567.52	132279.40	275656.40	90.27

Samples	Li	Be	Na	Mg	Al	Si	P
Ag13-33-U3-f4	17.37	1.56	19555.08	1302.09	134553.57	280378.53	601.17
Ag13-33-U3-f5	17.92	1.70	21405.61	1817.31	128024.76	257585.06	2845.64
Ag13-34-U3-f2	23.19	3.63	1226.98	740.56	142929.81	255144.11	26426.35
Ag13-34-U3-f1	41.30	2.87	12228.11	984.53	202560.69	217599.96	11880.83
Ag13-34-U3-f4	12.95	1.24	20227.67	2952.55	118238.73	275417.59	1671.37
Ag13-34-U3-f6	15.19	1.87	26143.41	2204.61	132950.52	251329.72	1156.74
Ag13-34-U3-f7	9.74	1.35	24124.57	1124.94	151798.71	263708.72	569.92
Ag13-35-U3-f2	9.50	2.68	10175.24	1825.88	172013.65	242817.96	411.27
Ag13-35-U3-f1	38.08	3.48	23168.61	904.61	150767.08	259999.45	1403.13
Ag13-39-U3-f6	21.48	2.09	17087.95	711.76	155596.61	252847.51	9313.54
Ag13-114-U4-f1	18.58	2.69	8862.92	502.89	166234.79	248245.95	12311.83
Ag13-116-U4-f1	18.09	2.60	5053.43	540.62	193171.36	220903.34	17888.21
Ag13-116-U4-f2	14.91	2.57	7867.67	949.91	194838.74	230523.77	2398.22
Pr32-1-1-f34	30.85	2.08	18291.86	839.43	136536.48	244252.14	2690.05
Pr32-1-2-f14	34.85	2.61	10026.74	665.13	167233.81	243112.90	2864.33
Pr32-1-3-f135	40.16	2.49	10410.38	1432.13	143250.62	271615.89	0.00
Pr32-1-4-f16	48.17	2.02	7475.77	1952.35	155888.33	232447.65	1943.98
Pr32-1-5-f75	64.52	2.11	10619.80	1459.00	147838.38	255947.86	2245.11
Pr32-1-6-f4	31.53	2.87	14349.06	559.06	153699.25	261575.18	1676.30
Pr32-1-8-f7	60.52	3.24	10585.01	2216.86	147801.33	263339.03	3099.42
Pr32-1-9-f1	45.72	2.32	13852.74	2149.95	151073.54	249939.74	2684.75
Pr32-1-10-f2	47.32	2.66	10285.82	1473.52	167473.42	231211.53	2133.16
Pr32-1-13-f4	44.60	2.03	8605.67	1260.28	144888.59	249037.12	2361.11
Pr32-1-14-f1	15.01	2.53	10581.10	1197.75	161877.96	252655.04	1516.32
Pr32-1-15-f20	87.76	2.23	13771.96	1105.41	155640.49	256201.88	1808.49
Pr32-1-16-1	60.62	3.20	21043.66	1226.15	166939.73	211519.91	4115.80
Pr32-1-16-f17	51.70	4.38	14785.67	1291.76	174257.84	240167.04	0.00
Pr32-1-17-EXT-f2	45.40	3.11	7792.71	358.37	184544.83	239577.14	3991.51
Pr32-1-17-f14	41.97	2.59	10843.76	821.89	164117.87	236519.44	3498.98
Pr32-1-19-f4	104.11	5.85	21893.23	883.28	149912.32	244765.37	1503.06
Pr32-1-20-f2	21.83	2.36	5749.69	650.50	155448.22	257523.07	2700.50
Pr32-C35-N9-1	28.16	2.18	7403.99	982.27	164955.82	222978.33	4994.02
Pr32-C35-N9-2	31.57	2.28	13328.85	834.46	154832.36	241638.42	3002.06
Pr32-C35-N9-3	29.20	2.70	16624.06	1689.53	140391.42	249402.69	2221.17
Pr32-C35-N9-4	48.52	4.06	23058.00	1315.95	142396.08	247793.10	1755.40
Pr32-C35-N12-1	33.73	2.45	15538.88	1127.70	158910.95	231805.07	3721.25
Pr32-C35-N12-2	22.80	3.27	10265.36	1873.86	182746.90	222505.24	3457.49
Pr32-C35-N12-3	33.90	2.12	12544.37	720.35	154011.29	259363.76	2771.39
Pr32-C35-N12-4	54.51	2.46	8275.15	1429.46	164653.67	216373.25	4673.65
Pr32-C35-N14-1	39.28	2.30	11772.15	641.02	143313.40	255032.26	2999.58
Pr32-C35-N14-2	39.03	2.95	17079.95	1555.52	149282.20	232415.39	6635.29
Pr32-C35-N14-3	23.82	2.44	7065.39	654.54	175639.51	232698.48	4477.90
Pr32-C35-N14-4	22.57	3.34	9640.39	931.27	181355.82	235060.29	2736.87
Pr32-C35-N17-1	52.22	1.64	9244.66	1375.52	153007.82	259073.02	2583.86
Pr32-C35-N17-2	16.49	1.92	3739.58	754.40	200856.38	216631.11	7206.96
Pr32-C35-N20-1	65.15	1.60	15083.79	7588.31	123526.35	283287.73	1089.57
Pr32-C35-N20-2	40.68	1.73	10402.38	2391.14	161109.27	235264.63	4660.60

Samples	Li	Be	Na	Mg	Al	Si	P
Pr32-C35-N20-3	44.53	1.21	9810.04	1879.53	157782.63	238200.11	2352.52
Pr32-C35-N20-4	32.78	1.08	15494.82	1444.05	175948.43	223577.84	2256.14
Pr32-C35-N20-5	17.18	1.95	6990.39	904.95	172444.16	245115.11	4106.20
Pr32-C35-N22-1	27.10	2.60	9128.48	1873.84	155138.31	228205.28	1671.35
He5-60-f10	93.63	2.22	13785.64	7208.98	126436.62	228198.78	1430.94
He5-60-f16	47.44	2.19	19902.28	4048.21	135618.82	215279.16	2816.64
He5-60-f18	84.62	2.04	4128.01	7204.15	131771.22	253732.62	612.40
He5-60-f63	44.73	1.35	6844.80	5605.49	139992.68	261061.00	633.39
He5-60-f9	35.42	2.12	15004.17	1086.40	136278.13	256932.29	3001.54
He5-61-f10	49.26	1.04	9674.22	2324.67	123940.47	266297.14	137.19
He5-61-f11	53.55	2.73	11316.78	5496.09	141183.74	232199.41	1455.70
He5-62-f12	30.53	3.71	6336.84	3838.94	219857.97	200175.70	1054.83
He5-62-f20	53.39	0.83	7335.06	4727.22	169650.20	243107.54	1083.26
He5-63-f1	129.99	2.16	19899.33	4269.76	104486.83	255935.40	2162.54
He5-63-f2	48.28	2.65	15067.57	3141.44	143656.85	249451.42	1981.76
He5-64-f3	56.23	1.14	26511.51	2484.90	85208.95	308348.65	1417.84
He5-64-f4	58.69	2.36	16710.54	2576.60	104543.99	262088.46	0.00
He5-66-f1	24.95	0.84	16918.02	1892.32	139970.32	261726.88	651.61
He5-68-f4	34.86	2.48	13461.17	1905.74	169139.12	251439.01	892.53
He5-68-f6	82.48	1.52	24147.37	5903.51	168971.46	239188.30	729.92
He5-69A-f3	41.02	2.12	14911.18	3531.87	174824.37	241006.11	783.56
He5-70-f1	71.01	4.70	9490.09	3395.03	250399.08	153149.52	481.18
He5-76-f1	56.64	2.11	30442.33	2419.97	139246.27	274850.99	310.71
Pr14-22-1	8.96	2.35	16578.62	1970.18	173792.33	240251.24	416.29
Pr14-24-1	13.53	2.37	12503.41	3749.32	176473.04	217734.49	395.67
Pr14-25-1	20.95	3.40	12173.65	2447.51	184283.38	209662.16	2127.35
Lp8-34-2.01-1	8.74	2.06	3641.08	401.26	219010.34	209201.90	190.93
Lp8-38-2.01-2	33.17	1.74	9724.43	537.78	162701.45	253665.25	374.30
Lp8-94-1.45-1	13.94	2.21	3325.76	422.25	216951.20	210077.95	93.47
Lp8-114-1.57-1-1	15.02	2.82	5095.03	520.41	195414.24	212001.00	280.24
Lp8-114-1.57-1-2	14.40	2.23	7281.10	2119.37	211708.97	196047.14	473.26
Lp8-120-1.35-1	28.45	0.78	13163.06	338.70	191194.93	229574.52	165.64
Lp8-122-1.35-1	17.64	2.39	10542.85	91.81	199814.48	209950.56	328.11
Lp8-126-1.35-3-1	20.04	2.47	7510.80	453.26	208465.94	231179.48	269.01
Lp8-135-2.01-1	6.22	2.83	4918.88	706.53	252265.98	151446.64	366.12
Lp8-144-1.47-1	17.32	2.72	6827.44	438.81	178193.42	223107.29	253.16
Lp8-150-1.47-4-1	15.59	1.77	8141.36	101.26	207121.76	210594.30	254.27
Lp8-154-1.474-1	13.05	1.02	10217.94	910.55	193026.87	228469.00	496.17
Lp8-167-1.59-2-1	14.53	1.38	9659.80	252.55	199676.19	201670.50	337.56
Lp8-170-1.59-2-1	18.92	0.73	7380.75	2589.85	136120.52	243089.43	461.21
Lp8-174-1.59-2-1	17.76	1.58	13005.14	1552.41	188836.44	230202.38	305.79
Lp8-176-1.59-2-1	53.15	2.49	37421.28	402.31	110819.79	292394.66	257.93
Lp8-182-1.59-2-1	9.76	1.88	6038.71	284.50	231801.22	196272.94	516.66
Lp134-56-6-f109	32.03	2.47	13948.51	1882.14	135033.50	276150.96	695.36
Lp134-71-f98	14.08	0.38	18719.10	1053.58	152754.31	258838.17	4216.31
Lp134-83-31-f102	16.07	0.98	27088.67	1582.10	134762.17	271940.83	3381.45

Samples	Li	Be	Na	Mg	Al	Si	P
Lp134-140-24-f287	9.63	3.27	4312.42	759.25	159172.78	273117.28	1472.35
Lp134-148-156-f241	11.91	0.78	5842.98	583.84	176066.41	261534.03	1637.84
Lp134-148-30-f105	22.15	1.51	15873.92	580.44	147810.76	281256.98	1491.25
Lp134-150-14-f108	28.79	1.46	17187.84	305.70	120824.36	308678.01	1691.16
Lp134-150-150-f103	8.48	3.00	11007.66	702.96	148751.94	276443.84	3395.94
Lp134-150-16-f96	11.59	2.80	1599.10	877.88	158745.31	260280.75	4695.65
Lp134-151-f110	19.60	2.08	10021.29	576.39	174178.29	252314.22	3420.04
Lp134-161-125-f243	13.38	0.16	13260.57	1467.31	124144.17	292571.69	1019.65
Lp134-161-f91	4.62	2.01	5405.44	563.51	168312.43	248806.69	3374.61
Lp134-170-25-f106	22.02	2.21	16586.90	592.70	152903.80	260060.17	2250.89
Lp134-195-26-f236	6.97	2.63	816.43	776.92	151632.69	267207.88	2231.07
Lp134-199-19-f92	15.88	1.34	21062.62	498.38	145898.14	276307.96	3182.58
Lp134-202-218-f107	8.09	1.14	6972.07	911.52	133236.10	289471.71	1969.16
Lp134-208-18-f99	22.88	1.88	13105.16	666.24	168503.45	264090.13	1297.08
Lp134-236-f97	17.61	2.53	7330.55	1028.36	163716.61	270549.69	3565.46
Lp134-241-241-f114	25.61	1.32	23422.56	669.30	122951.51	295189.12	5222.87
Lp134-282-27-f95	18.65	1.07	10799.47	801.12	141016.02	290921.62	0.00
Lp134-305-15-f94	28.39	2.26	12357.85	571.84	137566.10	289726.49	687.32
Lp134-318-37-f281	12.42	2.81	1447.59	989.93	144299.52	274978.67	2530.55
Sf9-B-60-1	16.35	1.03	7804.69	1232.05	187217.35	236381.99	2132.04
Sf9-B-61-1	10.40	3.00	5604.13	1056.48	165538.28	244787.40	4526.73
Sf9-H20-3	38.68	0.53	1659.90	1124.89	113119.20	281540.12	516.75
Sf9-H20-6	47.46	2.54	7855.91	889.25	136312.24	285609.81	728.76

Table 3. Quantitative compositional data of pottery clay matrix obtained via TOF-LA-ICP-MS for the elements Li, Be, Na, Mg, Al, Si, and P.

Samples	S	K	Ca	Sc	Ti	V	Cr
Cl1-2-f3	0.00	3527.34	10307.16	69.04	3604.59	140.35	0.00
Cl1-2--f11	0.00	5023.32	11788.02	21.60	2593.37	48.80	231.46
Cl1-2-f13	49.44	6732.00	11884.23	49.09	2631.52	77.16	99.65
Cl1-2-f17	4.49	5462.62	18703.75	13.87	2963.85	202.15	151.88
Cl1-3-f11	38.91	8302.29	7916.19	2.33	3946.19	60.56	40.69
Cl1-3-f14	24.18	6127.04	15386.18	25.39	3037.33	103.85	107.73
Cl1-3-f18	0.00	7887.52	0.00	17.64	7324.67	128.89	239.12
Cl1-3-f19	352.14	17426.22	9496.15	18.54	3472.93	98.46	60.72
Cl1-3-f120	19.04	2681.45	5961.86	60.60	3188.94	108.21	17.98
Cl1-3-f122	0.00	5936.21	0.00	0.00	3164.66	81.67	578.80
Cl1-3-f124	0.00	427.27	8499.29	41.13	3038.33	64.92	44.24
Cl1-3-f137	0.00	1638.16	0.00	0.48	3075.41	77.26	257.32
Cl1-44-f2	57.46	3857.20	12147.71	2.41	2969.84	86.53	0.00
Cl1-44-f8	18.89	3863.69	20425.82	66.82	3087.47	143.05	0.00
Cl1-44-f10	103.55	14007.98	11247.32	3.16	2691.65	106.18	0.00
Cl1-44-f17	36.13	2852.45	7546.83	84.72	4918.06	165.94	0.00
Cl1-45-f2	80.84	7216.87	8132.00	2.88	2858.18	72.22	0.00
Cl1-45-f4	185.14	6213.24	10623.36	29.96	2200.63	42.90	106.19
Cl1-45-f10	821.06	7089.57	13340.93	17.67	2016.43	63.88	18.29
Cl1-45-f13	2.08	4254.62	13374.32	66.30	3519.23	119.68	0.00
Cl1-45-f16	14.52	8422.97	18713.26	64.02	3111.91	80.15	0.00
Cl1-4-f11	49.95	2666.89	11439.22	63.32	2224.74	85.62	0.00
Cl1-4-f35	0.00	1147.34	3482.29	67.73	5190.59	225.41	5.48
Cl1-4-f44	584.41	5826.90	7949.44	27.69	3844.21	86.69	94.45
Cl1-4-f50	0.00	6111.23	0.00	0.00	4076.82	68.60	749.85
Cl1-4-f56	0.00	3218.10	10032.99	48.73	3836.79	108.72	0.00
Cl1-4-f60	1.54	2913.79	9358.86	3.24	2339.24	85.66	0.55
Cl1-4-f82	3.86	15644.85	14769.75	73.27	8203.18	180.09	7.09
Ag13-2-U1-f1	17.65	2541.50	24250.44	20.03	2766.57	66.49	321.81
Ag13-5-U1-f1	13.51	5530.05	20322.88	35.19	5622.11	153.95	176.03
Ag13-6-U1-f1	0.00	3849.58	232.56	9.44	6333.91	86.45	321.06
Ag13-6-U1-f2	22.56	7473.78	28255.13	36.54	6154.28	123.21	115.82
Ag13-6-U1-f3	24.82	1763.86	11646.01	25.46	5315.85	91.41	407.85
Ag13-8-U1-f1	19.74	4330.54	14690.86	20.31	6198.52	81.45	183.36
Ag13-8-U1-f2	0.00	2309.77	13080.36	7.58	4411.83	66.96	115.62
Ag13-8-U1-f3	8.55	2585.54	12146.26	44.37	6228.23	125.19	746.36
Ag13-9-U1-f1	0.65	1596.30	19748.58	15.69	3218.78	75.75	113.26
Ag13-22-U2-f1	13.69	4324.21	19155.17	76.20	2242.71	67.26	425.15
Ag13-30-U3-f3	6.47	5200.15	41630.91	54.13	2306.21	64.96	0.00
Ag13-31-U3-f8	22.76	19662.07	19752.39	63.24	4379.46	101.80	0.00
Ag13-32-U3-f1	0.77	5076.51	12775.74	6.83	4358.83	109.30	418.47
Ag13-32-U3-f2	19.63	3677.96	18850.48	34.88	4230.70	81.17	209.47
Ag13-32-U3-f3	0.00	373.19	11975.11	0.00	1760.54	79.23	297.54
Ag13-32-U3-f12	11.71	3543.70	28062.37	35.85	3114.47	85.23	0.00

Samples	S	K	Ca	Sc	Ti	V	Cr
Ag13-32-U3-f5	9.00	8739.63	17649.52	63.88	4595.78	143.07	0.00
Ag13-33-U3-f4	2.74	13983.33	19224.32	79.20	4383.60	98.67	0.00
Ag13-33-U3-f5	5.34	13892.75	46703.67	49.45	3908.20	100.95	52.65
Ag13-34-U3-f2	0.00	9671.35	5737.77	19.68	5176.00	130.98	724.99
Ag13-34-U3-f1	17.05	2560.52	17549.19	72.68	2792.34	49.38	24.92
Ag13-34-U3-f4	0.00	21042.18	20693.53	41.95	3397.33	127.47	108.58
Ag13-34-U3-f6	3.77	12789.07	30471.09	27.02	5873.28	112.47	116.88
Ag13-34-U3-f7	197.36	6270.11	27763.79	102.92	2133.31	53.16	50.05
Ag13-35-U3-f2	0.27	7179.07	21411.55	14.21	6192.75	90.36	93.29
Ag13-35-U3-f1	23.26	8607.19	21792.66	114.94	4646.84	75.19	0.00
Ag13-39-U3-f6	42.46	6043.18	16151.09	79.35	5491.99	109.99	0.00
Ag13-114-U4-f1	1612.07	3697.63	12098.71	65.67	2546.23	69.05	73.93
Ag13-116-U4-f1	16.12	3377.29	7782.24	1.01	3587.61	63.53	357.67
Ag13-116-U4-f2	0.02	4510.51	5882.50	3.23	3339.81	60.45	251.17
Pr32-1-1-f34	25.39	14852.25	22772.95	93.19	6097.21	176.15	0.00
Pr32-1-2-f14	4.09	5016.50	26213.21	63.23	9432.01	128.34	0.00
Pr32-1-3-f135	16.52	12680.00	16470.84	35.73	5406.13	144.21	0.00
Pr32-1-4-f16	0.83	6206.41	30287.33	56.62	10943.45	189.05	130.33
Pr32-1-5-f75	1.52	4130.90	29391.78	76.12	6273.15	106.91	20.60
Pr32-1-6-f4	20.72	7415.88	28906.06	69.41	3819.63	89.63	44.29
Pr32-1-8-f7	16.02	7478.87	27111.32	55.73	4889.35	101.31	111.81
Pr32-1-9-f1	9.29	6736.17	27701.86	80.41	5860.20	144.13	133.28
Pr32-1-10-f2	1.36	4519.36	24258.92	89.22	7359.39	161.91	0.00
Pr32-1-13-f4	0.00	4257.23	28729.08	41.97	5062.94	193.30	67.25
Pr32-1-14-f1	0.00	8106.32	31937.06	55.64	5964.99	111.54	39.90
Pr32-1-15-f20	0.00	4981.83	31328.75	87.60	6329.07	103.57	0.00
Pr32-1-16-1	0.18	4962.52	17503.75	75.47	6488.28	97.17	0.37
Pr32-1-16-f17	9.25	6189.61	799.11	0.00	7020.08	87.31	7.24
Pr32-1-17-EXT-f2	26.60	3236.06	22913.10	105.12	5336.48	53.90	3.15
Pr32-1-17-f14	140.84	5964.78	29096.80	75.23	4490.43	156.53	155.30
Pr32-1-19-f4	4.17	8597.33	25444.70	289.31	8408.26	154.41	81.20
Pr32-1-20-f2	41.06	3350.82	27508.31	77.19	6461.45	140.43	208.33
Pr32-C35-N9-1	0.00	8505.66	17953.79	48.81	6768.33	112.24	194.09
Pr32-C35-N9-2	16.58	6728.16	26374.16	48.82	6079.69	100.70	105.21
Pr32-C35-N9-3	0.97	12711.40	24052.71	42.90	6475.66	85.76	106.26
Pr32-C35-N9-4	99.05	12575.32	23915.55	170.96	6696.98	97.08	19.15
Pr32-C35-N12-1	0.00	7230.64	21532.93	27.77	6209.03	106.59	267.59
Pr32-C35-N12-2	0.00	2685.32	26944.18	5.12	6452.73	105.83	165.66
Pr32-C35-N12-3	17.25	6604.96	23277.66	49.78	5611.35	99.01	300.74
Pr32-C35-N12-4	0.45	6933.10	27685.74	81.14	5133.13	155.56	1.25
Pr32-C35-N14-1	1.87	7007.35	28729.40	75.92	8088.12	119.89	0.00
Pr32-C35-N14-2	86.08	9418.49	30353.41	90.21	5089.95	138.48	32.00
Pr32-C35-N14-3	7.39	4541.53	23085.28	16.65	6497.48	98.04	179.69
Pr32-C35-N14-4	6.87	4921.14	28595.32	25.57	6497.17	76.19	94.32
Pr32-C35-N17-1	13.40	5755.07	24170.14	45.75	4761.06	120.12	101.30
Pr32-C35-N17-2	23.15	2906.20	24164.45	9.08	6815.00	70.02	119.50
Pr32-C35-N20-1	0.49	10830.61	11481.67	55.42	3076.79	103.34	247.08

Samples	S	K	Ca	Sc	Ti	V	Cr
Pr32-C35-N20-2	17.19	7292.36	23243.37	64.47	6950.83	107.39	11.66
Pr32-C35-N20-3	17.72	3959.03	21414.64	76.95	9312.95	139.36	175.85
Pr32-C35-N20-4	24.42	4412.19	18025.65	65.89	7619.54	147.80	217.93
Pr32-C35-N20-5	313.98	4647.84	27238.60	25.69	3291.34	71.55	133.14
Pr32-C35-N22-1	0.83	7620.88	22542.85	56.71	5054.53	138.07	1.94
He5-60-f10	21.52	10802.42	18273.10	66.04	5529.09	142.49	0.00
He5-60-f16	37.90	7724.25	45892.26	361.27	9106.90	174.30	0.00
He5-60-f18	46.20	10234.13	9050.18	24.46	5530.01	174.28	272.63
He5-60-f63	0.37	4886.22	12209.99	42.17	8789.15	91.32	158.77
He5-60-f9	12.57	6523.38	28128.52	109.74	5789.93	97.66	143.37
He5-61-f10	17.73	10367.49	12200.63	93.48	20797.24	201.74	35.20
He5-61-f11	4.01	10224.45	22986.06	39.36	7587.43	104.68	0.00
He5-62-f12	17.48	4946.48	17826.71	20.40	7566.31	60.59	289.71
He5-62-f20	0.34	7028.27	16047.26	21.34	5889.11	101.97	281.31
He5-63-f1	14.00	17668.27	13169.88	62.91	12223.07	215.10	0.00
He5-63-f2	0.00	9105.79	14622.87	35.72	6897.28	114.67	104.42
He5-64-f3	0.00	12689.22	15151.41	57.92	5572.41	198.16	0.00
He5-64-f4	3.30	12496.65	15293.99	64.08	9509.37	216.01	1.74
He5-66-f1	132.67	7806.38	15506.97	52.28	6031.07	127.95	142.11
He5-68-f4	21.73	5675.18	13945.38	35.52	4148.84	68.31	87.81
He5-68-f6	39.22	17486.05	23087.55	48.78	6527.40	102.68	30.72
He5-69A-f3	21.85	12553.83	12114.63	46.63	6381.20	104.48	118.11
He5-70-f1	11.17	4567.98	8554.58	65.43	12333.44	135.79	60.93
He5-76-f1	39.53	10562.08	7078.69	14.28	2772.04	66.76	305.69
Pr14-22-1	10.97	3878.06	18023.78	0.01	6807.83	96.32	211.94
Pr14-24-1	166.72	2625.53	12328.67	34.05	7994.63	200.19	24.59
Pr14-25-1	34.55	3605.56	20903.31	33.82	7184.51	192.88	206.98
Lp8-34-2.01-1	76.33	1240.68	5342.11	25.78	4016.34	170.87	196.40
Lp8-38-2.01-2	48.44	3756.81	10650.80	83.17	4964.81	167.40	104.36
Lp8-94-1.45-1	17.80	2607.80	4327.19	3.67	4886.68	189.93	248.68
Lp8-114-1.57-1-1	16.95	1655.33	5152.40	68.89	4688.41	176.54	0.00
Lp8-114-1.57-1-2	12.48	1630.71	12129.55	74.48	4640.90	193.42	0.00
Lp8-120-1.35-1	9.25	1881.33	12063.09	30.27	3459.22	135.77	121.93
Lp8-122-1.35-1	0.78	2065.97	9760.06	26.16	3283.84	248.67	175.19
Lp8-126-1.35-3-1	0.48	1571.78	7169.89	47.09	3306.71	171.28	109.64
Lp8-135-2.01-1	148.74	2180.21	5382.98	21.01	4094.38	192.02	1584.15
Lp8-144-1.47-1	0.00	1422.90	8244.22	49.80	4730.96	189.47	109.27
Lp8-150-1.47-4-1	22.43	1794.95	6738.14	50.58	7598.72	293.30	43.44
Lp8-154-1.474-1	0.80	785.91	11938.47	52.63	4749.48	156.01	80.35
Lp8-167-1.59-2-1	0.77	1460.72	7594.14	41.94	4358.09	223.37	374.87
Lp8-170-1.59-2-1	4.79	2094.09	50347.47	62.79	12103.48	297.12	0.00
Lp8-174-1.59-2-1	58.62	1544.84	14472.27	77.38	4336.21	175.09	72.28
Lp8-176-1.59-2-1	2.09	16027.74	15741.02	327.51	2424.58	85.10	309.64
Lp8-182-1.59-2-1	81.31	859.86	6457.07	64.36	6954.13	196.51	0.10
Lp134-56-6-f109	12.09	5697.75	29305.07	176.93	4159.86	90.16	0.00
Lp134-71-f98	8.96	6192.14	26268.16	30.41	1680.44	65.85	90.18

Samples	S	K	Ca	Sc	Ti	V	Cr
Lp134-83-31-f102	0.00	3614.14	34271.49	64.32	1825.23	58.17	56.69
Lp134-140-24-f287	7.48	3039.76	11865.57	1.92	2678.82	89.32	296.72
Lp134-148-156-f241	21.09	6069.63	11547.21	53.04	2874.34	58.27	150.38
Lp134-148-30-f105	0.22	3323.51	16733.50	45.13	2970.87	74.08	0.00
Lp134-150-14-f108	1.21	3804.24	18631.91	41.83	1923.60	50.94	0.00
Lp134-150-150-f103	0.58	3961.23	24683.36	3.60	2402.18	55.03	418.45
Lp134-150-16-f96	0.27	5119.60	7863.27	2.35	7516.36	120.46	0.00
Lp134-151-f110	5.62	3605.57	17381.93	46.87	2439.05	75.98	95.47
Lp134-161-125-f243	0.73	5064.79	23020.19	61.79	2482.95	86.97	80.29
Lp134-161-f91	0.83	3364.19	13553.59	11.78	3010.20	89.34	888.35
Lp134-170-25-f106	10.17	4511.08	20007.62	78.19	3011.30	128.16	50.95
Lp134-195-26-f236	5.04	7015.19	9344.34	8.98	2546.94	74.14	859.55
Lp134-199-19-f92	128.76	3740.66	28786.37	115.03	1627.68	54.93	52.68
Lp134-202-218-f107	0.36	4351.60	15528.69	7.59	3104.73	100.45	0.00
Lp134-208-18-f99	0.19	2983.73	18126.20	45.24	2157.95	66.99	1.86
Lp134-236-f97	8.46	5561.02	15129.67	60.23	2656.18	67.34	59.99
Lp134-241-241-f114	0.00	4606.37	28793.96	75.62	1544.15	47.32	0.00
Lp134-282-27-f95	0.00	3908.13	0.00	0.00	2696.33	41.01	476.95
Lp134-305-15-f94	2.13	4185.44	13969.80	60.76	3857.13	117.74	1.06
Lp134-318-37-f281	0.58	22743.45	7280.39	8.77	3751.93	83.87	301.55
Sf9-B-60-1	20.84	5272.29	15084.11	21.43	5700.54	72.66	143.81
Sf9-B-61-1	229.51	5435.68	11846.69	35.99	7172.04	123.54	250.97
Sf9-H20-3	1.71	10228.52	10780.44	75.64	12349.58	314.31	139.78
Sf9-H20-6	10.30	14113.16	11406.34	63.82	4358.10	131.75	166.30

Table 4. Quantitative compositional data of pottery clay matrix obtained via TOF-LA-ICP-MS for the elements S, K, Ca, Sc, Ti, V, and Cr.

Samples	Mn	Fe	Ni	Co	Cu	Zn	Ge
Cl1-2-f3	634.47	68174.58	546.84	15.74	65.51	123.51	3.07
Cl1-2--f11	417.50	36239.68	88.99	9.11	46.50	31.68	3.63
Cl1-2-f13	1132.17	66390.06	513.52	15.70	65.88	77.85	2.67
Cl1-2-f17	1362.05	96317.31	442.83	41.54	70.52	89.72	2.81
Cl1-3-f11	793.20	47400.27	1308.32	12.83	76.37	78.82	4.02
Cl1-3-f14	251.27	42087.20	0.00	9.66	83.08	106.57	2.75
Cl1-3-f18	731.85	46514.45	262.19	8.80	90.73	1168.32	19.84
Cl1-3-f19	106.75	64054.51	33.91	8.68	37.72	33.25	3.60
Cl1-3-f120	494.45	66318.84	1005.49	15.31	76.01	86.67	3.67
Cl1-3-f122	372.95	45733.66	840.82	11.08	45.77	109.00	22.39
Cl1-3-f124	277.19	35532.74	157.37	6.74	27.99	69.92	9.23
Cl1-3-f137	389.79	56016.14	458.30	12.24	32.90	59.64	11.91
Cl1-44-f2	599.97	53675.37	287.34	9.98	72.90	68.11	2.28
Cl1-44-f8	4557.98	89493.55	0.00	44.27	106.26	74.40	0.05
Cl1-44-f10	950.61	42934.15	1081.72	12.86	47.26	74.63	4.59
Cl1-44-f17	167.99	64941.99	1089.24	17.05	57.18	111.06	3.69
Cl1-45-f2	496.29	54705.91	589.04	11.39	142.98	83.58	3.64
Cl1-45-f4	371.75	39616.40	40.12	9.64	61.42	62.43	2.16
Cl1-45-f10	1468.16	41328.79	565.81	27.25	67.86	73.84	3.27
Cl1-45-f13	540.62	69683.63	616.79	15.88	69.49	94.36	4.53
Cl1-45-f16	228.99	27612.29	9.34	10.04	60.37	62.27	3.18
Cl1-4-f11	333.15	52213.15	307.12	11.32	94.28	60.82	2.42
Cl1-4-f35	132.88	72578.71	91.99	19.86	98.65	142.22	8.63
Cl1-4-f44	206.16	61640.93	77.11	27.05	280.65	93.44	2.93
Cl1-4-f50	1313.53	55156.59	662.37	16.05	47.38	288.82	41.24
Cl1-4-f56	142.71	66603.33	119.44	19.87	55.33	79.82	2.70
Cl1-4-f60	6875.69	65091.28	420.47	132.80	60.66	79.83	1.22
Cl1-4-f82	1473.28	115992.39	0.00	27.53	180.95	130.18	0.04
Ag13-2-U1-f1	1311.06	51180.87	435.83	19.32	88.61	133.95	4.00
Ag13-5-U1-f1	561.72	61309.81	210.54	16.96	93.03	74.64	3.87
Ag13-6-U1-f1	773.86	62687.09	260.42	13.51	128.40	107.42	24.52
Ag13-6-U1-f2	1828.28	60839.77	181.21	27.20	105.44	220.07	1.96
Ag13-6-U1-f3	1554.96	80115.50	0.00	17.52	107.44	198.79	3.32
Ag13-8-U1-f1	368.04	62208.12	0.00	10.66	132.46	200.09	2.23
Ag13-8-U1-f2	380.49	54516.54	0.00	10.79	59.01	72.21	4.34
Ag13-8-U1-f3	497.04	54658.09	1007.39	17.83	72.17	188.08	4.70
Ag13-9-U1-f1	647.18	48517.03	0.00	8.51	122.71	233.28	0.91
Ag13-22-U2-f1	1304.46	34424.44	1114.47	18.52	55.88	110.19	3.32
Ag13-30-U3-f3	886.07	34106.08	0.00	16.39	73.51	88.02	2.26
Ag13-31-U3-f8	487.13	37099.95	0.00	12.41	74.04	149.21	2.60
Ag13-32-U3-f1	304.40	48674.19	0.00	11.68	54.06	243.01	3.61
Ag13-32-U3-f2	1530.57	39402.48	283.02	21.33	46.57	131.26	2.28
Ag13-32-U3-f3	220.05	57211.80	0.00	8.54	92.06	167.15	5.59
Ag13-32-U3-f12	1254.45	50965.06	0.00	27.56	49.33	136.26	1.95
Ag13-32-U3-f5	715.07	64171.99	14.84	16.90	75.45	202.47	3.25
Ag13-33-U3-f4	466.96	40102.17	77.97	15.61	67.10	100.75	1.48

Samples	Mn	Fe	Ni	Co	Cu	Zn	Ge
Ag13-33-U3-f5	893.04	50352.85	155.63	14.99	100.57	100.41	4.43
Ag13-34-U3-f2	442.21	59988.77	144.88	11.02	132.73	105.16	4.55
Ag13-34-U3-f1	813.81	46240.30	1058.31	12.44	57.09	184.68	5.11
Ag13-34-U3-f4	1199.71	58119.72	307.55	21.74	102.14	64.51	5.32
Ag13-34-U3-f6	1543.67	61809.32	117.06	18.64	85.05	74.03	5.71
Ag13-34-U3-f7	475.90	38849.70	219.51	7.87	51.00	43.71	3.53
Ag13-35-U3-f2	258.79	44388.49	0.00	9.45	60.37	77.30	0.73
Ag13-35-U3-f1	447.06	45868.62	1234.79	15.93	59.18	129.20	5.30
Ag13-39-U3-f6	434.98	53112.56	18.39	15.39	75.07	137.56	2.62
Ag13-114-U4-f1	261.99	54695.45	16.24	9.39	92.77	83.46	1.02
Ag13-116-U4-f1	1555.81	56559.47	1185.92	15.75	104.56	98.40	1.83
Ag13-116-U4-f2	827.84	53459.49	124.66	12.05	82.56	127.73	11.44
Pr32-1-1-f34	435.43	86351.57	30.51	15.82	60.74	136.59	2.46
Pr32-1-2-f14	645.18	56245.14	90.83	11.47	25.82	67.12	2.99
Pr32-1-3-f135	1585.57	54902.56	71.23	34.01	77.91	88.58	4.56
Pr32-1-4-f16	768.03	80309.11	2038.37	21.39	75.23	150.26	2.85
Pr32-1-5-f75	1001.30	62826.69	135.73	23.60	75.73	124.74	3.02
Pr32-1-6-f4	1655.27	44250.31	672.31	28.65	40.46	67.80	6.87
Pr32-1-8-f7	1167.65	49935.73	645.36	17.05	28.12	63.15	6.54
Pr32-1-9-f1	4043.54	58816.64	1013.34	44.62	52.97	89.64	8.99
Pr32-1-10-f2	813.90	78085.63	338.64	19.27	25.82	99.12	8.32
Pr32-1-13-f4	4102.52	77092.77	595.04	40.04	48.38	66.98	3.31
Pr32-1-14-f1	669.87	45089.60	478.37	12.02	54.08	88.18	2.22
Pr32-1-15-f20	540.09	48007.77	233.17	12.88	42.66	86.22	2.67
Pr32-1-16-1	3033.41	99375.39	823.46	33.06	64.19	218.41	9.12
Pr32-1-16-f17	1192.98	75821.03	749.67	31.07	41.14	269.87	8.15
Pr32-1-17-EXT-f2	745.71	47524.50	1394.04	8.26	29.60	81.18	9.20
Pr32-1-17-f14	2216.96	67311.16	799.87	39.30	78.50	114.96	4.39
Pr32-1-19-f4	3114.44	62055.64	1343.84	48.29	38.01	105.34	13.84
Pr32-1-20-f2	796.66	56333.72	1619.20	19.16	55.24	92.17	2.96
Pr32-C35-N9-1	1921.54	93937.30	1289.43	20.41	31.93	152.93	10.08
Pr32-C35-N9-2	1210.49	72486.49	501.57	16.23	55.73	87.92	3.60
Pr32-C35-N9-3	2345.52	72774.53	87.92	22.26	61.69	148.46	2.65
Pr32-C35-N9-4	701.81	68720.17	674.55	22.96	70.01	149.76	11.22
Pr32-C35-N12-1	1310.43	81718.38	916.38	31.57	51.21	124.25	9.75
Pr32-C35-N12-2	1054.60	67599.57	787.76	16.50	56.50	92.98	5.63
Pr32-C35-N12-3	527.24	52602.84	337.57	13.45	58.47	93.13	0.85
Pr32-C35-N12-4	1848.53	97573.83	630.53	27.20	42.43	116.80	5.62
Pr32-C35-N14-1	958.33	64964.30	191.95	15.85	61.58	85.20	2.72
Pr32-C35-N14-2	2643.98	76641.61	468.78	33.36	86.58	140.70	3.96
Pr32-C35-N14-3	509.80	67420.98	414.77	10.29	43.41	158.64	4.35
Pr32-C35-N14-4	189.99	51407.90	16.96	7.61	58.75	77.04	2.79
Pr32-C35-N17-1	1140.39	57281.67	607.58	22.47	51.11	108.62	5.03
Pr32-C35-N17-2	1071.71	56859.17	48.76	10.44	58.95	83.43	1.91
Pr32-C35-N20-1	1561.53	59786.47	577.69	29.59	36.58	166.01	7.04
Pr32-C35-N20-2	2746.08	71816.88	753.79	26.98	47.07	154.17	6.32
Pr32-C35-N20-3	1358.27	79692.09	965.94	20.53	29.36	102.14	5.18

Samples	Mn	Fe	Ni	Co	Cu	Zn	Ge
Pr32-C35-N20-4	349.83	78992.38	522.78	17.59	26.09	159.85	5.24
Pr32-C35-N20-5	722.29	52930.50	92.75	8.04	109.52	64.59	2.13
Pr32-C35-N22-1	1171.96	101785.43	171.16	13.66	38.35	79.37	2.57
He5-60-f10	962.55	131060.30	0.00	22.56	72.09	209.70	0.51
He5-60-f16	1863.00	103703.22	0.00	27.81	50.91	206.05	0.68
He5-60-f18	1550.05	104324.41	432.00	34.31	75.31	217.60	9.57
He5-60-f63	385.98	81297.52	0.00	15.95	28.13	131.18	1.37
He5-60-f9	1833.13	69938.07	895.67	23.44	51.08	128.44	5.92
He5-61-f10	2785.73	74819.46	0.00	21.33	22.90	273.82	2.55
He5-61-f11	3785.60	100164.43	24.85	29.01	107.01	202.73	2.56
He5-62-f12	370.21	63656.47	360.25	12.76	67.11	238.28	3.18
He5-62-f20	177.68	66319.92	127.56	11.26	29.54	156.96	1.11
He5-63-f1	3963.68	102805.87	0.00	53.12	43.63	257.62	2.11
He5-63-f2	542.97	82809.11	52.35	12.68	59.42	83.47	4.10
He5-64-f3	944.87	60645.82	35.61	24.53	157.98	141.57	0.46
He5-64-f4	1747.12	109739.67	81.14	28.15	220.43	387.22	4.03
He5-66-f1	203.32	72218.88	375.23	12.16	37.72	114.65	4.78
He5-68-f4	342.07	57991.17	209.03	9.28	46.41	180.64	3.60
He5-68-f6	183.61	40252.34	195.62	16.37	64.17	324.54	3.91
He5-69A-f3	744.48	55432.26	215.26	16.09	71.96	155.68	2.65
He5-70-f1	774.85	96433.03	116.26	26.54	44.64	67.25	6.04
He5-76-f1	2839.08	48527.62	151.60	12.69	102.48	88.11	6.72
Pr14-22-1	394.44	60406.90	0.00	13.51	107.73	55.45	4.02
Pr14-24-1	586.81	97353.10	38.46	15.62	81.67	61.30	2.99
Pr14-25-1	2258.17	87083.56	37.11	27.18	196.54	79.09	1.93
Lp8-34-2.01-1	392.59	79751.83	6.78	12.46	126.07	101.77	2.69
Lp8-38-2.01-2	774.05	71950.53	736.72	15.03	96.62	200.31	2.94
Lp8-94-1.45-1	132.03	80744.33	18.68	9.77	83.87	87.50	6.00
Lp8-114-1.57-1-1	442.63	103660.08	921.48	13.51	81.50	85.43	4.30
Lp8-114-1.57-1-2	585.56	94405.98	1407.03	15.89	78.39	115.50	4.95
Lp8-120-1.35-1	1246.50	69492.00	599.33	16.63	51.72	84.70	3.49
Lp8-122-1.35-1	1677.02	91730.11	573.72	23.77	53.87	85.85	4.80
Lp8-126-1.35-3-1	720.78	55137.71	732.01	13.65	35.06	60.76	2.98
Lp8-135-2.01-1	562.79	117724.88	157.15	20.17	125.11	107.78	4.68
Lp8-144-1.47-1	1400.56	104678.95	464.07	19.39	65.28	77.67	4.78
Lp8-150-1.47-4-1	190.33	83104.53	690.90	14.59	58.91	129.64	1.91
Lp8-154-1.474-1	638.00	70264.02	883.70	15.75	59.08	83.87	5.75
Lp8-167-1.59-2-1	2707.55	104961.45	707.96	103.71	74.24	78.82	13.00
Lp8-170-1.59-2-1	910.74	75907.02	26.15	15.80	69.94	1274.05	3.72
Lp8-174-1.59-2-1	622.03	67248.66	1140.71	14.82	53.39	79.71	4.57
Lp8-176-1.59-2-1	1016.10	39923.33	4531.79	14.39	175.85	160.15	11.73
Lp8-182-1.59-2-1	326.22	75325.28	537.28	13.32	83.98	80.87	1.45
Lp134-56-6-f109	817.44	50078.15	51.57	15.52	92.27	128.23	2.63
Lp134-71-f98	448.34	49549.58	0.00	10.72	37.43	42.64	0.22
Lp134-83-31-f102	450.60	39266.77	1532.28	9.65	60.23	43.52	1.61
Lp134-140-24-f287	165.92	53988.54	0.00	7.38	41.90	74.09	2.54

Samples	Mn	Fe	Ni	Co	Cu	Zn	Ge
Lp134-148-156-f241	306.04	44959.10	0.00	7.77	37.48	65.62	2.57
Lp134-148-30-f105	642.46	39975.14	457.64	12.21	37.09	72.60	2.19
Lp134-150-14-f108	257.84	33191.39	19.90	5.59	27.34	46.82	1.27
Lp134-150-150-f103	199.15	39751.05	0.00	5.61	35.55	96.79	0.09
Lp134-150-16-f96	539.47	66858.57	0.00	6.36	49.10	177.98	0.85
Lp134-151-f110	1267.24	48987.34	1400.08	20.14	46.95	83.17	3.87
Lp134-161-125-f243	416.21	49724.85	0.00	12.39	37.47	95.31	2.93
Lp134-161-f91	497.46	70458.57	368.81	10.40	42.89	90.28	3.70
Lp134-170-25-f106	316.23	58005.19	1478.38	13.01	48.91	135.07	5.33
Lp134-195-26-f236	435.81	72492.68	658.76	11.25	49.28	83.22	5.49
Lp134-199-19-f92	207.68	31590.29	732.04	7.26	37.95	50.95	0.88
Lp134-202-218-f107	678.56	54488.04	0.00	8.00	57.47	125.54	0.64
Lp134-208-18-f99	797.51	40372.22	864.53	13.32	32.24	68.54	2.62
Lp134-236-f97	257.94	39420.40	595.97	9.61	52.90	86.79	1.38
Lp134-241-241-f114	458.77	27519.55	54.56	7.42	63.13	59.79	1.88
Lp134-282-27-f95	355.37	56858.62	670.23	9.22	63.81	156.36	14.11
Lp134-305-15-f94	1035.07	46123.40	366.73	16.00	50.31	67.88	0.99
Lp134-318-37-f281	179.72	57485.67	0.00	8.47	39.99	194.73	0.75
Sf9-B-60-1	1803.08	52115.00	54.40	11.77	56.13	96.19	2.97
Sf9-B-61-1	1036.49	71389.66	118.72	10.87	141.15	75.72	2.15
Sf9-H20-3	580.78	88000.06	0.00	29.75	91.93	149.95	2.66
Sf9-H20-6	716.11	50262.87	0.00	14.95	55.02	121.41	1.10

Table 5. Quantitative compositional data of pottery clay matrix obtained via TOF-LA-ICP-MS for the elements Mn, Fe, Ni, Co, Cu, Zn, and Ge.

Samples	As	Rb	Sr	Y	Zr	Nb	Mo
Cl1-2-f3	37.77	21.51	444.19	6.70	72.04	5.13	0.42
Cl1-2--f11	9.49	23.83	1435.16	11.03	88.27	4.87	1.27
Cl1-2-f13	7.46	29.31	427.90	19.86	50.98	3.88	1.79
Cl1-2-f17	30.45	26.17	1082.99	6.03	60.09	4.02	1.31
Cl1-3-f11	10.54	39.87	525.76	4.12	58.83	4.76	1.71
Cl1-3-f14	3.28	47.51	571.90	5.42	73.77	5.02	1.08
Cl1-3-f18	93.90	33.94	477.22	6.78	97.02	13.89	3.63
Cl1-3-f19	8.56	71.71	3760.66	21.99	103.54	10.86	2.82
Cl1-3-f120	18.25	14.80	82.73	4.43	45.94	4.11	0.46
Cl1-3-f122	48.14	31.80	423.80	9.93	65.89	4.00	1.95
Cl1-3-f124	11.72	17.96	361.01	5.65	64.96	4.84	1.67
Cl1-3-f137	22.96	6.72	127.99	10.53	83.30	4.68	0.39
Cl1-44-f2	22.69	13.36	906.98	4.96	48.26	4.30	0.95
Cl1-44-f8	29.77	13.78	430.77	7.33	57.92	3.88	1.96
Cl1-44-f10	14.38	58.13	2812.51	9.67	213.20	5.16	2.37
Cl1-44-f17	8.44	12.62	81.05	5.08	69.42	5.44	1.27
Cl1-45-f2	41.66	31.74	1189.43	7.81	95.46	6.14	0.96
Cl1-45-f4	6.88	34.15	1442.75	6.75	64.19	4.75	0.90
Cl1-45-f10	15.29	31.17	465.81	4.18	38.66	2.93	2.46
Cl1-45-f13	17.77	17.04	322.22	10.03	61.39	4.06	0.84
Cl1-45-f16	10.18	49.76	674.06	7.20	46.74	3.79	1.62
Cl1-4-f11	7.03	13.08	351.68	4.50	41.71	3.07	1.52
Cl1-4-f35	18.95	9.95	47.64	5.87	109.45	7.51	1.66
Cl1-4-f44	47.17	19.01	867.67	6.20	107.36	6.11	2.09
Cl1-4-f50	90.90	17.27	359.05	7.09	78.93	6.62	7.11
Cl1-4-f56	8.25	12.84	278.35	3.73	76.08	5.73	1.68
Cl1-4-f60	13.01	10.86	528.41	5.53	50.00	3.62	1.35
Cl1-4-f82	2.38	26.05	175.25	19.88	78.08	2.50	0.45
Ag13-2-U1-f1	6.00	24.83	315.02	10.69	67.24	4.78	0.95
Ag13-5-U1-f1	2.59	46.25	309.48	19.63	150.06	14.30	1.64
Ag13-6-U1-f1	22.82	24.69	260.54	16.34	167.10	21.15	3.96
Ag13-6-U1-f2	4.88	46.75	552.61	12.57	97.39	12.48	0.08
Ag13-6-U1-f3	9.73	20.91	158.25	50.98	162.82	13.46	0.92
Ag13-8-U1-f1	8.50	33.79	200.53	23.76	157.50	19.34	0.35
Ag13-8-U1-f2	8.86	16.35	294.25	10.07	69.36	7.25	1.98
Ag13-8-U1-f3	13.72	19.71	217.69	19.50	87.74	18.49	0.48
Ag13-9-U1-f1	11.79	9.37	309.90	14.47	101.06	6.01	0.12
Ag13-22-U2-f1	5.23	30.16	329.70	4.74	44.96	4.23	1.02
Ag13-30-U3-f3	4.15	37.01	772.86	5.93	52.89	3.78	1.48
Ag13-31-U3-f8	2.03	85.07	651.10	9.06	66.20	14.07	1.73
Ag13-32-U3-f1	0.92	30.15	335.61	20.60	196.04	14.45	0.99
Ag13-32-U3-f2	3.82	25.32	419.58	29.62	69.41	11.10	0.10
Ag13-32-U3-f3	8.37	19.34	237.73	25.55	47.27	2.92	3.34
Ag13-32-U3-f12	5.52	30.68	656.65	9.79	53.65	4.34	0.74
Ag13-32-U3-f5	7.30	38.90	468.39	18.71	85.43	14.03	1.16
Ag13-33-U3-f4	3.36	63.38	429.22	7.46	76.13	13.30	0.85

Samples	As	Rb	Sr	Y	Zr	Nb	Mo
Ag13-33-U3-f5	3.96	70.98	705.48	10.43	62.67	11.28	0.38
Ag13-34-U3-f2	8.10	42.15	219.39	26.67	177.02	18.64	0.61
Ag13-34-U3-f1	8.84	25.27	301.48	8.02	70.31	4.62	1.10
Ag13-34-U3-f4	6.32	103.52	437.02	10.95	72.50	10.55	0.57
Ag13-34-U3-f6	3.77	68.97	907.25	8.17	57.07	9.04	0.35
Ag13-34-U3-f7	0.33	25.58	477.04	5.08	35.07	2.15	0.45
Ag13-35-U3-f2	1.34	31.78	508.72	22.71	92.94	15.88	0.80
Ag13-35-U3-f1	5.08	27.84	601.35	9.92	59.73	9.66	0.99
Ag13-39-U3-f6	12.59	37.42	522.91	17.95	98.51	17.49	1.33
Ag13-114-U4-f1	6.03	39.01	271.29	9.48	79.93	4.90	0.87
Ag13-116-U4-f1	12.89	15.88	134.40	8.60	74.11	4.89	0.83
Ag13-116-U4-f2	8.49	20.14	273.02	10.37	97.91	5.29	2.50
Pr32-1-1-f34	34.87	35.59	386.46	13.60	91.66	10.34	0.47
Pr32-1-2-f14	16.59	15.19	399.83	17.21	93.05	16.42	1.13
Pr32-1-3-f135	28.40	46.03	267.65	20.27	127.39	21.03	0.79
Pr32-1-4-f16	25.24	24.60	417.00	39.78	92.67	17.18	0.87
Pr32-1-5-f75	21.81	17.92	484.27	24.75	112.95	19.69	1.20
Pr32-1-6-f4	15.59	27.74	530.23	23.38	69.10	13.32	0.70
Pr32-1-8-f7	10.21	26.37	434.99	11.87	75.99	13.61	0.98
Pr32-1-9-f1	17.70	21.88	443.81	14.04	87.35	13.73	1.90
Pr32-1-10-f2	27.45	19.49	333.98	10.56	75.40	14.32	0.65
Pr32-1-13-f4	18.38	17.93	487.90	23.52	82.08	11.74	1.46
Pr32-1-14-f1	17.28	18.94	585.35	15.80	107.30	19.76	1.71
Pr32-1-15-f20	19.56	21.80	685.83	13.68	93.04	19.52	1.06
Pr32-1-16-1	40.27	9.55	572.67	10.81	66.34	16.63	0.56
Pr32-1-16-f17	52.93	10.66	550.06	22.15	121.36	27.60	1.63
Pr32-1-17-EXT-f2	32.27	13.32	364.71	15.27	88.26	16.68	0.67
Pr32-1-17-f14	32.15	22.26	484.27	13.37	102.29	17.55	1.15
Pr32-1-19-f4	13.73	33.97	344.88	18.10	88.27	18.00	3.17
Pr32-1-20-f2	32.13	13.12	322.47	13.99	84.14	13.87	0.58
Pr32-C35-N9-1	46.60	23.89	207.00	14.09	62.08	16.60	1.07
Pr32-C35-N9-2	20.85	27.40	414.08	22.26	73.93	11.41	0.72
Pr32-C35-N9-3	20.56	29.28	345.43	26.40	120.29	16.89	0.82
Pr32-C35-N9-4	11.91	30.38	400.36	25.71	115.29	13.09	1.73
Pr32-C35-N12-1	27.67	32.91	460.18	20.27	50.65	12.24	0.85
Pr32-C35-N12-2	17.40	12.24	440.71	26.31	59.97	14.23	0.06
Pr32-C35-N12-3	16.99	24.89	422.74	9.63	78.09	15.95	0.73
Pr32-C35-N12-4	21.46	25.50	441.41	28.99	81.15	11.71	0.89
Pr32-C35-N14-1	23.54	21.27	450.68	24.67	103.25	15.44	0.48
Pr32-C35-N14-2	35.92	30.03	484.63	12.92	67.34	12.11	1.14
Pr32-C35-N14-3	29.02	13.85	338.13	24.70	99.37	18.03	0.47
Pr32-C35-N14-4	19.99	17.17	601.68	12.43	124.36	20.90	0.29
Pr32-C35-N17-1	27.31	28.38	412.23	10.99	58.92	10.98	0.42
Pr32-C35-N17-2	24.31	11.12	264.44	16.57	108.95	17.40	0.62
Pr32-C35-N20-1	10.92	20.02	140.15	15.56	22.08	5.13	1.03
Pr32-C35-N20-2	38.08	49.98	312.08	16.24	66.55	13.65	0.91
Pr32-C35-N20-3	24.31	24.46	276.72	27.14	80.37	18.99	1.05

Samples	As	Rb	Sr	Y	Zr	Nb	Mo
Pr32-C35-N20-4	12.74	14.12	522.04	17.69	76.12	16.27	0.70
Pr32-C35-N20-5	28.31	13.99	364.01	8.71	79.84	6.50	0.48
Pr32-C35-N22-1	24.92	20.46	277.33	21.96	104.38	13.52	1.07
He5-60-f10	21.55	23.52	187.27	28.92	17.04	6.16	0.93
He5-60-f16	25.60	20.53	537.88	13.53	83.58	18.26	1.22
He5-60-f18	19.92	19.13	229.48	21.63	33.09	8.10	3.08
He5-60-f63	5.63	11.02	378.90	8.09	63.74	16.18	2.52
He5-60-f9	15.69	16.18	404.93	23.93	83.48	12.38	0.34
He5-61-f10	6.67	22.97	143.77	19.72	882.35	20.51	0.56
He5-61-f11	27.17	17.55	438.12	12.09	102.30	18.28	0.76
He5-62-f12	10.78	12.69	449.82	14.12	148.74	25.62	1.03
He5-62-f20	6.48	15.69	366.05	44.21	97.19	12.38	0.35
He5-63-f1	23.13	40.48	107.76	13.30	590.94	19.88	1.98
He5-63-f2	28.77	28.68	342.98	26.66	96.30	14.79	1.10
He5-64-f3	13.35	17.57	225.29	17.70	33.64	7.07	7.53
He5-64-f4	39.13	32.73	211.98	22.57	95.68	10.78	0.93
He5-66-f1	6.07	33.50	397.06	18.13	82.35	11.42	1.02
He5-68-f4	5.79	6.32	324.40	7.70	76.33	5.86	0.02
He5-68-f6	6.17	29.53	299.81	32.78	40.24	13.37	1.78
He5-69A-f3	6.10	21.95	221.91	28.70	137.56	8.50	0.21
He5-70-f1	13.27	10.10	151.74	48.38	347.59	20.80	0.40
He5-76-f1	5.98	14.64	149.97	7.11	48.97	3.95	0.77
Pr14-22-1	0.55	18.35	321.83	38.57	60.71	15.82	1.59
Pr14-24-1	3.97	13.58	175.26	26.46	92.23	13.44	0.53
Pr14-25-1	7.91	9.68	239.14	74.15	112.28	17.25	0.52
Lp8-34-2.01-1	0.68	5.47	113.31	11.15	108.86	7.01	2.39
Lp8-38-2.01-2	4.34	16.29	127.25	8.69	73.50	7.34	1.42
Lp8-94-1.45-1	3.37	11.45	86.80	3.15	37.30	5.07	1.30
Lp8-114-1.57-1-1	2.73	5.77	37.09	5.89	72.33	6.17	1.54
Lp8-114-1.57-1-2	3.61	5.74	114.94	6.81	69.41	6.19	0.87
Lp8-120-1.35-1	6.05	9.78	262.10	5.27	44.31	3.75	1.44
Lp8-122-1.35-1	6.45	7.51	194.76	5.32	54.62	5.13	1.30
Lp8-126-1.35-3-1	4.70	5.10	99.05	6.89	73.41	4.60	0.50
Lp8-135-2.01-1	7.22	5.95	84.94	6.57	84.11	6.32	1.06
Lp8-144-1.47-1	5.24	7.64	149.99	12.51	98.59	6.08	1.72
Lp8-150-1.47-4-1	1.66	4.96	104.26	5.87	92.18	7.58	1.29
Lp8-154-1.474-1	6.89	2.40	211.00	6.90	77.01	6.10	0.90
Lp8-167-1.59-2-1	7.95	5.86	128.92	4.83	72.69	5.96	1.32
Lp8-170-1.59-2-1	7.22	9.59	229.26	6.77	172.04	22.41	2.99
Lp8-174-1.59-2-1	6.65	5.17	200.81	7.85	63.63	5.71	1.34
Lp8-176-1.59-2-1	23.57	65.52	234.69	9.74	78.49	5.15	4.62
Lp8-182-1.59-2-1	1.20	2.16	90.92	5.04	77.70	6.99	1.29
Lp134-56-6-f109	1.53	37.14	525.97	16.16	112.05	8.69	0.69
Lp134-71-f98	0.76	23.17	480.09	6.80	33.43	2.48	2.02
Lp134-83-31-f102	2.61	17.37	743.13	7.32	36.02	3.85	0.99
Lp134-140-24-f287	1.74	24.77	236.69	5.94	7.72	4.09	1.04

Samples	As	Rb	Sr	Y	Zr	Nb	Mo
Lp134-148-156-f241	1.25	27.69	172.05	5.58	64.66	5.09	1.57
Lp134-148-30-f105	2.05	29.52	376.51	6.87	112.38	5.31	0.16
Lp134-150-14-f108	1.96	17.29	458.38	4.67	44.28	3.26	0.08
Lp134-150-150-f103	0.55	23.03	594.59	8.87	174.03	5.68	0.70
Lp134-150-16-f96	3.83	36.63	180.21	10.64	322.12	17.74	0.11
Lp134-151-f110	3.87	27.36	316.42	5.79	79.00	5.19	1.34
Lp134-161-125-f243	1.17	25.42	429.35	6.94	56.56	4.31	1.44
Lp134-161-f91	5.93	23.45	286.41	8.86	442.98	3.70	0.76
Lp134-170-25-f106	6.66	14.46	429.58	6.66	75.26	6.73	1.01
Lp134-195-26-f236	7.18	37.71	198.95	5.54	46.35	4.03	0.50
Lp134-199-19-f92	3.24	17.34	682.54	5.35	53.81	2.73	0.71
Lp134-202-218-f107	4.07	25.76	321.57	9.09	138.50	4.40	0.17
Lp134-208-18-f99	2.04	24.02	413.57	6.30	82.88	5.08	0.00
Lp134-236-f97	5.49	30.63	208.45	6.71	51.73	4.80	0.89
Lp134-241-241-f114	2.49	24.93	784.42	6.28	35.98	2.56	0.48
Lp134-282-27-f95	14.52	17.12	438.80	9.72	52.71	3.45	2.59
Lp134-305-15-f94	2.64	23.12	221.84	6.75	71.47	8.44	0.00
Lp134-318-37-f281	3.71	146.54	94.25	21.81	98.66	14.58	0.45
Sf9-B-60-1	4.96	37.46	338.30	20.65	3328.17	16.20	0.44
Sf9-B-61-1	6.87	27.09	232.90	35.42	139.79	17.97	0.44
Sf9-H20-3	20.87	56.59	136.71	18.55	141.65	15.60	1.62
Sf9-H20-6	9.38	59.80	173.10	9.61	74.25	8.92	1.06

Table 6. Quantitative compositional data of pottery clay matrix obtained via TOF-LA-ICP-MS for the elements As, Rb, Sr, Y, Zr, Nb, and Mo.

Samples	Ag	Cd	Sn	Sb	Cs	Ba	La
Cl1-2-f3	0.61	0.25	4.40	1.33	1.37	4642.94	230.39
Cl1-2--f11	0.38	1.47	1.77	5.01	1.16	29290.38	1195.51
Cl1-2-f13	0.57	0.12	1.03	0.65	0.95	6381.53	316.19
Cl1-2-f17	0.22	0.15	1.36	1.12	0.86	9786.42	373.76
Cl1-3-f11	0.25	0.29	1.28	1.13	1.25	7567.46	296.07
Cl1-3-f14	0.78	0.22	5.57	0.37	0.49	2372.88	70.35
Cl1-3-f18	0.31	6.34	1.87	3.06	0.54	1411.42	129.12
Cl1-3-f19	0.70	0.46	4.49	0.64	2.16	63609.91	1350.00
Cl1-3-f120	0.49	0.23	2.03	0.93	0.80	784.49	40.43
Cl1-3-f122	0.25	7.04	0.87	0.65	0.59	2419.57	199.37
Cl1-3-f124	0.15	2.04	1.06	0.27	0.00	994.86	91.10
Cl1-3-f137	0.20	2.51	0.77	0.43	0.69	692.69	30.93
Cl1-44-f2	5.67	0.34	2.96	1.27	1.30	8888.81	422.25
Cl1-44-f8	1.80	0.11	1.17	1.19	0.73	951.06	59.14
Cl1-44-f10	0.46	0.01	1.16	1.18	1.98	31590.89	1537.17
Cl1-44-f17	0.57	0.08	0.94	0.67	0.86	1137.20	21.25
Cl1-45-f2	0.40	0.00	0.79	0.95	1.67	24107.75	979.02
Cl1-45-f4	0.29	2.23	2.62	0.63	1.23	25553.83	440.73
Cl1-45-f10	0.49	1.45	1.24	1.02	1.26	3297.75	104.06
Cl1-45-f13	0.45	0.45	4.13	0.83	0.57	1219.38	61.08
Cl1-45-f16	0.77	0.08	0.87	0.35	1.22	2112.64	143.00
Cl1-4-f11	0.30	0.32	1.70	1.24	1.18	5452.94	295.37
Cl1-4-f35	0.33	1.11	1.56	2.17	0.27	1063.59	26.30
Cl1-4-f44	1.94	0.72	5.66	2.17	0.75	17552.71	608.33
Cl1-4-f50	0.10	19.30	1.73	1.75	0.08	918.58	67.35
Cl1-4-f56	0.13	0.20	1.22	1.15	0.84	3245.08	208.84
Cl1-4-f60	1.02	0.01	1.48	0.82	0.53	5847.40	217.24
Cl1-4-f82	0.49	0.00	2.09	0.20	0.56	704.16	15.07
Ag13-2-U1-f1	0.87	0.20	3.04	0.15	3.06	6974.13	91.17
Ag13-5-U1-f1	0.23	1.60	5.04	0.57	5.02	9834.57	135.48
Ag13-6-U1-f1	2.61	6.08	42.16	3.91	2.27	14690.38	122.20
Ag13-6-U1-f2	1.15	0.06	3.22	0.26	4.73	10322.63	144.01
Ag13-6-U1-f3	1.45	0.58	4.67	0.47	3.38	3404.17	90.38
Ag13-8-U1-f1	1.14	0.53	3.03	0.53	5.79	4067.31	80.44
Ag13-8-U1-f2	1.27	1.68	5.87	0.48	2.41	4715.51	57.22
Ag13-8-U1-f3	0.88	0.10	6.80	0.52	3.51	3626.52	76.30
Ag13-9-U1-f1	1.17	0.37	2.70	0.36	2.33	3946.49	59.89
Ag13-22-U2-f1	0.39	0.01	1.73	0.28	1.28	4591.16	59.00
Ag13-30-U3-f3	1.09	0.00	3.56	0.23	2.56	7965.43	86.73
Ag13-31-U3-f8	0.47	0.34	2.80	0.32	3.44	10967.59	286.96
Ag13-32-U3-f1	2.65	0.34	5.40	0.40	1.82	1809.74	65.23
Ag13-32-U3-f2	1.11	0.60	3.90	0.32	1.68	7400.80	150.71
Ag13-32-U3-f3	1.07	2.08	5.00	0.59	2.34	5255.75	85.88
Ag13-32-U3-f12	0.40	0.20	7.34	0.32	1.85	9216.24	256.00
Ag13-32-U3-f5	0.83	0.10	4.43	0.59	1.80	1211.27	50.72
Ag13-33-U3-f4	0.18	0.05	1.58	0.32	2.76	4111.06	57.53

Samples	Ag	Cd	Sn	Sb	Cs	Ba	La
Ag13-33-U3-f5	0.71	0.50	1.29	0.29	2.93	3553.51	57.18
Ag13-34-U3-f2	1.39	0.95	7.86	1.63	0.65	2179.94	65.12
Ag13-34-U3-f1	0.99	0.30	1.29	0.34	5.66	3141.78	40.33
Ag13-34-U3-f4	0.80	0.80	1.86	0.46	4.21	3390.21	57.73
Ag13-34-U3-f6	0.96	0.82	1.49	0.36	3.71	7137.83	81.66
Ag13-34-U3-f7	0.45	0.41	1.02	0.14	1.12	4005.42	43.85
Ag13-35-U3-f2	3.15	0.79	5.45	0.62	2.44	20146.00	102.45
Ag13-35-U3-f1	0.34	0.00	1.94	0.61	1.79	3663.74	57.27
Ag13-39-U3-f6	0.25	0.00	2.08	0.33	2.33	1295.41	44.22
Ag13-114-U4-f1	7.00	0.71	11.13	0.59	6.65	3719.09	50.78
Ag13-116-U4-f1	0.73	0.00	5.11	0.31	1.41	5473.11	31.85
Ag13-116-U4-f2	4.95	3.02	18.13	1.67	2.02	19199.90	115.10
Pr32-1-1-f34	1.38	0.12	2.35	0.33	0.66	855.53	27.05
Pr32-1-2-f14	0.49	0.19	3.09	0.35	0.79	753.00	46.40
Pr32-1-3-f135	0.64	0.25	2.51	0.47	0.78	1283.64	44.01
Pr32-1-4-f16	0.72	1.14	3.42	0.31	0.78	836.24	146.31
Pr32-1-5-f75	0.43	1.00	1.69	0.36	1.19	705.24	49.29
Pr32-1-6-f4	2.17	0.54	1.63	0.46	1.04	1133.26	67.52
Pr32-1-8-f7	0.51	1.08	1.58	0.26	1.30	997.45	41.03
Pr32-1-9-f1	0.29	1.59	2.05	0.32	0.94	1032.78	35.50
Pr32-1-10-f2	0.43	1.60	1.50	0.33	1.05	718.37	24.36
Pr32-1-13-f4	0.19	1.31	1.34	0.46	0.76	1099.19	52.40
Pr32-1-14-f1	1.77	1.43	2.10	0.32	0.65	1046.39	36.22
Pr32-1-15-f20	0.37	0.38	1.58	0.32	0.98	623.51	31.40
Pr32-1-16-1	0.56	0.45	4.13	0.23	0.49	862.80	41.86
Pr32-1-16-f17	0.35	0.82	2.95	0.49	0.24	744.82	65.39
Pr32-1-17-EXT-f2	0.49	0.48	1.49	0.38	0.47	807.35	27.51
Pr32-1-17-f14	0.56	0.71	1.80	0.43	1.59	1033.88	50.26
Pr32-1-19-f4	3.92	3.02	4.52	0.80	1.31	828.66	49.92
Pr32-1-20-f2	0.09	1.22	1.77	0.21	0.61	789.70	34.88
Pr32-C35-N9-1	0.27	2.29	2.18	0.55	0.68	704.82	37.15
Pr32-C35-N9-2	0.68	0.00	3.02	0.27	1.50	850.38	56.41
Pr32-C35-N9-3	2.11	1.75	13.49	0.60	1.01	1096.37	78.33
Pr32-C35-N9-4	0.51	3.16	2.62	0.95	1.67	921.92	51.79
Pr32-C35-N12-1	0.36	0.84	1.84	0.25	1.82	854.57	43.77
Pr32-C35-N12-2	4.80	3.55	2.71	0.38	1.04	653.75	71.16
Pr32-C35-N12-3	0.36	0.31	2.07	0.28	1.33	853.57	32.31
Pr32-C35-N12-4	1.83	1.27	10.17	0.51	0.69	756.61	65.64
Pr32-C35-N14-1	0.48	0.34	2.90	0.34	0.90	873.68	41.82
Pr32-C35-N14-2	0.60	2.28	4.37	0.32	1.05	977.15	37.67
Pr32-C35-N14-3	1.61	1.71	3.75	0.47	0.34	817.59	65.86
Pr32-C35-N14-4	0.23	0.56	2.76	0.29	0.69	736.51	35.01
Pr32-C35-N17-1	0.61	0.00	2.54	0.15	1.07	694.16	25.87
Pr32-C35-N17-2	0.72	0.65	2.48	0.27	0.12	742.43	39.44
Pr32-C35-N20-1	0.57	0.70	5.09	0.64	1.24	320.15	11.38
Pr32-C35-N20-2	1.35	0.22	7.07	0.28	3.14	860.37	61.69
Pr32-C35-N20-3	0.31	0.97	1.75	0.29	1.05	727.64	72.85

Samples	Ag	Cd	Sn	Sb	Cs	Ba	La
Pr32-C35-N20-4	0.34	0.11	3.14	0.38	0.87	671.73	83.75
Pr32-C35-N20-5	0.21	1.18	2.51	0.53	0.36	778.95	23.50
Pr32-C35-N22-1	0.30	1.59	2.52	0.34	0.68	828.53	53.47
He5-60-f10	0.57	0.00	2.99	0.56	0.78	369.16	27.97
He5-60-f16	0.32	0.12	2.14	0.37	0.65	518.46	33.21
He5-60-f18	0.53	2.69	2.90	0.82	0.55	469.19	22.27
He5-60-f63	0.06	0.66	2.45	0.39	0.21	472.90	17.05
He5-60-f9	1.30	0.16	6.25	0.28	0.69	791.02	54.71
He5-61-f10	0.85	0.08	3.82	0.59	1.00	322.27	12.39
He5-61-f11	0.45	0.64	2.22	1.11	0.98	600.97	26.72
He5-62-f12	2.66	0.41	5.43	0.25	0.62	779.60	33.29
He5-62-f20	4.14	0.81	3.47	0.25	0.61	574.58	71.16
He5-63-f1	0.69	0.75	5.40	1.21	1.57	345.25	8.76
He5-63-f2	1.64	1.76	6.50	0.43	1.01	482.11	31.75
He5-64-f3	0.82	0.24	2.56	0.64	0.57	181.22	14.02
He5-64-f4	0.95	1.19	4.37	1.01	0.79	359.46	17.85
He5-66-f1	0.58	0.29	2.28	0.18	2.46	482.96	35.93
He5-68-f4	2.04	0.25	2.81	0.21	0.25	291.59	11.66
He5-68-f6	6.17	0.83	8.43	0.43	1.00	337.63	21.10
He5-69A-f3	2.77	0.13	4.24	0.50	1.00	660.78	21.47
He5-70-f1	0.80	0.34	5.82	0.60	0.38	237.33	19.93
He5-76-f1	1.90	1.90	4.84	0.52	1.00	161.39	8.28
Pr14-22-1	0.34	0.17	3.47	0.29	0.56	769.64	33.71
Pr14-24-1	0.34	0.76	5.74	0.45	0.71	725.20	38.68
Pr14-25-1	0.91	4.38	4.87	0.61	0.78	1603.80	85.00
Lp8-34-2.01-1	2.74	1.63	8.99	0.71	0.45	241.53	13.98
Lp8-38-2.01-2	0.52	0.79	5.12	0.56	2.02	248.82	10.65
Lp8-94-1.45-1	0.37	0.12	3.27	0.22	0.22	383.75	9.08
Lp8-114-1.57-1-1	0.27	0.31	1.87	0.36	0.60	177.23	9.27
Lp8-114-1.57-1-2	0.62	0.26	14.05	0.42	0.50	138.67	9.61
Lp8-120-1.35-1	1.48	2.06	1.96	0.30	2.34	259.98	7.57
Lp8-122-1.35-1	0.32	0.89	2.55	0.27	0.91	229.96	12.28
Lp8-126-1.35-3-1	0.32	0.28	1.12	0.26	0.67	143.49	11.61
Lp8-135-2.01-1	7.21	5.03	94.91	0.93	0.42	94.48	6.27
Lp8-144-1.47-1	0.49	0.44	1.71	0.28	1.41	189.10	9.84
Lp8-150-1.47-4-1	0.26	1.16	2.18	0.25	0.74	199.00	10.33
Lp8-154-1.474-1	0.55	0.66	2.13	0.32	0.22	228.66	10.05
Lp8-167-1.59-2-1	0.34	1.86	6.14	0.41	0.60	179.19	9.30
Lp8-170-1.59-2-1	0.53	0.41	2.62	0.77	1.13	614.69	35.26
Lp8-174-1.59-2-1	0.17	0.46	1.45	0.40	0.59	144.82	8.77
Lp8-176-1.59-2-1	2.86	0.00	75.93	2.45	0.93	458.30	16.94
Lp8-182-1.59-2-1	1.93	1.01	2.03	0.13	0.35	103.16	6.42
Lp134-56-6-f109	0.84	0.09	1.52	0.28	1.25	441.59	18.07
Lp134-71-f98	0.07	0.13	0.51	0.14	0.84	634.29	14.67
Lp134-83-31-f102	0.58	0.34	7.54	0.32	0.26	469.30	11.32
Lp134-140-24-f287	0.68	0.32	1.65	0.44	0.80	495.28	10.41

Samples	Ag	Cd	Sn	Sb	Cs	Ba	La
Lp134-148-156-f241	0.13	1.77	1.55	0.11	1.25	542.10	11.02
Lp134-148-30-f105	0.23	0.06	0.98	0.17	1.29	382.00	13.57
Lp134-150-14-f108	0.53	0.24	0.83	0.24	1.13	258.52	8.71
Lp134-150-150-f103	1.75	0.84	1.67	0.62	0.62	648.64	13.84
Lp134-150-16-f96	0.83	0.70	1.93	0.24	1.43	673.48	26.62
Lp134-151-f110	0.60	0.29	1.01	0.25	0.98	561.84	12.12
Lp134-161-125-f243	0.26	0.02	0.73	0.19	0.49	721.60	14.99
Lp134-161-f91	0.31	0.85	1.28	0.21	0.39	406.30	11.62
Lp134-170-25-f106	0.48	0.46	1.64	0.25	0.51	373.36	10.75
Lp134-195-26-f236	0.27	0.88	1.49	0.28	0.54	677.74	16.56
Lp134-199-19-f92	0.44	0.36	0.78	0.12	0.47	427.12	10.87
Lp134-202-218-f107	1.91	0.57	3.36	0.20	0.77	652.08	22.10
Lp134-208-18-f99	0.46	0.26	0.85	0.13	0.66	569.13	16.50
Lp134-236-f97	0.49	0.79	0.83	0.10	1.41	624.88	14.39
Lp134-241-241-f114	0.64	0.38	0.80	0.12	0.47	594.05	15.16
Lp134-282-27-f95	0.58	3.76	1.72	0.17	0.00	791.33	21.67
Lp134-305-15-f94	0.44	0.08	0.91	0.10	1.27	233.00	9.14
Lp134-318-37-f281	0.80	0.79	3.10	0.61	2.73	1075.81	30.45
Sf9-B-60-1	0.77	0.76	2.22	0.28	0.64	2189.54	45.04
Sf9-B-61-1	1.56	1.08	5.38	1.97	0.78	1894.98	55.31
Sf9-H20-3	0.40	1.47	3.82	1.37	2.29	1254.03	25.60
Sf9-H20-6	0.60	2.50	2.30	0.71	2.14	2143.80	33.42

Table 7. Quantitative compositional data of pottery clay matrix obtained via TOF-LA-ICP-MS for the elements Ag, Cd, Sn, Sb, Cs, Ba, and La.

Samples	Ce	Pr	Nd	Sm	Eu	Gd	Tb
Cl1-2-f3	46.11	8.53	13.49	4.13	1.94	2.76	0.29
Cl1-2--f11	82.97	25.95	26.42	3.99	1.76	2.02	0.35
Cl1-2-f13	39.85	9.16	11.65	1.70	0.98	2.64	0.48
Cl1-2-f17	48.59	11.48	11.59	2.81	1.09	1.65	0.18
Cl1-3-f11	35.76	8.08	9.00	0.94	0.07	1.38	0.20
Cl1-3-f14	14.43	2.84	6.91	1.16	0.24	1.13	0.23
Cl1-3-f18	23.26	4.37	7.01	2.43	1.34	1.11	0.19
Cl1-3-f19	113.39	37.01	40.08	6.28	2.34	3.33	0.72
Cl1-3-f120	13.30	2.04	5.19	1.30	0.65	1.37	0.14
Cl1-3-f122	33.25	7.63	13.99	4.14	1.26	2.46	0.43
Cl1-3-f124	16.72	3.74	7.37	1.90	1.21	1.38	0.20
Cl1-3-f137	33.32	4.53	15.28	3.15	1.40	6.73	0.57
Cl1-44-f2	52.87	12.62	12.75	2.71	0.84	1.40	0.22
Cl1-44-f8	43.73	4.08	11.33	2.69	1.00	4.65	0.34
Cl1-44-f10	171.23	39.16	28.67	8.60	4.57	2.32	0.30
Cl1-44-f17	14.99	2.43	7.87	2.20	1.27	1.75	0.20
Cl1-45-f2	110.90	27.01	25.79	7.41	3.35	2.08	0.43
Cl1-45-f4	41.74	13.60	14.72	2.17	1.33	1.09	0.25
Cl1-45-f10	28.22	3.87	5.47	1.92	0.94	1.51	0.11
Cl1-45-f13	56.53	5.48	15.43	3.73	1.41	5.39	0.32
Cl1-45-f16	30.00	5.74	9.64	2.74	1.93	2.92	0.30
Cl1-4-f11	36.96	8.40	9.44	2.20	1.30	1.51	0.18
Cl1-4-f35	20.69	3.03	8.49	2.39	1.46	3.89	0.33
Cl1-4-f44	53.52	15.84	17.89	1.62	0.43	1.19	0.27
Cl1-4-f50	31.08	4.66	10.50	2.17	0.98	1.39	0.17
Cl1-4-f56	32.60	6.91	8.26	2.01	1.27	1.15	0.08
Cl1-4-f60	124.29	8.54	10.37	2.92	1.06	3.53	0.20
Cl1-4-f82	14.47	2.76	11.60	3.22	1.54	4.57	0.74
Ag13-2-U1-f1	31.72	6.87	16.34	3.68	1.31	3.02	0.36
Ag13-5-U1-f1	48.81	9.77	21.94	2.72	0.60	2.64	0.70
Ag13-6-U1-f1	22.00	7.29	21.24	3.82	0.90	3.80	0.48
Ag13-6-U1-f2	65.92	9.50	20.06	4.70	1.65	2.40	0.34
Ag13-6-U1-f3	44.64	12.27	44.24	10.03	2.94	8.76	1.35
Ag13-8-U1-f1	38.96	9.32	28.23	6.12	1.99	4.67	0.68
Ag13-8-U1-f2	11.38	4.96	15.88	3.01	1.18	2.70	0.36
Ag13-8-U1-f3	30.25	9.50	32.13	4.77	2.61	4.16	0.72
Ag13-9-U1-f1	13.36	4.47	11.34	2.59	0.93	2.36	0.41
Ag13-22-U2-f1	23.80	3.60	9.69	2.10	1.21	1.29	0.29
Ag13-30-U3-f3	35.48	5.31	9.44	3.16	1.28	3.45	0.21
Ag13-31-U3-f8	55.74	11.50	19.65	4.48	1.52	4.06	0.42
Ag13-32-U3-f1	15.19	7.43	23.09	3.55	1.33	3.32	0.53
Ag13-32-U3-f2	60.66	14.14	40.25	7.03	2.73	5.38	0.84
Ag13-32-U3-f3	30.31	11.98	53.09	9.23	3.04	7.93	1.11
Ag13-32-U3-f12	59.45	11.09	16.69	10.25	5.53	5.85	0.38
Ag13-32-U3-f5	35.04	7.29	24.80	5.49	2.09	7.83	0.75
Ag13-33-U3-f4	26.18	4.75	11.29	2.61	0.53	2.45	0.30

Samples	Ce	Pr	Nd	Sm	Eu	Gd	Tb
Ag13-33-U3-f5	35.33	6.96	18.79	2.96	0.87	4.18	0.42
Ag13-34-U3-f2	50.10	9.24	31.66	6.00	1.77	4.82	0.87
Ag13-34-U3-f1	21.57	3.54	10.40	1.88	1.07	1.48	0.25
Ag13-34-U3-f4	39.88	6.01	17.28	3.25	1.18	3.97	0.32
Ag13-34-U3-f6	27.70	5.80	13.60	1.71	1.18	2.64	0.25
Ag13-34-U3-f7	10.54	2.81	6.09	0.51	0.23	1.31	0.20
Ag13-35-U3-f2	10.21	12.66	27.23	5.50	1.78	4.64	0.90
Ag13-35-U3-f1	27.97	4.95	14.70	3.17	1.65	2.19	0.37
Ag13-39-U3-f6	32.77	7.65	27.17	5.93	1.94	6.55	0.73
Ag13-114-U4-f1	13.07	4.75	13.50	3.12	1.56	2.57	0.38
Ag13-116-U4-f1	7.88	4.35	9.17	1.29	0.09	2.59	0.37
Ag13-116-U4-f2	16.77	7.12	15.39	3.23	0.90	2.87	0.44
Pr32-1-1-f34	24.90	4.85	17.08	2.85	1.31	3.62	0.43
Pr32-1-2-f14	23.53	6.94	24.41	3.60	1.44	3.66	0.38
Pr32-1-3-f135	34.44	4.64	14.62	8.77	3.72	11.83	0.91
Pr32-1-4-f16	34.52	24.90	90.81	14.51	4.35	12.31	1.63
Pr32-1-5-f75	33.98	9.75	33.89	7.43	2.35	8.96	1.10
Pr32-1-6-f4	67.39	12.96	43.58	7.66	2.66	7.34	0.88
Pr32-1-8-f7	24.48	5.18	16.14	2.70	0.68	2.76	0.36
Pr32-1-9-f1	39.31	6.36	22.32	4.32	1.49	3.72	0.55
Pr32-1-10-f2	27.00	4.72	16.79	3.31	1.15	2.60	0.42
Pr32-1-13-f4	81.06	9.47	29.74	6.32	2.15	12.01	0.86
Pr32-1-14-f1	19.24	6.06	20.62	4.39	1.55	4.20	0.48
Pr32-1-15-f20	26.77	5.58	17.36	3.55	1.57	5.14	0.50
Pr32-1-16-1	37.61	6.94	20.24	3.63	1.17	3.00	0.46
Pr32-1-16-f17	52.98	12.01	38.19	9.10	3.43	16.25	1.38
Pr32-1-17-EXT-f2	18.35	6.81	24.20	6.37	1.76	3.37	0.73
Pr32-1-17-f14	57.45	7.59	20.74	4.02	1.34	3.87	0.48
Pr32-1-19-f4	89.20	9.21	36.29	4.88	2.02	5.52	0.62
Pr32-1-20-f2	18.60	5.65	18.29	3.80	1.14	4.04	0.50
Pr32-C35-N9-1	31.91	6.07	21.50	4.72	1.47	3.91	0.39
Pr32-C35-N9-2	21.38	7.17	24.56	4.25	1.55	3.34	0.61
Pr32-C35-N9-3	53.15	12.52	43.24	7.87	2.31	8.68	0.91
Pr32-C35-N9-4	23.93	8.36	27.22	5.17	3.33	4.80	0.70
Pr32-C35-N12-1	24.93	6.44	24.68	4.50	1.69	4.04	0.53
Pr32-C35-N12-2	29.04	12.56	46.33	7.05	2.48	5.90	0.86
Pr32-C35-N12-3	26.72	4.97	15.32	3.72	0.86	2.26	0.43
Pr32-C35-N12-4	25.23	12.48	38.23	6.63	2.75	5.69	0.96
Pr32-C35-N14-1	25.45	7.81	28.49	6.27	2.05	6.37	0.97
Pr32-C35-N14-2	31.97	6.72	20.61	3.89	1.36	3.50	0.51
Pr32-C35-N14-3	31.98	11.60	39.18	6.51	2.31	4.96	0.67
Pr32-C35-N14-4	21.72	4.77	14.88	3.56	1.13	2.87	0.22
Pr32-C35-N17-1	37.60	5.19	15.95	3.44	1.11	2.22	0.44
Pr32-C35-N17-2	20.15	6.30	24.57	2.92	1.64	3.17	0.51
Pr32-C35-N20-1	43.36	3.20	11.26	2.58	0.56	3.71	0.52
Pr32-C35-N20-2	57.01	10.49	32.56	5.61	2.25	4.68	0.52
Pr32-C35-N20-3	35.86	14.16	52.95	9.73	2.82	6.83	1.08

Samples	Ce	Pr	Nd	Sm	Eu	Gd	Tb
Pr32-C35-N20-4	28.36	9.93	34.34	5.64	2.05	4.88	0.68
Pr32-C35-N20-5	16.73	3.33	10.42	2.15	1.03	2.27	0.37
Pr32-C35-N22-1	24.12	9.14	33.70	6.49	1.86	5.63	0.75
He5-60-f10	61.55	8.61	34.86	8.44	2.35	14.59	1.32
He5-60-f16	41.95	6.07	20.86	4.06	1.65	6.70	0.54
He5-60-f18	42.00	4.59	15.77	3.44	1.05	4.05	0.63
He5-60-f63	15.24	3.34	13.23	3.21	0.97	2.57	0.33
He5-60-f9	40.05	7.61	26.89	5.40	2.13	6.59	0.69
He5-61-f10	24.98	2.73	10.38	3.31	1.22	7.65	0.69
He5-61-f11	42.13	4.70	16.09	3.38	1.18	7.25	0.39
He5-62-f12	23.65	5.75	19.60	3.86	1.37	3.34	0.46
He5-62-f20	47.46	15.78	60.79	13.36	4.05	9.64	1.47
He5-63-f1	40.58	2.11	7.44	2.31	0.48	4.80	0.38
He5-63-f2	20.90	7.54	29.01	5.22	1.84	4.25	0.64
He5-64-f3	46.59	4.72	18.33	4.22	1.19	7.00	0.74
He5-64-f4	51.18	4.37	16.85	4.40	1.50	11.34	0.85
He5-66-f1	17.58	6.34	21.86	4.34	1.64	3.59	0.44
He5-68-f4	9.49	2.22	8.90	1.23	0.44	1.28	0.29
He5-68-f6	37.02	6.60	26.22	6.54	2.14	5.16	1.13
He5-69A-f3	28.52	4.58	17.85	4.94	1.34	5.39	1.21
He5-70-f1	44.28	5.73	25.96	7.43	2.20	7.76	1.61
He5-76-f1	11.23	1.93	6.90	1.42	0.60	1.77	0.17
Pr14-22-1	18.07	6.39	26.43	5.68	2.47	5.20	0.85
Pr14-24-1	15.39	5.92	25.61	4.83	2.01	3.95	0.77
Pr14-25-1	48.69	16.16	64.52	12.87	5.24	13.15	2.20
Lp8-34-2.01-1	12.91	2.67	11.56	2.28	1.03	1.99	0.31
Lp8-38-2.01-2	9.60	2.17	9.08	1.96	1.00	1.61	0.25
Lp8-94-1.45-1	5.72	0.96	3.46	0.69	0.23	1.58	0.06
Lp8-114-1.57-1-1	27.51	2.31	7.86	1.50	0.98	2.33	0.30
Lp8-114-1.57-1-2	32.39	2.56	8.48	2.08	0.77	3.25	0.32
Lp8-120-1.35-1	18.62	2.06	6.62	1.48	0.72	1.64	0.18
Lp8-122-1.35-1	37.56	2.94	8.63	1.89	0.84	2.37	0.22
Lp8-126-1.35-3-1	22.95	2.35	8.27	1.38	0.94	2.19	0.23
Lp8-135-2.01-1	13.14	1.99	8.03	1.75	0.64	1.50	0.22
Lp8-144-1.47-1	24.47	3.45	13.09	2.74	1.06	3.89	0.37
Lp8-150-1.47-4-1	16.86	2.12	7.92	1.55	0.72	2.06	0.24
Lp8-154-1.474-1	21.84	2.14	7.22	1.53	0.81	1.90	0.21
Lp8-167-1.59-2-1	36.19	2.51	9.44	2.51	0.73	2.72	0.28
Lp8-170-1.59-2-1	11.88	2.00	4.63	1.50	0.82	1.35	0.17
Lp8-174-1.59-2-1	21.71	2.45	8.81	2.08	0.87	2.39	0.26
Lp8-176-1.59-2-1	20.71	3.35	8.46	3.76	2.83	1.12	0.12
Lp8-182-1.59-2-1	19.20	1.81	6.23	0.92	0.68	1.63	0.18
Lp134-56-6-f109	20.05	3.92	16.55	4.24	1.52	6.95	0.60
Lp134-71-f98	17.81	2.50	8.50	1.56	1.04	2.01	0.28
Lp134-83-31-f102	11.33	1.81	7.46	2.76	0.60	1.66	0.24
Lp134-140-24-f287	8.27	1.81	7.04	1.53	0.82	0.83	0.27

Samples	Ce	Pr	Nd	Sm	Eu	Gd	Tb
Lp134-148-156-f241	8.09	1.56	5.13	1.63	0.31	1.51	0.16
Lp134-148-30-f105	24.27	2.25	7.01	2.13	0.54	3.45	0.13
Lp134-150-14-f108	9.39	1.74	5.39	1.43	0.52	2.00	0.12
Lp134-150-150-f103	14.06	2.12	7.74	1.37	0.41	1.41	0.20
Lp134-150-16-f96	46.47	4.57	15.32	3.86	1.12	2.26	0.49
Lp134-151-f110	14.18	1.89	7.43	1.67	0.40	1.83	0.17
Lp134-161-125-f243	12.23	1.94	7.42	1.26	0.54	0.96	0.16
Lp134-161-f91	12.24	1.82	7.35	1.71	0.66	1.03	0.18
Lp134-170-25-f106	13.75	1.84	6.80	2.45	0.88	1.63	0.28
Lp134-195-26-f236	17.64	2.16	8.34	1.64	0.60	0.91	0.15
Lp134-199-19-f92	9.46	1.40	4.83	1.97	0.28	1.61	0.17
Lp134-202-218-f107	19.37	3.23	12.59	2.75	0.90	1.82	0.39
Lp134-208-18-f99	14.77	2.42	6.98	1.88	0.61	2.58	0.12
Lp134-236-f97	11.24	1.84	6.41	2.44	0.56	2.01	0.22
Lp134-241-241-f114	12.85	2.05	6.54	1.69	0.85	2.41	0.18
Lp134-282-27-f95	10.30	3.25	10.31	2.30	0.75	1.99	0.24
Lp134-305-15-f94	18.10	1.87	5.72	1.71	0.47	3.11	0.17
Lp134-318-37-f281	31.08	5.03	16.78	4.29	0.69	3.05	0.59
Sf9-B-60-1	15.22	4.85	17.95	2.85	1.40	2.68	0.55
Sf9-B-61-1	22.18	7.30	30.56	6.45	2.16	7.43	1.23
Sf9-H20-3	32.80	4.11	14.84	4.32	1.12	4.23	0.55
Sf9-H20-6	22.59	3.36	11.47	2.16	0.93	2.28	0.31

Table 8. Quantitative compositional data of pottery clay matrix obtained via TOF-LA-ICP-MS for the elements Ce, Pr, Nd, Sm, Eu, Gd, and Tb.

Samples	Dy	Ho	Er	Tm	Yb	Lu	Hf
Cl1-2-f3	1.46	0.34	0.73	0.09	1.06	0.14	1.97
Cl1-2--f11	1.50	0.35	0.55	0.18	0.89	0.20	2.26
Cl1-2-f13	3.35	0.83	2.00	0.39	2.65	0.27	2.12
Cl1-2-f17	1.15	0.25	0.46	0.08	0.70	0.08	1.52
Cl1-3-f11	0.96	0.19	0.33	0.07	0.91	0.00	1.52
Cl1-3-f14	0.85	0.25	0.52	0.10	0.53	0.11	1.92
Cl1-3-f18	1.00	0.15	0.61	0.10	0.60	0.11	2.27
Cl1-3-f19	3.25	0.71	1.47	0.39	2.40	0.42	2.99
Cl1-3-f120	1.25	0.23	0.63	0.05	0.72	0.11	1.12
Cl1-3-f122	1.97	0.33	0.87	0.14	0.81	0.18	1.77
Cl1-3-f124	1.03	0.13	0.40	0.07	0.56	0.10	1.84
Cl1-3-f137	1.66	0.39	1.17	0.11	1.03	0.21	2.29
Cl1-44-f2	1.04	0.24	0.42	0.06	0.52	0.05	1.49
Cl1-44-f8	1.23	0.29	0.70	0.14	0.78	0.11	1.31
Cl1-44-f10	1.30	0.37	0.69	0.23	0.82	0.11	5.42
Cl1-44-f17	0.77	0.22	0.64	0.06	0.92	0.07	1.71
Cl1-45-f2	1.44	0.31	0.76	0.13	1.06	0.13	2.85
Cl1-45-f4	0.89	0.21	0.51	0.10	0.76	0.15	1.96
Cl1-45-f10	0.60	0.11	0.09	0.05	0.40	0.04	0.93
Cl1-45-f13	2.34	0.44	1.11	0.15	0.94	0.18	1.88
Cl1-45-f16	1.35	0.17	0.60	0.07	0.93	0.12	1.11
Cl1-4-f11	1.12	0.22	0.47	0.11	0.89	0.06	1.28
Cl1-4-f35	1.06	0.20	0.79	0.13	0.70	0.16	2.61
Cl1-4-f44	1.23	0.25	0.73	0.14	0.91	0.15	3.05
Cl1-4-f50	1.47	0.21	0.42	0.03	0.55	0.12	2.38
Cl1-4-f56	0.68	0.16	0.34	0.05	0.44	0.09	2.05
Cl1-4-f60	1.13	0.30	0.66	0.11	0.58	0.13	1.41
Cl1-4-f82	3.97	0.88	2.32	0.32	2.44	0.34	2.04
Ag13-2-U1-f1	2.11	0.50	0.94	0.18	1.27	0.33	2.26
Ag13-5-U1-f1	3.72	0.68	1.94	0.33	2.91	0.43	4.02
Ag13-6-U1-f1	2.75	0.76	1.78	0.29	2.05	0.26	4.69
Ag13-6-U1-f2	2.45	0.53	1.32	0.28	1.46	0.28	2.23
Ag13-6-U1-f3	8.19	1.76	4.88	0.73	4.98	0.83	3.47
Ag13-8-U1-f1	4.72	0.86	1.96	0.41	2.81	0.35	2.78
Ag13-8-U1-f2	2.18	0.31	0.99	0.16	1.29	0.18	1.77
Ag13-8-U1-f3	3.49	0.66	1.04	0.24	1.75	0.34	2.65
Ag13-9-U1-f1	2.44	0.47	1.20	0.26	1.61	0.28	2.89
Ag13-22-U2-f1	0.72	0.13	0.27	0.10	0.75	0.09	0.99
Ag13-30-U3-f3	0.84	0.19	0.29	0.05	0.49	0.05	1.16
Ag13-31-U3-f8	1.65	0.41	0.70	0.16	0.69	0.14	1.64
Ag13-32-U3-f1	3.03	0.55	2.05	0.24	2.00	0.27	3.83
Ag13-32-U3-f2	4.60	0.84	2.24	0.42	2.81	0.38	1.70
Ag13-32-U3-f3	5.27	0.96	2.34	0.29	2.13	0.46	1.36
Ag13-32-U3-f12	1.56	0.36	0.84	0.15	0.84	0.17	1.43
Ag13-32-U3-f5	3.18	0.62	1.87	0.26	1.82	0.28	2.04
Ag13-33-U3-f4	1.30	0.35	0.65	0.12	0.84	0.19	1.87

Samples	Dy	Ho	Er	Tm	Yb	Lu	Hf
Ag13-33-U3-f5	1.70	0.33	0.95	0.22	0.99	0.15	1.35
Ag13-34-U3-f2	4.70	1.12	2.79	0.51	3.41	0.61	4.18
Ag13-34-U3-f1	1.39	0.26	0.57	0.13	0.66	0.21	1.52
Ag13-34-U3-f4	1.80	0.49	0.86	0.20	1.14	0.23	1.60
Ag13-34-U3-f6	1.00	0.17	0.73	0.15	0.78	0.06	1.18
Ag13-34-U3-f7	0.45	0.13	0.45	0.08	0.64	0.10	1.21
Ag13-35-U3-f2	3.69	0.76	1.79	0.31	2.22	0.38	2.27
Ag13-35-U3-f1	1.79	0.31	0.78	0.17	0.73	0.15	1.21
Ag13-39-U3-f6	3.87	0.77	1.62	0.30	1.88	0.25	2.64
Ag13-114-U4-f1	1.90	0.44	0.88	0.15	1.15	0.21	2.20
Ag13-116-U4-f1	1.15	0.26	0.94	0.10	0.90	0.16	2.64
Ag13-116-U4-f2	1.34	0.47	0.79	0.19	0.90	0.15	2.66
Pr32-1-1-f34	2.72	0.55	1.49	0.18	1.47	0.27	1.80
Pr32-1-2-f14	2.27	0.49	1.24	0.19	1.57	0.18	1.92
Pr32-1-3-f135	3.14	0.69	2.22	0.30	2.36	0.33	3.58
Pr32-1-4-f16	6.54	1.29	2.84	0.45	2.76	0.40	2.49
Pr32-1-5-f75	4.73	1.04	2.67	0.40	3.28	0.45	2.59
Pr32-1-6-f4	4.64	0.86	1.93	0.30	2.37	0.36	2.08
Pr32-1-8-f7	1.90	0.49	1.03	0.11	0.96	0.28	1.98
Pr32-1-9-f1	3.63	0.72	1.62	0.22	2.28	0.26	1.98
Pr32-1-10-f2	2.23	0.42	1.35	0.13	1.36	0.23	1.53
Pr32-1-13-f4	3.76	0.89	1.97	0.38	2.47	0.38	2.09
Pr32-1-14-f1	2.56	0.60	1.51	0.21	1.67	0.31	2.62
Pr32-1-15-f20	2.14	0.42	1.38	0.18	1.79	0.22	2.29
Pr32-1-16-1	2.27	0.40	1.05	0.14	1.58	0.08	0.97
Pr32-1-16-f17	4.15	0.85	2.72	0.35	2.21	0.28	3.27
Pr32-1-17-EXT-f2	4.60	0.75	1.60	0.28	2.39	0.39	2.52
Pr32-1-17-f14	2.68	0.47	1.32	0.29	1.61	0.26	2.85
Pr32-1-19-f4	3.51	0.65	1.83	0.21	2.72	0.27	1.80
Pr32-1-20-f2	2.05	0.47	1.04	0.24	1.59	0.27	2.07
Pr32-C35-N9-1	2.31	0.58	1.39	0.24	1.97	0.28	2.17
Pr32-C35-N9-2	3.20	0.64	1.58	0.37	2.12	0.24	2.21
Pr32-C35-N9-3	4.36	0.97	2.20	0.33	2.17	0.42	2.72
Pr32-C35-N9-4	4.30	0.76	3.85	0.71	1.64	0.53	3.43
Pr32-C35-N12-1	2.33	0.68	1.32	0.37	2.19	0.39	1.82
Pr32-C35-N12-2	3.80	0.89	2.27	0.41	2.55	0.48	2.19
Pr32-C35-N12-3	1.73	0.36	1.01	0.13	1.43	0.14	2.13
Pr32-C35-N12-4	4.46	1.06	2.54	0.43	2.97	0.37	1.97
Pr32-C35-N14-1	5.06	1.18	2.95	0.43	2.93	0.44	2.83
Pr32-C35-N14-2	1.99	0.59	0.91	0.18	1.37	0.19	1.56
Pr32-C35-N14-3	3.36	0.72	1.70	0.30	1.90	0.31	2.44
Pr32-C35-N14-4	2.89	0.52	1.35	0.26	1.88	0.34	3.11
Pr32-C35-N17-1	1.82	0.49	1.11	0.13	1.24	0.23	1.63
Pr32-C35-N17-2	2.87	0.82	2.05	0.26	2.14	0.28	2.49
Pr32-C35-N20-1	2.93	0.43	1.53	0.22	2.19	0.27	0.63
Pr32-C35-N20-2	3.29	0.60	1.60	0.17	1.84	0.29	1.70
Pr32-C35-N20-3	4.66	1.12	2.38	0.51	2.05	0.44	2.22

Samples	Dy	Ho	Er	Tm	Yb	Lu	Hf
Pr32-C35-N20-4	2.79	0.53	1.49	0.24	1.74	0.20	1.63
Pr32-C35-N20-5	1.54	0.44	0.85	0.14	1.08	0.26	2.14
Pr32-C35-N22-1	4.00	0.80	2.09	0.34	2.15	0.32	2.73
He5-60-f10	6.10	1.27	2.91	0.42	3.16	0.39	0.63
He5-60-f16	2.14	0.55	1.15	0.20	1.63	0.25	1.88
He5-60-f18	3.95	0.86	2.11	0.41	2.26	0.47	1.10
He5-60-f63	1.39	0.32	0.89	0.22	1.02	0.19	1.63
He5-60-f9	3.39	0.87	1.62	0.31	1.89	0.26	2.11
He5-61-f10	3.34	0.80	2.40	0.42	3.24	0.51	16.03
He5-61-f11	2.14	0.47	1.29	0.19	1.22	0.22	2.67
He5-62-f12	3.44	0.54	1.40	0.27	1.86	0.38	3.86
He5-62-f20	8.05	1.87	3.38	0.65	4.06	0.50	2.30
He5-63-f1	2.14	0.55	1.85	0.32	2.80	0.44	12.20
He5-63-f2	4.86	1.00	2.60	0.40	3.08	0.41	2.43
He5-64-f3	3.74	0.78	1.97	0.33	2.35	0.21	0.78
He5-64-f4	4.43	0.90	2.71	0.39	2.98	0.41	2.36
He5-66-f1	3.72	0.68	1.49	0.19	2.05	0.23	2.10
He5-68-f4	1.55	0.27	0.71	0.20	0.70	0.17	2.38
He5-68-f6	6.99	1.38	2.91	0.66	4.36	0.65	1.65
He5-69A-f3	6.53	1.18	2.71	0.62	3.77	0.59	5.29
He5-70-f1	9.87	2.00	5.31	0.99	5.46	0.89	8.17
He5-76-f1	1.18	0.34	0.76	0.14	0.36	0.07	1.50
Pr14-22-1	4.59	1.38	2.89	0.65	3.15	0.43	1.42
Pr14-24-1	4.57	1.10	2.68	0.15	3.32	0.54	2.45
Pr14-25-1	10.50	2.64	5.12	0.78	5.76	0.78	2.88
Lp8-34-2.01-1	1.47	0.39	1.00	0.11	1.67	0.28	3.43
Lp8-38-2.01-2	1.51	0.40	0.90	0.14	1.36	0.19	1.84
Lp8-94-1.45-1	0.41	0.15	0.27	0.10	0.48	0.08	1.14
Lp8-114-1.57-1-1	1.46	0.35	0.61	0.07	1.11	0.18	1.82
Lp8-114-1.57-1-2	1.71	0.35	0.61	0.08	0.92	0.18	1.81
Lp8-120-1.35-1	1.05	0.24	0.58	0.11	0.94	0.11	1.23
Lp8-122-1.35-1	1.13	0.24	0.57	0.13	0.93	0.11	1.16
Lp8-126-1.35-3-1	1.19	0.23	0.40	0.15	0.60	0.15	1.60
Lp8-135-2.01-1	1.79	0.38	0.85	0.15	1.15	0.20	2.34
Lp8-144-1.47-1	2.36	0.52	1.29	0.26	1.88	0.29	2.57
Lp8-150-1.47-4-1	1.16	0.21	0.72	0.13	0.70	0.20	2.29
Lp8-154-1.474-1	1.22	0.30	0.51	0.15	1.11	0.18	2.08
Lp8-167-1.59-2-1	1.07	0.31	0.29	0.08	1.16	0.17	1.95
Lp8-170-1.59-2-1	0.81	0.21	0.51	0.10	0.86	0.13	4.50
Lp8-174-1.59-2-1	1.97	0.32	0.92	0.12	1.06	0.11	1.19
Lp8-176-1.59-2-1	2.54	0.56	0.13	0.19	0.48	0.20	1.61
Lp8-182-1.59-2-1	1.11	0.10	0.51	0.13	0.51	0.16	1.91
Lp134-56-6-f109	2.99	0.68	1.76	0.29	2.10	0.29	2.38
Lp134-71-f98	1.00	0.25	0.64	0.05	0.67	0.13	0.56
Lp134-83-31-f102	1.01	0.28	0.64	0.10	0.51	0.20	1.02
Lp134-140-24-f287	0.67	0.25	0.71	0.07	1.40	0.16	0.08

Samples	Dy	Ho	Er	Tm	Yb	Lu	Hf
Lp134-148-156-f241	1.15	0.17	0.51	0.03	0.73	0.14	1.32
Lp134-148-30-f105	0.88	0.22	0.51	0.08	0.31	0.07	3.00
Lp134-150-14-f108	0.97	0.29	0.46	0.08	0.31	0.04	1.01
Lp134-150-150-f103	1.26	0.22	0.87	0.05	1.17	0.20	3.19
Lp134-150-16-f96	3.48	0.65	1.74	0.20	1.72	0.22	5.20
Lp134-151-f110	0.98	0.25	0.70	0.09	1.00	0.13	1.86
Lp134-161-125-f243	1.02	0.27	0.36	0.06	0.98	0.15	1.17
Lp134-161-f91	1.17	0.38	0.80	0.19	1.74	0.36	8.33
Lp134-170-25-f106	1.25	0.27	0.77	0.15	1.11	0.13	1.93
Lp134-195-26-f236	0.70	0.26	0.59	0.14	0.84	0.14	1.47
Lp134-199-19-f92	1.03	0.13	0.46	0.07	0.76	0.10	1.57
Lp134-202-218-f107	1.89	0.41	0.94	0.19	1.24	0.07	2.85
Lp134-208-18-f99	1.24	0.27	0.45	0.05	0.53	0.13	2.30
Lp134-236-f97	1.06	0.25	0.62	0.08	0.79	0.11	1.61
Lp134-241-241-f114	0.77	0.20	0.47	0.09	0.50	0.05	0.94
Lp134-282-27-f95	1.76	0.33	0.94	0.14	0.89	0.19	1.63
Lp134-305-15-f94	1.75	0.32	0.73	0.06	0.75	0.12	1.59
Lp134-318-37-f281	3.85	0.84	2.28	0.40	3.20	0.60	2.65
Sf9-B-60-1	3.13	0.90	2.13	0.45	4.66	0.76	55.69
Sf9-B-61-1	6.83	1.40	3.12	0.39	3.32	0.46	3.56
Sf9-H20-3	4.01	0.78	1.75	0.15	1.71	0.37	2.69
Sf9-H20-6	2.09	0.43	0.99	0.28	0.76	0.19	1.28

Table 9. Quantitative compositional data of pottery clay matrix obtained via TOF-LA-ICP-MS forDy, Ho, Er, Tm, Yb, Lu, and Hf.

Samples	Ta	W	Tl	Pb	Bi	Th	U
Cl1-2-f3	0.35	0.38	0.59	17.74	1.66	7.35	1.37
Cl1-2--f11	0.44	0.47	0.40	8.73	1.24	2.73	1.10
Cl1-2-f13	0.27	0.23	0.73	5.48	0.76	13.29	1.58
Cl1-2-f17	0.26	0.25	0.36	13.26	1.54	2.23	0.73
Cl1-3-f11	0.29	0.30	0.65	11.62	1.28	11.32	1.07
Cl1-3-f14	0.39	0.46	0.38	9.17	1.36	1.97	0.71
Cl1-3-f18	0.69	0.53	0.38	9.02	1.65	2.50	1.01
Cl1-3-f19	0.72	1.00	0.53	12.54	1.28	3.77	1.68
Cl1-3-f120	0.35	0.22	0.55	9.02	0.90	1.43	0.85
Cl1-3-f122	0.33	0.11	0.22	4.25	0.49	4.46	1.06
Cl1-3-f124	0.34	0.13	0.31	6.71	0.62	2.00	0.84
Cl1-3-f137	0.57	0.14	0.33	5.60	0.63	2.47	0.93
Cl1-44-f2	0.27	0.35	0.71	10.11	0.96	23.57	0.65
Cl1-44-f8	0.25	0.40	0.50	24.61	1.73	17.58	0.95
Cl1-44-f10	0.43	0.40	0.79	14.51	1.66	3.04	1.68
Cl1-44-f17	0.47	0.31	0.58	9.16	0.94	2.28	0.83
Cl1-45-f2	0.45	0.32	0.90	11.19	1.13	3.11	1.12
Cl1-45-f4	0.36	0.33	0.37	6.93	0.81	1.59	0.53
Cl1-45-f10	0.21	0.10	0.47	31.59	2.39	2.03	0.56
Cl1-45-f13	0.32	0.33	0.58	8.94	0.74	2.34	1.40
Cl1-45-f16	0.22	0.31	0.37	6.95	0.55	1.78	1.00
Cl1-4-f11	0.23	0.24	0.44	11.24	1.25	0.99	0.79
Cl1-4-f35	0.62	0.47	0.48	13.98	1.10	2.75	1.19
Cl1-4-f44	0.54	0.52	0.69	10.41	1.43	6.29	1.04
Cl1-4-f50	0.41	0.48	0.32	7.49	0.84	3.71	1.56
Cl1-4-f56	0.42	0.39	0.47	9.07	0.87	3.51	1.21
Cl1-4-f60	0.25	0.29	0.54	19.66	1.73	1.67	0.74
Cl1-4-f82	0.16	0.21	0.21	7.28	0.47	0.52	0.41
Ag13-2-U1-f1	0.31	0.26	0.43	8.86	1.01	2.81	0.73
Ag13-5-U1-f1	0.88	0.80	0.90	15.33	1.74	11.11	4.20
Ag13-6-U1-f1	1.57	1.65	0.35	11.17	12.74	11.09	2.06
Ag13-6-U1-f2	0.88	0.58	0.67	10.98	1.32	6.42	1.73
Ag13-6-U1-f3	1.08	0.64	0.28	10.04	1.33	7.93	1.33
Ag13-8-U1-f1	1.24	0.79	0.57	11.73	1.67	9.51	2.07
Ag13-8-U1-f2	0.43	0.99	0.23	7.13	0.86	2.58	1.09
Ag13-8-U1-f3	1.24	0.74	0.34	12.62	1.29	8.85	2.21
Ag13-9-U1-f1	0.51	0.41	0.28	9.35	1.14	5.95	0.73
Ag13-22-U2-f1	0.26	0.69	0.34	8.34	0.89	32.22	1.10
Ag13-30-U3-f3	0.25	0.26	0.56	9.60	0.80	13.76	0.95
Ag13-31-U3-f8	0.80	0.62	0.36	12.46	0.97	12.32	2.42
Ag13-32-U3-f1	0.93	1.16	0.33	10.68	0.65	0.28	1.94
Ag13-32-U3-f2	0.82	0.81	0.38	10.09	1.20	4.30	1.43
Ag13-32-U3-f3	0.50	0.45	0.38	8.69	1.07	2.61	0.80
Ag13-32-U3-f12	0.35	0.27	0.31	6.12	0.57	6.04	1.29
Ag13-32-U3-f5	0.73	0.77	0.37	10.44	1.00	5.27	3.12
Ag13-33-U3-f4	0.93	0.56	0.33	9.55	0.79	7.47	3.06

Samples	Ta	W	Tl	Pb	Bi	Th	U
Ag13-33-U3-f5	0.62	0.68	0.45	7.10	0.99	7.40	2.78
Ag13-34-U3-f2	1.20	1.06	0.25	17.21	2.65	12.65	4.09
Ag13-34-U3-f1	0.32	0.20	0.50	7.57	0.73	2.69	0.95
Ag13-34-U3-f4	0.54	0.51	0.70	7.55	0.99	10.46	2.61
Ag13-34-U3-f6	0.53	0.25	0.53	7.23	0.98	8.10	1.73
Ag13-34-U3-f7	0.23	0.15	0.36	3.17	0.40	1.19	0.56
Ag13-35-U3-f2	1.08	2.84	0.63	10.95	1.66	6.14	1.70
Ag13-35-U3-f1	0.59	0.39	0.29	10.25	0.95	5.12	1.85
Ag13-39-U3-f6	1.31	0.80	0.56	12.90	1.18	12.17	3.32
Ag13-114-U4-f1	0.45	1.38	1.31	158.93	15.04	2.13	0.77
Ag13-116-U4-f1	0.58	0.71	0.36	11.08	1.63	5.38	0.71
Ag13-116-U4-f2	0.53	1.50	0.44	10.11	2.33	12.67	0.90
Pr32-1-1-f34	0.63	0.72	0.20	12.48	1.42	5.43	2.19
Pr32-1-2-f14	0.78	0.72	0.10	8.72	0.87	6.98	2.37
Pr32-1-3-f135	1.55	1.09	0.18	12.37	0.85	6.88	1.18
Pr32-1-4-f16	0.84	0.81	0.22	28.33	2.53	7.07	1.82
Pr32-1-5-f75	1.07	0.91	0.15	12.37	0.94	9.17	2.72
Pr32-1-6-f4	0.81	0.58	0.19	11.58	1.14	5.18	1.91
Pr32-1-8-f7	0.79	0.46	0.12	7.24	0.91	18.31	1.88
Pr32-1-9-f1	0.94	0.56	0.17	7.51	1.04	6.06	2.23
Pr32-1-10-f2	0.72	0.47	0.17	8.09	1.09	7.17	2.84
Pr32-1-13-f4	0.56	0.47	0.15	13.38	1.09	5.94	2.01
Pr32-1-14-f1	1.02	0.93	0.19	13.90	1.21	9.72	3.31
Pr32-1-15-f20	0.99	1.02	0.16	12.35	1.05	9.44	2.73
Pr32-1-16-1	0.82	0.72	0.16	26.88	2.21	4.44	2.81
Pr32-1-16-f17	1.71	1.13	0.10	21.14	1.49	12.98	3.04
Pr32-1-17-EXT-f2	0.98	0.78	0.13	11.73	1.16	6.59	1.92
Pr32-1-17-f14	0.98	0.86	0.24	14.77	1.37	11.31	2.18
Pr32-1-19-f4	0.60	0.58	0.19	10.66	1.35	4.48	2.22
Pr32-1-20-f2	0.76	0.44	0.07	10.50	0.87	40.15	1.64
Pr32-C35-N9-1	0.84	0.58	0.10	12.75	1.19	7.44	2.58
Pr32-C35-N9-2	0.61	0.46	0.19	10.42	1.36	4.99	1.42
Pr32-C35-N9-3	0.84	0.61	0.20	17.98	1.77	7.20	1.92
Pr32-C35-N9-4	0.83	1.49	0.18	18.70	2.03	5.31	1.05
Pr32-C35-N12-1	0.63	0.52	0.17	8.72	0.69	4.81	1.60
Pr32-C35-N12-2	0.67	0.63	0.12	9.97	1.18	6.80	1.75
Pr32-C35-N12-3	0.78	0.63	0.27	9.54	1.14	7.50	2.07
Pr32-C35-N12-4	0.60	0.75	0.15	16.34	1.51	8.78	1.87
Pr32-C35-N14-1	0.93	0.49	0.19	8.49	0.79	6.84	1.82
Pr32-C35-N14-2	0.62	0.85	0.22	14.95	1.39	5.40	2.46
Pr32-C35-N14-3	0.97	0.74	0.09	13.67	1.23	6.13	1.97
Pr32-C35-N14-4	1.35	2.26	0.17	13.84	1.76	25.87	1.48
Pr32-C35-N17-1	0.64	0.34	0.17	9.73	0.88	4.83	1.56
Pr32-C35-N17-2	0.98	3.51	0.13	10.53	1.64	4.50	1.55
Pr32-C35-N20-1	0.31	0.40	0.26	17.04	1.25	2.80	1.02
Pr32-C35-N20-2	0.48	0.68	0.35	18.00	1.83	6.44	2.35

Samples	Ta	W	Tl	Pb	Bi	Th	U
Pr32-C35-N20-3	0.83	0.54	0.21	7.64	0.95	5.60	1.72
Pr32-C35-N20-4	0.69	0.64	0.12	12.63	1.38	5.42	2.65
Pr32-C35-N20-5	0.42	2.22	0.12	15.41	1.87	4.83	0.73
Pr32-C35-N22-1	0.76	0.74	0.15	13.29	1.31	8.15	1.85
He5-60-f10	0.35	0.36	0.14	20.39	1.63	3.29	1.10
He5-60-f16	0.76	0.79	0.22	14.97	0.97	5.77	3.31
He5-60-f18	0.58	0.43	0.14	17.58	2.05	6.44	0.73
He5-60-f63	0.87	0.71	0.14	9.91	1.06	5.65	2.87
He5-60-f9	0.67	0.73	0.13	11.77	1.10	14.73	1.68
He5-61-f10	1.19	0.63	0.14	25.53	1.35	2.36	1.22
He5-61-f11	1.06	0.70	0.22	13.40	0.94	8.85	2.56
He5-62-f12	1.74	0.89	0.14	20.18	2.67	17.16	2.42
He5-62-f20	0.75	0.55	0.11	7.25	0.92	7.33	1.77
He5-63-f1	1.47	0.67	0.29	25.57	1.99	3.17	2.17
He5-63-f2	0.81	0.87	0.19	12.16	1.35	6.69	2.37
He5-64-f3	0.34	0.54	0.15	20.85	1.32	5.62	0.99
He5-64-f4	0.60	0.75	0.25	38.17	2.09	8.01	1.28
He5-66-f1	0.49	0.53	0.28	10.48	1.03	4.51	1.84
He5-68-f4	0.42	0.81	0.12	8.75	1.05	2.50	0.73
He5-68-f6	1.08	0.70	0.10	8.50	1.02	5.59	0.98
He5-69A-f3	0.75	0.73	0.50	117.14	13.48	13.88	1.16
He5-70-f1	1.85	0.96	0.05	16.56	1.77	7.89	1.06
He5-76-f1	0.23	0.76	0.13	22.88	2.70	2.02	0.88
Pr14-22-1	0.72	3.67	0.21	11.94	1.45	6.14	1.67
Pr14-24-1	0.78	2.10	0.11	13.04	1.61	5.09	1.03
Pr14-25-1	1.21	3.59	0.09	21.53	2.43	10.67	1.93
Lp8-34-2.01-1	0.47	1.86	0.16	10.27	1.67	3.13	1.47
Lp8-38-2.01-2	0.49	0.70	0.43	12.79	1.43	3.11	2.13
Lp8-94-1.45-1	0.45	1.54	0.28	13.83	2.03	2.35	0.80
Lp8-114-1.57-1-1	0.41	0.42	0.13	12.94	1.35	56.45	1.55
Lp8-114-1.57-1-2	0.49	0.41	0.12	14.42	1.42	5.03	1.50
Lp8-120-1.35-1	0.14	0.26	0.31	11.08	1.08	1.29	1.48
Lp8-122-1.35-1	0.30	0.31	0.13	11.34	1.15	1.67	1.91
Lp8-126-1.35-3-1	0.36	0.37	0.10	9.93	1.08	5.14	1.31
Lp8-135-2.01-1	0.49	2.41	0.14	17.41	2.32	2.67	2.91
Lp8-144-1.47-1	0.42	0.40	0.27	10.31	0.98	4.86	1.97
Lp8-150-1.47-4-1	0.40	0.41	0.12	12.29	1.23	6.59	1.74
Lp8-154-1.474-1	0.43	0.38	0.10	9.98	1.02	3.01	1.24
Lp8-167-1.59-2-1	0.39	0.47	0.11	18.39	1.65	1.77	1.36
Lp8-170-1.59-2-1	1.08	1.12	0.28	12.40	1.26	5.46	3.30
Lp8-174-1.59-2-1	0.38	0.37	0.15	13.94	1.50	4.33	1.39
Lp8-176-1.59-2-1	0.76	1.12	0.67	39.32	3.32	86.11	1.05
Lp8-182-1.59-2-1	0.38	0.35	0.10	10.42	0.97	2.59	1.31
Lp134-56-6-f109	0.53	0.61	0.15	7.10	0.53	3.16	1.32
Lp134-71-f98	0.19	0.24	0.03	5.07	0.54	7.04	0.71
Lp134-83-31-f102	0.23	0.21	0.04	11.29	0.89	1.15	0.51

Samples	Ta	W	Tl	Pb	Bi	Th	U
Lp134-140-24-f287	0.28	0.32	0.08	5.44	0.05	0.00	0.63
Lp134-148-156-f241	0.33	0.44	0.16	5.91	0.61	2.28	1.13
Lp134-148-30-f105	0.33	0.24	0.14	9.07	0.76	5.18	0.83
Lp134-150-14-f108	0.22	0.18	0.12	5.51	0.45	126.64	0.63
Lp134-150-150-f103	0.39	0.33	0.07	6.49	0.14	0.00	3.04
Lp134-150-16-f96	1.17	0.71	0.21	7.76	1.29	10.01	4.66
Lp134-151-f110	0.37	0.27	0.09	10.13	1.01	3.60	1.28
Lp134-161-125-f243	0.30	0.36	0.05	5.27	0.82	12.29	0.94
Lp134-161-f91	0.44	0.27	0.05	3.84	0.56	1.40	0.95
Lp134-170-25-f106	0.42	0.38	0.12	11.25	1.25	3.96	1.63
Lp134-195-26-f236	0.26	0.36	0.05	4.15	0.66	1.53	0.65
Lp134-199-19-f92	0.16	0.13	0.03	5.55	0.46	1.20	0.87
Lp134-202-218-f107	0.40	0.28	0.09	4.30	0.81	2.84	1.62
Lp134-208-18-f99	0.30	0.20	0.04	9.49	0.81	2.90	1.04
Lp134-236-f97	0.33	0.42	0.08	6.80	0.54	8.54	0.77
Lp134-241-241-f114	0.13	0.16	0.06	7.67	0.55	203.18	0.73
Lp134-282-27-f95	0.21	0.38	0.05	4.89	0.54	2.10	0.77
Lp134-305-15-f94	0.39	0.30	0.07	10.39	0.82	208.05	0.93
Lp134-318-37-f281	0.96	1.04	0.68	8.65	1.02	6.91	3.08
Sf9-B-60-1	2.70	3.56	0.13	12.91	1.92	8.10	6.85
Sf9-B-61-1	1.07	1.45	0.22	12.70	2.62	106.27	2.36
Sf9-H20-3	0.73	0.92	0.26	9.61	1.14	2.39	1.53
Sf9-H20-6	0.59	0.61	0.27	10.49	1.00	2.77	1.70

Table 10. Quantitative compositional data of pottery clay matrix obtained via TOF-LA-ICP-MS for the elements Ta, W, Tl, Pb, Bi, Th, and U.

Sample	Fe K1, 2	Co K1, 2	Ni K1, 2	Cu K1, 2	Zn K1, 2
Cl1-2-F2	15691.10	254.60	129.90	146.40	101.30
Cl1-2-F3	21755.60	314.60	475.60	115.20	123.40
Cl1-2-F9	22111.53	193.18	332.17	262.52	136.07
Cl1-2-F11	16005.80	165.00	479.00	126.60	148.00
Cl1-2-F13	17727.80	185.20	408.80	406.40	199.40
Cl1-2-f17	28338.60	414.00	479.80	155.40	230.80
Cl1-2-F23	8903.90	94.10	166.50	96.70	117.70
Cl1-2-F29	9925.88	120.13	147.63	97.00	147.13
Cl1-3-F11	23941.60	320.00	333.20	546.80	66.20
Cl1-3-f14	15866.50	156.67	409.00	329.83	154.67
Cl1-3-f18	12874.60	45.20	337.40	115.40	161.20
Cl1-3-f19	25557.40	209.20	266.60	134.80	220.80
Cl1-3-f29	8744.40	87.80	162.20	117.20	161.60
Cl1-3-F46	8628.10	140.30	161.30	133.60	100.00
Cl1-3-f120	21122.00	296.20	478.80	125.80	66.80
Cl1-3-f122	16804.60	198.40	513.40	102.20	166.80
Cl1-3-f124	22240.00	230.20	380.40	385.20	175.20
Cl1-3-F129	8760.40	112.80	173.40	131.60	202.20
Cl1-3-F130	8168.68	113.68	164.35	148.67	82.73
Cl1-3-F133	7966.30	99.60	169.80	142.20	121.20
Cl1-3-f137	17323.75	117.50	297.75	97.50	80.25
Cl1-4-f11	17596.80	127.80	298.40	134.00	166.20
Cl1-4-f15	9119.80	116.60	175.80	160.00	129.00
Cl1-4-F17	14116.20	121.08	352.95	119.70	97.85
Cl1-4-f32	14060.60	170.30	175.40	136.30	181.40
Cl1-4-f35	20000.40	147.40	311.00	130.40	158.40
Cl1-4-F39	33479.25	358.20	268.25	312.80	139.95
Cl1-4-f44	21307.00	259.60	451.40	436.20	209.20
Cl1-4-F47	11414.20	147.55	163.60	126.88	112.90
Cl1-4-F48	19357.40	239.60	466.20	2952.20	65.40
CL1-4-F49	6973.00	98.00	164.00	161.80	104.70
Cl1-4-f50	16519.80	213.60	494.60	119.60	199.80
Cl1-4-f56	17253.80	69.40	340.20	127.40	117.20
Cl1-4-f60	17671.40	100.80	301.60	223.40	112.00
Cl1-4-f62	8734.88	89.38	181.13	166.50	121.38
Cl1-4-f82	16045.80	71.40	297.60	147.60	127.20
Cl1-44-f2	17398.00	54.20	318.80	249.20	138.00

Sample	Fe K1, 2	Co K1, 2	Ni K1, 2	Cu K1, 2	Zn K1, 2
Cl1-44-f8	17570.80	63.60	317.20	126.20	113.80
Cl1-44-f10	23140.40	284.40	519.00	105.40	159.40
Cl1-45-f1	10355.50	118.30	155.30	115.00	144.10
Cl1-45-f2	21735.00	310.20	416.00	161.40	120.20
Cl1-45-f4	22411.60	228.20	381.60	360.60	160.20
Cl1-45-f8	13718.60	166.00	347.80	350.80	75.20
Cl1-45-f10	14857.60	62.20	307.00	92.20	124.20
Cl1-45-f13	22818.60	260.80	318.60	320.00	102.20
Cl1-45-f16	17609.40	217.60	470.00	102.80	93.00
Cl1-45-f36	12297.13	146.75	147.88	120.00	108.25
AG13-2-U1-f1	17556.80	201.80	349.40	386.40	227.60
Ag13-5-U1-f1	23762.00	369.20	312.80	367.40	195.60
Ag13-6-U1-f1	23119.20	302.00	330.20	384.60	289.20
Ag13-6-U1-f2	30454.20	410.00	279.60	376.80	196.00
Ag13-6-U1-f3	23117.80	300.40	396.40	430.00	248.60
Ag13-8-U1-f1	20254.20	230.40	356.00	415.00	293.80
Ag13-8-U1-f2	16124.20	135.00	438.40	289.80	145.20
Ag13-8-U1-f3	15963.60	184.60	252.80	337.40	207.80
Ag13-9-U1-f1	18006.00	229.20	377.60	405.60	333.80
Ag13-22-U2-f1	16634.40	191.00	325.20	305.80	180.60
Ag13-22-U2-f43	6642.00	54.40	180.40	109.40	144.20
Ag13-29-U3-f6	20377.75	98.25	287.00	172.50	470.50
Ag13-29-U3-f14	8935.60	109.00	173.20	93.40	167.60
Ag13-30-U3-f3	11248.40	20.00	304.20	87.60	140.00
Ag13-31-U3-f8	13462.00	86.20	318.80	166.20	384.80
Ag13-32-U3-f1	21812.80	267.80	343.80	343.60	325.20
Ag13-32-U3-f2	26866.60	292.80	278.40	247.50	415.00
Ag13-32-U3-f3	18330.80	190.60	385.40	420.20	374.20
ag13-32-U3-f4	21853.60	123.00	267.20	86.60	267.80
Ag13-32-U3-F5	8945.00	95.50	157.25	126.25	195.50
Ag13-32-U3-f6	20356.80	145.40	292.60	125.40	352.60
Ag13-32-U3-f7	8620.60	97.00	164.40	150.40	242.20
Ag13-32-U3-f53	8138.80	92.40	159.60	124.00	197.00
Ag13-32-U3-f55	11009.00	163.25	192.25	137.00	255.75
Ag13-32-U3-f56	8120.00	83.60	170.00	93.60	167.20
Ag13-32-U3-f57	7512.20	131.60	167.20	147.80	264.40
Ag13-32-U3-f58	5821.80	81.00	178.20	118.60	200.00

Sample	Fe K1, 2	Co K1, 2	Ni K1, 2	Cu K1, 2	Zn K1, 2
Ag13-32-U3-f60	9507.67	127.00	139.33	136.00	118.00
Ag13-32-U3-f61	11666.20	141.00	169.20	130.40	221.20
Ag13-33-U3-f4	18897.60	60.00	321.60	223.80	342.20
Ag13-33-U3-f5	17290.40	91.00	311.60	172.20	230.00
Ag13-33-U3-f10	14337.40	164.00	166.40	147.60	266.20
Ag13-33-U3-f11	9688.20	109.60	144.80	102.20	117.60
Ag13-33-U3-f12	12331.20	143.20	162.00	97.20	233.00
Ag13-34-U3-f1	16326.80	157.00	417.00	368.80	280.80
Ag13-34-U3-f2	21747.40	248.80	321.40	440.00	288.60
Ag13-34-U3-f4	21337.40	95.60	253.20	131.00	236.20
Ag13-34-U3-f6	18956.60	114.00	261.40	201.40	483.80
Ag13-34-U3-f7	14705.00	38.75	288.50	120.75	203.50
Ag13-35-U3-f1	21733.20	261.40	415.80	189.40	259.80
Ag13-35-U3-f2	18438.60	185.80	359.00	325.60	244.20
Ag13-109-U5-f2	16800.00	182.80	115.20	108.80	226.80
Ag13-109-U5-f4	15793.00	58.00	307.80	115.40	209.00
Ag13-110-U4-f2	15597.60	135.40	138.40	105.60	175.20
Ag13-111-U5-f1	11058.40	143.00	161.80	190.00	189.40
Ag13-111-U5-f2	19517.60	199.40	121.20	119.60	142.20
Ag13-113-U4-f2	13274.40	175.20	155.80	164.60	127.00
Ag13-114-U4-f1	26213.20	306.20	386.60	431.00	209.60
Ag13-116-U4-f1	21230.80	229.20	287.20	397.20	261.00
Ag13-116-U4-f2	19193.20	227.20	361.80	446.40	229.40
Pr32-C35-N9-1	28339.80	338.00	374.20	294.00	228.60
Pr32-C35-N9-2	27802.40	369.60	301.60	339.60	209.00
Pr32-C35-N9-3	23207.00	277.00	390.20	387.00	388.80
Pr32-c35-N9-4	26207.80	137.20	254.60	73.20	201.20
Pr32-C35-N12-1	27399.60	355.00	342.20	340.80	216.40
Pr32-c35-N12-2	24684.80	206.60	275.60	103.80	148.20
Pr32-C35-N12-3	20494.40	276.60	345.80	377.00	196.60
Pr32-C35-N12-4	29581.20	477.60	280.80	295.20	164.00
Pr32-C35-N14-1	19861.80	272.80	335.40	305.00	162.20
Pr32-C35-N14-2	29776.20	416.60	313.80	325.00	139.00
pr32-c35-N14-3	27842.60	384.60	358.00	317.80	291.80
Pr32-C35-N14-4	22667.60	257.00	363.40	317.60	226.40
Pr32-C35-N17-1	29535.40	429.60	286.80	326.40	199.00
Pr32-C35-N17-2	26616.00	353.40	328.00	285.20	245.80

Sample	Fe K1, 2	Co K1, 2	Ni K1, 2	Cu K1, 2	Zn K1, 2
Pr32-c35-N20-1	25787.60	133.20	282.00	72.80	211.40
Pr32-C35-N20-2	27563.20	427.00	343.80	348.00	269.40
Pr32-C35-N20-3	26439.40	343.60	347.40	282.60	169.60
Pr32-C35-N20-4	35607.20	527.00	257.60	274.40	255.20
Pr32-C35-N20-5	16080.20	215.00	322.80	303.60	167.80
Pr32-C35-N22-1	28219.60	380.40	313.40	339.40	177.00
Pr32-1-1-f20	14552.80	194.00	143.00	104.80	151.00
Pr32-1-1-f34	26505.40	181.80	255.00	114.40	305.80
Pr32-1-2-f14	21044.40	117.00	310.60	86.40	207.40
Pr32-1-3-F10	16950.80	227.40	135.60	99.40	105.80
Pr32-1-3-F16	12270.20	154.80	158.20	104.20	139.60
Pr32-1-3-F32	16795.80	224.80	149.00	81.60	131.20
Pr32-1-3-f135	15388.00	43.00	297.00	80.20	206.00
Pr32-1-4-f16	26758.40	180.20	288.40	173.60	383.40
Pr32-1-4-f77	11075.60	156.00	135.20	86.40	115.20
Pr32-1-5-f75	18623.00	109.20	260.40	84.00	294.40
Pr32-1-6-f4	26392.00	192.60	235.80	81.80	136.00
Pr32-1-8-f7	22363.40	155.80	283.00	87.00	307.80
Pr32-1-9-f1	23240.20	101.40	270.40	58.40	260.20
Pr32-1-9-2	13356.00	212.60	157.20	100.20	154.00
Pr32-1-10-f2	28996.40	156.20	267.20	87.40	452.60
Pr32-1-13-f4	28035.00	163.00	272.40	94.40	230.40
Pr32-1-14-f1	22325.20	159.00	263.80	105.20	151.20
Pr32-1-15-f20	17416.80	117.00	277.00	89.60	201.60
Pr32-1-15-f29	15932.00	223.80	140.40	80.80	119.80
Pr32-1-15-f52	9914.00	146.80	149.80	108.00	168.80
Pr32-1-16.1	32128.60	460.20	297.40	353.40	344.20
Pr32-1-16-f17	27229.25	187.75	254.25	72.00	398.25
Pr32-1-16-F24	11504.80	130.00	145.40	104.80	121.20
Pr32-1-17-ext-f2	26804.80	223.80	274.00	134.00	199.20
Pr32-1-17-f14	24640.40	205.40	267.00	155.20	318.80
Pr32-1-19-f4	29663.00	244.20	253.60	119.20	185.40
Pr32-1-19-F7	17103.20	254.00	144.80	104.00	117.00
Pr32-1-19-F8	15743.20	218.00	139.40	89.20	171.20
Pr32-1-20-f2	28840.20	250.20	241.60	132.80	241.00
He5-60-F4	9940.60	130.00	177.80	104.40	193.60
He5-60-f9	18046.00	167.60	374.00	284.00	211.60

Sample	Fe K1, 2	Co K1, 2	Ni K1, 2	Cu K1, 2	Zn K1, 2
He5-60-f10	20743.20	136.60	253.00	75.20	173.60
He5-60-f16	20379.20	94.80	265.20	78.60	197.00
He5-60-f18	30258.00	386.40	344.40	344.40	304.60
He5-60-f63	29207.80	217.60	239.60	84.40	192.80
He5-61-f10	21637.20	234.60	392.00	297.80	308.00
He5-61-f11	26694.60	336.20	344.80	358.80	450.40
He5-61-F13	10177.40	125.00	164.80	147.20	204.40
He5-61-f23	20762.40	267.00	345.80	399.00	135.80
He5-61-f27	8726.80	110.00	199.20	120.00	133.20
He5-61-F22	10122.00	137.80	174.80	101.40	142.60
He5-62-f1	14321.80	172.60	339.00	383.40	90.60
He5-62-f2	14234.45	108.78	320.95	263.18	122.25
He5-62-F6	12947.80	180.40	163.00	134.20	182.40
He5-62-f12	25398.60	305.80	380.80	363.00	209.40
He5-62-f20	40352.33	525.17	292.83	326.00	140.50
He5-62-F22	16677.00	244.40	149.80	109.40	163.20
He5-63-f1	20562.00	231.20	381.80	417.60	203.00
He5-63-f2	27858.33	371.50	315.83	291.33	134.83
He5-63-F5	10337.60	152.60	159.00	121.60	233.20
He5-64-F2	16220.60	202.00	153.60	113.80	173.20
He5-64-3	12897.80	179.60	434.00	365.80	160.00
He5-64-f4	25100.60	337.80	383.40	410.60	301.00
He5-64-F5	18432.20	265.00	131.60	130.40	197.60
He5-66-f1	34570.00	527.20	327.00	340.40	217.20
He5-68-f1	18096.20	194.20	338.60	439.40	91.80
He5-68-f4	22668.20	244.20	373.60	346.80	192.60
He5-68-f6	14274.20	140.60	405.20	323.80	113.40
He5-69-F2	12458.00	176.50	166.50	99.75	163.50
He5-69-f3	15194.40	187.60	390.20	335.20	102.00
He5-69-f5	15432.60	226.60	177.80	132.60	136.40
He5-69-f8	18900.60	208.80	399.60	342.60	149.00
He5-69A-f2	15217.40	205.80	163.20	107.00	337.40
He5-69a_f3	19920.00	302.00	352.33	342.00	199.00
He5-70-f1	25671.20	287.00	343.20	303.00	194.20
He5-76-f1	18575.00	231.60	377.20	332.20	126.20
Pr14-22-1	29319.00	356.40	326.60	412.40	135.20
Pr14-24-1	33180.60	439.40	325.00	443.60	149.20

Sample	Fe K1, 2	Co K1, 2	Ni K1, 2	Cu K1, 2	Zn K1, 2
Pr14-25-1	36057.20	473.40	271.40	591.80	148.20
Lp8-34-2.01-1	23416.40	152.20	280.80	100.20	132.80
Lp8-37-2.01-1	35921.50	250.00	225.75	69.25	98.50
Lp8-38-2.01-1	26800.80	169.60	282.40	112.80	317.20
Lp8-38-2.01-2	24516.40	121.80	262.80	109.00	187.20
Lp8-94-1.45-1-1	26919.80	170.20	270.40	143.40	177.60
Lp8-114-1.57-1-1	26064.00	183.80	282.60	99.40	110.60
Lp8-114-1.57-1-2	30022.00	156.00	247.40	90.20	133.60
Lp8-120-135-1.35-1	21321.60	85.80	285.20	79.20	136.00
Lp8-122-1.35-1	25921.60	140.80	254.40	92.00	136.60
Lp8-126-1.35-3-1	22251.20	17.60	250.60	74.60	145.00
Lp8-135-1.47-1	32588.00	151.60	243.80	91.80	165.20
Lp8-144-1.47-1	31481.20	172.00	247.60	97.20	184.80
Lp8-150-1.47-4-1	32293.00	190.60	229.60	83.60	220.00
Lp8-154-1.47-4-1	22308.75	144.00	259.50	81.75	138.75
Lp8-164-1.59-2-1	30352.80	227.40	255.60	79.40	179.60
Lp8-167-1.59-2-1	48370.80	267.40	202.20	130.80	173.60
Lp8-170-1.59-2-1	24410.00	148.60	252.80	88.80	178.00
Lp8-174-1.59-1	18461.80	71.20	299.60	93.20	123.00
Lp8-176-1.59-2-1	21112.80	112.60	295.40	103.00	174.40
Lp8-182-1.59-2-1	19805.25	171.75	276.75	130.25	160.25
Lp134-32-166-f252	9813.00	93.80	161.00	146.40	237.60
Lp134-56-6-f109	17782.80	60.00	280.80	132.00	153.60
Lp134-59-f60	11425.40	148.20	169.80	111.40	105.00
Lp134-71-f98	19072.00	91.20	283.00	173.40	143.80
Lp134-71-162-f251	10264.40	136.00	153.20	146.00	122.60
Lp134-75-f198	6786.60	78.40	183.60	153.60	123.40
Lp134-82-176-f246	18690.00	114.00	292.20	141.00	163.00
Lp134-83-31-f102	18364.60	59.80	287.20	105.20	126.40
Lp134-83-f168	13277.60	55.20	324.60	167.00	177.20
Lp134-90-151-f268	10696.80	138.00	125.20	109.00	92.20
Lp134-90-f2	12304.60	160.40	154.20	107.20	111.80
Lp134-140-24-f287	20570.60	155.20	236.00	96.40	144.80
Lp134-148-30-f105	19264.60	124.80	291.40	100.20	213.60
Lp134-148-156-f241	17232.60	90.60	311.40	129.20	241.20
Lp134-150-f63	13551.60	149.80	156.60	117.20	178.20
Lp134-150-14-f108	17932.80	67.00	273.00	775.40	129.20

Sample	Fe K1, 2	Co K1, 2	Ni K1, 2	Cu K1, 2	Zn K1, 2
Lp134-150-150-f103	26638.40	151.80	251.20	782.80	113.60
Lp134-151-20-f278	20023.80	124.80	284.80	903.60	76.20
Lp134-151-f110	16000.00	81.40	311.40	79.80	131.00
Lp134-151-f165	24110.20	203.20	297.40	175.40	140.00
Lp134-151-178-f247	8091.00	120.60	155.80	121.00	102.00
Lp134-152-f193	11809.80	126.80	148.40	97.00	156.20
Lp134-156-16-f96	26143.00	152.20	266.80	132.60	172.20
Lp134-161-f1	21385.00	169.00	304.00	481.80	142.40
Lp134-161-f91	21385.00	169.00	304.00	481.80	142.40
Lp134-161-125-f243	21432.50	142.50	295.00	208.25	259.25
Lp134-170-25-f106	20891.00	56.40	279.40	100.20	171.60
Lp134-182-35-f89	8032.40	101.80	143.80	85.60	63.80
Lp134-183-131-f250	15819.20	242.20	129.40	124.20	137.80
Lp134-195-26-f236	22195.80	142.40	268.00	896.40	86.00
Lp134-199-19-f92	16413.60	80.00	291.00	210.40	121.40
Lp134-202-218-f107	16409.00	62.80	292.20	179.20	236.60
Lp134-209-f208	7330.40	100.00	164.80	121.40	76.60
Lp134-224-f4	7793.00	97.00	160.00	123.80	72.20
Lp134-225-175-f256	7729.40	91.00	153.00	122.40	71.40
Lp134-228-f161	18046.60	84.60	296.00	133.00	151.40
Lp134-236-f97	18182.80	106.00	291.40	152.60	142.20
Lp134-241-241-f114	12757.20	39.60	296.60	515.00	151.00
Lp134-271-f6	10234.00	101.80	156.80	121.60	74.60
Lp134-282-27-f95	18193.00	89.80	279.00	192.80	115.20
Lp134-293-f101	15863.80	91.60	296.40	156.60	108.20
Lp134-293-f194	9906.80	101.40	150.20	107.40	79.20
Lp134-297-f39	22243.60	116.20	289.80	123.40	134.20
Lp134-297-2-f279	17956.20	113.80	293.80	225.60	88.20
Lp134-305-5-f94	15779.20	85.60	293.20	110.60	118.40
Lp134-312-f61	5240.60	30.80	165.80	113.60	78.40
Lp134-313-f150	15457.40	51.00	328.00	158.80	116.60
Lp134-318-37-f281	18360.60	100.40	268.00	158.00	191.20
Lp134-319-128-f87	12097.00	166.40	140.60	153.60	122.80
Lp134-A35P-36-F88	8865.80	82.60	134.80	101.40	93.80
Sf9_b_60	28961.00	361.20	334.00	347.80	209.80
Sf9_b_61	28077.20	328.60	316.00	354.00	167.00
Sf9-h20-3	32450.00	313.20	227.20	121.40	219.60
Sf9-h20-6	25420.00	229.20	279.20	122.60	225.80

Table 11. Semi-quantitative compositional data obtained via P-XRF for Fe K1, 2; Co K1, 2; Ni K1, 2; Cu K1, 2; and Zn K1, 2

Sample	Ga K1, 2	Ge K1, 2	As K1, 2	Se K1, 2	Br K1, 2
Cl1-2-F2	13.00	45.80	45.80	33.20	119.90
Cl1-2-F3	50.60	1.00	126.60	17.60	214.20
Cl1-2-F9	39.33	42.32	101.87	13.72	162.72
Cl1-2-F11	46.40	9.80	93.60	14.80	215.40
Cl1-2-F13	25.80	5.00	97.60	19.20	230.40
Cl1-2-f17	50.20	3.00	135.20	20.80	228.60
Cl1-2-F23	16.00	31.30	30.30	15.90	115.60
Cl1-2-F29	41.38	33.25	26.00	13.88	100.50
Cl1-3-F11	22.00	6.40	115.00	16.00	274.20
Cl1-3-f14	9.00	7.33	75.17	7.67	33.17
Cl1-3-f18	19.80	82.20	113.80	19.00	132.00
Cl1-3-f19	23.60	71.80	314.20	20.40	96.00
Cl1-3-f29	6.80	11.20	49.00	10.00	220.00
Cl1-3-F46	23.80	33.50	59.50	18.30	112.50
Cl1-3-f120	39.60	1.40	78.00	18.20	215.60
Cl1-3-f122	40.60	5.80	95.00	18.80	155.40
Cl1-3-f124	23.60	8.00	123.40	19.40	259.60
Cl1-3-F129	14.40	57.20	73.80	19.40	220.20
Cl1-3-F130	16.35	37.80	47.22	19.45	72.05
Cl1-3-F133	10.70	47.50	59.40	22.10	72.70
Cl1-3-f137	42.25	83.50	82.25	15.75	128.00
Cl1-4-f11	47.80	80.20	98.00	11.60	110.00
Cl1-4-f15	24.30	34.50	64.20	17.40	134.60
Cl1-4-F17	26.90	42.78	116.35	13.00	247.33
Cl1-4-f32	48.70	44.40	49.00	10.20	134.20
Cl1-4-f35	48.80	63.20	94.80	24.80	98.60
Cl1-4-F39	25.55	52.63	146.58	18.98	587.90
Cl1-4-f44	15.40	6.60	121.20	12.20	384.00
Cl1-4-F47	7.08	37.25	83.60	16.10	109.00
Cl1-4-F48	36.20	5.00	42.40	29.00	246.40
CL1-4-F49	60.30	38.50	58.20	13.30	106.90
Cl1-4-f50	27.60	5.00	90.00	19.00	73.80
Cl1-4-f56	44.40	85.40	158.60	13.60	485.40
Cl1-4-f60	22.60	75.80	181.60	17.40	354.40
Cl1-4-f62	8.50	35.00	129.50	31.13	152.50
Cl1-4-f82	42.00	65.40	229.40	25.00	311.80
Cl1-44-f2	14.20	76.60	250.80	23.40	153.60

Sample	Ga K1, 2	Ge K1, 2	As K1, 2	Se K1, 2	Br K1, 2
Cl1-44-f8	47.80	80.60	111.20	20.20	99.60
Cl1-44-f10	45.80	1.00	85.40	22.60	45.20
Cl1-45-f1	12.00	41.70	57.60	16.50	78.40
Cl1-45-f2	21.20	6.80	68.80	13.60	149.00
Cl1-45-f4	14.20	7.60	88.60	22.20	87.40
Cl1-45-f8	9.20	-100.40	48.20	15.20	104.00
Cl1-45-f10	42.20	92.20	102.80	15.40	104.60
Cl1-45-f13	11.40	2.20	79.40	19.40	145.80
Cl1-45-f16	51.20	5.00	59.80	12.00	176.80
Cl1-45-f36	13.25	28.38	41.63	18.63	114.88
AG13-2-U1-f1	6.80	3.40	42.00	15.20	62.60
Ag13-5-U1-f1	0.40	2.40	35.40	8.00	56.60
Ag13-6-U1-f1	2.20	0.80	32.60	13.60	93.20
Ag13-6-U1-f2	7.40	2.80	28.40	15.20	65.40
Ag13-6-U1-f3	13.60	3.60	47.00	14.00	63.00
Ag13-8-U1-f1	3.80	2.80	55.60	13.80	61.60
Ag13-8-U1-f2	14.40	0.80	44.80	8.80	69.80
Ag13-8-U1-f3	1.80	3.80	15.40	7.20	54.00
Ag13-9-U1-f1	15.20	3.40	30.00	11.40	98.00
Ag13-22-U2-f1	13.60	12.20	9.60	14.80	36.80
Ag13-22-U2-f43	8.40	6.60	6.20	12.20	50.60
Ag13-29-U3-f6	38.00	91.75	110.75	15.00	65.00
Ag13-29-U3-f14	22.80	13.00	9.80	3.00	37.60
Ag13-30-U3-f3	45.40	87.60	53.00	18.60	49.40
Ag13-31-U3-f8	22.80	67.40	63.20	20.60	56.00
Ag13-32-U3-f1	18.20	3.00	40.60	18.40	65.80
Ag13-32-U3-f2	15.20	35.10	47.20	11.70	43.70
Ag13-32-U3-f3	4.20	1.00	32.80	12.80	56.20
ag13-32-U3-f4	26.80	71.40	98.60	16.00	64.40
Ag13-32-U3-F5	7.00	-29.50	12.50	5.50	54.50
Ag13-32-U3-f6	42.00	61.40	80.40	22.40	63.60
Ag13-32-U3-f7	21.00	88.00	43.80	15.40	48.80
Ag13-32-U3-f53	18.60	73.20	29.80	19.60	42.80
Ag13-32-U3-f55	20.50	63.75	34.00	28.50	38.25
Ag13-32-U3-f56	0.40	15.20	9.60	6.00	43.80
Ag13-32-U3-f57	11.20	64.20	36.40	21.40	32.40
Ag13-32-U3-f58	16.80	81.80	31.00	27.00	36.80

Sample	Ga K1, 2	Ge K1, 2	As K1, 2	Se K1, 2	Br K1, 2
Ag13-32-U3-f60	5.00	7.00	12.33	18.33	54.33
Ag13-32-U3-f61	16.60	2.00	11.20	17.20	72.60
Ag13-33-U3-f4	36.60	64.40	73.20	21.20	85.60
Ag13-33-U3-f5	25.60	80.80	98.40	18.20	97.40
Ag13-33-U3-f10	2.80	2.60	16.40	13.80	64.80
Ag13-33-U3-f11	1.80	13.60	25.80	11.80	23.20
Ag13-33-U3-f12	6.60	6.40	19.20	13.80	50.20
Ag13-34-U3-f1	19.20	4.00	36.20	8.40	76.00
Ag13-34-U3-f2	6.60	8.00	44.60	11.60	70.20
Ag13-34-U3-f4	16.60	64.40	66.40	25.40	96.20
Ag13-34-U3-f6	24.20	54.00	76.60	13.80	90.80
Ag13-34-U3-f7	19.75	68.75	55.25	22.25	47.50
Ag13-35-U3-f1	40.00	3.60	38.80	12.20	53.40
Ag13-35-U3-f2	7.00	1.40	11.40	23.00	39.20
Ag13-109-U5-f2	8.60	2.60	11.00	6.80	59.40
Ag13-109-U5-f4	21.20	63.00	83.40	16.40	81.00
Ag13-110-U4-f2	10.60	10.00	2.00	17.00	56.60
Ag13-111-U5-f1	11.40	18.00	33.00	18.00	74.80
Ag13-111-U5-f2	9.80	4.20	12.20	8.60	46.40
Ag13-113-U4-f2	15.80	9.60	26.00	11.40	70.60
Ag13-114-U4-f1	19.60	2.80	40.80	15.60	39.00
Ag13-116-U4-f1	2.60	2.60	36.80	4.80	80.40
Ag13-116-U4-f2	18.80	5.60	7.80	3.00	51.80
Pr32-C35-N9-1	8.80	6.60	89.20	4.80	120.20
Pr32-C35-N9-2	4.00	8.20	84.40	17.60	125.60
Pr32-C35-N9-3	26.40	3.00	89.60	20.60	273.80
Pr32-c35-N9-4	29.00	77.40	91.40	8.00	67.20
Pr32-C35-N12-1	13.20	6.40	40.60	12.00	47.00
Pr32-c35-N12-2	37.80	88.60	117.20	16.60	106.20
Pr32-C35-N12-3	15.20	7.00	69.00	10.80	99.00
Pr32-C35-N12-4	13.20	5.40	76.80	17.00	53.20
Pr32-C35-N14-1	13.00	9.00	31.20	15.60	28.60
Pr32-C35-N14-2	22.00	13.60	90.60	13.80	168.00
pr32-c35-N14-3	35.20	9.60	103.20	14.40	163.00
Pr32-C35-N14-4	10.40	10.80	65.40	6.60	47.40
Pr32-C35-N17-1	14.80	11.20	49.00	9.00	66.00
Pr32-C35-N17-2	22.20	9.20	117.80	14.40	78.60

Sample	Ga K1, 2	Ge K1, 2	As K1, 2	Se K1, 2	Br K1, 2
Pr32-c35-N20-1	27.20	85.60	113.60	19.60	46.40
Pr32-C35-N20-2	8.40	3.40	84.20	9.40	76.80
Pr32-C35-N20-3	9.60	10.60	65.20	6.00	52.60
Pr32-C35-N20-4	34.20	3.80	22.80	15.40	139.00
Pr32-C35-N20-5	9.80	15.60	93.80	5.80	90.00
Pr32-C35-N22-1	14.20	9.00	96.00	10.00	149.00
Pr32-1-1-f20	9.40	4.00	39.60	15.60	87.00
Pr32-1-1-f34	31.60	83.80	153.60	20.60	91.40
Pr32-1-2-f14	24.20	93.00	135.20	11.40	96.60
Pr32-1-3-F10	16.80	6.40	15.80	6.00	84.40
Pr32-1-3-F16	11.00	11.20	39.00	5.60	144.20
Pr32-1-3-F32	13.40	18.60	15.80	11.20	52.20
Pr32-1-3-f135	18.80	92.80	105.40	14.00	100.40
Pr32-1-4-f16	27.20	81.60	144.60	12.20	192.00
Pr32-1-4-f77	4.00	12.00	30.00	8.00	31.80
Pr32-1-5-f75	16.00	62.60	117.00	19.20	36.40
Pr32-1-6-f4	25.00	90.60	125.80	20.60	36.00
Pr32-1-8-f7	31.20	69.00	107.00	6.60	75.20
Pr32-1-9-f1	25.80	75.40	100.20	18.60	110.00
Pr32-1-9-2	12.40	11.00	31.60	3.80	101.80
Pr32-1-10-f2	30.80	83.40	108.60	13.80	61.00
Pr32-1-13-f4	32.20	82.20	133.40	24.00	123.20
Pr32-1-14-f1	21.20	60.00	128.00	16.00	162.60
Pr32-1-15-f20	38.20	68.80	117.40	13.20	128.00
Pr32-1-15-f29	5.80	4.00	21.40	5.80	54.40
Pr32-1-15-f52	7.80	9.40	43.80	5.00	200.40
Pr32-1-16.1	18.20	14.00	67.40	6.20	45.00
Pr32-1-16-f17	52.25	64.00	118.00	12.50	31.75
Pr32-1-16-F24	10.80	17.00	43.80	6.00	70.60
Pr32-1-17-ext-f2	21.00	96.00	160.00	9.00	37.00
Pr32-1-17-f14	21.60	73.60	119.40	18.60	107.00
Pr32-1-19-f4	35.20	83.60	92.40	7.40	149.40
Pr32-1-19-F7	7.20	15.20	31.20	17.40	154.80
Pr32-1-19-F8	6.80	10.80	46.00	9.60	122.20
Pr32-1-20-f2	24.40	75.40	133.20	14.40	123.80
He5-60-F4	20.00	77.80	61.40	21.60	118.40
He5-60-f9	6.20	5.60	16.80	9.80	117.60

Sample	Ga K1, 2	Ge K1, 2	As K1, 2	Se K1, 2	Br K1, 2
He5-60-f10	17.40	83.20	96.00	16.00	60.40
He5-60-f16	27.60	89.40	116.60	23.00	73.20
He5-60-f18	2.60	5.80	42.60	13.20	114.80
He5-60-f63	41.20	92.60	78.40	23.40	50.20
He5-61-f10	8.60	2.20	8.40	19.20	44.20
He5-61-f11	13.40	3.40	61.40	17.20	186.00
He5-61-F13	16.80	61.20	53.20	24.60	118.20
He5-61-f23	16.00	9.80	23.40	13.40	42.00
He5-61-f27	14.00	73.00	56.40	14.80	49.00
He5-61-F22	19.00	61.40	47.20	29.20	34.00
He5-62-f1	0.00	14.20	9.40	12.00	161.00
He5-62-f2	8.53	58.45	61.45	14.45	120.73
He5-62-F6	9.40	51.20	41.40	20.20	81.20
He5-62-f12	15.80	5.00	25.20	15.20	177.60
He5-62-f20	11.17	3.17	30.50	16.00	45.67
He5-62-F22	28.00	81.60	40.60	23.40	60.20
He5-63-f1	7.00	3.80	41.40	10.80	155.40
He5-63-f2	7.83	5.33	46.33	10.00	29.17
He5-63-F5	15.60	70.80	50.40	21.00	53.80
He5-64-F2	27.40	68.40	41.20	27.20	30.20
He5-64-3	0.60	5.80	23.40	6.40	59.80
He5-64-f4	6.60	9.20	41.80	17.00	143.80
He5-64-F5	21.20	68.80	54.60	34.60	61.60
He5-66-f1	0.60	26.80	29.00	11.40	80.00
He5-68-f1	2.20	5.00	37.40	7.60	134.00
He5-68-f4	17.00	6.40	44.80	6.20	81.20
He5-68-f6	8.80	6.40	34.40	13.00	98.60
He5-69-F2	21.50	55.00	45.50	25.25	62.00
He5-69-f3	8.80	2.00	24.60	15.80	104.00
He5-69-f5	15.00	66.20	47.40	25.80	84.80
He5-69-f8	4.60	4.40	33.00	13.20	32.00
He5-69A-f2	26.60	75.20	31.80	28.20	40.20
He5-69a_f3	0.00	3.33	41.67	16.00	108.33
He5-70-f1	12.20	1.00	20.40	9.80	35.00
He5-76-f1	14.40	4.60	28.60	8.40	107.80
Pr14-22-1	6.20	6.80	9.40	7.20	161.80
Pr14-24-1	11.00	9.20	35.20	14.60	164.20

Sample	Ga K1, 2	Ge K1, 2	As K1, 2	Se K1, 2	Br K1, 2
Pr14-25-1	1.20	3.80	36.40	12.80	216.20
Lp8-34-2.01-1	64.40	87.00	56.40	26.00	83.20
Lp8-37-2.01-1	42.75	72.75	42.75	28.25	78.00
Lp8-38-2.01-1	42.40	78.00	87.40	24.80	21.80
Lp8-38-2.01-2	37.80	56.40	53.20	15.00	114.80
Lp8-94-1.45-1-1	51.80	72.20	53.80	16.20	96.20
Lp8-114-1.57-1-1	53.60	79.20	49.40	19.40	34.80
Lp8-114-1.57-1-2	47.40	82.80	68.60	28.20	75.00
Lp8-120-135-1.35-1	42.20	76.60	49.80	25.60	138.80
Lp8-122-1.35-1	64.80	82.00	65.40	26.40	216.60
Lp8-126-1.35-3-1	56.40	82.20	62.80	19.40	216.20
Lp8-135-1.47-1	57.00	73.80	71.60	20.40	286.80
Lp8-144-1.47-1	52.80	82.00	71.40	14.40	100.00
Lp8-150-1.47-4-1	68.80	79.20	74.00	16.00	66.60
Lp8-154-1.47-4-1	39.75	89.75	59.75	18.25	64.50
Lp8-164-1.59-2-1	60.40	79.60	53.00	22.80	89.40
Lp8-167-1.59-2-1	39.40	82.60	101.40	16.80	64.40
Lp8-170-1.59-2-1	61.20	68.20	55.80	5.80	46.80
Lp8-174-1.59-1	65.20	89.80	51.60	18.60	65.20
Lp8-176-1.59-2-1	64.00	78.60	64.00	22.60	52.40
Lp8-182-1.59-2-1	59.00	83.25	55.75	16.25	44.25
Lp134-32-166-f252	11.00	12.00	14.80	8.40	39.00
Lp134-56-6-f109	32.40	73.20	65.20	19.80	16.00
Lp134-59-f60	7.40	9.40	1.00	4.80	42.40
Lp134-71-f98	32.20	66.80	53.80	10.80	52.00
Lp134-71-162-f251	16.60	15.80	5.80	9.40	75.60
Lp134-75-f198	7.40	5.00	5.00	5.80	37.40
Lp134-82-176-f246	36.60	72.60	60.80	21.40	48.40
Lp134-83-31-f102	38.60	72.20	53.60	22.00	60.00
Lp134-83-f168	45.00	103.60	76.60	22.60	95.20
Lp134-90-151-f268	8.60	11.80	8.20	-0.40	43.00
Lp134-90-f2	4.80	2.20	16.60	1.00	64.40
Lp134-140-24-f287	32.00	69.60	54.60	14.80	37.40
Lp134-148-30-f105	46.40	83.40	79.40	20.00	51.80
Lp134-148-156-f241	36.80	56.00	55.80	14.60	93.40
Lp134-150-f63	2.60	6.20	1.80	6.20	150.00
Lp134-150-14-f108	33.40	68.00	66.20	17.00	93.20

Sample	Ga K1, 2	Ge K1, 2	As K1, 2	Se K1, 2	Br K1, 2
Lp134-150-150-f103	20.00	74.80	48.80	17.60	16.60
Lp134-151-20-f278	11.80	82.00	49.80	10.00	61.80
Lp134-151-f110	51.20	69.80	50.20	13.00	28.40
Lp134-151-f165	49.80	77.00	59.20	6.40	61.80
Lp134-151-178-f247	10.00	3.00	0.80	3.40	56.00
Lp134-152-f193	4.20	11.00	13.60	2.60	39.80
Lp134-156-16-f96	37.00	90.00	74.60	23.20	53.20
Lp134-161-f1	45.20	92.60	55.40	13.40	81.20
Lp134-161-f91	45.20	92.60	55.40	13.40	81.20
Lp134-161-125-f243	36.50	83.75	67.75	21.75	34.75
Lp134-170-25-f106	57.40	66.60	62.60	13.80	186.00
Lp134-182-35-f89	8.60	7.80	9.00	2.60	47.80
Lp134-183-131-f250	8.20	10.20	1.00	4.40	37.60
Lp134-195-26-f236	19.80	76.40	52.80	28.80	45.00
Lp134-199-19-f92	35.60	96.80	68.20	16.80	39.20
Lp134-202-218-f107	30.00	81.00	59.20	15.20	71.60
Lp134-209-f208	14.60	5.00	6.80	6.60	49.40
Lp134-224-f4	14.00	11.80	11.40	6.20	55.40
Lp134-225-175-f256	8.00	6.00	8.40	1.60	45.00
Lp134-228-f161	46.60	71.40	52.60	12.00	33.00
Lp134-236-f97	42.60	95.20	61.00	14.20	31.00
Lp134-241-241-f114	23.80	90.00	56.00	16.60	43.40
Lp134-271-f6	13.60	14.20	4.20	4.80	56.20
Lp134-282-27-f95	37.80	98.40	56.00	17.40	27.40
Lp134-293-f101	39.20	85.00	61.60	19.60	58.00
Lp134-293-f194	8.40	6.80	8.80	15.80	58.80
Lp134-297-f39	37.00	82.60	59.20	8.40	73.40
Lp134-297-2-f279	45.40	84.00	66.80	16.00	128.40
Lp134-305-5-f94	48.00	82.60	60.60	11.80	50.20
Lp134-312-f61	9.00	22.80	9.20	6.80	79.80
Lp134-313-f150	40.40	84.80	65.60	17.40	54.40
Lp134-318-37-f281	28.00	88.60	71.60	26.20	43.80
Lp134-319-128-f87	6.60	9.60	14.60	6.80	44.00
Lp134-A35P-36-F88	12.20	14.40	5.20	11.80	49.40
Sf9_b_60	8.80	3.80	19.60	9.00	33.40
Sf9_b_61	9.20	4.80	36.80	22.20	44.40
Sf9-h20-3	42.80	83.00	128.40	12.00	4.60
Sf9-h20-6	43.60	88.20	112.00	19.40	21.40

Table 12. Semi-quantitative compositional data obtained via P-XRF for Ga K1, 2; Ge K1, 2; As K1, 2;Se K1, 2; and Br K1, 2.

Sample	Rb K1, 2	Y K1, 2	Zr K1, 2	Nb K1, 2
Cl1-2-F2	768.40	163.10	3187.60	114.80
Cl1-2-F3	137.80	46.20	1804.40	37.20
Cl1-2-F9	233.27	60.30	1558.77	19.10
Cl1-2-F11	236.60	28.00	2100.00	15.40
Cl1-2-F13	288.40	40.60	2063.80	40.80
Cl1-2-f17	317.00	47.60	2044.60	31.80
Cl1-2-F23	159.70	35.40	1866.80	25.20
Cl1-2-F29	72.76	35.00	1021.50	28.00
Cl1-3-F11	140.40	37.00	1232.80	38.80
Cl1-3-f14	571.50	10.83	1928.33	34.33
Cl1-3-f18	262.20	30.20	2052.20	20.00
Cl1-3-f19	1268.00	251.80	4082.20	120.20
Cl1-3-f29	105.80	43.60	1401.80	18.20
Cl1-3-F46	110.90	47.40	1464.60	37.10
Cl1-3-f120	114.00	57.40	1298.80	37.60
Cl1-3-f122	420.00	29.40	1873.40	18.80
Cl1-3-f124	195.00	58.60	2410.80	19.00
Cl1-3-F129	117.40	47.40	1412.20	19.20
Cl1-3-F130	60.30	18.33	1228.62	9.08
Cl1-3-F133	153.20	39.40	1377.40	40.70
Cl1-3-f137	35.75	50.00	1523.25	6.50
Cl1-4-f11	66.20	52.20	1987.80	39.00
Cl1-4-f15	68.30	11.80	1076.00	20.00
Cl1-4-F17	79.55	43.33	1740.05	31.03
Cl1-4-f32	92.00	52.20	1162.10	28.60
Cl1-4-f35	69.20	51.80	2298.40	48.00
Cl1-4-F39	1029.10	319.05	3972.63	184.08
Cl1-4-f44	118.60	40.00	2858.60	16.60
Cl1-4-F47	111.65	15.03	1495.75	17.20
Cl1-4-F48	78.40	72.00	1982.80	54.60
CL1-4-F49	77.40	28.60	792.90	27.60
Cl1-4-f50	279.40	73.20	2685.20	39.60
Cl1-4-f56	93.80	22.40	1957.60	16.00
Cl1-4-f60	113.80	13.40	2725.40	8.40
Cl1-4-f62	56.75	34.50	1745.50	24.13
Cl1-4-f82	94.80	12.40	1722.60	0.20
Cl1-44-f2	247.40	23.20	2262.00	8.40

Sample	Rb K1, 2	Y K1, 2	Zr K1, 2	Nb K1, 2
Cl1-44-f8	125.00	62.40	3054.60	14.60
Cl1-44-f10	370.60	81.40	2589.00	37.00
Cl1-45-f1	166.30	31.00	879.00	28.50
Cl1-45-f2	302.60	40.20	1957.00	34.00
Cl1-45-f4	316.20	27.60	2197.80	39.00
Cl1-45-f8	198.00	21.20	1755.60	39.60
Cl1-45-f10	206.40	17.60	1661.40	3.80
Cl1-45-f13	114.80	82.00	2013.80	26.40
Cl1-45-f16	103.40	78.40	2089.20	15.20
Cl1-45-f36	109.63	32.25	1094.13	30.88
AG13-2-U1-f1	218.20	94.40	1916.40	20.80
Ag13-5-U1-f1	343.00	159.40	4411.20	138.60
Ag13-6-U1-f1	633.80	177.40	3397.00	167.20
Ag13-6-U1-f2	435.20	187.60	4233.00	146.20
Ag13-6-U1-f3	445.40	380.20	4811.80	241.60
Ag13-8-U1-f1	478.20	348.40	4134.20	192.20
Ag13-8-U1-f2	124.40	78.00	1389.60	25.40
Ag13-8-U1-f3	208.00	209.40	2295.60	128.60
Ag13-9-U1-f1	118.60	82.40	2147.00	43.60
Ag13-22-U2-f1	215.60	41.40	1914.00	21.00
Ag13-22-U2-f43	93.80	19.20	1457.20	26.00
Ag13-29-U3-f6	556.00	189.75	4139.50	171.00
Ag13-29-U3-f14	169.80	39.60	1356.40	18.40
Ag13-30-U3-f3	184.60	38.40	1409.40	10.40
Ag13-31-U3-f8	915.80	54.00	3047.00	92.00
Ag13-32-U3-f1	368.40	306.80	3979.20	147.60
Ag13-32-U3-f2	292.20	243.10	3664.10	108.80
Ag13-32-U3-f3	187.40	59.80	1849.80	15.80
ag13-32-U3-f4	479.80	247.40	4001.00	135.00
Ag13-32-U3-F5	98.25	19.50	1081.00	6.00
Ag13-32-U3-f6	564.40	188.60	4161.00	150.60
Ag13-32-U3-f7	310.20	105.20	2407.60	100.40
Ag13-32-U3-f53	353.00	144.80	1994.60	63.60
Ag13-32-U3-f55	85.50	30.00	1281.50	10.00
Ag13-32-U3-f56	92.40	26.20	1818.40	13.60
Ag13-32-U3-f57	321.20	138.00	1794.20	94.00
Ag13-32-U3-f58	136.20	16.80	1177.80	47.80

Sample	Rb K1, 2	Y K1, 2	Zr K1, 2	Nb K1, 2
Ag13-32-U3-f60	141.33	40.00	1133.67	15.00
Ag13-32-U3-f61	149.00	86.60	1389.00	36.00
Ag13-33-U3-f4	764.00	152.80	2910.60	142.20
Ag13-33-U3-f5	918.00	149.40	3754.20	153.80
Ag13-33-U3-f10	320.20	171.20	2270.80	109.60
Ag13-33-U3-f11	285.80	117.00	1732.80	81.80
Ag13-33-U3-f12	60.80	85.60	1188.40	40.40
Ag13-34-U3-f1	255.60	91.20	2418.40	41.20
Ag13-34-U3-f2	393.60	279.60	4720.40	172.60
Ag13-34-U3-f4	908.80	209.80	3046.00	127.60
Ag13-34-U3-f6	776.20	218.00	3315.60	147.00
Ag13-34-U3-f7	174.25	38.00	1590.75	3.25
Ag13-35-U3-f1	418.40	256.00	4206.20	145.60
Ag13-35-U3-f2	518.00	283.80	3388.60	137.00
Ag13-109-U5-f2	241.00	138.00	2636.60	109.40
Ag13-109-U5-f4	109.00	78.00	2807.60	5.60
Ag13-110-U4-f2	332.00	131.80	2173.80	119.60
Ag13-111-U5-f1	316.80	166.60	2270.20	105.80
Ag13-111-U5-f2	163.40	41.00	1155.20	31.40
Ag13-113-U4-f2	243.40	219.80	2399.00	99.20
Ag13-114-U4-f1	332.60	163.00	2537.80	44.00
Ag13-116-U4-f1	140.80	92.40	1684.00	16.40
Ag13-116-U4-f2	184.80	148.80	2019.00	63.60
Pr32-C35-N9-1	258.60	283.20	4389.20	181.20
Pr32-C35-N9-2	327.40	298.20	3302.60	135.00
Pr32-C35-N9-3	236.60	419.60	4833.20	231.80
Pr32-c35-N9-4	297.40	421.60	3415.60	152.80
Pr32-C35-N12-1	266.60	393.40	3577.40	154.00
Pr32-c35-N12-2	232.40	405.00	3416.40	162.00
Pr32-C35-N12-3	340.00	241.20	3648.60	173.60
Pr32-C35-N12-4	257.80	398.20	3089.00	165.80
Pr32-C35-N14-1	244.80	223.80	2833.60	139.40
Pr32-C35-N14-2	385.40	232.00	6401.80	206.60
pr32-c35-N14-3	181.20	414.00	4212.40	226.40
Pr32-C35-N14-4	260.60	167.80	3741.20	169.00
Pr32-C35-N17-1	350.00	282.80	3553.20	147.40
Pr32-C35-N17-2	211.60	239.20	3554.80	156.00

Sample	**Rb K1, 2**	**Y K1, 2**	**Zr K1, 2**	**Nb K1, 2**
Pr32-c35-N20-1	345.00	394.00	3915.20	134.60
Pr32-C35-N20-2	301.00	268.80	3746.40	133.40
Pr32-C35-N20-3	368.60	445.60	3981.80	144.80
Pr32-C35-N20-4	164.60	397.60	4137.80	159.40
Pr32-C35-N20-5	40.80	74.60	2363.00	56.80
Pr32-C35-N22-1	270.60	360.40	3445.80	139.60
Pr32-1-1-f20	173.20	189.20	1910.60	106.80
Pr32-1-1-f34	370.80	143.20	4289.60	142.00
Pr32-1-2-f14	254.20	277.60	3884.20	120.00
Pr32-1-3-F10	218.60	99.80	1704.80	75.40
Pr32-1-3-F16	171.60	123.60	2403.60	106.40
Pr32-1-3-F32	184.20	163.80	2221.00	117.60
Pr32-1-3-f135	306.60	167.00	3777.40	165.80
Pr32-1-4-f16	365.20	671.80	3058.20	157.80
Pr32-1-4-f77	206.40	70.80	2219.00	59.40
Pr32-1-5-f75	291.20	210.20	3142.60	140.40
Pr32-1-6-f4	183.60	399.20	3226.20	141.00
Pr32-1-8-f7	410.60	173.40	3475.00	138.40
Pr32-1-9-f1	363.00	245.60	3242.40	129.40
Pr32-1-9-2	158.20	173.20	1926.20	94.40
Pr32-1-10-f2	277.00	112.60	3260.80	100.00
Pr32-1-13-f4	260.40	223.60	5432.40	137.40
Pr32-1-14-f1	248.00	218.40	3647.80	172.20
Pr32-1-15-f20	363.60	263.20	3897.20	148.00
Pr32-1-15-f29	225.00	114.00	1913.60	86.80
Pr32-1-15-f52	120.00	92.80	2192.00	113.80
Pr32-1-16.1	186.80	337.00	4502.40	195.60
Pr32-1-16-f17	134.50	376.00	4333.75	185.25
Pr32-1-16-F24	144.20	151.80	1389.80	68.40
Pr32-1-17-ext-f2	188.20	271.60	3743.80	131.40
Pr32-1-17-f14	306.60	132.80	3507.60	151.20
Pr32-1-19-f4	265.40	283.80	3691.80	157.80
Pr32-1-19-F7	206.40	122.20	2047.00	83.20
Pr32-1-19-F8	141.40	135.00	2339.20	71.20
Pr32-1-20-f2	239.60	246.00	3093.60	127.60
He5-60-F4	178.40	181.00	2676.00	118.60
He5-60-f9	310.00	291.20	5188.40	229.40

Sample	**Rb K1, 2**	**Y K1, 2**	**Zr K1, 2**	**Nb K1, 2**
He5-60-f10	366.40	419.20	3339.00	114.20
He5-60-f16	170.40	227.20	3596.20	136.00
He5-60-f18	343.40	355.40	4825.00	234.80
He5-60-f63	178.20	223.60	3786.80	139.40
He5-61-f10	303.20	501.80	7237.20	296.40
He5-61-f11	279.20	274.00	3915.20	178.00
He5-61-F13	181.20	172.80	3166.00	129.80
He5-61-f23	393.60	257.60	4178.00	163.60
He5-61-f27	176.60	138.40	2704.80	143.20
He5-61-F22	239.40	121.80	1958.60	72.40
He5-62-f1	278.20	316.80	4953.20	156.20
He5-62-f2	303.23	334.40	5292.30	190.38
He5-62-F6	142.80	139.00	2210.20	125.60
He5-62-f12	320.20	182.00	4478.00	192.00
He5-62-f20	349.50	505.83	3301.67	164.67
He5-62-F22	138.60	251.80	1596.40	92.40
He5-63-f1	318.40	305.20	5660.80	219.80
He5-63-f2	350.67	370.67	2574.83	132.83
He5-63-F5	159.60	236.60	3673.60	155.20
He5-64-F2	183.00	152.80	2221.00	87.40
He5-64-3	297.00	435.40	4644.40	194.80
He5-64-f4	317.40	361.40	7012.40	219.40
He5-64-F5	161.60	263.20	1775.80	107.00
He5-66-f1	334.00	398.00	4021.00	143.80
He5-68-f1	312.40	424.40	4388.40	169.00
He5-68-f4	78.60	81.80	2411.20	35.00
He5-68-f6	395.40	711.20	4117.20	198.80
He5-69-F2	249.50	93.75	2327.25	79.25
He5-69-f3	346.20	441.60	5570.80	197.60
He5-69-f5	200.40	215.40	1542.80	110.60
He5-69-f8	419.00	437.40	5793.00	201.00
He5-69A-f2	157.80	188.60	2149.20	128.60
He5-69a_f3	288.67	333.67	4594.00	188.67
He5-70-f1	316.60	499.40	5522.20	221.20
He5-76-f1	63.60	172.40	2121.80	56.40
Pr14-22-1	254.80	455.60	3886.00	172.40
Pr14-24-1	309.60	375.00	2748.00	136.80

Sample	Rb K1, 2	Y K1, 2	Zr K1, 2	Nb K1, 2
Pr14-25-1	157.20	634.40	4271.20	180.20
Lp8-34-2.01-1	40.60	136.20	1937.40	23.80
Lp8-37-2.01-1	19.50	99.50	2123.50	35.75
Lp8-38-2.01-1	93.40	192.00	2677.60	65.00
Lp8-38-2.01-2	44.00	184.80	2571.00	57.60
Lp8-94-1.45-1-1	31.80	110.40	2689.00	10.80
Lp8-114-1.57-1-1	38.00	38.20	2261.00	37.20
Lp8-114-1.57-1-2	23.80	92.80	2682.60	22.00
Lp8-120-135-1.35-1	33.00	79.60	2219.20	8.40
Lp8-122-1.35-1	17.20	89.40	1836.80	24.80
Lp8-126-1.35-3-1	14.40	121.20	2164.20	17.20
Lp8-135-1.47-1	31.40	111.80	2695.20	32.00
Lp8-144-1.47-1	28.80	116.80	2183.00	26.60
Lp8-150-1.47-4-1	38.40	135.00	2812.20	49.60
Lp8-154-1.47-4-1	11.75	79.00	2464.25	18.25
Lp8-164-1.59-2-1	41.20	89.80	2073.00	43.20
Lp8-167-1.59-2-1	43.60	181.40	2804.20	67.20
Lp8-170-1.59-2-1	27.40	82.00	3454.00	47.60
Lp8-174-1.59-1	35.60	84.20	3876.80	26.20
Lp8-176-1.59-2-1	37.00	53.20	2721.40	15.40
Lp8-182-1.59-2-1	27.00	62.50	2452.75	27.75
Lp134-32-166-f252	133.80	44.20	1706.20	30.00
Lp134-56-6-f109	337.40	123.60	5064.00	60.00
Lp134-59-f60	92.80	30.60	1286.40	14.20
Lp134-71-f98	188.80	116.40	2082.40	29.40
Lp134-71-162-f251	552.40	205.40	2244.60	105.40
Lp134-75-f198	149.20	51.80	1297.80	25.40
Lp134-82-176-f246	130.60	146.40	3049.00	69.20
Lp134-83-31-f102	119.00	118.20	1850.80	27.20
Lp134-83-f168	261.20	43.40	3110.80	20.40
Lp134-90-151-f268	111.80	59.80	1214.80	27.00
Lp134-90-f2	110.80	147.60	1780.40	56.00
Lp134-140-24-f287	195.40	87.60	2207.40	22.20
Lp134-148-30-f105	319.40	62.20	2585.80	33.00
Lp134-148-156-f241	245.80	91.00	2445.40	35.80
Lp134-150-f63	50.80	83.60	1648.00	65.60
Lp134-150-14-f108	94.80	66.20	3001.80	-4.20

Sample	Rb K1, 2	Y K1, 2	Zr K1, 2	Nb K1, 2
Lp134-150-150-f103	264.80	63.80	2254.80	47.00
Lp134-151-20-f278	187.80	151.60	3648.00	45.40
Lp134-151-f110	207.40	67.60	1977.80	12.80
Lp134-151-f165	240.00	44.60	2617.00	33.00
Lp134-151-178-f247	630.40	153.20	2832.60	134.60
Lp134-152-f193	88.00	62.00	1265.00	42.20
Lp134-156-16-f96	589.80	242.80	4886.80	146.80
Lp134-161-f1	181.40	87.40	2087.40	58.20
Lp134-161-f91	181.40	87.40	2087.40	58.20
Lp134-161-125-f243	370.50	127.25	3237.50	56.50
Lp134-170-25-f106	133.80	149.00	3454.20	24.00
Lp134-182-35-f89	119.40	57.60	1226.80	34.60
Lp134-183-131-f250	404.60	135.20	2183.20	58.40
Lp134-195-26-f236	304.00	121.20	2231.80	40.20
Lp134-199-19-f92	152.60	62.40	1552.20	35.60
Lp134-202-218-f107	293.60	68.20	2175.80	22.60
Lp134-209-f208	124.60	66.60	1292.20	16.20
Lp134-224-f4	112.80	23.60	1343.20	33.00
Lp134-225-175-f256	98.60	93.80	1504.80	34.40
Lp134-228-f161	144.20	109.60	1870.00	26.20
Lp134-236-f97	212.20	118.20	2166.40	27.40
Lp134-241-241-f114	192.40	45.20	1959.60	13.60
Lp134-271-f6	90.60	25.40	1308.20	27.00
Lp134-282-27-f95	198.80	122.80	2011.20	12.00
Lp134-293-f101	177.80	72.80	3734.80	35.20
Lp134-293-f194	111.00	25.80	1078.20	37.60
Lp134-297-f39	187.80	146.00	2673.60	52.60
Lp134-297-2-f279	124.20	120.80	1854.60	29.60
Lp134-305-5-f94	198.20	34.20	3208.20	16.60
Lp134-312-f61	35.40	31.60	1120.80	25.20
Lp134-313-f150	191.00	69.40	1728.80	40.40
Lp134-318-37-f281	1672.40	425.40	4429.00	194.60
Lp134-319-128-f87	182.20	135.40	1689.40	46.20
Lp134-A35P-36-F88	90.00	61.80	1244.00	29.80
Sf9_b_60	637.60	250.60	3793.20	133.00
Sf9_b_61	465.20	289.00	4601.40	171.00
Sf9-h20-3	776.00	368.40	3360.80	127.80
Sf9-h20-6	559.60	345.60	3587.60	160.00

Table 13. Semi-quantitative compositional data obtained via P-XRF, for Rb K1, 2; Y K1, 2; Zr K1, 2; and Nb K1, 2

	Incl%			Litho_Type_Var		
	Incl% (Avr)	Lith % (Avr)	Minr% (Avr)	Plt	Vlc	Sed
Granite	25	12	13	mic-grnit	int-bsc vlc, rhy, tff	
Mxd Igneous	35	11.8	23.3	grnit, int-bsc intrsv, bsc intrsv,	poly-qz, int-bsc vlc, rhy, vlc-chrt, trcyt, weathrd vlc	
Pyrclstcs	28.1	12.9	15.2		rhy, tff, prph-rhy, bsc vlc, dcit, int-bsc vlc	

Table 14. Petrographic data of raw materials: Raw clayey soil inclusion % and lithic type variability.
Abbreviations: Incl, inclusion; Lith, lithic; Minr, mineral; Var, variability; Plt, plutonic; Vlc, volcanic; Sed, sedimentary; Mxd, mixed; Pyrclstcs, pyroclastics; Qz, quartz; Plg, plagioclase; Zn-fd, zoned feldspar; Amph, amphibole; Px, pyroxene; Mg, magnetite; Bt, biotite; Hmt, hematite; Vc-Qz, volcanc quartz; mic, micro; grnit, granite; trcyt, trachyte; rhy, rhyolite; tff, tuff; dcit, dacite; ply-qz, polycrystalline quartz; prph, porphyritic; andst, andesite; chrt, chert; bsc, basic.

Rock grp	Qz		Plg		Zn-fd		Amph		Mg	
	Ab	Sz	Ab	Sz	Ab	Sz	Ab	Sz	Ab	Sz
Granite	≥50	0.05-1							<1	0.15-0.4
Mxd Igneous	≥1 - <50	0.03-1.4	<1 - <5	0.1-0.3			<1 - <5	0.05	<1 - <5	0.05-0.25
Pyroclstcs	≥1 - <50	0.03-1.6	<1- <50	0.1-1.3	<1- <20	0.15-1.2	≥1 - <5	0.08-0.8	≥1 - <5	0.05-0.8

Rock grp	Bt		Hmt		Vc-Qz		Epd	
	Ab	Sz	Ab	Sz	Ab	Sz	Ab	Sz
Granite	≥1 - <5	0.1-0.15						
Mxd Igneous	<1	0.12-0.22	<1 - <5	0.1			<1	0.1-0.3
Pyroclstcs	≥1	0.15-0.2	<1- <20	0.05-0.7	<1	0.1-0.8	<1	0.1-0.2

Table 15. Petrographic data of raw materials: Raw clayey soil petrography by source types and its mineralogical abundance % and size ranges (mm).
Abbreviations: Plt, plutonic; Vlc, volcanic; Sed, Mxd, mixed; Pyrclstcs, pyroclastics; Qz, quartz; Plg, plagioclase; Zn-fd, zoned feldspar; Amph, amphibole; Mg, magnetite; Bt, biotite; Hmt, hematite; Vc-Qz, volcanc quartz;

Rock Type	lithic:mineral (%)		Litho_Type_Var.		
			Plt	Vlc	Sed
Granite					
Mxd Igneous					
Pyrclstcs	60	40		rhy, tff, dcit, ply-qz, prph-andst, rh, prph-int bsc, vlc-chrt, ply-qz	

Table 16. Petrographic data of raw materials: Raw sand sample lithics and mineral ratios and rock fragment type variability
Abbreviations: Var, variability; Plt, plutonic; Vlc, volcanic; Sed, sedimentary; Mxd, mixed; Pyrclstcs, pyroclastics; rhy, rhyolite; tff, tuff; dcit, dacite; ply-qz, polycrystalline quartz; prph, porphyritic; andst, andesite; chrt, chert; bsc, basic.

Petrg grp	Qz		Plg		Zn-fd		Amph		Px	
	Ab	Sz	Ab	Sz	Ab	Sz	Ab	Sz	Ab	Sz
Granite										
Mixed Igneous										
Pyroclstcs	≥1 - <20	0.3-0.5	≥1 - <50	0.2-1.6	≥5 - <50		≥1 - <5	0.05-1.1	≥1 - <5	0.5

Petrg grp	Mg		Bt		Hmt		Vc-Qz	
	Ab	Sz	Ab	Sz	Ab	Sz	Ab	Sz
Granite								
Mixed Igneous								
Pyroclstcs	<1 - <5	0.05-0.8	<1	0.3	≥1 - <5	0.2-1.6	≥1 - <5	0.5-1.7

Table 17. Petrographic data of raw materials: Raw sand inclusions abundance % and size ranges (mm).
Abbreviations: Qz, quartz; Plg, plagioclase; Zn-fd, zoned feldspar; Amph, amphibole; Px, pyroxene; Mg, magnetite; Bt, biotite; Hmt, hematite; Vc-Qz, volcanc quartz.

	Petrography			Total
	Type 1	Type 2	Type 3	
Cl1	0	0	20	20
Lp134	0	1 (I)	19 (M), 4 (I)	24
Ag13	0	9	9	18
Lp8	0	0	20	20
Pr32	0	20	1	21
He5	14	5	2	21
Pr14	0	3	0	3
Sf9	0	2	0	2
Total	14	40	75	129

	LA-ICP-MS			Total
	Type 1	Type 2	Type 3	
Cl1	0	0	23	23
Lp134	1	15 (M), 1 (I)	0	17
Ag13	10	0	13	23
Lp8	0	9	3	12
Pr32	37	0	0	37
He5	14	1	0	15
Pr14	1	0	0	1
Sf9	4	0	0	4
Total	67	26	39	132

	P-XRF		Total
	Type 1	Type 2	
Cl1	30	2	32
Lp134	33 (M), 8 (I)	5 (M), 4 (I)	50
Ag13	14	27	41
Lp8	20	0	20
Pr32	2	44	46
He5	1	32	33
Pr14	0	3	3
Sf9	0	5	5
Total	108	122	230

Table 18. Sherds that were assigned to Azuero and Cordillera from petrography, LA-ICP-MS, and P-XRF.
M is Monagrillo and I is Incised and Appliqué.

	Azuero	Cordillera	Mixed	Total
Cl1	0	14 (+4?)	0	14
Lp134	1	12	2	15
Ag13	9 (+1?)	6	4 (+1?)	19
Lp8	0	17	0	17
Pr32	20	0	1	21
He5	14	2	0	16
Pr14	3	0	0	3
Sf9	2	0	0	2
Total	49	51	7	107

Table 19. Sourcing results from samples analyzed using petrography and geochemical methods LA-ICP-MS, and P-XRF.
The sourcing results from samples that were analyzed using all three methods: petrography, LA-ICP-MS, and P-XRF. If petrographic and a geochemical method had a compatible results and another chemical method suggested unassigned, the sample was classified to the provenance of the former. Lp134 only includes samples assigned to the Monagrillo period. 'B' is the sourcing results from the combination of petrographic and one geochemical method, TOF-LA-ICP-MS or P-XRF.

	Azuero	Cordillera	Mixed	Total
Cl1	0	16 (+5?)	0	16
Lp134	2	21	2	25
Ag13	9(+1?)	6	4 (+1?)	19
Lp8	0	20	0	20
Pr32	20	0	1	21
He5	18	2	0	20
Pr14	3	0	0	3
Sf9	2	0	0	2
Total	54	65	6	125

Table 20. Sourcing results from samples analyzed using a combination of petrographic and one geochemical method, TOF-LA-ICP-MS or P-XRF.
The sourcing results from the combination of petrographic and one geochemical method, TOF-LA-ICP-MS or P-XRF.

Appendix A.1. Raw material collection locations, raw material types, and clay property test results

When plasticity test and shrinkage tests were conducted, they are checked as X. Good results from the clay property tests, based on plasticity and shrinkage tests, are checked as X.

Date	X	Y	Height	Collection ID	Raw Material/ Lithotype	Unit name	Description
Jul/08/09	522323	856334	746	1-1	Clay	Loma Montuoso_Fm	
Jul/08/09	525165	856372	670	1-3	Clay	Loma Montuoso_Fm	
Jul/08/09	528091	856755	344	1-5	Clay	Loma Montuoso_Fm	
Jul/08/09	540214	846733	135	1-6	Clay	Playa Venado_Fm	
Jul/09/09	560104	886152	24	1-8	Clay	Pesé_Fm	
Jul/09/09	562157	886497	21	1-9	Clay	Pesé_Fm	
Jul/09/09	565247	875887	30	1-10	Clay	Tonosí_Fm	
Jul/09/09	563560	877871	37	1-11	Clay	Pesé_Fm	
Jul/09/09	551319	870138	44	1-12	Clay	Ocú_Fm	
Jul/09/09	550691	871958		1-13	Clay	Pesé_Fm	
Jul/09/09	553116	867559	38	1-14	Clay	Ocú_Fm	
Jul/10/09	537849	867885	41	1-15	Clay	Pesé_Fm	
Jul/10/09	558652	880024	49	1-16	Clay	Valle Riquito_Fm	
Jul/10/09	558786	881083	63	1-17	Clay	Valle Riquito_Fm	
Jul/10/09	N/A	N/A		1-18-1	Clay	N/A	
Jul/10/09	N/A	N/A		1-18-2	Clay	N/A	
Jul/10/09	552309	882804	62	1-19	Clay	Valle Riquito_Fm	
Jul/10/09	539680	878587	47	1-20	Clay	Cañazas_Fm	
Jul/10/09	556489	879318	38	1-21	Clay	Pesé_Fm	
Jul/10/09	556505	884000	27	1-22	Clay	Pesé_Fm	
Oct/09/09	556687	885490	28	2-1	Clay	Pesé_Fm	
Oct/09/09	556624	885509	30	2-2	Clay	Pesé_Fm	
Oct/09/09	556674	885739	25	2-5	Clay	Pesé_Fm	
Oct/10/09	551864	896852	19	2-6	Clay	RíoHato_Fm	
Oct/10/09	553462	891916	17	2-7	Clay	RíoHato_Fm	
Oct/10/09	558797	885452	31	2-11	Clay	Pesé_Fm	
Oct/10/09	547628	882694	55	2-12/020176	Clay	Valle Riquito_Fm	
Oct/11/09	550794	884538	79	2-16	weathered agglomerate	Pesé_Fm	
Jan/12/10	N/A	N/A		3-1	coarse rock		
Jan/12/10	511425	835237	86	3-2	schistic clay	Lovaina_Fm/ Playa Venado	
Jan/12/10	511425	835237		3-3	schistic clay	Lovaina_Fm/ Playa Venado	
				3-3'			
Jan/12/10	511218	835119		3-4	Sand	Lovaina_Fm	
Jan/12/10	511125	835108		3-5	Sand	Lovaina_Fm	

Date	X	Y	Height	Collection ID	Raw Material/ Lithotype	Unit name	Description
Jan/12/10	510929	835238		3-6	schistic clay	Lovaina_Fm/ Playa Venado	
Jan/12/10	510363	835079	53	3-7	metasedimentary coarse rock	Lovaina_Fm/ Playa Venado	
Jan/12/10	505224	835915		3-8	basaltic top soil	Playa Venado_Fm/Tonosí_Fm	
Jan/13/10	519564	872929	208	3-9	dacitic tuff bedrock clay	Playa Venado_Fm/Tonosí_Fm	
Jan/13/10	525085	890586		3-10	Gabbro	Pesé_Fm	
Jan/13/10	525085	890586		3-11	weathered gabbro clay	Pesé_Fm	
Jan/13/10	519680	884242		3-12	hydrothermally altered gabbro	Valle Riquito_Fm	
May/28/09	561233	885405	25	3-13	Clay	Pesé_Fm	
May/28/09	561232	885407		3-14	Clay	Pesé_Fm	
May/28/09	561232	885404		3-15	Clay	Pesé_Fm	
Aug/2006	560428	885241		HE5-DO-1	Clay	Pesé_Fm	
Aug/2006	560440	885231	26	HE5-DO-2	Clay	Pesé_Fm	
Aug/2006	561223	885678	15	HE5-SH-1	Clay	Pesé_Fm	
Mar/27/10	501521	917300		4-1	Clay	Cañazas_Fm	Carabalí
Mar/27/10	501378	917500	264	4-2	Clay	Cañazas_Fm	Carabalí
Mar/27/10	501586	917227		4-3	Clay	Cañazas_Fm	Carabalí
Mar/27/10	502045	917023		4-4	Clay	Cañazas_Fm	Carabalí
Mar/27/10	502069	917090		4-5	Clay	Cañazas_Fm	Carabalí
Mar/27/10	502186	917319	264	4-6	Clay	Cañazas_Fm	Carabalí
Mar/27/10	502186	917319	264	4-7?	Sand	Cañazas_Fm	
April/03/10	539441	904727		6-1	Clay	RíoHato_Fm	Aguadulce
April/03/10	539441	904727		6-2	Sand	RíoHato_Fm	
				6-3			
April/04/10	526779	925653		7-1	felsic volcanic rock	Cañazas_Fm	
April/04/10	527023	925662	291	7-2	sand felsic volcanic rock-derived sand	Cañazas _Fm	
April/04/10	527106	925539		7-3	Sand	Cañazas _Fm	
April/04/10	527052	925133		7-4	Clay	Cañazas _Fm	Corona
April/04/10	526352	925062	171	7-5	Clay	Cañazas _Fm	Corona

Date	X	Y	Height	Collection ID	Raw Material/ Lithotype	Unit name	Description
April/04/10	528177	926196	188	7-6	Clay	Cañazas _Fm	Corona
				7-9			Corona
April/09/10	538420	895863	24	8-1	Clay	RíoHato _Fm	La Arena potter
April/09/10	538423	895878	25	8-2	Clay	RíoHato _Fm	La Arena potter
April/09/10	550705	886134	82	9-1	Clay	Pesé _Fm	La Arena potter
April/09/10	550705	886212	68	9-3	Clay	Pesé _Fm	La Arena potter
				9-4	Rock		
April/12/09	517967	923041	250	10-2	Clay	Cañazas _Fm	Yeguada
				10-6	Rock		
April/12/09	507250	941142	767	10-7	volcanic ash-based clay or intense weathering of a rock	La Yeguada _Fm	Yeguada
				10-7'			Yeguada
April/12/09	507507	941212	729	10-9	Clay	La Yeguada _Fm	Vaca de Monte
April/12/09	507507	941212	729	10-10	Clay	La Yeguada _Fm	Vaca de Monte
				10-11			
April/13/09	509163	941716	550	10-12	Clay	Viejo _Fm	El Bajo Chitra
April/??/09	509175	939005	620	10-13	Clay	La Yeguada _Fm	El Bajo Chitra
April/??/09	509175	939005	620	10-14	Clay	La Yeguada _Fm	El Bajo Chitra
April/??/09	510019	938941	596	10-15	Clay	La Yeguada _Fm	El Bajo Chitra
April/??/09	510027	938857	557	10-16	Clay	La Yeguada _Fm	
April/??/09	505782	942357	633	10-17	Clay	Cañazas _Fm	
April/??/09	509900	938996	609	10-18	Clay	La Yeguada _Fm	
April/??/09	507507	941212	729	10-19	Rock	La Yeguada _Fm	
April/??/09	510069	938827	554	10-20	Sand	La Yeguada _Fm	
April/03/2010	558165	945897		5-1	Clay	Cañazas _Fm	Cebollal
April/03/2010	558289	945881		5-2	Clay	Cañazas _Fm	Cebollal
April/03/2010	558358	946002		5-3	Clay	Cañazas _Fm	Cebollal
April/03/2010	558268	945973		5-4	Rock	Cañazas _Fm	
April/03/2010	558268	945973		5-5	Rock	Cañazas _Fm	

Date	X	Y	Height	Collection ID	Raw Material/ Lithotype	Unit name	Description
April/03/2010	558321	946015		5-6	Rock	Cañazas _Fm	
Aug/2006	556637	940582	316	CL1-B-1	Clay	RíoHato _Fm	Ladrones
Aug/2006	556649	940591	293	CL1-B-2	Clay	RíoHato _Fm	Ladrones
Aug/2006	556622	940575	354	CL1-B-3	Clay	RíoHato _Fm	Ladrones
Aug/2006	556589	940560	381	CL1-B-4	Clay	RíoHato _Fm	Ladrones
Aug/2006	556629	940570		CL1-B-5	Clay	RíoHato _Fm	Ladrones
Aug/2006	556629	940570		CL1-B-6	Clay	RíoHato _Fm	Ladrones
Aug/2006	556653	940660	292	CL1-B-7	Clay	RíoHato _Fm	Ladrones
Aug/2006	556656	940585	297	CL1-B-8	Clay	RíoHato _Fm	
Aug/2006	555934	940901	328	CL1-TP-1	Clay	Cañazas _Fm	Ladrones
Aug/2006	555653	940774	296	CL1-TP-2	Clay	Cañazas_Fm	Ladrones
Aug/2006	555285	940940	268	CL1-TP-3	Clay	Cañazas_Fm	Ladrones
Aug/2006	554460	940942	213	CL1-TP-4	Clay	Cañazas_Fm	Ladrones
6/20/11	593225	952110		EV-1	Clay	ElValle_Fm	
6/20/11	593225	952113	875	EV-2	Clay	ElValle_Fm	
6/20/11	593220	952163	860	EV-3	Clay	ElValle_Fm	
6/20/11	593284	952388	854	EV-4	Clay	ElValle_Fm	
6/20/11	593361	952406	829	EV-5	Clay	ElValle_Fm	
6/20/11	593424	952398	823	EV-6	Clay	ElValle_Fm	
6/20/11	593454	952315	814	EV-7	Clay	ElValle_Fm	
6/20/11	593543	952226	752	EV-8	Clay	ElValle_Fm	
6/21/11	593340	951885	900	EV-9	Clay	ElValle_Fm	
6/21/11	593093	951085	882	EV-10	Rock	ElValle_Fm	
6/21/11	593167	951376	861	EV-11	Rock	ElValle_Fm	
6/21/11	593139	951500	902	EV-12-1	Rock	ElValle_Fm	
6/21/11	593140	951511	902	EV-12-2	Clay	ElValle_Fm	
6/21/11	592480	951988	901	EV-13	Rock	ElValle_Fm	
6/21/11	593253	952378	868	EV-14	Clay	ElValle_Fm	
6/22/11	597498	955393	708	EV-15	pyroclastic sand on cerro wall	ElValle_Fm	
6/22/11	597782	955661	705	EV-16	sand, stream	ElValle_Fm	
6/22/11	597782	955661	705	EV-17	Clay	ElValle_Fm	
6/22/11	597916	955881	670	EV-18	Clay	ElValle_Fm	
6/22/11	597295	958849	596	EV-19	Clay	ElValle_Fm	
6/22/11	597445	959038	619	EV-20	Clay	ElValle_Fm	

Date	X	Y	Height	Collection ID	Raw Material/ Lithotype	Unit name	Description
6/22/11	597751	959795	576	EV-21	Sand	Tucué_Fm	
6/22/11	596881	954329	862	EV-22	Sand	ElValle_Fm	
6/22/11	594990	953731	710	EV-23	Sand	ElValle_Fm	
6/23/11	596826	952592	775	EV-24-1	Rock	ElValle_Fm	
6/23/11	596826	952592	775	EV-24-2	Rock	ElValle_Fm	
6/23/11	607493	942470	230	Jaime Coronado/ Llano Bonito	Clay	ElValle_Fm	
7/2/11	607493	942470	230	Munhoz-1	Clay	ElValle_Fm	
7/2/11	607376	942574	237	Munhoz-2	Clay	ElValle_Fm	
7/2/11	607316	942564	232	Munhoz-3	Clay	ElValle_Fm	
7/3/11	592893	949460	748	AC-1	porphyritic tuff	ElValle_Fm	
7/3/11	592893	949460	748	AC-2	Sand	ElValle_Fm	
7/3/11	593421	946762	588	Cabu-J	Clay	RíoHato_Fm	
7/3/11	592945	946857	541	Cabu-1	Clay	RíoHato_Fm	
7/3/11	592945	946857	541	Cabu-2	Clay	RíoHato_Fm	
7/3/11	594157	948307	716	Cabu-3	Clay	ElValle_Fm	
7/3/11	591064	949499	585	Estan-1	Clay	ElValle_Fm	
7/3/11	591054	949490		Estan-2	Clay	ElValle_Fm	
				Sofu-1			
7/3/11	586510	954992	340	La Mina-1	Rock	RíoHato_Fm	
7/3/11	586465	949980		La Mina-2	Clay	RíoHato_Fm	
6/25/10	565827	941779	89	Quiros	Clay	RíoHato_Fm	Silencio, Penonomé
6/25/10	553093	941979	78	Dalia-1	Clay	Cañazas_Fm	Potrero
6/25/10	553106	941959	80	Dalia-2	Clay	Cañazas_Fm	Potrero
7/3/07	502044	917094	272	Cbli-1	Clay	Cañazas_Fm	Carabalí
June/24/2010	554876	927742	55	#13-1	Clay	RíoHato_Fm	El Caño
June/24/2010	554914	927743	38	#13-2	Clay	RíoHato_Fm	El Caño
Jun3/25/2010	556443	940509		#14-1	Clay	RíoHato_Fm	Ladrones
Jun3/25/2010	556425	940485	362	#14-2	extrusive rock	RíoHato_Fm	
Jun3/25/2010	556384	940489	374	#14-3	Clay	RíoHato_Fm	Ladrones
Jun3/25/2010	556285	940476	388	#14-4	Clay	RíoHato_Fm	Ladrones
Jun3/25/2010	556183	940577	366	#14-5	Clay	RíoHato_Fm	Ladrones
Jun3/25/2010	556127	940652	348	#14-6	Clay	RíoHato_Fm	Ladrones

Date	X	Y	Height	Collection ID	Raw Material/ Lithotype	Unit name	Description
Jun3/25/2010	556117	940666	347	#14-7	Rock	RíoHato_Fm	
Jun3/25/2010	556034	940689	339	#14-8	Clay	Cañazas_Fm	Ladrones
Jun3/25/2010	556031	940684	346	#14-9	Rock	Cañazas_Fm	
Jun3/25/2010	556028	940803	325	#14-10	Clay	Cañazas_Fm	Ladrones
Jun3/25/2010	555926	940889	310	#14-11	Rock	Cañazas_Fm	
Jun3/25/2010	555842	940875	288	#14-12	Sand	Cañazas_Fm	
Jun3/25/2010	555819	940864	290	#14-13	Clay	Cañazas_Fm	Ladrones
Jun3/25/2010	555819	940864	290	#14-14	Clay	Cañazas_Fm	
Jun3/25/2010	555703	940865	293	#14-15	Clay	Cañazas_Fm	Ladrones
Jun3/25/2010	555322	940722	267	#14-16	Clay	Cañazas_Fm	Ladrones
Jun3/25/2010	554887	940716	223	#14-17	Clay	Cañazas_Fm	Ladrones
Jun3/25/2010	554276	941274	137	#14-18	Clay	Cañazas_Fm	
				#4-19			Ladrones
July/11/2010	542160	966905	103	Limon 1	Clay	Tocúe_Fm	Limón
July/12/2010	542566	967001	102	Limon 5	Sand	Tocúe_Fm	
July/12/2010	542229	967049	98	Limon 6	Clay	Tocúe_Fm	Limón
July/12/2010	542244	966436	193	LP8-2	Clay	Tocúe_Fm	Calaveras
							Calaveras
July/12/2010	542217	966430	232	LP8-4	Clay	Tocúe_Fm	Calaveras
July/12/2010	542175	966268	201	LP8-5	Clay	Tocúe_Fm	Calaveras
July/12/2010	542310	966562	221	LP8-6	Clay	Tocúe_Fm	Calaveras
July/12/2010	542456	966782	156	LP8-7	Clay	Tocúe_Fm	Calaveras
July/12/2010	542502	966917	113	LP8-8	Clay	Tocúe_Fm	Calaveras
July/12/2010	542183	966857	103	Limon 8	Clay	Tocúe_Fm	
July/12/2010	542018	967658		Escuela Villa	Clay	Tocúe_Fm	Escuela Villa
July/12/2010	541547	967944	44	San Juan 1	Clay	Tocúe_Fm	San Juan
July/12/2010	541142	968573	84	San Juan 2	Rhyolite	Tocúe_Fm	
July/12/2010	540944	968589	75	San Juan 3	Sand	Tocúe_Fm	
				San Juan 4	Clay	Tocúe_Fm	San Juan
July/12/2010	540920	968589	75	San Juan 5	Sand	Tocúe_Fm	

Collection ID	X	Y	Bedrock (clayey soil)	Top to sub-surface (clayey soil)	Away from rivers (rock/sand)	Outcrop (rock)
1-1	522323	856334				
1-3	525165	856372	X			
1-5	528091	856755				
1-6	540214	846733				
1-8	560104	886152				
1-9	562157	886497				
1-10	565247	875887		X		
1-11	563560	877871		X		
1-12	551319	870138				
1-13	550691	871958		X		
1-14	553116	867559		X		
1-15	537849	867885	X			
1-16	558652	880024		X		
1-17	558786	881083		X		
1-18-1	N/A	N/A				
1-18-2	N/A	N/A				
1-19	552309	882804		X		
1-20	539680	878587				
1-21	556489	879318	X			
1-22	556505	884000		X		
2-1	556687	885490		X		
2-2	556624	885509		X		
2-5	556674	885739				
2-6	551864	896852		X		
2-7	553462	891916		X		
2-11	558797	885452		X		
2-12/020176	547628	882694	X			
2-16	550794	884538		X		
3-1	N/A	N/A			X	
3-2	511425	835237				
3-3	511425	835237				
3-3'						
3-4	511218	835119				
3-5	511125	835108				
3-6	510929	835238				
3-7	510363	835079			X	X
3-8	505224	835915		X		
3-9	519564	872929	X			
3-10	525085	890586			X	X
3-11	525085	890586	X			

Collection ID	X	Y	Bedrock (clayey soil)	Top to sub-surface (clayey soil)	Away from rivers (rock/sand)	Outcrop (rock)
3-12	519680	884242			X	X
3-13	561233	885405		X (SUBSURFACE)		
3-14	561232	885407		X (SUBSURFACE)		
3-15	561232	885404		X (SUBSURFACE)		
HE5-DO-1	560428	885241		X		
HE5-DO-2	560440	885231		X		
HE5-SH-1	561223	885678				
4-1	501521	917300		X		
4-2	501378	917500		X		
4-3	501586	917227		X		
4-4	502045	917023		X		
4-5	502069	917090		X		
4-6	502186	917319				
4-7?	502186	917319				
6-1	539441	904727				
6-2	539441	904727				
6-3					X	
7-1	526779	925653			X	
7-2	527023	925662				X
7-3	527106	925539				
7-4	527052	925133				
7-5	526352	925062		X		
7-6	528177	926196		X		
7-9						
8-1	538420	895863		X		
8-2	538423	895878		X		
9-1	550705	886134	X			
9-3	550705	886212	X (POSSIBLE)			
9-4					X	X

Collection ID	X	Y	Bedrock (clayey soil)	Top to sub-surface (clayey soil)	Away from rivers (rock/sand)	Outcrop (rock)
10-2	517967	923041		X		
10-6					X	
10-7	507250	941142	X (POSSIBLE)	X (POSSIBLE)		
10-7’			X (POSSIBLE)	X (POSSIBLE)		
10-9	507507	941212				
10-10	507507	941212				
10-11					X	
10-12	509163	941716				
10-13	509175	939005		X		
10-14	509175	939005		X		
10-15	510019	938941		X		
10-16	510027	938857		X		
10-17	505782	942357				
10-18	509900	938996		X		
10-19	507507	941212			X	
10-20	510069	938827			X	
5-1	558165	945897				
5-2	558289	945881				
5-3	558358	946002		X		
5-4	558268	945973			X	X
5-5	558268	945973			X	X
5-6	558321	946015			X	X
CL1-B-1	556637	940582				
CL1-B-2	556649	940591				
CL1-B-3	556622	940575				
CL1-B-4	556589	940560				
CL1-B-5	556629	940570				
CL1-B-6	556629	940570				
CL1-B-7	556653	940660				
CL1-B-8	556656	940585				
CL1-TP-1	555934	940901				
CL1-TP-2	555653	940774		X		
CL1-TP-3	555285	940940		X		
CL1-TP-4	554460	940942		X		
EV-1	593225	952110		X		
EV-2	593225	952113		X		
EV-3	593220	952163		X		
EV-4	593284	952388		X		

Collection ID	X	Y	Bedrock (clayey soil)	Top to sub-surface (clayey soil)	Away from rivers (rock/sand)	Outcrop (rock)
EV-5	593361	952406		X		
EV-6	593424	952398		X		
EV-7	593454	952315		X		
EV-8	593543	952226		X		
EV-9	593340	951885		X		
EV-10	593093	951085			X	X
EV-11	593167	951376				
EV-12-1	593139	951500			X	X
EV-12-2	593140	951511		X		
EV-13	592480	951988			X	X
EV-14	593253	952378				
EV-15	597498	955393			X	X
EV-16	597782	955661				X
EV-17	597782	955661				
EV-18	597916	955881		X		
EV-19	597295	958849		X		
EV-20	597445	959038		X		
EV-21	597751	959795				
EV-22	596881	954329			X	
EV-23	594990	953731				
EV-24-1	596826	952592			X	X
EV-24-2	596826	952592			X	X
Jaime Coronado/Llano Bonito	607493	942470		X		
Muñoz-1	607493	942470		X		
Muñoz-2	607376	942574		X		
Muñoz-3	607316	942564		X		
AC-1	592893	949460				
AC-2	592893	949460				
Cabu-J	593421	946762		X		
Cabu-1	592945	946857		X		
Cabu-2	592945	946857		X		
Cabu-3	594157	948307		X		
Estan-1	591064	949499	X			
Estan-2	591054	949490	X			
Sofu-1						
La Mina-1	586510	954992				
La Mina-2	586465	949980		X		
Quiros	565827	941779		X		
Dalia-1	553093	941979		X		
Dalia-2	553106	941959	X			
Cbli-1	502044	917094		X		
#13-1	554876	927742		X		
#13-2	554914	927743				

Collection ID	X	Y	Bedrock (clayey soil)	Top to sub-surface (clayey soil)	Away from rivers (rock/sand)	Outcrop (rock)
#14-1	556443	940509		X		
#14-2	556425	940485				
#14-3	556384	940489		X		
#14-4	556285	940476		X		
#14-5	556183	940577		X		
#14-6	556127	940652		X		
#14-7	556117	940666				
#14-8	556034	940689		X		
#14-9	556031	940684				
#14-10	556028	940803				
#14-11	555926	940889				
#14-12	555842	940875				
#14-13	555819	940864				
#14-14	555819	940864				
#14-15	555703	940865		X		
#14-16	555322	940722		X		
#14-17	554887	940716		X		
#14-18	554276	941274				
#14-19				X		
Limon 1	542160	966905		X		
Limon 5	542566	967001				
Limon 6	542229	967049				
Lp8-2	542244	966436		X		
Lp8-4	542217	966430		X		
Lp8-5	542175	966268		X		
Lp8-6	542310	966562		X		
Lp8-7	542456	966782		X		
Lp8-8	542502	966917				
Limon 8	542183	966857				
Escuela Villa	542018	967658		X		
San Juan 1	541547	967944	X			
San Juan 2	541142	968573				
San Juan 3	540944	968589				
San Juan 4						
San Juan 5	540920	968589				

Collection ID	X	Y	Major rivers	Streams	Unknown	Plasticity test	Shrinkage test	Clay property test	Modern potter use
1-1	522323	856334		X		X	X	X	
1-3	525165	856372				X	X		
1-5	528091	856755		X		X	X	X	
1-6	540214	846733	X			X	X		
1-8	560104	886152	X			X	X		
1-9	562157	886497	X			X	X	X	
1-10	565247	875887				X	X	X	
1-11	563560	877871				X	X	X	
1-12	551319	870138	X			X	X		
1-13	550691	871958				X	X	X	
1-14	553116	867559				X	X		
1-15	537849	867885				X	X	X	X
1-16	558652	880024				X	X	X	
1-17	558786	881083				X	N/A		X
1-18-1	N/A	N/A			X	X	X	X	X
1-18-2	N/A	N/A			X	X	X	X	X
1-19	552309	882804				X	X		
1-20	539680	878587			X	X	X	X	
1-21	556489	879318				X	X	X	
1-22	556505	884000				X	X	X	
2-1	556687	885490				X	X	X	
2-2	556624	885509				X	X	X	
2-5	556674	885739			X	X	N/A		
2-6	551864	896852				X	X	X	
2-7	553462	891916					X	X	
2-11	558797	885452				X	X		
2-12/020176	547628	882694				X	X		
2-16	550794	884538				X	X		
3-1	N/A	N/A							
3-2	511425	835237			X	X	X	X	
3-3	511425	835237		X		X	X	X	
3-3'			X						
3-4	511218	835119	X						
3-5	511125	835108	X						
3-6	510929	835238		X		X	X	X	
3-7	510363	835079							
3-8	505224	835915				X	X	X	
3-9	519564	872929				N/A	X		
3-10	525085	890586							
3-11	525085	890586				N/A	X		
3-12	519680	884242							

Collection ID	X	Y	Major rivers	Streams	Unknown	Plasticity test	Shrinkage test	Clay property test	Modern potter use
3-13	561233	885405				X	X	X	
3-14	561232	885407				X	X	X	
3-15	561232	885404				X	X	X	
HE5-DO-1	560428	885241				X	X	X	
HE5-DO-2	560440	885231				X	X	X	
HE5-SH-1	561223	885678	X (alvina)			X	X	X	
4-1	501521	917300				X			
4-2	501378	917500				X	X		
4-3	501586	917227				X	X		
4-4	502045	917023				X	X	X	
4-5	502069	917090				X	X	X	X
4-6	502186	917319		X		X	X	X	X
4-7?	502186	917319		X		N/A	N/A		X
6-1	539441	904727		X		X	X		
6-2	539441	904727		X					
6-3									
7-1	526779	925653							
7-2	527023	925662							
7-3	527106	925539		X					
7-4	527052	925133		X		N/A	X		
7-5	526352	925062				X	X		X
7-6	528177	926196				X	X		
7-9					X	X	N/A		X
8-1	538420	895863				X	X	X	X
8-2	538423	895878				X	X	X	X
9-1	550705	886134				N/A	X		X
9-3	550705	886212				X	N/A		X
9-4									
10-2	517967	923041				N/A	X		
10-6									
10-7	507250	941142				N/A	X		
10-7’						N/A	N/A		
10-9	507507	941212		X		N/A	X		
10-10	507507	941212		X		N/A	N/A		
10-11									
10-12	509163	941716		X		N/A	N/A		
10-13	509175	939005				N/A	N/A		X
10-14	509175	939005				N/A	N/A		X
10-15	510019	938941				X	N/A		X
10-16	510027	938857				X	X	X	X
10-17	505782	942357				X	X		

Collection ID	X	Y	Major rivers	Streams	Unknown	Plasticity test	Shrinkage test	Clay property test	Modern potter use
10-18	509900	938996				X	N/A		X
10-19	507507	941212							
10-20	510069	938827							X
5-1	558165	945897		X		X	X	X	
5-2	558289	945881		X		X	X	X	
5-3	558358	946002				X	X	X	
5-4	558268	945973							
5-5	558268	945973							
5-6	558321	946015							
CL1-B-1	556637	940582		X		X	X		
CL1-B-2	556649	940591		X		X	X		
CL1-B-3	556622	940575		X		X	X		
CL1-B-4	556589	940560		X		X	X		
CL1-B-5	556629	940570		X		X	X		
CL1-B-6	556629	940570		X		X	X	X	
CL1-B-7	556653	940660		X		X	X	X	
CL1-B-8	556656	940585							
CL1-TP-1	555934	940901							
CL1-TP-2	555653	940774				X	X		
CL1-TP-3	555285	940940				X	X	X	
CL1-TP-4	554460	940942				X	X	X	
EV-1	593225	952110				X	X	X	
EV-2	593225	952113				X	X	X	
EV-3	593220	952163				X	X	X	
EV-4	593284	952388				X	X	X	
EV-5	593361	952406				X			
EV-6	593424	952398				X	X	X	
EV-7	593454	952315				X	X		
EV-8	593543	952226				X	X	X	
EV-9	593340	951885				X	X	X	
EV-10	593093	951085							
EV-11	593167	951376							
EV-12-1	593139	951500							
EV-12-2	593140	951511				X	N/A		
EV-13	592480	951988							
EV-14	593253	952378				X	X		
EV-15	597498	955393							
EV-16	597782	955661		X					
EV-17	597782	955661		X		X	X	X	
EV-18	597916	955881				X	X	X	
EV-19	597295	958849				X	X		
EV-20	597445	959038				X	X		

Colletion ID	X	Y	Major rivers	Streams	Unknown	Plasticity test	Shrinkage test	Clay property test	Modern potter use
EV-21	597751	959795		X					
EV-22	596881	954329							
EV-23	594990	953731							
EV-24-1	596826	952592							
EV-24-2	596826	952592							
Jaime Coronado/Llano Bonito	607493	942470				X	X	X	X
Muñoz-1	607493	942470				X	X	X	X
Muñoz-2	607376	942574				X	X	X	X
Muñoz-3	607316	942564				X	X	X	X
AC-1	592893	949460							
AC-2	592893	949460							
Cabu-J	593421	946762				X	X	X	X
Cabu-1	592945	946857				X	X	X	X
Cabu-2	592945	946857				X	N/A	X	X
Cabu-3	594157	948307				N/A	X	X	
Estan-1	591064	949499				X	X	X	
Estan-2	591054	949490				X	X	X	
Sofre-1						X	X	X	
La Mina-1	586510	954992							
La Mina-2	586465	949980				X	X	X	
Quiros	565827	941779				X	X	X	X (non-fired)
Dalia-1	553093	941979				X	N/A		
Dalia-2	553106	941959				X	N/A		
Cbli-1	502044	917094				X	X	X	
#13-1	554876	927742				X	N/A		
#13-2	554914	927743				X	N/A	N/A	
#14-1	556443	940509				X	N/A		
#14-2	556425	940485							
#14-3	556384	940489				X	N/A		
#14-4	556285	940476				X	N/A		
#14-5	556183	940577				X	N/A		
#14-6	556127	940652				N/A	N/A		
#14-7	556117	940666							
#14-8	556034	940689				N/A	N/A		
#14-9	556031	940684							
#14-10	556028	940803	X			N/A	N/A		
#14-11	555926	940889							
#14-12	555842	940875							
#14-13	555819	940864	X			N/A	N/A		
#14-14	555819	940864							
#14-15	555703	940865				N/A	N/A		

Collection ID	X	Y	Major rivers	Streams	Unknown	Plasticity test	Shrinkage test	Clay property test	Modern potter use
#14-16	555322	940722				X	N/A		
#14-17	554887	940716				X	N/A		
#14-18	554276	941274				X	N/A		
#14-19						N/A	N/A		
Limon 1	542160	966905				X	N/A		
Limon 5	542566	967001							
Limon 6	542229	967049		X		X	N/A		
Limon 7						X			
Lp8-2	542244	966436				X	N/A		
						X	N/A		
Lp8-4	542217	966430				X	N/A		
Lp8-5	542175	966268				X	N/A		
Lp8-6	542310	966562					N/A		
Lp8-7	542456	966782				X	N/A		
Lp8-8	542502	966917				X	N/A		
Limon 8	542183	966857							
Escuela Villa	542018	967658				X	N/A		
San Juan 1	541547	967944				X	N/A		
San Juan 2	541142	968573							
San Juan 3	540944	968589		X					
San Juan 4						X	N/A		
San Juan 5	540920	968589		X					

Appendix A.2. Petrographic data of pottery and raw material thin sections

Size	Millimeter (mm)

Angularity	Abbreviation
Angular	Ang
Sub-angular	Sbang
Sub-round	Sbrd
Round	Rd

Shape	Abbreviation
Equidimensional	Eq
Elongated	El
Anhedral	Anh
Subhedral	Sbh
Euhedral	Euh
Embayed	Emb
Diamond	Dmd

Degree of Weathering	Code
Fresh	1
Weathered	2
Very Weathered	3

Approx. amount	Approximate % of all [100%] minerals and lithic fragments	Code
Very high	≥50	5
High	≥20 - <50	4
Moderate	≥5 - <20	3
Minor	≥1 - <5	2
Trace	<1	1

PR14-22-1

Coarse fragments: 35% coarse fragments of lithics (20%, 0.1-1.6 mm) and minerals (15%, 0.05-1 mm). Major inclusions are volcanic rocks, porphyrticic volcanic rocks (basic/intermediate to felsic) and their monomineralic phenocrysts (quartz, plagioclase, zoned plagioclase, alkali-feldspars ad minor amount of magnetite). There are large hematite inclusions. This sherd is from Azuero because there are mico-intrusive rocks.

Temper: Possibly added because many volcanic rock fragments are fresh and so are their phenocrysts and monomineralic phenocrysts. They must have weathered if they were originally from the clayey sediment.

Clays: In PPL, interior surface to the core is oxidized but the thin layer of the exterior surface is reduced. The clay is birefringent in XPL.

Mineral/ lithic fragment	Quartz	Vol-canic quartz	Plagioclase	Zoned feldspar	Iron ox-ide/hydroxide	Chert	Alkali feldspar	Magnetite
Size	0.03-0.9	0.25	0.1-0.15	0.25-0.4	0.15-0.25	0.7-0.9	0.5	0.05-0.1
Angularity	Ang	Rd	Ang	Ang	Sbang	Ang-Sbang	Ang	Ang
Shape	Eq-El	Eq	Eq	Eq	Eq-El	El	Eq	Eq
Degree of weathering	1	1	1	1	3	2	1	1
Approx. amount	3	1	2	2	1	2	2	1

Mineral/ lithic fragment	Amphibole	Biotite	Epidote	Rhyolite (hypocrystalline; with or without phenocryst (plagioclase, amphibole, embayed quartz), with or without hematite stains)	Hematite	Rhyolite (holocrystalline)	Volcanic glass (Fe-rich)
Size	0.2	0.1	0.15	0.15-1.6	1.1	1.4	0.05-0.3
Angularity	Ang	Rd	Rd	Rd	Rd	Subang	Ang
Shape	Eq	El	Eq	El	El	El	Eq
Degree of weathering	1	2	1	2	3	1	3
Approx. amount	1	2	1	3	2	2	2

Mineral/ lithic fragment	Rhyolite (holohyaline; with or without phenocrysts)	Mafic to intermediate volcanic rock (feldspar laths of 0.05-0.1 mm; hematite stained, accessory magnetites)	Polycryst-alline quartz	Intermediate to basic volcanic rock (heavily hematite stained with plagioclase and quartz phenocryst)
Size	0.6	0.4	0.3	0.4
Angularity	Ang	Ang	Rd	Rd
Shape	El	El	El	El
Degree of weathering	1	3	1	3
Approx. amount	2	1	1	1

Mineral/lithic fragment	Possible Colorless amphibole	Micro mafic intrusive rock (grains: 0.2-0.35 mm)
Size	0.6	0.9 mm
Angularity	Ang	Ang
Shape	El	El
Degree of weathering	1	3
Approx. amount	1	1

Manufacturing technique: The pore lines are parallel to the wall so perhaps the technique was squeezed or layered slabs.
Slip/Paint/Surface finish: exterior surface where it is non-weathered is smoothed (aligned or sunken particles); the interior surface is not smoothed or has the weathered surface
Provenance of temper: Azuero (volcanic sand and their monomineralic phenocrysts and sedimentary rocks)
Similarity to Ceramics form other sites: Azuero

PR14-24-1

Coarse fragments: There are 50% of coarse fragments of lithics (40%, 0.2-1.9 mm) and minerals (10%, 0.02-1.2 mm). Feldspars and quartz are the most abundant minerals but the former is more common (plagioclase and possible alkali-feldspars about equal amount).
Temper: Porphyritic felsic to basic volcanic sand, fresh monomineralic phenocrysts derived from them, and volcanic rock based sand without phenocrysts were possibly added as temper.
Clays: Clays are birefringent in XPL; reduced interior and reduced exterior, oxidized core in PPL.

Mineral/ lithic fragment	Quartz	Plagioclase	Zoned plagioclase	Epidote	Amphibole	Iron oxide/hydroxide	Quartz aggregate (0.05-0.1 mm)
Size	0.2-1	0.1-0.4	0.2-1	0.1-0.3	0.08-0.3	0.15-0.4	0.5
Angularity	Ang	Ang	Ang	Ang	Ang	Rd	Rd
Shape	Eq-El	Eq-El	Eq	Eq	Eq-El	El	Eq
Degree of weathering	1	1	1	1	2	3	2
Approx. amount	2	2	2	1	2	1	1

Mineral/ lithic fragment	Volcanic glass (rich in Fe)	Tuff	Vocanic chert	Rhyolite (hypocrystalline, with or without phenocryst including quartz)	Porphyritic basic volcanic rocks (hematite stained laths 0.08 mm, plagioclase phenocryst)	Quartz aggregate and rhyolite combined rock
Size	0.1-0.5	0.2	0.1	0.25-1	0.4	1.8
Angularity	Rd	Rd	Ang	Rd-Ang	Rd	Ang
Shape	Eq-El	Eq	Eq	Eq	Eq	Eq
Degree of weathering	3	2	1	1-2	2	3
Approx. amount	3	1	1	3	1	1

Mineral/ lithic fragment	Mafic volcanic rock (hematite stained, plagioclase (0.05-0.08 mm), possible amphibole/pyroxene, and magnetite grains)	Rhyolite with large embayed quartz phenocryst (1.2 mm)	Hematite	Magnetite	Biotite	Rhyolite (holocryst-alline; quartz, amphibole, and magnetite grains)
Size	0.3-0.5	1.2	0.5-0.9	0.08-0.15	0.1	0.2
Angularity	Ang	Rd	Rd	Ang	Rd	Rd
Shape	El, Anh	Eq	El	Eq	El	Eq
Degree of weathering	2	2	3	1	3	1
Approx. amount	1	1	2	1	1	1

Manufacturing technique: squeezed technique but the possible lip (check with the actual sherd) seems to be added at the end.
Slip/Paint/surface finish: exterior surface seems to be smoothed (but weathered or plucked) and interior surface is weathered.
Provenance: Pottery with Azuero sand inclusion or possible temper
Similarity to Ceramics from other sites: Azuero

PR14-25-1

Coarse fragments: There are 35% coarse fragments of lithics (15%; 0.4-1.4 mm) and minerals (20%, 0.03-2 mm). Unlike some other sherds, inclusions are low. Major inclusions are: monomineralic phenocrysts derived from volcanic rocks, lesser amount of volcanic rocks, porphyritic volcanic rocks, as well as hematites. There are small amount of biotite and magnetite. There is one grain of mafic to intermediate intrusive rocks.
Temper: Possibly natural because rocks in volcanic rock-based sand are not fresh (if people did not add weathered volcanic sand-based temper)
Clays: Marbly color oxidized and reduced in PPL. One area is reduced in the core oxidized in the exterior and interior surface. Another area is reduced in the interior and oxidized in the exterior. In XPL, the clays are birefringent.

Mineral/ lithic fragment	Quartz	Volcanic quartz	Plagioclse	Zoned feldspar	Biotite	Iron oxide/ hydroxide (hematite stain)	Mafic intrusive rock (grains: 0.25-0.3 mm)
Size	0.03-2	0.3	0.15-0.4	0.4	0.25	0.1-1.3	0.6
Angularity	Ang	Rd	Ang	Ang	Rd	Rd	Rd
Shape	Eq-El, Anh	Eq	Eq	Eq	El	Eq-El, Anh	El
Degree of weathering	1	1	1-3	1	2	3	3
Approx. amount	4	1	2	2	1	2	1

Mineral/ lithic fragment	Amphibole	Zircon	Epidote	Hematite	Magnetite	Rhyolite (hypocrystalline; can be hematite stained; with or without phenocrysts of quartz and plagioclase)
Size	0.05-0.15	0.05	0.1	0.05-1	0.03-0.15	0.3-0.7
Angularity	Ang	Ang	Ang	Rd	Ang	Ang
Shape	Eq-El	Eq	Eq	Eq-El, Anh	Eq-El	El
Degree of weathering	1-2	1	1	3	1	3
Approx. amount	1	1	2	3	1	1

Mineral/ lithic fragment	Rhyolite (holo-crystalline)	Quartz aggrega-tion	Volcanic chert	Possible Trachyite (0.1-0.2 mm grains, with magnetite and hematite accessory inclusions; some hematite stain)	Spherulite	Mafic volcanic rock (possible basalt, with heavy to moderate hematite stain)
Size	1	0.1-0.2	0.15	0.6	0.15-1	0.3-0.35
Angularity	Sbang	Rd	Rd	Rd	Ang-Rd	Rd
Shape	Eq	Eq-El	El	Eq	Eq	Eq
Degree of weathering	2	2	1	2	1	3
Approx. amount	3	2	1	1	1	2

Mineral/ lithic fragment	Mafic to intermediate porphyritic volcanic rock (plagioclase phenocrysts; heavily hematite stained, partially vitreous matrix)	Hematite including some quartz grains	Polycrystalline quartz (0.02 mm) with a large quartz phenocryst (0.6 mm)	Intermediate to mafic intrusive rock (0.3 mm grins, hematite stained, hematite very fine grains)	Possible micro-granitic/granodioritic rock (grains: 0.2-0.4 mm)
Size	1	1.2	0.6	0.6	0.5
Angularity	Rd	Ang	Ang	Ang	Rd
Shape	El	El, Anh	El	El	Eq
Degree of weathering	3	3	1	4	2
Approx. amount	1	1	1	1	1

Manufacturing technique: squeezed or slab technique but one area shows thermal cracks where two cracks run parallel and with inclination crossing the manufacturing lines. The clays are shrinking around inclusions.
Slip/Paint/Surface finish: Interior is not finished smoothly. The exterior surface is also smoothed (surface particles are aligned) (but most parts are eroded).
Provenance Clay: Azuero volcanic rock based sand, their phenocrysts, and one plutonic mafic to intermediate rock, mafic to felsic intrusive rocks.
Similarity to Ceramics form other sites: Azuero

SF9-B60-1

Coarse fragments: There are 40% of very poorly sorted coarse fragments of lithics (30%, 0.4-0.6 mm) and minerals (10%, 0.05-1.6 mm). Major inclusions are fresh to weathered basic to felsic volcanic rock and porphyritic volcanic rock based sand and monomineralic phenocrysts derived from these materials.
Temper: Possibly added because many volcanic rock fragments are fresh and so are their phenocrysts and monomineralic phenocrysts derived from them. Since they are not pyroclastics that landed on the clay deposit, they should have been weathered if they were originally from the clayey sediment.
Clays: birefringent and oxidized in light yellow color but seems vitrified or opaque in a lot of the areas.

Mineral/ lithic fragment	Quartz	Volcanic quartz	Plagioclas e	Iron ox-ide/ hydrox-ide	Biotite	Magnetite	Zoned plagio-clase	Hematite
Size	0.05-0.6	0.2-1.6	0.15-0.9	0.08-0.3	0.2-0.3	0.03-0.3	0.25	0.2
Angular-ity	Ang	Rd	Ang	Rd	Rd	Ang	Ang	Ang
Shape	Eq-El	Eq	Eq-El	Eq-El	Eq-El	Eq-El, Sbh	Eq-El, Sbh	El
Degree of weather-ing	1	1	1	3	2	1	1	3
Approx. amount	3	1	3	1	1	1	2	1

Mineral/ lithic fragment	Amphibole	Trachyte (simple twinning laths, 0.08 mm) with phenocrysts (plagioclase (0.1 mm), amphibole (0.4 mm)	Basic to intermediate volcanic rock (with feldspar laths and hematite stain)	Quartz aggregate (hematite stained, 0.05-0.1 mm)	Rhyolite (holocrystalline; 0.03-0.2 mm) (with or without phynocrysts of biotite, plagioclase, and quartz)
Size	0.1-0.3	0.5	0.3	0.4	0.5-1.5
Angularity	Ang	Ang	Ang	Rd	Ang
Shape	Eq, Dmd	Eq	El	El	Eq
Degree of weathering		1	2	2	1
Approx. amount		1	1	1	3

Mineral/ lithic fragment	Heavily hematite stained rhyolite	Spherulite (fanning itergrown needles)	Rhyolite with or without phenocrysts (plagioclase, amphibole)(hypocrystalline)	Plagioclase phenocrysts (0.7 mm) with polycrystlline quartz heavily stained by hematite	Epidote, biotite, and quartz aggregate
Size	0.4-1.6	0.25	0.3-1.3	1.6	0.2
Angularity	Rd	Ang	Ang	Rd	Ang
Shape	El	El	Eq-	El	Eq
Degree of weathering	3	1	1	3	2
Approx. amount	1	1	1	1	1

Manufacturing technique: pore lines are parallel to the wall indicating that a slab or squeezed technique was used.. There are thermal cracks across wall and clay shrinkage around grains that the manufacturing technique is difficult to understand.
Slip/Paint/Surface finish: The surface is weathered and undulated or was not finished smoothly from the beginning.
Provenance of Clay: possible Azuero (volcanic sand based inclusions but there is no plutonic or sedimentary rock inclusions)
Similarity to Clays from other sites: Azuero igneous sand inclusions

SF9-B61-1

Coarse fragments: There are 40% coarse fragments of lithics (15%, 0.15-1.1 mm) and minerals (25%, 0.03-0.9 mm). Major inclusions are volcanic rocks, porphyritic volcanic rocks and monomineralie phenocrysts (quartz, plagioclase, zoned feldspar) derived from those rocks, and hematites.
Temper: Possibly added because many volcanic rock fragments are fresh and so are their phenocrysts and monomineralic phenocrysts derived from them. Since they are not pyroclastics that landed on the clay deposit, they should have been weathered if they were originally from the clayey sediment.
Clays: birefringent in XPL and in PPL, exterior, interior, and the core are all oxidized.

Mineral/ lithic fragment	Quartz	Plagio-clase	Zoned feld-spar (mainly plagioclase)	Iron ox-ide/ hydrox-ide	Magnetite	Amphibole	Hematite	Possible felsic volcanic rock with heavy hematite stain
Size	0.03-0.9	0.2-0.4	0.15-1	0.15-0.3	0.05-0.1	0.1	0.3-0.8	1.4
Angularity	Ang	Ang	Ang	Rd	Ang	Ang	Rd-Ang	Rd
Shape	Eq-El	Eq-El	Eq-El, Sbh	Eq-El	Eq-El	Eq	Eq-El	El
Degree of weathering	1	1	1	3	1	1	3	3
Approx. amount	3	2	2	2	1	1	3	2

Mineral/ lithic frag-ment	Rhyolite (holo-hyaline)	Rhyolite (holocrys-talline; 0.05 mm grains)	Intermediate to mafic volcanic rocks	Dacite/Rhyolite (hypocrystalline ; with or without phenocryst (zoned plag, amphibole)	Some needle-like texture-including chert surrounding possible mafic vol-canic rock/iron ox-ide or iron hydrox-ide (heavily weath-ered)	Volcanic chert/mi-croystal-ine rhyo-lite with quartz pheno-cryst
Size	0.4	0.3	0.35	0.6	0.8	0.3
Angularity	Rd	Rd	Rd	Rd	Ang	Rd
Shape	El	Eq	Eq	Eq	Eq-El	Eq
Degree of weathering	3	2	2	1	2	1
Approx. amount	1	2	1	2	1	1

Mineral/ lithic fragment	Volcanic glass (rich in Fe)	Volcanic rock with spherulitic texture with subhedral phenocryst (0.35 mm)
Size	0.3	1
Angularity	Ang	Ang
Shape	Eq	Eq
Degree of weathering	3	2
Approx. amount	3	1

Manufacturing technique: squeezed or slab technique because pore lines are parallel to the wall and at the lip, they are parallel to the lip. So the lip was added.
Slip/Paint/Surface finish: dark red-brown slips are all around the lip and the body intermittently. However, since it is even on non-surface (cracked area at the bottom on the body) it is unclear whether this is the slip or paint. The wall surface finish is smoothed on one side of the wall than other and also the lip is smoothed.
Provenance: Possible Azuero (with igneous rock-based sand inclusions)
Similarity to Clays from other sites: Azuero

AG13-2-U1-F1

Coarse fragments: There are 30% of coarse fragments of lithics (5%, 0.15-1.6mm) and minerals (25%, 0.03-1.3 mm). Major inclusions are pyroclastic-derived fresh and angular monomineralic phenocrysts of plagioclase, zoned-plagioclase, and quartz. Volcanic rock fragments are the parental rocks of these monomineralic phenocrysts; however, except for a few fragments, there are no phenocryts of these rocks with equivalent sizes to the monomineralic ones.
Temper: Fresh pyroclastics with monomineralic phenocrysts and some volcanic rock matrix may have been added or they could have been fallen onto the clayesy soil deposit.
Clays: birefringent clay with interior being light yellow and the exterior somewhat more orange-ish. The clayey sediment is burnt amber in PPL.

Mineral/ lithic frag-ment	Plagio-clase	Quartz	Zoned plagi-oclase	Amphibole	Volcanic quartz	Tuff (porpy-ritic)	Rhyolite (hypo-crystalline)
Size	0.1-1.2	0.1-2	0.2-1.3	0.2	0.1-1.5	0.9	0.3-0.7
Angularity	Ang	Ang	Ang	Ang	Ang, Rd	Rd	Rd
Shape	Eq-El	Eq-el	Eq, El, Sbh	Eq-El	Eq, Emb	El	Eq
Degree of weathering	1	1	1	1	1	1	1
Approx. amount	4	3	3	1	2	1	3

Mineral/ lithic fragment	Dacite (with zoned plagioclase phenocryst of 0.3 mm)	Interedate to basic volcanic rock (0.05 mm grain; with or without quartz phenocryst 0.15 mm)	Rhyolite (holo-hyaline)	Magnetite	Iron oxide/hydroxide	Epidote?
Size	0.5	0.5	0.25	0.03-0.15	0.1-0.2	0.2
Angularity	Ang	Ang	Rd	Ang	Rd	Rd
Shape	El	El	Eq	Eq-El	Eq-El	Eq
Degree of weathering	1	2	1	1	3	2
Approx. amount	1	1	1	1	1	1

Mineral/lithic fragment	Tuff	Andesite/basalt
Size	0.15-0.4	0.25
Angularity	Ang	Rd
Shape	Eq	El
Degree of weathering	1	2
Approx. amount	2	1

Manufacturing technique: slab construction and folded over at the lip.
Slip/Paint: none
Provenance of clay: it is possibly from the volcanic zone of El Valle and La Yeguada
Similarity to Ceramics form other sites: Possibly ceramics from Cl1, Ag13, and Lp134 but compared to Cl1, more volcanic rocks are included

AG13-5-U1-F1

Coarse fragments: There are 15% of coarse fragments of lithics (5%, 0.15- 1.7 mm) and minerals (10%, 0.05–1.7 mm). The major inclusions are fresh and angular plagioclase, quartz (including volcanic quart), and zoned feldspar from pyroclastics derived monomineralic fresh phenocrysts/volcanic rocks containing fresh phenocrysts (the amount of inclusions are not high). There are volcanic rock fragment inclusions that have similar phenocrysts or without those phenocrysts. Plagioclase can be zoned. The untwinned feldspars are probably plagioclase but are difficult to distinguish from K-feldspars.
Temper: pyroclastics have fallen onto the clayey soil deposit or volcanic sand with fresh monomineralic phenocrysts were added to the paste
Clays: it is birefringent in XPL and the exterior seems to be more oxidized than the more yellowish interior. Clayey soil is reddish in PPL.

Inclusions:

Mineral/ lithic frag-ment	Plagio-clase	quartz	Amphi-bole	Zoned feld-spar	Hematite	Magnet-ite	Volcanic quartz	Hypo-crystalline Inter mediate volcanic rock
Size	0.07-0.4	0.03-1.2	0.1-3	0.2-0.4	0.15-0.4	0.05-0.2	0.15-0.3	1.5
Angularity	Ang	Ang	Ang	Ang	Rd	Ang	Rd-Ang	Rd
Shape	Eq-El	Eq-El	El	Eq-El, Sbang	Eq-El	Eq-El, Emb	Eq-El, Emb, Euh	El
Degree of weathering	1-2	1	1	1	3	1	1	3
Approx. amount	3	4	1	2	1	2	2	2

Mineral/ lithic fragment	Spherulite aggregate (0.02 mm grain	Porphyritic rhyolite with or without embayed quartz plagioclase phenocryst (0.7-1.5 mm)	Rhyolite (hypo-crystalline)	Volcanic glass with Fe	Epidote	Volcanic chert (0.02 mm grain)
Size	0.15	0.8	0.1-0.4	0.3	0.1	0.2
Angularity	Ang	Ang	Sbang	Rd	Rd	Ang
Shape	Eq	El	Eq-El	El	El	El
Degree of weathering	1	1	2	3	2	1
Approx. amount	1	1	3	1	1	1

Mineral/ lithic fragment	Quartz aggregate (0.1 mm grain)	Iron oxide/hyrdroxide	Rhyolite (heavily hematite stained)	Intermediate to basic rock (heavily hematite stained, holocrystalline)	Volcanic rock with Volcanic rock with spherulitic texture
Size	0.5	0.3-0.4	0.2-0.9	0.25	0.35
Angularity	Rd	Rd	Rd	Ang	Ang
Shape	El	Eq-El	Eq	Eq	El
Degree of weathering	2	3	3	3	2
Approx. amount	1	1	4	1	1

Manufacturing technique: slab construction—clays being squeezed and flattened
Slip/Paint: none
Provenance: La Yeguada and El Valle volcanic pyroclastic materials
Similarity to ceramics from other sites: Lp134, especially, and other isthmus proper pottery based on pyroclastic inclusions.

AG13-6-U1-F1

Coarse fragments: There are 45% of dense and coarse fragment inclusions of lithics (35%, 0.1-2.9 mm) and single minerals (10%, 0.05-0.8 mm). Major inclusions are mixed igneous assemblage of porphyritic volcanic rock, volcanic felsic rocks (rhyolite), diorite, and monomineralic phenocryst (quartz, plagioclase, zoned plagioclase) based sand inclusions. There seems to be monomineralic alkali-feldspars inclusions. There are minor amount of amphiboles, and even less amount of magnetites and hematites.
Temper: Since the mixed igneous rock-based sand inclusions are fresh and in the humid tropics weathering seem affect the rocks, it seems that they are added to the clay.
Clays: The clay is reddish with the interior reduction in PPL, and is birefringent in XPL.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagioclase	Biotite	Amphibole (hornblende)	Volcanic glass	Volcanic quartz (with fluid inclusions)	Amphibole aggregate	Iron-oxide/hydroxide
Size	0.03-0.25	0.1-0.6	0.05-0.15	0.08-0.5	0.7	0.2	0.25	0.2-0.3
Angularity	Ang-Rd	Ang	Ang	Ang	Ang	Rd	Ang	Rd
Shape	Eq-El	Eq-El	El	Eq-El	Eq-El	Eq	Eq	Eq
Degree of weathering	1	1	2	1	1	1	2	3
Approx. amount	2	3	1	2	1	1	1	1

Mineral/ lithic fragment	Diorite (plagioclase grains: 0.1-0.4 mm)	Tuff	Rhyolite (hypocrystalline; with or without phenocryst (amphibole, quartz); some are rich in feldspar laths and others are quartz rich) (can be heavily hematite stained)	Rhyolite (holocrystalline)	Alakli feldspar (coarse sanidine/ anorthoclase?)	Volcanic chert	Zoned feldspars
Size	2	0.2-0.5	0.3-1.5	0.2-0.4	0.25	0.4-0.6	0.2-1
Angularity	Ang	Ang	Sbang	Sbang	Ang	Sbang	Ang
Shape	El, Anh	El	Eq-El	El, Anh	Eq	Eq	Eq, Sbh
Degree of weathering	1	2	1	1-2	1	1	1
Approx. amount	1	2	4	4	1	2	2

Mineral/ lithic fragment	Hematite	Magnetite
Size	0.05-0.2	0.08
Angularity	Ang	Ang
Shape	Eq	Eq
Degree of weathering	3	1
Approx. amount	1	1

Manufacturing technique: cracks run vertically and horizontally. An evident crack going across the wall is due to the thermal shock (there are also some others that are smaller pore lines indicating this). The manufacturing technique seems to be squeezed technique or slabs. There are thermal cracks and shrinkages exist around minerals and rocks.
Slip/Paint: None; the surface that remains on the exterior are smoothed.
Source: Azuero
Similarity to Ceramics from Other Sites: Azuero such as those found inPr32 and He5

AG13-6-U1-F2

Coarse fragments: There are 25% of coarse fragments of lithics (10%, 0.1-0.5 mm) and minerals (15%, 0.05-0.5- mm). Major inclusions are monomineralic phenocrysts from porphyritic volcanic rocks and volcanic rocks. This sherd looks like a mixture of Cordilleran pyroclastics and Azuero igneous-sand-based inclusions; however, the granitic inclusion suggests it is from Azuero. Rock fragments are very weathered. When clay matrix is examined, it does not have an indication of mixture of two clay types and monomineralic phenocrsyts are also well merged with the matrix. There could have been a location where La Yeguad and El Valle pyroclastics and Azuero sediments with intrusive fragments were available (along the Santa María River?).
Temper: The freshness of phenocrysts and monomineralic phenocrysts of volcanic rocks suggest they were added (not volcanic ash that deposited)
Clays: Reddish dark brown clay containing lots of Fe. Reduced especially in the interior but the entire paste is relatively reduced. Clay is not birefringent in XPL. In PPL, the color is burnt amber.

Inclusions:

Mineral/ lithic fragment	Quartz	Zoned feldspar (manly plag)	Plagio-clase	Amphi-bole	Epidote	Vol-canic quartz	Zircon	Iron oxide/ hy-droxide	Mag-netite
Size	0.05-0.9	0.2-0.8	0.3-0.5	0.15-0.2	0.2	0.2-0.55	0.03	0.1	0.03-0.35
Angularity	Ang	Ang	Ang	Ang	Ang	Ang, Rd	Ang	Ang	Ang
Shape	Eq-El	Eq-El, Sbh	Eq-el	Eq-El, Euh	Eq	Emb, Sbh	E1	Eq	Eq-El
Degree of weather-ing	1	1-2	1-2	1	1	1	1	3	1
Approx-imate amount	4	2	4	1	1	1	1	1	2

Mineral/ lithic frag-ment	Intermediate to basic volcanic rock (heav-ily hematite stained)	Porphyritic rhyolite (holocrys-talline; quartz phenocryst 0.3 mm)	Rhyolite (hypo-crystalline)	Andesite (0.05-0.1 mm grain)	Polycryt-alline quartz	Porphyristic Dacite (phenocryst of zoned plagioclase or amphibole, 0.2-0.4 mm grain)
Size	0.5	0.5	0.2-0.4	0.25	0.2	0.3-0.6
Angularity	Ang	Ang	Ang	Ang	Ang	Rd-Ang
Shape	El	El	Eq-El	Eq	El	Eq
Degree of weathering	3	2	2	1	1	1
Approx-imate amount	2	1	3	1	1	1

Mineral/ lithic fragment	Rhyolite (heavily hematite staied)	Chert/undulating quartz (0.03 m grain)	Micro granite (0.25 mm grain)	Trachyte	Tuff
Size	0.4	0.15	0.7	0.3	0.4
Angularity	Ang	Ang	Ang	Rd	Ang
Shape	El	El	El	Eq	Eq
Degree of weathering	3	1	2	2	2
Approx. amount	1	1	1	1	1

Manufacturing technique: there are long parallel pores along the wall in a vertical direction. slab construction/ pressure placed on the wall
Slip/Paint: no slip or paint
Provenance: Azuero (igneous intrusive contained) and pyroclastics mixed
Similarity to ceramics from other sites:

AG13-6-U1-F3

Course fragments: There are 25% of course fragments of lithics (13%, 0.2-0.8mm) and minerals (12%, 0.02-0.5mm). Major inclusions are fresh and angular monomineralic plagioclase fragments (zoned and non-zoned), some quartz, and minor amount of zoned feldspar and basic to felsic igneous rock-based sand that include large phenocrysts that are equivalent types to the monomineralic phenocrysts. There are some intermediate to basic volcanic rock fragments that seem somewhat large grained but are much smaller to be intrusives.
Temper: Fresh and angular pophyritic volcanic sand that includes monoineralic fresh plagioclase and quartz phenocrysts may have been added.
Clays: The clay is birefringent in XPL; it is orangish in the interior and the core and has a thin reduction on the exterior. In PPL, the paste is amber colored.

Inclusions:

Mineral/ lithic frag-ment	Quartz	Am-phi-bole	Iron oxide/ hy-drox-ide	Zir-con	Mag-netite	Epid-ote	Plagi-oclase	Volcanic quartz	Alkali-fedl-spar	Hema -tite
Size	0.02-0.5	0.25	0.15-0.3	0.03	0.05-0.1	0.2	0.15-0.5	0.15-0.3	0.6	0.1
Angularity	Ang	Ang	Rd	Ang	Ang	Ang	Ang	Rd	Ang	Ang
Shape	El-Eq	Dmd	Eq-El	El	Eq-El, Anh, Emb	Eq	Eq-El, Sbh, Anh	Eq, Sbh	El	El
Degree of weathering	1	1	3	1	1	1	1	1	1	3
Approx. amount	3	1	1	1	2	1	3	2	1	1

Mineral/ lithic fragment	Zoned plagio-clase	Bio-tite	Tra-chyte	Rhyolite (with or with-out pheno-cryst (0.15 mm, qtz, magnetite, plg), hypo-crystalline)	Spheru-litic tex-tured volcaic rock	Basic to intermedi-ate vol-canic rock (heavily hematite stained, 0.03 mm)	Vol-canic glass	Dacite (zoned feldspar pheno-cryst)
Size	0.3-0.8	0.35	1.1	0.6	0.35	0.3	0.15-1.2	0.5
Angular-ity	Ang	Rd	Ang	Ang	Rd	Rd	Rd-Ang	Ang
Shape	Sbh, Eq	El	El	El	El	El	Eq-El	Eq
Degree of weather-ing	1	3	1	1	1	3	3	1
Approx. amount	1	1	1	3	1	1	2	2

Mineral/ lithic fragment	Andesite/basalt (0.1 mm grain)	Rhyolite (with phenocryt, heavily hematite staied)	Chert (grain 0.05-0.1 mm)	Polycrystalline quartz (0.03 mm grain)
Size	0.3	0.5	0.5	0.5
Angularity	Ang	Rd	Ang	Rd
Shape	Eq	Eq	El	El
Degree of weathering	2		1	1
Approx. amount	1	3	1	2

<u>Manufacturing technique:</u> there are long parallel pores along the wall in a vertical direction. Perhaps it is slab constructed or pressure placed against a wall.
<u>Slip/Paint: there is</u> no slip or paint but the interior and exterior walls are well smoothed (minerals tend to be aligned).
<u>Provenance:</u> It is likely to be Azuero Peninsula igneous rock fragment-based sand. Possibly Parita River mouth origin (similar to the ones from there) but since this sherd lacks intrusive rock fragment, it is not certain.
<u>Similarity to ceramics from other sites</u>: Azuero pottery

AG13-8-U1-F1

Course fragments: There are 20% of course fragments of lithics (7%, 0.15-1.5 mm) and minerals (13%, 0.2-1.2- mm). Major inclusions are fresh and angular monomineralic plagioclase fragments (zoned and non-zoned), some quartz, and minor amount of zoned feldspar and basic to felsic igneous rock-based sand that include large phenocrysts that are equivalent types to the monomineralic phenocrysts. Non-zoned plagioclase that is subhedral or close to being euhedral is not common among pyroclastics of Cordilleran sherds. There is a weathered rock fragments that seem somewhat large grain but are much smaller to be intrusives.
Temper: Fresh and angular pophyritic volcanic sand that includes monoineralic fresh plagioclase and quartz phenocrysts may have been added.
Clays: it has orangish birefringent body with the interior (curved interior) being oxidized and the exterior being slightly reduced. In PPL, the clay is amber colored.

Inclusions:

Mineral/ lithic frag-ment	Porphyritic dacite with coarse pheno-crysts of fresh plagioclase and/ quartz	Volcanic quartz	Quartz	Plagioclase	Zoned plagioclase	Green amphibole
Size	0.6-0.8	0.1-0.25	0.05-1.2	0.08-0.8	0.1-0.8	0.4
Angularity	Ang	Ang-Rd	Ang	Ang	Ang	Ang
Shape	El-Eq	Eq, Sbh	Eq-el	Eq-el, Subh	Eq-El, Sbh	El
Degree of weathering	1	1	1	1-2	1	1
Approx. amount	3	1	3	3	2	1

Mineral/ lithic frag-ment	Amphibole	Epidote	Hematite	Magnetite	Rhyolite (hypo-crystalline)	Intermediate to basic volcanic rock (heavily hematite stained)	Dacite (without phenocryst) (0.1 mm grain)
Size	0.2	0.08	0.05	0.05-1	0.15-0.8	1.3	0.45
Angularity	Ang	Sbang	Ang	Ang	Ang	Ang	Rd
Shape	El	El	Eq	Eq-El, Sbh	Eq	El	Eq
Degree of weathering	2	1	3	1	1	3	1
Approx. amount	1	1	1	1	3	1	1

Mineral/	Rhyolite	Chert	Coarse polycrystlline	Rhyolite	Volcanic	Iron ox-

lithic frag-ment	(holo-crystlline, 0.05 mm grain)	(0.02 mm grain)	quartz with spherulitic textured fragment (0.15 mm grain)	(holohyaline)	glass (hematite stained)	ide/hydroxide
Size	0.2-1.5	0.4	0.9-1.7	0.8	0.1-0.2	0.05-0.15
Angularity	Ang	Ang	Ang	Ang	Rd	Rd
Shape	Eq-El	El	Eq	Eq	Eq-El	El
Degree of eathering	1-2	1	3	2	3	3
Approx. amount	3	2	2	1	3	1

Manufacturing technique: slab or squeezed/pressure technique
Slip/Paint: no red slip present but the residue from the red pencil placed for the sample preparation present. The exterior (outside of the curve) has surface smoothing
Provenance: It is likely to be Azuero peninsula volcanic rock fragment-based sand. Possibly Parita River mouth origin (similar to the ones from there) but since this sherd lacks intrusive rock fragment, it is not certain.
Similarity to ceramics from other sites: Azuero pottery

AG13-8-U1-F2

Coarse fragments: There are 50% of coarse fragments of lithics (5%, 0.2-0.7 mm) and minerals (45%, 0.02-1 mm). The major inclusions are pyroclastics with monmineralic phenocrysts of mainly plagioclase and quartz. There are small amount of tuff and rhyolite inclusions.
Temper: Pyroclastics with monomineralic phenocrysts may have fallen onto the clay deposit or they could have been added.
Clays: The exterior is red oxidized and interior is yellow-brown and the interior surface is reduced in PPL. The clay is birefringent XPL.

Mineral/ lithic frag-ment	Quartz	Plagioclase	Zoned feldspar (mainly plagioclase)	Amphibole	Magnetite (some have laths of hematite)
Size	0.05-1	0.3-0.8	0.3-0.6	0.1-0.5	0.15-0.4
Angularity	Ang	Ang	Ang	Ang	Ang
Shape	Eq-El	Eq-El	Eq, Sbh	Eq-El	Eq-El
Degree of weathering	1	1	1	1	1
Approx. amount	4	5	2	1	1

Mineral/ lithic fragment	Volcanic Glass	Rhyolite (hypo-crystalline)	Rhyolite (holohyaline)	Rhyolite (holocrys-talline)
Size	0.2-0.7	0.5	0.5-0.7	0.15-0.4
Angularity	Rd	Rd	Rd	Rd
Shape	El	Eq	Eq	Eq
Degree of weathering	1	2	2	1
Approx. amount	1	1	1	1

Manufacturing technique: slab construction
Slip/Paint: the interior surface is smoothed and no slip or pant is present.
Provenance: Isthmus proper with El Valle-La Yeguada materials
Similarity to ceramics from other sites: Cl1

AG13-8-U1-F3

Coarse fragments: There are 40% of coarse fragments of lithics (20%, 0.1-1.2 mm) and minerals (20%, 0.05–1 mm). Major inclusions are mixed porphyritic vocanic rocks and monimineralic phenocrysts (volcanic quartz, quartz, plagioclase, zoned feldspars). This has significant amount of weathered (hematite stained) intermediate to basic porphyritic volcanic rocks, not common from El Valle-La Yeguada pyroclastics containing Monagrillo pottery. So the provenance is Azuero.
Temper: Fresh porphyritic volcanic rock-based sand may have been added.
Clays: exterior (the exterior of the curved) is oxidized and the interior is somewhat reduced. The interior is yellowish red. In PPL, the color is amber with reduced exterior and interior surfaces.

Inclusions:

Mineral/ lithic frag-ment	Quartz	Plagio-clase	Rhyolite (holohyaline, w/ or without plagioclase phenocryst)	Porphyritic trachyte (w/ or without fresh plagioclase and/ zoned plagioclase, 0.2-0.4 mm grain, phenocysts)	Zoned feld-spar	Zircon
Size	0.05-0.7	0.1-1	0.25-0.7	0.3-1.5	0.15-1.2	0.08
Angularity	Ang	Ang	Ang	Ang	Ang,	Ang
Shape	Eq-el	El-Eq	El	El-Eq	Eq-El, Sbh	Eq
Degree of weathering	1	1-2	2	1-2	1	1
Approx. amount	3	3	3	3	3	1

Mineral/ lithic fragment	Iron ox-ide/hydroxide	Hematite	Biotite	Epidote	Magnetite	Possible micro basic intrusive (0.15-0.4 mm)
Size	0.15	0.3	0.15	0.1	0.02-0.15	0.6
Angularity	Ang	Rd	Rd	Rd	Ang	Rd
Shape	Eq	Eq	El	El	Eq-El, Sbang, Emb	Eq
Degree of weathering	3	3	3	2	1	2
Approx. amount	1	1	1	1	2	1

Mineral/ lithic frag-ment	Rhyolite (heavily hematite stained)	Rhyolite (holo-crystalline; can have pheno-cryst))	Intermediate to basic porphyritic volcanic rock (heavily hematite stained; plagioclase phenocrysts)	Weathered porphy-ritic tuff (with weathered plagio-calse phenocryst)	Dacite (hypocrys-talline; can have amphibole pheno-cryst, 0.15 mm grain)
Size	0.3-1.2	0.3	0.9	0.8	1
Angularity	Ang	Ang	Rd	Rd	Rd
Shape	El	El	Eq	El	El
Degree of weathering	3	2	3	3	2
Approx. amount	2	3	1	1	2

Mineral/ lithic frag-ment	Volcanic glass (Fe-rich)	Andesite/basalst (0.02-0.1 mm grain)	Rhyolite (holo-hyline)	Polyrcystalline quartz (perhaps with some spherulitic texture) (0.1-0.2 mm grain)	Chert (0.02-0.2 mm, grain)	Tuff (hematite stained)
Size	0.9	0.3	0.6	0.45	0.6	0.2
Angularity	Rd	Ang	Ang	Ang	Ang	Rd
Shape	El	El	Eq	El	El	Eq
Degree of weathering	3	2	2	2	1	3
Approx. amount	1	2	2	2	1	1

Manufacturing technique: slab or squeezed (pressured)
Slip/Paint: none, the exterior and interior surfaces are smoothed
Provenance: Basic to felsic volcanic rock fragment and their monomineralic phenocryst containing sand from Azuero.
Similarity to ceramics from other sites: Azuero pottery

AG13-9-U1-F1

Coarse fragments: There are 35% of coarse fragments of lithics (5%, 0.1-1.1 mm) and minerals (30%, 1.6–0.02 mm). Major inclusions are porphyritic igneous sand (basic to felsic) and their fresh and angular monomineralic phenocrysts (zoned feldspars/plagioclase, plagioclase, lesser amount of amount of quartz). The latter could be pyroclastics-derived. Clear concentrically zoned euhedral plagioclase found in this sherd are not common in Cordilleran pottery. There could be some secondary calcite on part of the exterior surface and in pores close to the surface.
Temper: Fresh porphyritic volcanic rock-based sand may have been added.
Clays: The pottery is reduced in the exterior (of the slight curve) and interior is neutral. The clayey soil is birefringent in XPL. In PPL, amber colored.

Inclusions:

Mineral/ lithic fragment	Quartz (can have fluid inclusions)	Plagioclase	Zoned-feldspar (including concentric, mainly plag)	Magnetite	Amphibole	Zircon	Epidote	Vocanic quartz
Size	0.03-0.4	0.07-1.2	0.15- 1.7	0.05-0.15	0.4	0.15	0.1	0.15-0.4
Angularity	Ang	Ang	Ang	Ang	Ang	Ang	Rd	Rd
Shape	Eq-el	E1-El	El-Eq, Euh, Sbh	Eq-el	El-Eq	El	Eq	Eq, Emb
Degree of weathering	3	1	1	1	1	1	2	1
Approx. amount	3	4	4	1	2	1	1	1

Mineral/ lithic fragment	Porphyritic dacite (hypocrystaline to holohyaline or their mix w/ or without zoned feldspar, amphibole, plag, quartz phenocrists)	Interediate to basic volcanic rock (hypocrystalline)	Intermediate to basic volcanic rock (holohyaline)	Volcanic Chert	Tuff (holohyaline)
Size	0.3-1.7	0.7	2	0.15	0.3
Angularity	Sub rd-	Ang-	Rd	Rd	Rd
Shape	Eq-El	E1	Eq	Eq	Eq
Degree of weathering	1	2	3	1	3
Approx. amount	2	1	2	1	1

Mineral/ lithic frag-ment	Rhyolite (holo-crystalline)	Rhyolite (heavily hematite stained)	Trachyte	Intermediate to basic volcanic rock (heavily weathered holocrystaline, w/ quartz phenocryst)	Intermediate to basic vol-canic rock (holohyaline)	Hematite
Size	0.4	1.2	0.5	1.2	0.7	0.2
Angularity	Rd	Rd	Rd	Rd	Rd	Ang
Shape	Eq	El	El	El	El	El
Degree of weathering	1	3	2	3	1	1
Approx. amount	1	2	1	1	1	1

Mineral/ lithic fragment	Polycrystalline quartz (0.15 mm grain)	Secondary cacite (walls and pores close to the exterior)	Iron oxide/hydroxide
Size	0.4	0.02	0.1-0.4
Angularity	Ang	Ang	Rd
Shape	El	El	El
Degree of weathering	1	1	3
Approx. amount	1	1	2

Manufacturing technique: slabs or squeezed
Slip/Paint: there is no slip or paint and the interior of the curve is more smoothed (aligened minerals) than the exterior
Provenance: possible Azuero with porphyritic volcanic rock-based sand, although the intrusive rock fragments are absent or the sherds has fresh monomineralic phenocrysts pyroclastics derived from El Valle-La Yeguada.
Similarity to ceramics from other sites: mainlyAg13 pottery

AG-13-22-U2-F1

Coarse fragments: They are 35% coarse fragments of lithics (5%, 0.2-1.2 mm) and minerals (30%, 0.02-1.5 mm). The major inclusions are pyroclastics-derived coarse angular monomineralic plagioclase, zoned plagioclase and lesser amount of quartz. There are possibly small amount of K-feldspars. Minor inclusions are magnetite and hematite, as well as amphibole (hornblende). There are minor amount of felsic volcanic rocks and volcanic glass of which most are hypocrystalline to holohyaline in texture.
Temper :Pyroclastics sand with mono-minerlic phenocrysts fell onto the clay deposit or were added to the clay as temper.
Clays: The clays are birefringent in XPL. In PPL, the core is reduced and both of the exteriors are oxidized.

Mineral/ lithic fragment	Quartz	Plagioclase	Zoned feldspar (mainly plagioclase)	Amphoble (hornblende)	Iron ox-ide/hydroxide	Volcanic quartz
Size	0.02-1.7	0.15-1.2	0.2-0.7	0.2-0.5	0.05-0.1	0.2-0.6
Angularity	Ang	Ang	Ang	Ang	Rd	Rd
Shape	Eq-El	Eq-El	Eq-El, Sbh	Eq-El, Dmd	El	Eq, Sbh
Degree of weather-ing	1	1	1	1	3	1
Approx. amount	4	3	3	2	2	1

Mineral/ lithic frag-ment	Magnetite	Hematite	Tuff	Rhyolite (hypocrystal-line; can be prphyritic with quartz amphibole, or magnetite)	Rhyolite (holo-crystalline)	Quartz aggregate (with hematite stain; grain: 0.01-0.15 mm)
Size	0.1-0.3	0.1	0.15	0.2	0.3	0.15-1.1
Angularity	Ang	Rd	Rd	Rd	Rd	Rd
Shape	Eq-El	Eq	Eq	El	El	El
Degree of weathering	2	3	2	3	1	2
Approx. amount	1	1	1	1	1	2

Mineral/ lithic fragment	Volcanic chert	Volanic glass (rich in Fe)	Alkali-feldspar (?)
Size	0.25	0.5	0.25-1.2
Angularity	Rd	Rd	Ang
Shape	El	El, Anh	Eq
Degree of weathering	1	3	1
Approx. amount	1	1	1

Manufacturing technique: lip is added on top of layered slab/squeezed clay wall which at the core furthest from the lip, seems to have a clay ball of the same paste sandwiched by walls.
Slip/Paint: The surface all around is carefully smoothed. Opaque colored hematite rich-slip (in reflected light) is added on the interior (exterior is the carmine red from the waxed red pencil). The interior lip has thick clay material without added temper but with birefringence. This material is different from clays used for the paste.
Provenance: Ag13 or El Valle and La Yeguada
Similarity to Ceramics form other sites/or this site: Ag13-like

AG13-32-U3-F1

Coarse fragments: There are 35% of coarse fragments of lithics (25%, 0.1-1.8 mm) and minerals (10%, 0.03–1.3 mm). Major inclusions are mixed igneous rock (basic to felsic intrusives and volcanic rocks) fragments and monomineralic phenocrysts (fresh to somewhat weathered) derived from some volcanic porphyritic rocks. Intrusive rocks include microgranodiorite. Clayey soil pore edges can be altered (iron-oxide/hydroxide texture).
Temper: mixed igneous rock based sand may have been added because monomineralic plagioclase phenocrysts can be fresh.
Clays: Birefringent orangish ocre in XPL. In PPL, the exterior is amber color and the interior is reduced.

Inclusions:

Mineral/ lithic frag-ment	Quartz	Plagioclase (can have apatite inclusion)	Amphibole	Epidote	Alkali-feldspar?	Iron oxide (hematite stained) with radiating epidote	Zoned feldspar
Size	0.03-1.3	0.1-1.1	0.15	0.15	0.3	0.45	0.2-0.6
Angularity	Ang	Ang	Ang	Sbang	Ang	Rd	Ang
Shape	El-Eq	Eq-El	El	Eq	Eq	Eq	Eq-El, Sbh
Degree of weathering	1	1	1	2	2	3	1
Approx. amount	3	3	1	1	1	1	3

Mineral/ lithic frag-ment	Magnetite	Biotite	Basalt	Micro Gabbro/Diorite (0.1-0.5 mm grain) with separate epidote and plagioclase aggregates (0.3-0.4 mm grain) (heavily hematite stained)
Size	0.03-0.3	0.9	2	2.9
Angularity	Ang	Rd	Rd	Rd
Shape	Eq-el	El	El	El
Degree of weathering	1	2-3	3	3
Approx. amount	Low	1	1	1

Mineral/ lithic fragment	Iron oxide/hydroxide	Micro basic to intermediate intrusive rock (0.2-0.4 mm grain)	Polycrystallin quartz (0.05 mm grain)	Zircon	Volcanic quartz	Porphyritic intermediate to basic volcanic rock (w/ zoned feldspar and quartz phenocrysts)
Size	0.05-0.8	0.4	0.5	0.08	0.2	0.9El
Angularity	Rd	Rd	Rd	Ang	Rd	Ang
Shape	Eq-El, Anh	Eq	Eq	Eq	Eq	El
Degree of weathering	3	3	2	1	1	1
Approx. amount	3	1	3	1	1	1

Mineral/ lithic fragment	Micro Granodiorite (0.1-0.3 mm)	Volcanic glass (Fe-rich)	Gabbro/diorite (0.1-0.5 mm grain; heavily hematite staied)	Intermediate to basic volcanic rock (heavily hematite stained, 0.15 mm grain)	Rhyolite (heavily hematite stained)
Size	0.6	0.6	1.5	0.8	2.5
Angularity	Ang	Rd	Rd	Rd	Rd
Shape	El	El	El	Eq	El
Degree of weathering	2	3	3	3	3
Approx. amount	1	1	1	1	1

Manufacturing technique: slab/squeezed and at the rim/lip, one slab is longer folding over to make the lip shape
Slip/Paint: slip/paint none but both exterior and interior surfaces are well-smoothed minerals aligning at the surface
Provenance: Azuero intrusive zone
Similarity to ceramics from other sites: Pr32 with mixed igneous assemblage including intrusives

AG13-32-U3-F2

Coarse fragments: There are 25% of coarse fragments of lithics (15%, 0.25-2.7- mm) and minerals (10%, 0.3–0.8 mm). Major inclusions are mixed igneous assemblages that include hematite stained or weathered intermediate to basic intrusive and volcanic rocks as well as rhyolites. The volcanic rocks can contain phenocrsts, which are the consistency of the monomineralic phenocrysts in the paste.
Temper: The inclusions are not necessarily fresh, including plagioclase, so the inclusions could be natural.
Clays: clayey sediment is birefringent, yellowish color on both exteriors and somewhat reduced in the interior thick core. In PPL, the paste is light amber throughout the paste.

Inclusions:

Mineral/ lithic frag-ment	Quartz	Plagio-clase	Epi-dote	Amphi-bole	Magnet-ite	Volcanic quartz	Zir-con	Hematite
Size	0.03-1.2	0.08-0.8	0.1-0.2	0.15	0.05-0.1	0.1-0.7	0.1	0.1-1.2
Angularity	Ang	Ang	Ang	Ang	Ang	Rd, Ang	Ang	Rd
Shape	Eq-El	Eq-El	El	El	Eq-El	Eq, Sbh	Eq	El
Degree of weathering	1	1-2	1	1	1	1	1	3
Approx. amount	3	3	1	1	1	1	1	2

Mineral/ lithic frag-ment	Rhyolite (hematite stained, holohya-line, w/ or without pheno-cryst)	Rhyolite /felsic volcanic rock with heavy hematite stain	Intermediate to felsic vol-canic rock with heavy menatite stain (can have phenocrysts)	Epidote and feldspar aggre-gate (0.1 mm grain)	Porphy-ritic Dacite (Plag phe-nocryst, 0.6 mm)	Poly-crystal-line quartz (0.5-0.2 mm grain)	Chert
Size	1.7	0.8	0.6-1.7	0.25	0.7	1.2	0.3
Angularity	Ang	Rd	Ang	Ang	Rd	Rd	Ang
Shape	Eq	El	El	El	El	Eq	El
Degree of weathering	3	3	3	1	2	2	1
Approx. amount	1	3	3	1	1	1	2

Mineral/ lithic fragment	Micro Diorite/Gabbro (0.35 mm grain; heavily hematite stained)	Tracyte	Dacite (holocrystalline; amphibole phenocryst, some hematite stain)	Rhyolite (hypo-crystalline)	Felsic to intermediate volcanic rock (holo-crystalline)
Size	1.1	1.1	0.5	0.3-0.6	0.7
Angularity	Rd	Rd	Rd	Ang	Ang
Shape	Eq	Eq	Eq	Eq-El	Eq
Degree of weathering	3	3	2	2	1
Approx. amount	1	1	1	2	1

Mineral/ lithic fragment	Volcanic aggregate of spherulitic textured fragments (0.05-0.1 mm)	Rhyolite with spherulitic texture and plagioclase phenocrysts (the rock contains zircon and iron oxide/hydroxide)	Spherulitic textured chert	Zoned feldspar	Iron oxide/hydroxide
Size	0.6	3.5	0.1-0.4	0.3	0.15
Angularity	Rd	Ang	Ang	Ang	Rd
Shape	El	El	Rd	Eq, Sbh	El
Degree of weathering	1	3	2	1	3
Approx. amount	1	2	1	1	1

Manufacturing technique: a slab on top of two slabs
Slip/Paint: the surface is not particularly well finished
Provenance: Azuero intrusive zone
Similarity to ceramics from other sites: He5 and Pr32 with Azuero instrusive (mixed igneous assemblage)

AG13-32-U3-F3

Coarse fragments: There are 40% of coarse fragments of lithics (2%, 0.15-0.6 mm) and minerals (38%, 0.03-1.25– mm). Major inclusions are pyroclastics with fresh monomineralic phynocrysts with plagioclase, quartz, volcanic quartz, and zoned feldspars. There seems to be no obvious alakali feldspar because many zoned feldspars are zoned plagioclase. Rock fragments are scarce because perhaps most of the matrix vitrous fragments are perhaps weathered.
Temper: pyroclastics sand may have been added or could have been fallen onto the clay deposit.
Clays: birefringent in XPL. In PPL, the paste is amber colored but the thin exterior and interior surfaces are reduced giving burnt amber color.

Inclusions:

Mineral/ lithic frag-ment	Quartz	Plagioclase	Zoned feldspar (mainly plagio-clase)	Magnetite	Hornblende	Hematite	Volcanic quartz
Size	0.03-1.4	0.05-1.25	0.4-1	0.1-0.4	0.2-0.4	Eq	0.5-0.8
Angularity	Ang	Ang	Ang	Ang	Ang	Ang	Ang
Shape	Eq-el	El-eq	El-eq, Subh, Euh	Eq-el, Embayed, Sub	Eq-El, Dia-mond	Eq	Eq, Subang, Embayed
Degree of weathering	1	1	1	1	1	3	1
Approx. amount	4	3	3	1	2	1	2

Mineral/ lithic frag-ment	Rhyolite (holocrys-talline)	Tuff	Iron ox-ide/hydroxide	Zircon	Biotite	Rhyolite (hypo-crystalline)	Intermediate to basic volcanic rock
Size	0.15	0.5	0.05-0.1	0.05	0.2	0.2	0.8-1
Angularity	Ang	Ang	Rd	Ang	Rd	Rd	Rd
Shape	Eq	El	Eq-El	El	Eq	El	Eq
Degree of weathering	1	1	3	1	3	2	3
Approx. amount	1	1	2	1	1	1	1

Manufacturing technique: squeezed (or slab)
Slip/Paint: no paint or slip. One side is more smoothed than the other (which latter could have been weathered on the surface)
Provenance: Pyroclastics derived from volcanic units of El Valle and La Yeguada.
Similarity to ceramics from other sites: Very similar to some sherds in CL1 with the characteristics of significant amount of fresh monomineralic phenocrysts and the matrix has small number of volcanic rocks of a limited kind (e.g. rhyolite).

AG13-34-U3-F1

Coarse fragments: There are nearly 40% of coarse fragments of lithics (5%, 0.45-1.3 mm) and minerals (35%, 0.03–1.2 mm). Major inclusions are pyroclastics with fresh and angular plagioclase, quartz, and zoned plagioclase with some porphyritic volcanic rock fragments. There is a glob of clay with fresh plagioclase ad amphibole phenocryst that seems to be a clay inclusion with more oxidized state. Although this sherd has abundant pyroclastics inclusions, there are more volcanic rock inclusions than typical former found in Cl1.
Temper: Pyroclastics based sand was added or had fallen onto the clay deposit.
Clays: birefrigent. Soil is relatively dark reddish brown. The darker thin exterior sandwiches interior somewhat more exidized interior but which has a core that is again, reduced. In PPL, reduced thin core sandwiched by more oxidized amber paste while the exterior surfaces are reduced.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagioclase	Zoned feldspar (mainly plagioclase, includes concentric)	Magnetite	Hornblende	Volcanic quartz (can have apatite incusion and/or fluid inclusion)
Size	0.05-0.8	0.1-1	0.1-1	0.1-0.2	0.2	0.1-0.4
Angularity	Ang	Ang	Ang	Ang	Ang	Rd
Shape	Eq-El	Eq-El	El-eq, Euh	Eq-El, Sbh	Eq	Eq
Degree of weathering	1	1	1	1	1	1
Approx. amount	3	3	3	1	2	1

Mineral/ lithic fragment	Green amphi-bole	Hema-tite	Vol-canic glass (Fe-rich)	Volcanic glass	Rhyolite (holo-crystalline)	Rhyolite with quartz phenocryst (hypocrys-talline)	Rhyolite (holo-hyaline)	Intermediate to basic porphyritic volcanic rock (heav-ily hematite stained, holohyaline)
Size	0.15	0.5	0.08-0.3	0.25	0.5	2	0.5	1.7
Angularity	Ang	Rd	Eq	El	Eq	El	Ang	Ang
Shape	Eq	El	Rd	Ang	Ang	Ang	El	Eq
Degree of weathering	1	3	3	2	1	3	1	3
Approx. amount	1	1	3	2	1	2	1	1

Manufacturing technique: The long pores are horizontal to the wall. The manufacturing technique could be slab or squeezed technique.
Slip/Paint: There is no slip or paint. The surface is smoothed only on one surface.
Provenance: Isthmus proper pyroclastics (El Valle/La Yeguada)
Similarity to ceramics from other sites: Cl1

AG13-34-U3-F2

Coarse fragments: There are 50% of coarse fragments of lithics (25%, 0.2-1.8 mm) and minerals (25%, 0.05–1.2 mm). There are dense inclusions of mixed volcanic rocks rock assemblage ranging from felsic to basic characteristics and the clay contains epidote. Monomineralic fresh quartz, alkali-feldspars,, zoned feldspars (mainly plagioclase), plagioclase are derived from the types of porphyritic rocks included in the paste. There is a glob of oxidized clayey soil inclusions that contain similar minerals as the surrounding paste matrix.
Temper: Probably, volcanic rock-based sand (of different degree of weathering) was added (sand with fresh rock and monomineralic plagioclase phencrysts)
Clays: birefringent in XPL, and in PPL, oxidized in the thick core but reduced on the outer edges.

Inclusions:

Mineral/ lithic frag-ment	Quartz	Zoned plagioclase	Plagioclase	Amphibole	Epidote	Botite	Volcanic Glass	Zircon
Size	0.05-0.6	0.3-1.4	0.2-0.	0.35-0.6	0.2-0.3	0.5	0.3-0.6	0.1
Angularity	Ang	Ang	Ang	Ang	Ang	Rd	Ang-Rd	Ang
Shape	Eq-El	Sbh, Eq	Eq	Eq-El	Eq-El	El	Eq	El
Degree of weathering	1	1	1	1	1	2-3	3	1
Approx. amount	3	3	3	2	1	1	1	1

Mineral/ lithic fragment	Rhyo-lite (hypo-crystal-line)	Trachyte (with or without pheno-crysts of amphi-bole, al-kaliphelds par)	Andesite/ basalt	Dacite (w/ pheno-crysts	Poly-crystal-line quartz	Tuff (heav-ily hematite stained, w/ phenocryst (e.g. feld 0.15-0.25 mm grain, amphib 0.25 mm))	Micro quartz aggre-gate	Phyto-liths
Size	0.5-1.8	0.8	0.3	0.3-0.8	0.2-0.3	1.3	0.4	0.05
Angular-ity	Rd	Rd	Rd	Rd	Rd	Rd	Rd	Ang
Shape	El	Eq	Rd	Rd	Eq-El	El	El	Eq-El
Degree of weather-ing	2	1	3	1	2	3	2	1
Approx. amount	4	1	1	3	2	2	2	1

Mineral/ lithic frag- ment	Mag- netite	Tuff (w/ phenocryst (e.g. zoned plag 0.1-0.5 mm grain, clinpryoxene 0.1 mm)	Intermediate to basic vol- canic rock (hema- tite stained)	Volcanic quartz	Volcanic rock w/ spherulitic texture (w/ phenocryst (e.g. plag 0.6 mm grain)	Iron ox- ide/ hydroxide
Size	0.03- 0.15	1.2	0.7	0.25	1.3	0.05-0.3
Angularity	Ang	Rd	Rd	Rd	Rd	Rd
Shape	Eq-El	El	Eq	El	El	El
Degree of weathering	1	3	3	1	2	3
Approx. amount	2	2	2	1	2	2

Manufacturing technique: The dense inclusion gives undulating pores making the identification difficult. However, the directionality of elongated incusions suggest slab and lump construction. This also is found in the pottery sherd. This sherd is possibly a fragment of a round base.
Slip/Paint: There is no slip or painton the exterior or interior surface.
Provenance: Possible Azuero (no intrusive rocks fragments found but the igneous rock fragment textures and variability are similar to Azuero sherds paste)
Similarity to ceramics from other sites: Pr32 and some He5

AG13-35-U3-F1

Coarse fragments: There are 50% of coarse fragments of lithics (40%, 0.03-1 mm) and minerals (10%, 0.02–0.8 mm). The dense inclusion consist of mixed volcanic rock assemblage mainly consisting of fresh and angular monomineralic plagioclase, zoned plagioclase, quartz, volcanic quartz, amphibole, and magnetite. The sand inclusions have felsic to basic porphyritic to non-porphyritic volcanic rocks.
Temper: Volcanic sand was added
Clays: birefrinetnt in XPL and amber colored (somewhat oxidized) in PPL with sme reduction on the exterior surface.

Inclusions:

Mineral/ lithic frag-ment	Quartz	Vol-canic quartz	Zoned plagioclase	Plagioclase	Magnetite	Biotite	Amphibole	Volcanic glass
Size	0.03-0.8	0.2	0.5-1	0.3-0.7	0.05-0.1	0.2-0.4	0.15-0.2	0.3-1.1
Angularity	Ang	Rd	Ang	Ang	Ang	Rd	Ang	Rd
Shape	Eq-el	Eq	Euh	Eq-El	Eq	El	Eq-El	Eq-El
Degree of weathering	1	1	1	1	1	2	1	3
Approx. amount	3	1	3	3	2	1	2	2

Mineral/ lithic frag-ment	Trachyte	Rhyolite (hypo-crystalline)	Poly-crystalline quartz	Tuff (porphyritic (e.g. plag 0.3 mm) can have heavy hematite stain)	Epidote	Andesite/ Basalt	Microcrystalline epidote and qtz aggregate
Size	0.8	2.5	0.4	0.9-1.6	0.5	0.8	0.5
Angularity	Rd	Rd	Rd	Rd	Rd	Rd	Rd
Shape	El	El	El	El	El	El	El
Degree of weathering	2	2	2	1-3	1	3	2
Approx. amount	1	3	2	3	1	1	1

Mineral/ lithic fragment	Intermediate to basic vol-canic rock	Dacite	Iron ox-ide/ hyrdoxide	Spheritic textured vlcanicc rock	Felsic holocrystalline volcanic rock fragmene w/ partially spherulitic tex-ture (w/ phenocryst (e.g. plag and qtz 0.25 mm grain))
Size	0.5-0.8	0.8-1.6	0.03-0.2	0.7	0.7
Angularity	Rd	Ang	Rd	Rd	Rd
Shape	Eq	Eq	El	El	El
Degree of weathering	2-3	1	3	2	1
Approx. amount	2	3	2	1	1

Manufacturing technique: sqeezed or slab; there is a vertical shrinkage cracks.
Slip/Paint: There is no surface paint or slip but they are both smoothed
Provenance: Possible Azuero (no intrusive rocks fragments found but the rock fragment textures and variability are similar to Azuero sherds paste)
Similarity to ceramics from other sites: Pr32 and some He5

AG13-35-U3-F2

Coarse fragments: There are 35% of coarse fragments of lithics (20%, 0.15-1.5 mm) and minerals (15%, 0.15–1.2 mm). Major inclusions are mixed ignous assemblage with minor amount of intrusive to abundant volcanic rock framents ranging between felsic to basic constituency.
Temper: Since monnomineralic phenocrysts derived from plagioclase tend to be fresh, it could be that sand with mixed igneous rock constituency was added as inclusions.
Clays: birefringent in XPL. In PPL, it is oxidized on the exterior curve of the wall, w/ the red color, the interior is medium in the oxidation state and the interior curve has partial reduction.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagioclase	Zoned feldspar (some are plagioclase)	Volcanic quartz	Trachyte (with or without phenocryst of amphibole)	Rhyolite (hypocrystalline)	Biotite
Size	0.1-1.5	0.1-0.9	0.25-0.9	0.15	0.3-0.35	1.7	0.2
Angularity	Ang	Ang	Ang	Rd	Ang	Rd	Rd
Shape	Eq-El	Eq-El	El-Eq	Eq	El-Eq	Eq	El
Degree of weathering	1	1	1	1	1	1	3
Approx. amount	3	3	3	1	2	3	1

Mineral/ lithic fragment	Magnetite	Epidote	Iron oxide/hydroxide	Zircon	Amphibole	Volcanic glass	Dacite with or without phencryst (plagioclase, and amphibole 0.25-0.4 mm)
Size	0.25-0.1	0.05	0.15-0.5	0.15	0.1-0.35	0.15-0.4	0.6
Angularity	Ang	Rd	Rd	Ang	Ang	Rd, Ang	Rd
Shape	El-eq	Eq	Eq	El	Eq-El	Eq	El
Degree of weathering	1	2	3	1	1	1	1
Approx. amount	1	1	2	1	2	1	2

Mineral/ lithic fragment	Rhyolite (holo-crystalline)	Polycrystalined quartz (0.05 mm)	Tuff	Sphruitic textured grained volcanic rock	Chert	Hematite
Size	0.8	0.6	0.5	0.7	0.2	0.6
Angularity	Ang	Ang	Ang	Ang	Ang	Ang
Shape	El	El	El	El	Eq	Eq
Degree of weathering	2	1	1	1	1	3
Approx. amount	2	1	2	1	2	1

Mineral/ lithic fragment	Intermediate to basic vol-canic rock (heavily hematite stained)	Rhyolite (heavily hem-matite stained)	Micro-diorite or gabbro (0.3 mm plag grain)
Size	0.4	0.8	0.5
Angularity	Rd	Rd	Rd
Shape	El	El	El
Degree of weathering	3	3	3
Approx. amount	1	1	1

Manufacturing technique: the possible exterior wall curve seems to have two slabs placed against one slab in the interior wall curve according to the elongated pores.
Slip/Paint: There is no slip or paint. The interior reduced side is weathered and the oxidized exterior side that is partially weathered has smoothing evidenced by aligned minerals.
Provenance: Azuero with intrusive rock fragents and mixed ignous volcanic sand inclusions
Similarity to ceramics from other sites: Azuero

<u>AG13-114-U4-F1</u>

<u>Coarse fragments:</u> There are 40% of coarse fragments of lithics (5%, 0.1-1 mm) and minerals (35%, 0.03–1.3 mm). Major inclusions are pyroclastics derived fresh and agular monomineralic phenocrysts of plagioclase, zoned feldspar, quartz, amphibole, and magnetite as well as some mainly felsic volcanic rock fragents (do not have the phenocrsts existent in monomineralic phenocrysts). This is probably El Valle and La Yeguada pyroclastics-based paste but has more rock fragment than typical exclusively monomineralic pheocrysts from pyroclastics (similar to Ag13-34-U3-F1).
<u>Temper:</u> Pyroclstics were added or fell onto the clay deposit.
<u>Clays:</u> birefringent in XPL and is medium oxidized (but Fe could be not so high--- not causing reddish color) with amber color in PPL wth reduction on the exterior and interior surfaces.

<u>Inclusions:</u>

Mineral/ lithic fragment	Quartz	Zone feld-spars	Amphibole	Volcanic glass	Geeen amphibole	Magnetite
Size	0.05-1.3	0.25-0.5	0.2-0.35	0.14-0.5	0.4	0.05-0.5 mm
Angularity	Rd-Ang	Ang	Ang	Rd	Ang	Ang
Shape	Eq-El	Euh, sbh, Emb, Eq-El	Eq-El	El	El	Euh, Eq-El
Degree of weathering	1	1	1	3	1	1
Approx. amount	3	3	2	1	1	1

Mineral/ lithic fragment	Tuff	Phytoliths	Intermediate to basic volcanic rock	Porphyritic intermediate to basic volcanic rock	Rhyolite (holohyaline)
Size	0.1-0.2	0.05	0.9	1.3	0.3
Angularity	Rd	Ang	Rd	Ang	Ang
Shape	Eq-El	Eq-El	Eq	El	Eq
Degree of weath-ering	2	1	3	3	2
Approx. amount	2	1	1	2	1

Mineral/ lithic frag-ment	Rhyolite (holo-crystalline)	Rhyolite (heavily hema-tite stained)	Rhyolite (holohyaline matrix, phecryst have becme iron oxide/hydroxide)	Volcanic quartz
Size	1.1	0.1	0.7	0.2
Angularity	Ang	Rd	Rd	Ang
Shape	Eq	Eq	El	Eq
Degree of weathering	3	3	3	1
Approx. amount	1	1	1	1

Manufacturing technique: long pores are parallel to the wall and elongated minerals are also parallel to the wall; slab or squeezed construction
Slip/Paint: No slip or paint; some smoothing of interior surface
Provenance: Cordillera, Quaternary El Valle and La Yeguada adakitic zone pyroclastics
Similarity to ceramics from other sites: Cl1, Lp8, Lp134

AG13-116-U4-F1

Coarse fragments: There are 40 % of coarse fragments of lithics (5%, 0.15-1.3 mm) and minerals (35%, 0.03–1.4 mm). Major inclusions are pyroclastics derived fresh and angular, fresh, and abundant large monomineralic phenocrysts of zoned feldspars and plagioclase and some quartz w/ accessory minerals of pyroxenes and hornblendes. This is probably El Valle and La Yeguada-based paste but has more rock fragment than typical exclusively monomineralic pheocrysts from pyroclastics (similar to Ag13-34-U3-F1).
Temper: Pyroclastic-derived materials were added inclusions or were fallen onto the clay deposit.
Clays: birefringent ochreish clay w/ the exterior surface curve having reddish oxidation. In PPL, it is reddish-light brown (oxidized) on the exterior and the interior surface is reduced with the burnb amber color (pottery used for cooking?). Some part of the exterior is reduced.

Inclusions:

Mineral/ lithic frag-ment	Quartz	Plagio-clase	Zoned feldspar	Augite	Hornblende	Rhyolite porphery (w/ a large quartz phenocryst)	Rhyolite (holo-crystalline)
Size	0.03-1.3	0.15-1.2	0.25-1.5	0.15-0.3	0.3	0.4	0.1-0.8
Angularity	Ang	Ang	Ang	Ang	Ang	Ang	Rd-Ang
Shape	Eq-El	Eq-El	Eq-El, Sbh	El	El, Dmd	El	Eq-El
Degree of weathering	1	1	1	1	1	1	1
Approx. amount	3	3	3	1	1	1	4

Mineral/lithic fragment	Magnetite	Chert	Hematite	Iron ox-ide/hydroxide	Rhyolite (heavily hematite stained)
Size	0.05-0.1	0.3	0.05	0.05	1.3
Angularity	Ang	Ang	Ang	Rd	Rd
Shape	Eq-El	El	Eq	Eq	El
Degree of weathering	1	1	1	3	3
Approx. amount	1	1	1	1	1

Manufacturing technique: possible double slabs w/ pores indicating two slabs in the interior curve
Slip/Paint: no slip or paint. Exterior and interior walls are well smoothed.
Provenance: El Valle and La Yeguada-derived pyrocla stics.
Similarity to ceramics from other sites: similar to pottery with pyroclastics with monomineralic phenocrysts but with ~5% of rock inclusions.

AG13-116-U4-F2

Coarse fragments: There are 35% of coarse fragments of lithics (8%, 0.9-0.07 mm) and minerals (27%, 0.05-1.4 mm). Major inclusions are angular, coarse, and fresh phenocrysts of of plagioclase, zoned plagioclase and zoned feldspars and less quantity of accessory minerals of pyroxene and magnetite. There is a possible grain of augite as monomineralic phenocryst. They are derived from porphyritic rhyolitic rock-dervived. Volcanic rocks also include intermediate to basic rocks. The variability of igneous rocks is high and quantity is high compared to the typical El Valle and La Yeguada pottery.
Temper: Volcanic rock-based sand may have been added since some monomineralic plagioclase phenocryst grains are fresh.
Clays: birefringent, amber colored paste, the pottery is somewhat more reduced at the core. Oxidized exterior and amber at the central area of the paste and the interior surface is reduced in PPL (cooking vessel?).

Inclusions:

Mineral/ lithic fragment	Quartz	Plagioclase	Zoned feld-spar	Magnetite	Trachyte	Volcanic glass	Biotite
Size	0.2-1.3	0.1-1.3	0.2-1	0.03-0.6	0.3	0.2	0.25
Angularity	Ang-Rd	Ang	Ang	Ang	Rd	Rd	Rd
Shape	Eq-El	Eq-El	Eq-El	Eq-El, Sbh	El	El	El
Degree of weathering	1	1	1	1	2	3	2
Approx. amount	3	3	4	1	1	1	1

Mineral/ lithic frag-ment	Hornblende	Iron ox-ide/hydroxide	Spherulitic textured micro grain aggregate (hematite stained)	Intermediat to mafic volcic rock (slightly to heavily hematite stained)	Rhyolite (hypo-crystalline, can have quartz phenocryst)	Sphrulitic texutredd volcanic rock
Size	0.2- 0.4	0.2-0.25	0.6	1.2	0.3-0.4	0.5-1.3
Angularity	Rd	Rd	Ang	Rd	Ang-Rd	Ang
Shape	El	Eq-El	El	El	Rd	El
Degree of weathering	1	3	3	3	2	3
Approx. amount	1	1	1	3	4	2

Mineral/ lithic frag-ment	Augite (coloreless)	Rhyolite (holohyaline)	Rhyolite (holocrystal-line, heavily hematite stained)	Andesite/basalt (heavily hematite stined)	Green amphibole	Dacite (zoned plagioclase phenocryst; holohyaline)
Size	0.5	1	0.8	0.6	0.1	1.4
Angularity	Ang	Ang	Rd	Rd	Ang	Ang
Shape	El	Eq	El	Eq	Eq	Eq
Degree of weathering	1	2	3	3	1	1
Approx. amount	1	1	1	1	1	1

Manufacturing technique: slabs or squeezed. Vertical thin pores parallel to the wall and elongated minerals are also aligned with the wall. It seems that the lip is also finished without folding (the vertially aligned pores end abruptly).
Slip/Paint: No slip or paint and there is no particular evidence of smoothing (surface weathered away?)
Provenance: El Valle and La Yeguada pyroclastics inclusions are present but with relatively high amount of volcanic rocks.
Similarity to ceramics from other sites: Ag13 pyroclastics

PR32-C35-N9-1

Coarse fragments (temper): 40% poorly sorted rocks (15%, 0.15-1.8 mm) and minerals (25%, 0.05-1.3 mm). Major inclusions are: igneous assemblage (mainly rhyolitic) with or without phenocrysts and monomineralic inclusions of quartz, plagioclase, possible alkali-feldpsars, and zoned feldspars. Minomineralic inclusions include biotites and epidote. Monominerlic coarse quartz can contain tourmaline grains. There are micro instrusive rock grains.
Temper:since the glassy parts of volcanic rocks remain with large phenocrysts, volcanic ash including volcanic sand (mainly felcis) may have been added.
Clays: mainly oxidized in PPL (interior less oxidized), birefringent in XPL.

Mineral/ lithic fragment	Quartz	Plagio-clase	Alkali-feldspar (possible)	Biotite	Amphibole	Zoned feldspar	Epidote
Size	0.03-1.5	0.25-0.9	0.12-0.55	0.06-0.4	0.08-0.5	0.1-0.5	0.18
Angularity	Ang	Ang	Ang	Ang	Ang	Ang	Ang
Shape	El-Eq	El-Eq	El-Eq	El	El-Eq	Eq-El, Sbh	El
Degree of weathering	1	1	1-2	2	1	1	1
Approx. amount	3	2	2	1	1	2	1

Mineral/ lithic frag-ment	Spherulitic textured volcanic rock	Hematite	Magnetite	Iron Ox-ide	Polycrystalline quartz (0.03-0.1 mm grain)	Volcanic quartz
Size	0.2-0.4	0.05-0.15	0.02-0.3	0.05-0.08	0.5	1.5
Angularity	Ang	Ang-Rd	Ang	Rd	Rd	Rd
Shape	El	Eq-El	Eq-El, Euh	Eq-El	Eq	Emb
Degree of weathering	1	1-3	1	3	1	1
Approx. amount	2	2	1	2	1	1

Mineral/ lithic frag-ment	Rhyolite (hypocrystal-line; with feldspar laths (0.05 mm); quartz)	Volcanic glass	Rhyolite (hypcrystalline; can have phenocrysts of quatz; magnetite (0.1-0.15 mm)	Rhyolite (holocrystal-line; hematite stained)	Tuff (with or without some spherulitic textures; with or without penocrysts of iron oxide, magnetite; plagioclase; quartz (0.05-0.2 mm)
Size	0.3-0.4	0.3	0.2-0.6	0.25-0.7	1.6
Angularity	Rd	Rd	Rd	Rd	Rd
Shape	El	El	Eq-El	Eq	Eq
Degree of weathering	2	2	1-2	2	
Approx. amount	2	1	4	3	1

Mineral/ lithic fragment	Volcanic chert	Coarse aggregate of epidote; magnetite, possible quartz (hematite stained)	Biotite aggregate (franning, 0.03 mm)	Rhyolite (microcrystalline; with or without quartz phenocrysts (1.1 mm), quarz phenocryst can be embayed)	Rhyolitic textures volcanic rock containing possible micro-biotite)
Size	0.25	0.7	0.15	1.1	0.4
Angularity	Ang	Ang	Rd	Rd	Rd
Shape	Eq	Eq	El	El	El
Degree of weathering	1	3	2	1	1
Approx. amount	1	1	1	2	1

Mineral/ lithic frag-ment	Felsic to intermediate volcanic rock (heavy opaque stain)	Heavily hematite stained micro intermediate t rocko basic intrusive (0.08-0.25 mm grains) [can be volcanic rock but grains are larger than other volcanic rock inlusions in this paste]	Weathered in-strusive (possible felsic) rock (0.25 mm grains) with epidote inclusion	Micro granodioritic rock (0.25 mm grains)
Size	0.7	0.8-1.2	0.3	0.4
Angularity	Subang	Ang	Ang	Rd
Shape	Eq	Eq	Eq	Eq
Degree of weathering	3	3	2	3
Approx. amount	1	1	1	1

Manufacturing: squeezed or double layered slabs (pinched globs); pores around inclusions indicate clay dry shrinkage
Slip and Paint: There is a thin vitreous layer of possible slip on the exterior which may be clayey soil slip.
Provenance: Azuero igneous sand
Similarity to Ceramics from Other Sites: Pr32 Ag13, He5

PR32-C35-N9-2

Coarse fragments: There are 35% of coarse fragments of lithics (25%, 0.5 -1.5 mm) and minerals (10%, 0.05–1.2 mm).The inclusions are very poorly sorted. Major inclusions are igneous rock-based sand (basic to felsic volcanic and granite) that contains monomineralic phenocrysts of porphyritic volcanic rocks including quartz, fresh and angular plagioclase, zoned feldspars (mainly plagioclase), some possible alkali-feldspars, epidote, and amphiboles.
Temper: The dense inclusions igeneous rock based sand may have been added.
Clays: In PPL, the paste is amber color and somewhat reduced on the exterior and interior surface. In XPL, the clayey soil is birefringent.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagioclase	Zoned feld-spar (mainly plag)	Epidote	Trachyte	Amphibole	Magnetite
Size	0.1-1.3	0.5-0.9	0.6-1	0.3	0.2	0.3	0.03-0.15
Angularity	Ang	Ang	Ang	Rd-ang	Ang	Ang	Ang
Shape	El-Eq	El-Eq	El-Eq	Eq	El	El-Eq	El-Eq
Degree of weathering	1	1	1	1	2	1	1
Approx. amount	3	3	3	1	2	1	1

Mineral/ lithic frag-ment	Tuff (w/ or without phe-nocryst)	Intermediate to basic volcanic rock (heavily hematite stained, w/qz penocryst)	Porphyritic rhyolite (holo-crystalline)	Andesite or basalt (0.15 mm plag grain) (hematite stained w/ or without phenocrysts [e.g. plag 0.6-1.1])
Size	0.3-1.4	1.2-1.3	0.7-2	0.4-1.2
Angularity	Rd	Rd	Rd	Rd
Shape	El	El-Eq	El	Eq
Degree of weathering	1	3	1	3
Approx. amount	3	4	2	3

Mineral/ lithic fragment	Hematite	Biotite	Micro granite/granodiorite (0.3 mm grain)	Trachyte and tuffacious textured matrix combined (w/qtz phenocryts and hematite stain)	Tuff (Fe-rich)	Rhyolite (holo-crystalline)
Size	0.1-0.4	0.1	0.6-0.9	0.9	0.8	0.4-3.2
Angularity	Rd-Ang	Rd	Ang	Ang	Ang	Ang
Shape	El	El	Eq	El	El	Eq-El
Degree of weathering	3	3	2	3	3	2
Approx. amount	1	1	1	1	2	4

Mineral/ lithic fragment	Dacite (heavily hematite stained w/ pheoccrysts (e.g. magnetite, plag))	Polycrystalline quarz (0.05 mm grain; w/ or without phenocryst (e.g., magnetite)	Chert (undulating qtz aggregate, 0.05-0.1 mm grain)	Zoned alkali-feldspar
Size	1.9	0.6	0.6	0.4
Angularity	Ang	Ang	Ang	Ang
Shape	El	Eq	El	El
Degree of weathering	3	2	1	1
Approx. amount	3	2	1	1

Manufacturing technique: lumps or short slabs
Slip/Paint: interior and exterior surfaces are both smoothed.
Provenance: Parita River mouth with a granitic inclusions and igneous sand-based inclusions typical of Pr32 sherds that are made of raw materials derived from this area.
Similarity to ceramics from other sites: Pr32 and some He5 and Ag13

PR32-C35-N9-3

Coarse fragments: There are 20% of coarse fragments of lithics (5%, 0.15-0.7 mm) and minerals (15%, 0.05–1 mm). The paste is poorly sorted. Major inclusions are rock fragments that are mixed igneous assemblage (rhyolite, trachyte, andesite/basalt, polychrystaline pyroxene in rhyolite) and single minerals are fresh to weathered plagioclase and fresh quartz, possible pyroxene and fresh amphiboles.
Temper: The inclusions are likely to be all natural coming from the original clay or pyroclastics may have fallen onto the deposit. Many inclusions are very small in size mainly consisting of quartz.
Clays: interior curve is somewhat reduced but the paste is mainly oxidized (but not in bright red but in reddish amber color) in PPL; the clayey sediment is barely birefringent in XPL.

Inclusions:

Mineral/lithic fragment	Quartz	Placio-clase	Augerine-augite	Epi-dote	Amphibole	Magnetite	Biotite	Polycrystalline quartz from a vein (0.05-.1 mm grain)
Size	0.05-1.2	0.1-0.6	0.1	0.05	0.05-0.3	0.02-0.4	0.1	0.15-1
Angularity	Ang	Ang	Ang-Rd	Rd	Ang	Ang	Rd	Rd
Shape	El-Eq	El-Eq	El	Eq	El	El-Eq	El	Eq
Degree of weathering	1	1-2	1	1	1	1	3	1
Approx. amount	3	3		1	2	1	1	1

Mineral/ lithic fragment	Andesite/basalt	Felsic volcanic rock (hypocrystalline; w/ or without phenocrysts [e.g. biotite 0.3-0.7 mm, Ampibole 0.2 mm])	Pyroxene aggregate in rhyolite	Volcanic glass (heavily hematite stained)	Tuff
Size	1.2	0.5-1.2	1.5	0.25	0.3
Angularity	Rd	Rd	Rd	Rd	Rd
Shape	Eq	El-eq	El	El	El
Degree of weath-ering	1	2	1	3	1
Approx. amount	1	3	2	2	1

Mineral/lithic fragment	Hema-tite	Iron ox-ide/hydrox-ide	Welded tuff	Intermedi-ate to basic vol-canic rock (w/ or without pheno-cryst [feldspar 0.1-0.5 mm)	Rhyolite (holohyaline)	Trachyte (hematite sained)	Andesite/basalt (0.08-0.2 mm grain)
Size	0.15-0.3	0.1	0.2-0.8	0.3-0.6	0.45	0.8	0.5
Angularity	Ang	Rd	Rd	Rd	Rd	Rd	Rd
Shape	El	El	El	El	Eq	El	El
Degree of weathering	3	3	2	3	2	2	3
Approx. amount	1	1	1	1	1	1	1

Mineral/ lithic frag-ment	Zoned feld-spar	Volcanic quartz	Possible micro gran-ite/granodioritic (0.3 mm grains) fragment	Heavily hematite stained inter-mediate to basic micro intru-sive (0.25 mm grains)
Size	0.4-0.5	0.35	0.3	1.4
Angularity	Ang	Ang	Ang	Rd
Shape	El, Sbh	Eq	Eq	El
Degree of weathering	1	1	2	3
Approx. amount	2	1	2	1

Manufacturing technique: the technique is squeezed because there are micro clay pores aligned parallel to the wall. However, there is no indication of thick pores that should be due to joining.
Slip/Paint: No paint or slip but both surfaces (exterior and interior) are smoothed
Provenance: Azuero igneous sand
Similarity to ceramics from other sites: Azuero

PR32-C35-N9-4

Coarse fragments: There are 40% of coarse fragments of lithics (30%, 0.2-2.2 mm) and minerals (10%, 0.3 –1 mm). Major inclusions are mixed igneous assemblage including coarse monominerlic crystals of fresh plagioclase, zoned feldspars, and quartz. There are rocks that are mixed igneous assemblage having intrusive (diorite/gabbro) and felsic to basic porphyritic and non-non-porphyritic volcanic rocks (tuff, porphyritic tuff and porphyritic trachyte, basalt/andesite, and rhyolite).
Temper: mixed igneous rock-fragment and fresh monomineralic phenocryst including sand was possibly added as temper.
Clays: interior curve is somewhat reduced but the paste is mainly oxidized (but not in bright red but in reddish amber color). In XPL, the clay is birefringent.

Inclusions:

Mineral/ lithic frag-ment	Quartz	Epidote	Weathered possible pyroxene aggregate (0.03 mm grain)	Plagioclase	Zoned plagioclase	Welded tuff	Amphibole
Size	0.05-0.8	0.35	0.4	0.1-0.57	0.1-0.7	1.7	0.1-0.2
Angularity	Ang	Ang	Ang	Ang	Ang	Ang	Ang
Shape	El-Eq	El-Eq	Eq	El-Eq	Eq, Sbh	El	Eq-El
Degree of weathering	1	1	2	1	1	1	1
Approx. amount	3	1	1	3	3	1	2

Mineral/ lithic frag-ment	Polycrystal-line quartz (0.03-0.1 mm grain)	Porphy-ritic rhyolite with quartz pheno-cryst (0.3-0.7 mm grain)	Rhyolite (hypo-crystal-line)	Tuff	Hematite	Basalt/andesite (w/ or without plag pheno-cryst)	Volcanic glass (heavily hematite stained)
Size	0.4	0.1-1.4	0.8	0.4 mm	0.1-0.25	0.7	0.35
Angularity	Rd	Ang	Ang-rd	Ang	Ang-Rd	Ang	Rd
Shape	Eq	El	El	Eq	Eq	El	El
Degree of weathering	1	2	1	2	3	2	3
Approx. amount	2	1	3	4	1	2	1

Mineral/ lithic fragment	Trachyte (including hematite stained)	Biotite	Volcanic rock with quartz and spherulites	Rhyolite (holo-hyaline)	Dacite (can have phencrysts [e.g. zoned feld 0.4 mm, amphib 0.15 mm, plag]	Volcanic quartz	Gabbro/Diorite (heavily hematite stained)
Size	1.2	0.2-0.5	1.9	0.9	2.1	0.2-0.8	1.3
Angularity	Ang	Ang	Ang	Ang	Rd	Rd	Rd
Shape	El	El	El	El	El	Emb	El
Degree of weathering	1-3	2-3	3	1	1	1	3
Approx. amount	2	1	1	1	1	2	1

Mineral/ lithic fragment	Clino-pyroxene	Intermeridate to basic volcanic rock (heavily hematite stained)	Volcanic rock w/ spherulitic texture	Rhyolite (heavily hematite stained)	Iron oxide/ Hydroxide	Rhyolite (holo-crystalline)
Size	0.2	0.6-1	0.9	1.4	0.2	0.6-1
Angularity	Ang	Rd	Rd	Rd	Rd	Rd
Shape	El	El	Eq	El	El	Eq-El
Degree of weathering	1	3	2	3	3	2
Approx. amount	1	3	1	2	2	3

Manufacturing technique: squeezed or slab
Slip/Paint: no paint or slip, smoothed/burnished int and ext
Provenance: Parita River mouth with intrusive rocks. Other Pr32 pottery derived from this area has similar mixed igneous rock based sand inclusions
Similarity to ceramics from other sites: Pr32, some He5 and Ag13

PR32-C35-N12-1

Coarse fragments: There are 35% of coarse fragments of lithics (20%, 0.15- 2 mm) and minerals (15%, 0.03–1 mm). The paste is poorly sorted. The major inclusions are coarse mineral fragments consisting of weathered to fresh plagioclase, zoned plagioclase and quartz and much less amount of zone feldspar. The major inclusions are derived from mixed igneous rock-based sand that includes volcanic rocks (tuff and rhyolite) that are somewhat weathered to very weathered, and coarse rocks such as granites that are weathered.
Clays: exterior and interior surface areas area is more oxidized and the interior curved surface is somewhat reduced in PPL. The clayey soil is birefringent in XPL

Inclusions:

Mineral/ lithic fragment	Quartz	Zoned feldspar (mainly plag)	Augerine augite (clinopyroxene)	Amphibole	Biotite	Iron oxide/ \hyrdoxide
Size	0.1-1.6	0.2-0.8	0.6	0.15-0.2	0.6	0.05-0.15
Angularity	Ang	Ang	Ang	Ang	Rd	Rd
Shape	El	Eq, Sbh	El	Eq	El	Eq-El
Degree of weathering	1	1	1	1	1	3
Approx. amount	3	3	1	2	2	1

Mineral/ lithic fragment	Epidote aggregate (0.1-0.2 mm grain), with augerine-augite (0.1-0.2 mm grain), attached to polycrystalline quartz (0.05 mm grain)	Spherulite	Plagioclase	Zircon
Size	0.9	0.2	0.2-1	0.05
Angularity	Ang	Ang	Ang	Ang
Shape	E	El	El-Eq	El
Degree of weathering	1	1	1-2	1
Approx. amount	1	1	2	1

Mineral/ lithic fragment	Epidote aggre-gate (0.08-0.15 mm grain)	Polycrystal-line quartz (0.05-0.1 mm) with spherulite (0.2 mm) aggregate and feld-spar pheno-cryst (0.5 mm)	Spheru-lite (0.05-0.15 mm) aggre-gate	Rhyolite (hypo-crystalline)	Rhyolite (holohyaline)	Tuff (heavily weathered and hematite stained with weathered plag phe-nocryst (0.15 mm_	Basic to intermediate volcanic rock (heavily hematite stained) with some chert-like alternative texture
Size	0.5	1.2	0.7-0.9	0.5-2.4	0.6	0.7	0.9
Angularity	Rd	Rd	Ang	Ang	Ang	Ang	Rd
Shape	Eq	El	Eq	Eq-El	Eq	El	El
Degree of weathering	1	1	2	2	1	3	3
Approx. amount	1	1	2	2	1	2	1

Mineral/ lithic frag-ment	Rhyolite (holohyaline)	Hematite	Volcanic chert (0.01 mm)	Intermediate to basic volcanic rock	Andesite/ Basalt (0.15 mm plag grain)	Intermediate to basic vol-canic rock (heavily hematite stained)
Size	0.6	0.3	0.35-0.8	0.5	0.5	0.8
Angularity	Ang	Rd	Rd	Rd	Rd	Rd
Shape	Eq	El	El	El	El	El
Degree of weathering	2-3	3	2	2	2	3
Approx. amount	3	3	2	1	2	1

Mineral/ lithic frag-ment	Porphyritic basic vol-canic rock (amphib, plag pheno-crysts 0.1-0.25 mm)	Micro gab-bro/Diorite (plag 0.4 mm grain)	Spherulitic texture alterating with intermediate to basic volcanic rock (heavily hematite stained)	Dacite (w/phenocysts of od plag, feld, amphib, 0.1-0.15 mm)	Spherulitic tectured volcanic rock contain-ing (aphib and feld phenocrysts, 0.2 mm)
Size	0.5	1.1	0.8	0.6	0.9
Angularity	Ang	Ang	Ang	Ang	Ang
Shape	El	El	Eq	Eq	El
Degree of weathering	2	2	3	1	2
Approx. amount	1	1	1	1	1

Manufacturing technique: squeezed or slabs (elongated pores horizontally placed parallelling the wall)
Slip/Paint: none
Provenance: Azuero type form the mouth of Parita River passing the intrusive one. The volcanic sand inclusion that contains an intrusive rock fragment (gabbro/granodiorite)
Similarity to ceramics from other sites: Typical Pr32 type but that are also found at He5 and Ag13.

PR32-C35-N12-2

Coarse fragments: There are 40 % of coarse fragments of lithics (20%, 0.1-2.0 mm) and minerals (20%, 0.03 –1.2 mm). The paste is poorly sorted. The major inclusions are mixed igneous assemblage (andesite/basalt, micro-quartz aggregate, rhyolite, tuff, granite, spherulite) and angular monomineralic plagioclase, zoned feldspar, quartz, and volcanic quartz, and amphiboles derived from phenocrysts of volcanic rock fragments.
Temper: Possibly, igneous rock fragments and their monomineralic phenocryst-based sand was added.
Clays: in PPL exterior (the exterior of t. he curve) paste is oxidized, interior has a medium oxidation, and interior (interior of the curved) is reduced (black). In XPL, the clay is birefringent.

Inclusions

Mineral/ lithic frag-ment	Plagioclase	Zoned feldspar	Magnetite	Amphibole	Zircon	Quartz	Rhyolite (holhyaline, hematite stained)
Size	0.1-0.35	0.2	0.02-0.8	0.15 -0.35	0.07	0.05-0.6	1-1.5
Angularity	Rd to Ang	Ang	Ang	Ang	Ang	Ang	Rd
Shape	El-Eq	Eq-El Sbh-Euh	El, Sbh	El	El	El-Eq	Eq-El
Degree of weathering	1-2	1	1	1	1	1	2
Approx. amount	3	3	1	2	1	3	4

Mineral/ lithic frag-ment	Quartz	Epidote	Hematite	Green amphibole	Volcanic Quartz	Volcanic chert (0.03 mm grain)	Intermediate to basic volcanic rock
Size	0.15-0.3	0.2	0.2-0.8	0.2	0.1	0.2	0.3-0.4
Angularity	Ang	Ang-rd	Rd-Ang	Ang	Rd	Ang	Rd
Shape	El-Eq	Eq	Eq-El	Eq	Eq	El	Eq-El
Degree of weathering	1	1	3	1	1	1	1
Approx. amount	3	1	2	1	1	1	2

Mineral/ lithic frag-ment	Rhyolite (holo-crysta-lline)	Poly-crystalline quartz (0.05-0.08 mm grain)	Andesite/ basalt (0.05-0.15 mm grain)	Dacite (w/ phenocrysts of zoned feldspar, amphib, euh-qtz, plag phenocrysts)	Intermediate to basic volcanic rock (heavily hematite stained; w/ or without phenocrysts)	Granodiorite (0.5 mm grain)
Size	0.25-0.8	0.2	0.5	0.4	0.2-1	0.8
Angularity	Ang	Ang	Ang	Rd	Ang	Rd
Shape	Eq-El	Eq	Eq	El	El	El
Degree of weathering	2	1	2	1	3	2
Approx. amount	3	2	1	1	1	1

Mineral/ lithic fragment	Tuff	Iron oxide/hydroxide	Biotite
Size	0.4-0.7	0.2	0.15
Angularity	Rd	Rd	Rd
Shape	El	El	El
Degree of weathering	2	3	3
Approx. amount	1	2	1

Manufacturing technique: squeezed or slab
Slip/Paint: none
Provenance: Parita River mouth area of Azuero because there is an intrusive rock fragment (granodiorite)
Similarity to ceramics from other sites: Similar to ther Pr32 sherds and some Ag13 and He5

PR32-C35-N12-3

Coarse fragments: There are 20% of coarse fragments of lithics (8%, 0.5-3 mm) and minerals (12%, 0.03-2 mm). The paste is poorly sorted. Major inclusions are mixed vocanic rock (felsic to basic) based sand and their monomineralic phenocrysts (e.g. qquartz, plagioclase, zoned feldspars). Intrusive rock fragments were not found. Monomineralic phenorysts included possible alkali-feldspars. The sherd has low quantity of inclusions but the variability suggests that they are possibly from Azuero although no inrusives are found.
Temper: Volcanic rock-based sand and their minerals may have been added.
Clays: birefringent brown clay in XPL. In PPL, light amber pste with some core reduction close the interior surface.

Inclusions:

Mineral/ lithic fragment	Quartz	Alkali-fedlspar	Tuff (heavily hematite stained)	Rhyolite (hypo-crystalline)	Andesite/basalt (holocrystalline)	Biotite
Size	005-2	0.07	0.4	0.57	0.8	0.1
Angularity	Ang	Rd	Rd	Ang	Rd	Rd
Shape	El	El	El	El	El	El
Degree of weathering	1	1	3	1	1	2
Approx. amount	3	1	3	Low	2	1

Mineral/ lithic fragment	Magnetite	Volcanic Quartz	Dacite	Micro-polycrystalline quartz and iron oxide/hydroxide phenocryst	Hornblende	Epidote
Size	0.03-0.15	0.3-0.5	0.8	0.6	0.05	0.1
Angularity	Ang	Rd, Ang	Ang	Rd	Ang	Ang
Shape	Eq-El	Eq, Sbh, Emb	El	El	El	El
Degree of weathering	1	1	1	3	1	1
Approx. amount	1	1	Low	1	1	1

Mineral/ lithic frag-ment	Intermediate to basic volcanic rock (heavily hematite stained, w/ without pheoncryst)	Polycrystalline quartz (w/ or without qtz phenocryst)	Rhyolite (heavily hematite stained)	Phytoliths (elongated)	Volcanic glass (Fe-rich)	Possible intermediate to basic intrusive rock (heavily hematite stained, 0.25 mm grains)
Size	1	0.4-2.5	3	0.8 mm	0.15-0.2	1
Angularity	Rd	Ang	Rd	Ang	Rd	Ang
Shape	El	Eq	El	El	El	El
Degree of weathering	3	1	3	1	3	3
Approx. amount	3	2	1	1	2	1

Mineral/ lithic fragment	Plagioclase	Zoned feldspar (mainly plag)	Iron ox-ide/hydroxide	Hematite	Trachyte (holocrystalline)
Size	0.2-0.6	0.2-0.4	0.03	0.4-0.9	2.2
Angularity	Ang	Ang	Rd	Rd	Ang
Shape	Eq-el	Eq-El	Eq	El	El
Degree of weathering	1	1	3	3	2
Approx. amount	3	3	2	2	2

Manufacturing technique: squeezed or slab
Slip/Paint: exterior surface is well smoothed
Provenance: Azuero; there are possible intrusive rocks , the variability of rocks and the volcanic rock-based sand indicate that the sherd may be from Azuero.
Similarity to ceramics from other sites: Azuero sherd with intrusives.

PR32-C35-N12-4

Coarse fragments: There are 25% of coarse fragments of lithics (20%, 0.2-0.5- mm) and minerals (5%,0.15-1 mm). This paste is **very poorly** sorted.Major inclusions are igneous rock-based sand (basic t felsic volcanic rocks with or without phenocrysts, gabbro/diorite)and monomineralic phenocrysts (plagioclase, quartz, volcanic quartz, amphibole magnetite) derived from volcanic rock fragments.
Temper: Igenous rock-based sand may have been added since there ar efresh volcanic rock fragments as well as moominneralic plagioclase
Clays: Ochre colored paste throughout the body in PPL. In XPL, the clayey soil is birefrigent.

Inclusions:

Mineral/ lithic frag-ment	Quartz	Hematite	Magnetite	Hematite stained tuff	Trachyte (wth phenocrysts [e.g. plag 0.4 mm, bioite 0.3 mm, augerine augite 0.15 mm]
Size	0.05-3	0.1-1	0.03-0.1	0.6	1-1.8
Angularity	Ang	Rd	Ang	Rd	Rd
Shape	El-Eq	El-Eq	El-Eq	Eq	Eq
Degree of weathering	1	3	1	3	3
Approx. amount	3	1	1	1	2

Mineral/ lithic fragment	Intermediate to basic vol-canic rock (hematite stained)	Volcanic quartz	Granite (0.15-5 mm grain)	Plagio-clase	Epi-dote	Zone d feld-spar	Rhyolite (holocrys-talline)	Polycrys-talline quartz (0.02-0.15 mm grain)
Size	0.5	0.1-0.4		0.35-1.5	0.05	0.6-0.7	3.4	0.7
Angular-ity	Ang	Ang	Ang	Ang	Ang	Ang	Ang	Ang
Shape	El	El-Eq, Emb	Eq	El-Eq	Eq	Eq	Anh	Eq
Degree of weather-ing	3	1	2	1	1	1	2	1
Approx. amount	3	1	1	3	1	1	2	2

Mineral/ lithic fragment	Posible pyroxene (fresh)	Rhyolite (holo-crystalline)	Zircon	Heavily weathered tuff with extremely altered phenocrysts	Iron oxide/hydroxide aggregate	Hornblende	Green amphibole
Size	0.2	0.3-0.9	0.1	0.2-1.4	0.3	0.1	0.15
Angularity	Ang	Rd	Ang	Rd	Rd	Ang	Ang
Shape	El	Eq	El	El	El	El	El
Degree of weathering	1	1	1	3	3	1	1
Approx. amount	1	3	1	3	3	1	1

Mineral/ lithic fragment	Gabbro/Diorite (0.5-0.75 mm plag grain) (heavily hematite stained)	Dacite (w/ phenocrysts [e.g. plag 0.9 mm, augerine- augite 0.15 mm, amphib 0.08 mm]
Size	2 mm	0.65-2
Angularity	Rd	Ang
Shape	Eq	El-Eq, Anh
Degree of weathering	3	1
Approx. amount	1	2

Manufacturing technique: squeezed or slab natural inclusions oriented parallel to the wall
Slip/Paint: no paint or slip; smoothing of the wall not carefully done
Provenance: Parita River mouth with diorite/gabbro and possible granite fragments within igeous rock-based sand inclusions.
Similarity to ceramics from other sites: Pr32, some He5 and Ag13

PR32-C35-N14-1

Coarse fragments: There are 35% of coarse fragments of lithics (20%, 0.2-2 mm) and minerals (15%, 0.05–1.8 mm). Major inclusions are those consisting of mixed igneous rocks that includes intrusives (granite and micro gabbro/diorite) and porphyritic and non-porphyritic volcanic rocks (felsic to basic) in addition to monomineralic phenocrysts (plagioclase, quartz, amphibole, zoned feldspar etc.) derived from porphyritic volcanic rocks.
Temper; Igenous rock and volcanic monomineralig phenocryst-based sand is possibly added to the clay as temper beause feldspars derived from volcanic rocks are fresh.
Clays: in XPL, birefringent. The exterior is somewhat reduced, the paste is amber, and the interior is again, somewhat reduced in PPL.

Inclusions:

Mineral/ lithic fragment	Quartz	Amphibole	Zircon	Magnetite	Volcanic quartz	Iron oxide/hydroxide
Size	0.05-1.8	0.15-0.4	0.08	0.4-0.9	0.3	0.2
Angularity	Ang	Ang	Ang	Ang	Rd	Rd
Shape	El-Eq	El-Eq	El	Eq-El, Sbh	Eq	Eq
Degree of weathering	1	1	1	1	1	3
Approx. amount	3	1	1	1	1	1

Mineral/ lithic frag-ment	Plagioclase	Zoned plagioclase	Chert (undu-lating qtz, 0.03-0.4 mm)	Epidote	Hematite	Rhyolite (hypocrystl-line; w/ or without hematite staine)
Size	0.15-0.9	0.2-0.9	1.1 mm	0.2	1	0.25-1
Angularity	Ang	Ang	Ang	Ang	Ang	Rd
Shape	El-Eq	El-Eq,Sbh-Euh	El	Eq	El	Eq
Degree of weathering	1-2	1	1	1	3	2
Approx. amount	3	3	1	1	1	3

Mineral/ lithic fragment	Dacite (w/ pheno-crysts (e.g. zoned plag 0.2 mm,)	Andesite/ basalt (hema-tite stained)	Trachyte (w/ or without hematite stain, w/ many twinned feldspar laths)	Chert (fne grained, 0.02-0.05 mm)
Size	1.1	1.4	0.4-1	0.3
Angularity	Ang	Ang	Rd	Ang
Shape	El	El	Eq	Eq
Degree of weathering	1	3	3	Q
Approx. amount	2	3	3	1

Mineral/ lithic fragment	Welded tuff (porphyritic and non-porphyritic)	Tuff (hema-tite stained)	Porphyritic tuff	Granite (w/ epidote; 0.2-0.5 mm grain)
Size	0.8-0.9	0.25-1.3	0.7 mm	1.3
Angularity	Ang	Ang	Sbang	Ang
Shape	El	El	Eq	El
Degree of weathering	1	2		1
Approx. amount	1	3	Low	Low

Manufacturing technique: slag or squeezed technique; thin pores parallel the wall
Slip/Paint: no slip or paint. The interior wall is smoothed
Provenance: Parita River mouth with intrusives
Similarity to ceramics from other sites: Pr32 and some He5 and Ag13.

PR32-C35-N14-2

Coarse fragments: There are 45% of coarse fragments of lithics (20%, 0.1-2.8 mm) and minerals (25%, 0.05–1 mm). Major inclusion mixed igneous rocks (insturives such as micro gabbro/diorite and felsic to basic volcanic rocks) and monomineralic phenocrysts of quartz, plagioclase, zoned plagioclase, and much minor amount of ampbole and accessory minerals such as magnetite and epidote.
Temper: The mixed igeoused rock-based sand was probably added as inclusion because of the fresh monnomneralic plagioclase phenocryst.
Clays: birefringence is low in XPL and in PPL, the paste clayey soil is reduced.

Inclusions:

Mineral/ lithic fragment	Quartz	Rhyolite (holohyaline, heavily hematite stained	Iron oxide/hydroxide	Tuff	Epidote	Spherulite with quartz aggregate
Size	0.02-1.2	0.7	0.1-0.8	0.1-0.7	0.08-0.12	1-1.2 mm
Angularity	Ang	Rd	Rd	Rd	Ang	Ang
Shape	Eq-el	El	El	Eq	El	El
Degree of weathering	1	3	3	2-3	1	3
Approx. amount	4	1	2	3	1	1

Mineral/ lithic fragment	Polychrystaline quartz (fine sized sand partile)	Micro diorite/ Micro gabbro (0.1-0.3 mm grain)	Rhyolite (hypocrystalline w/ hematite stain)	Magnetite	Amphibole	Tachyte (heavily hematite stained)
Size	0.3	1.2	0.2-0.3	0.03-0.2	0.1-0.15	1.2
Angularity	Ang	Ang	Ang -Rd		Ang	Rd
Shape	Eq	Eq-el	El-eq	Eq-El, Euh	Eq	El
Degree of weathering	2	3	3	1	1-2	3
Approx. amount	2	1	4	1	1	1

Mineral/ lithic fragment	Plagio-clase	Quartz	Hema-tite	Andesite/basalt (w/ or without hematite stain' w/ or without phenocryst (e.g. 0.3 m possible weathered plag)	Dacite (w/ phenocrysts [e.g. amphibole 0.35 mm]	Zoned plagioclase	Zircon	Volcanic quartz
Size	0.15-0.4	0.02-1.2	0.05-0.1	1.4	0.9	0.8	0.1	015-0.6
Angularity	Ang	Ang	Ang	Rd	Rd	Ang	Ang	Rd-Ang
Shape	Eq-El	Eq-El	Eq	El	Eq		El	Eq, Emb
Degree of weathering	1-3	1	3	2	2	1	1	1
Approx. amount	3	4	1	2	3	2	1	1

Manufacturing technique: squeezed or slab with a thin and abundantparallel lines to the wall
Slip/Paint: some calcite encrustation in the interior surface of the sherd.
Provenance: Parita River mouth intrusive zone because of the micro gabbro/diorite and because of the similarity to other sherdds with mixed igneous assemblage added as the temper with intrusive rock content
Similarity to ceramics from other sites:Pr32 and some He5 and Ag13.

PR32-C35-N14-3

Coarse fragments: There are 35% of coarse fragments of lithics (25%, 0.15-2.3 mm) and minerals (10%, 0.05–1 mm). Major inclusions are mixed igneous rock fragments with abundant volcanic glass but that also include intermediate to basic volcanic rocks, with or without phenocrysts, as well as minor intrusive rocks (micro gabbro/diorite and granite). There are monomineralic phenocrysts of quartz, plagioclase, zoned feldspars (plag) and hornblende in addition to accessory minerals suh as zircon and magnetite.
Temper: Ignneous rock based sand may have been added. There are still fresh and angular monomineralic plagioclase phenocrysts and retainment of many fairly fresh volcanic glass fragments.
Clays: clays are light reddish brown (oxidized) and birfringent in XPL. In PPL, ochre colored paste with exterior surface having some reduction (amber).

Inclusions:

Mineral/ lithic fragment	Quartz	Volcanic glass	Rhyolite (holo-crystalline)	Intermediate to basic volcanic rock	Polycrystalline quartz (0.07-0.1 mm)
Size	0.05-1	0.3-1.2	0.3-0.7	0.7	1.1
Angularity	Rd	Rd	Rd	Rd	Rd
Shape	Eq-el	El-Eq	Eq	El	El
Degree of weath-ering	1	1-2	1	2	2
Approx. amount	3	4	3	1	3

Mineral/ lithic fragment	Plagio-clase	Zoned plagio-clase	Horn-blende	Clinopyroxene (augerine-au-gite)	Volcanic quartz	Hematite	Magnetite	Granite (0.1-0.4 mm grains)
Size	0.08-0.7	0.25-0.7	0.2	0.2	0.35	0.03-0.6	0.05-0.15	0.6
Angularity	Ang	Ang	Ang	Ang	Rd	Ang-rd	Ang	Rd
Shape	El-Eq	El-Eq, Sbh	El	El	Eq	Eq-El	Eq-El, Sbh	El
Degree of weathering	1	1	1-2	1	Rd	3	1	1
Approx. amount	3	3	2	1	1	1	1	1

Mineral	Zircon	Basalt/andesite (hematite stained, w/ plag phenocryst)	Epidote	Biotite	Dacite (w/ phenocrysts (e.g. zoned plag 0.3 mm, amphibole 0.3 mm)	Volcanic chert
Size	0.05	0.7	0.1	0.5	0.4	0.3
Angularity	Ang	Ang	Rd	Rd	Ang	Ang
Shape	Eq	El	Eq	El	El	Eq
Degree of weathering	1	3	1	2	1	1
% amongst all minerals and lithics	1	1	1	1	1	2

Mineral/ lithic fragment	Rhyolite (holo-hyaline; w/ or without phenocrysts (e.g. qtz 0.6 mm)	Iron oxide / Hydroxide	Basalt / andesite	Dacite (very weathered hematite stained w phenocrysts (plag, feld, iron oxide/hydroxide)	Rhyolite (heavily hematite stained)	Microgabbro/diorite (0.05-0.3 mm plag grains)	Rhyolite (heavily weathered, hypo-crystalline)	Trachyte (w/ or withour phenocryts (e.g. plag 0.2 mm)
Size	0.7	0.15	0.8	0.7	0.7	0.35	1.2	0.2-0.7
Angularity	Ang	Ang	Rd	Rd	Rd	Ang	Rd	Rd
Shape	Eq	Eq	El	El	El	Eq	Eq	Eq-El
Degree of weathering	1	3	2	3	3	3	3	3
Approx. amount	1	1	1	1	1	1	3	2

Manufacturing technique: there are long and short pores of different thickness parallel to the wall, which some emerge from the wall, indicating that they are slabs and lumps, or squeezed.
Slip/Paint: the interior surface is smoothed and has brownish slip (possible clay b)ut not birefringent. The exterior surface is also has a similar slip.
Provenance: Parita River mouth with some volcanic rocks in sand with fresh phenocrysts
Similarity to ceramics from other sites: Pr32, some He5 and Ag13

PR32-C35-N14-4

Course Fragments: 45% poorly sorted rocks (25%, 0.15-1.3 mm) and minerals (20%, 0.05-1 mm). Major inclusions are mixed igneous assemblage, mainly of felsic content, (glassy to semi-glassy rhyolites) that can have fresh phenocrysts, and monomneralic quartz, plagioclase, zoned feldspar, and possible alkali-feldspars. Zoned feldspars and quartz can have characteristic of phenocrysts, having been derived from volcanic rocks similar to the ones that are included in the paste.
Temper: Volcanic sand temper has been added or volcanic ash has fallen onto the paste matrix. Glassy matrix of the volcanic rock remains intact for them to have been natural inclusions.
Clay: clay sparkles and is birefringent, light yellow ocre color. This is natural clay that does not have added inclusions.

Mineral/lithic fragment	Quartz	Plagioclase	Amphibole	Biotite	Epidote	Phytoliths	Hematite
Size	0.03-0.8	0.15-1	0.15 – 0.25	0.1-0.9	0.2	0.05	1
Angularity	Ang	Ang	Ang	Ang	Rnd	Ang	Ang
Shape	El-Eq	El-Eq	El-Eq	El	El	El	El
Degree of weathering	1	1	1	2	1	1	2
Approx. amount	2	3	1	1	1	1	2

Mineral/ lithic fragment	Rhyolite (hypocrystalline (can have laths of 0.05 mm feldspar grains) with or without phenocryst (plagioclase (plagioclase can be suhedral), zoned feldspar; biotite); with or without hematite stain)	Zoned feld-spar (can be plag)	Volcanic glass (glassy particle aggregate)
Size	1	0.5	0.7
Angularity	Ang	Ang	Ang
Shape	El	Eq, Euh	El
Degree of weathering	1	1	1
Approx. amount	3	3	1

Mineral/ lithic fragment	Iron Oxide	Polycrystalline quartz (0.05-0.2 mm) (from possible vein)	Tuff (holohyaline; with or without hematite stain)	Possible rhyolite with spherulitic texture	Magnetite	Volcanic quartz
Size	0.15-0.4	0.4	0.2-0.35	0.35	0.03-0.15	0.3
Angularity	Rd	Rd	Rd	Rd	Ang	Rd, Emb
Shape	Eq-El	Eq	Eq	Eq	Eq-El	El
Degree of weathering	3	2	2	1	1	1
Approx. amount	2	1	1	1	1	1

Manufacturing technique: clay has numerous parallel rugged lines/pores to the wall. This is obviously a vessel wall fragment with squished clay slabs.
Slip and paint: possible opaque hematite slip in the exterior surface but above this layer, there is birefringent layer. The latter coud be clayey soil from the burial environment. Well prepared surface has burnishing underneath the thin slip.
Provenance: Azuero
Similarity to ceramics from other sites: Azuero

PR32-C35-N17-1

Coarse fragments: There are 40% of coarse fragments of lithics (30%, 0.3-2 mm) and minerals (15%, 0.3-1.3 mm). The paste is very poorly sorted with major inclusions of a variety of igneous rock fragments (felsic to basic volcanic [porphyritic or not porphyriic] and basic intrusive rocks) and monomineralic phenocrysts derived from the volcanic rocks. There is an unusual glass bubble-like fragment.
Temper: Igenous rock-based sand was perhaps added as temper
Clays: somewhat reduced exterior and interior surface with the core of the paste that is more oxidized (in PPL). In XPL, the paste is birefringent.

Inclusions:

Mineral/lithic frag-ment	Quartz	Plagioclase	Zoned plagio-clase	Amphibole	Zircon	Epidote	Magnetite
Size	0.02-2.1	0.1-0.3	0.55	0.02-0.15	0.03	0.05	0.08-0.2
Angularity	Ang	Ang	Ang	Ang	Ang	Ang	Ang
Shape	El-Eq	El-eq	Eq, Sbh	El	El	Eq	Eq-El
Degree of weathering	1	1	1	1	1	1	1
Approx. amount	3	3	2	1	1	1	1

Mineral/ lithic frag-ment	Hematite	Volcanic quartz	Biotite	Rhyolite (holo-crystalline, w/ phenocyrsts [.e.g magnetite, amphib)	Possible rhyolite (heavily hematite stained with phenocrysts of qtz 0.1-0.4 mm)	Dacite (pheno-crysts [plag 0.7 m, zoned feldspar 0.3 mm, amphib 0.2 mm]
Size	0.3-1	0.3-0.7	0.75	0.15-0.7	2	1.1
Angularity	Rd	Rd	Rd	Rd	Rd	Rd
Shape	El-Eq	Eq-El	El	Eq-El	El	El
Degree of weathering	3	1	2	2	3	1
Approx. amount	1	1	1	4	1	2

Mineral/ lithic fragment	Andesite/basalt	Intermediate to basic volcanic rock (heavily hematite stained; w/ phenocrysts [eg. Feld])	Rhyolite (holohyalie, fresh, lightly to heavily hematite stained)	Tuff (Fe - rich)	Trachyte	Vocanic glass bubble (birefringent)	Chert (microcrystalline)
Size	0.8	1	1-1.3	0.4	0.5	1.3	0.6
Angularity	Rd	Rd	Rd	Ang	Ang	Rd	Ang
Shape	El	El	El	Eq	Eq	El	Eq
Degree of weathering	2	3	1-3	3	2	1	1
Approx. amount	1	1	3	1	1	1	1

Mineral/ lithic fragment	Micro diorite/gabbro (0.15-0.4 mm plag grains; hematite stained)	Diorite/gabbro (.3-0.6 mm plag grains; heavily hematite staied)
Size	1	1.2
Angularity	Rd	Rd
Shape	Eq	El
Degree of weathering	3	3
Approx. amount	1	1

Manufacturing technique: squeezed or slab
Slip/Paint: none
Provenance: Parita River mouth because of intrusive rock fragments and characteristic of igneous rock fragments-based sand
Similarity to ceramics from other sites: Pr32 and some He5 and Ag13

PR32-C35-N17-2

Coarse fragments (temper): 40%, poorly sorted, coarse silt to very coarse sand sized lithics (15%, 0.4-2.2 mm) and medium silt to very coarse sand sized minerals (25%, 0.2-0.9 mm). Major inclusions are mixed igneous rock assemblage mainly felsic (rhyolitic) but also having basic to intermediate characteristics and quartz and plagioclase.Volcanic glassy texture remains in some of the tuff and rhyolitic rocks. There are also volcanic quartz inclusions. There are intermediate to basic intrusive rocks.
Temper: Volcanic sands including volcanic rocks and phenocrysts and monomineralic feldspars and quartz may have been added to the paste.
Clays: oxidized in PPL and in XPL, birefringent.

Inclusions:

Mineral/lithic fragment	Quartz	Volcanic quartz	Amphibole	Alkali-feldspar (possible)	Plagioclase	Epidote
Size	0.03-0.9	0.4	0.15-0.05	0.04-0.7	0.05 – 1	0.06-0.2
Angularity	Ang	Rd	Ang	Ang	Ang	Ang
Shape	Eq-El	Eq	El-Eq	El-Eq	Eq-El	Eq-El
Degree of weathering	1	1	1	1	1	1
Approx. amount	3	1	1	2	2	2

Mineral/ lithic frag-ment	Iron oxide	Biotite	Tuff	Magnetite	Hematite	Green amphibole	Rhyolite (hypo-crystalline)	Intermediate to basic intrusive rock (hematite stained, 0.05-1 mm grains)
Size	0.15-0.6	0.03-0.17	0.25	0.02-0.15	1.5-2	0.3	0.4	1.7-2
Angularity	Rd	Ang	Ang	Ang	Rd	Ang	Rd	Ang
Shape	Eq-El	El	Eq	Eq-El, Sbh	Eq-El	El	Eq	El
Degree of weathering	3	2	1	1	3	1	1	3
Approx. amount	2	1	3	1	2	1	1	2

Mineral/ lithic fragment	Rhyolite (holohya-line; with or without pheno-cryst (fresh plagio-clase, possible alkali-feldspar)	Rhyo-lite (holo-crys-taline; with or with-out pheno-crysts (fresh plagio-clase, biotite)	Rhyolite (weathered; hematite stained; phenocryst may or may not be present (weathered plagio-clase, mag-netite; epi-dote)	Quartz aggre-gate (0.15 mm grain; coarse; with am-phoble laths)	Basic to intermediate volcanic rock (0.05 mm feld-spar grains; hematite stained)	Volcanic chert	Zoned feldspar	Volcanic glass
Size	0.8-1.3	0.5-0.8	1.8	0.35	0.3-1.3	0.5	0.5-0.8	0.2-0.5
Angularity	Sbrd	Sbrd	Rd	Sbang	Rd	Rd	Ang	Rd
Shape	Eq-El	Eq-El	El	Eq	El	El	Eq, Sbh	Eq
Degree of weathering	1	1	2	1	2	1	1	2
Approx. amount	3	3	2	1	2	1	2	1

Mineral/ lithic frag-ment	Polycrystalline quartz (0.05 mm; vein)	Rhyolite (micro-crystaline; 0.01 mm grain)	Coarse quartz aggregate (0.1-0.2 mm; hematite stained)	Patchy pattern of coarse weathered feldspar phenocryst and amphibole with coarse quartz	Tuff (hematite stained; containing plagioclase pheno-crysts (0.01-0.15 mm)
Size	0.3-0.8	0.4-0.6	0.6	0.12	0.5
Angularity	Rd	Sbang	Rd	Sbang	Rd
Shape	El	El	El	Eq	El
Degree of weathering	1	2	3	3	3
Approx. amount	1	2	1	1	1

Manufacturing: thermal shock is shown in pores starting from the wall and reaching to the interior grains. Clay shrinkage is existent because there are pores around large inclusions.
Slip and Paint: No slip or paint but both exterior and interior are smoothed.
Provenance: Azuero with intrusive rock fragments
Similarity to Ceramics from Other Sites: Azuero

PR32-C35-N20-1

Coarse fragments: There are 50% of coarse fragments of lithics (40%, 0.25-2.9 mm) and minerals (10%, 0.02–1.5 mm). Major inclusions are mixed igneous assemblge with porphyritic and non-porphyritic volcanic rocks of felsic (mainly) to basic constituency.There are monomineralic quartz, zoned feldspar, amphibole and magnetite that are mainly fresh. There are very minor amount of possible micro diorite/gabbro and mico granite. There are also some iron oxide/hydroxide (weathered) fragments.
Temper: The igneous rock assemblage and monomineralic phencorysts derived from volcanic rocks were added since there are fairly abundant fresh monomineralic zoned plagioclase.
Clays: birefringent in XPL and oxidized exterior and less oxidized intetrior in PPL

Inclusions:

Mineral/ lithic frag-ment	Quartz	Vol-canic quartz	Trachyte (porpheritic, fresh phenecrysts; fresh to weathered)	Zoned plagio-clase	Volcanic glass	Polycrysta-lline quartz (hematite stained)	Epidote aggre-gate	Tuff w/ phenocryst (e.g., qtz 0.2 mm grain)
Size	0.02-1	0.5	0.4-1	0.4-0.7	0.3-0.45	0.5-3	0.4	1.3-3
Angularity	Ang	Rd	Rd	Ang	Rd	Rd	Rd	Rd
Shape	Eq-el, Euh	2/3 rounded square	Eq-El	Euhl – Subh	El	El	Eq	El
Degree of weathering	1	1	3	1	3	3	1	1
Approx. amount	3	1	3	3	1	2	1	1

Mineral/ lithic fragment	Biotite	Andesite/basalt (hematite stained)	Rhyolite (with or without phenocryst (plagioclase, quartz) (hypo-crystalline)	Volcanic chert/chalcedony (hema-tite stained; originally from basalt/andesite vein; with or without pheno-cryst (quartz)	Coarse quartz aggregate (w/ some hematite stain and micro iron oxide grains)
Size	0.15	o.7-0.9	0.2-1	2.3	0.7
Angularity	Rd	Ang	Ang-rd	Rd	Rd
Shape	El	El	Eq	El	El
Degree of weath-ering	1	3	2	3	2
Approx. amount	1	2	3	3	1

Mineral/ lithic fragment	Zircon	Micro-granite (fairly fresh, hematite stained	Magnetite (weathered hematite stained or fresh)	Spherulitic textured (fanning) mineral aggregate	Amphibole	Plagio-clase	Iron oxide/hydroxide
Size	0.02	0.6	0.05-0.1	1	0.05-0.35	0.1-0.3	0.05-0.7
Angularity	Ang	Ang	Rd-Ang	Rd	Ang	Ang	Rd
Shape	El	Eq	El-Eq	El	El-Eq	Eq-El	Eq-el, Anh
Degree of weathering	1	1	1	El	1	1	3
Approx. amount	1	1	1	2	1	2	2

Mineral/ lithic fragment	Green amphibole	Porphyritic intermediate to basic volcanic rock (phenocryst 0.6 mm)	Dacite	Spherulitic textured volcanic rock w/ phenocrysts (e.g. plag 0.3-0.7 mm grain)	Intermediate to basic volcanic rock w/ surrounded by polycrystaline qtz	Micro gabbro/diorite (very weathered, w/ iron oxide/hydroxide)
Size	0.05-0.1	0.6	1	3	1.6	0.7
Angularity	Ang	Rd	Rd	Rd	Rd	Rd
Shape	El	Eq	El	El	Eq	El
Degree of weathering	1	3	1	2	3	3
Approx. amount	1	3	1	2	2	3

Manufacturing technique: The pores show thermal shock (vertical to the wall) and horizontal heavily undulting long pores along big grains
Slip/Paint: the exterior is smoothed and has slip which has opaque characteristics in XPL with some birefringence. The interior is smoothed but has no slip. The slip could be somewhat vitrified.
Provenance: Mouth of Parita River with mixed igneous sand with intrusives or sediments from there.
Similarity to ceramics from other sites: Pr32, Ag13, and some He5

PR32-C35-N20-2

Coarse fragments: There are 20% of coarse fragments of lithics (12%, 0.2-1.8 mm) and minerals (8%, 0.02-1.8 mm). Major inclusions are porphyritic volcanic (mostly rhyolite but including basic to intermediate composition) sand and their monomneralic phenocrysts (quartz, plagioclase zoned-feldspars).
Temper: Pophyritic volcanic rock fragments and their monomineralic phenocryst-based sand may have been added as inclusions.
Clays: It is an iron-rich clay w/ reddish color in PPL. The interior surface of this pottery is reduced and the exterior the rest is oxidized. The core is red. The redox state indicates pottery may have been used for cooking.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagio-clase	Amphi-bole	Zoned-feldspar	Epidote	Magnetite	Intermediate to basic vol-canic rock (can be heav-ily hematite stained)	Rhyolite (holohyaline)
Size	0.15-2.2	0.35-0.55	0.05-0.1	0.35-0.6	0.15	0.05-0.13	0.3-1.1	0.3
Angularity	Ang	Ang	Ang	Ang	Ang	ang	Rd	Rd
Shape	El-Eq	El	Eq-el	El	El	El-Eq	Eq	Eq
Degree of weathering	1	1-2	1	1	1	1	3	3
Approx. amount	3	3	1	3	1	1	2	1

Mineral/ lithic frag-ment	Secondary calcite in pores and exterior	Volcanic quartz	Chert (0.03-0.1 mm, grain)	Rhyolite (hypo-crystalline; can have hematite stain and/or quartz pheo-cryst)	Quarz aggregate with weathered possible amphi-bole fragments	Rhyolite (heavily hematite stained)	Tuff
Size	0.15-0.5	0.5	0.2-1.1	0.2-3.4	0.4	1.4	0.3
Angularity	Ang	Ang, Rd	Ang	Rd	Rd	Rd	Rd
Shape	Eq-El-, Anh	Eq, Euh	Eq	Eq	El	El	El
Degree of weathering	2	1	2	2	2	3	3
Approx. amount	1	1	2	1		1	1

Mineral/ lithic frag-ment	Iron oxide /hydroxide	Hematite	Volcanic chert with spherulitic fragments	Rhyolite pheo-cryst (quartz and feldspar; hematite stained; holo-crystalline)	Trachyte	Augerine augite	Intermediate to basic intrusive (0.1-0.3 mm grains)
Size	0.15-0.5	0.3-0.5	1.2	1.5	0.25	0.7	0.8
Angularity	Rd	Rd	Ang	Rd	Ang	Ang	Ang
Shape	El	El-Eq	El	El	El	El	El
Degree of weathering	3	3	1	3	1	1	3
Approx. amount	1	2	1	1	1	1	1

Manufacturing technique: slabs or squeezed (pores are along the wall, parallel); the body is the area close to the rounded bottom (getting thicker)
Slip/Paint: no slip or paint but the surface is very well smoothed on both surfaces
Provenance: Volcanic sand inclusions from Azuero (with intrusives)
Similarity to ceramics from other sites: it can be similar to Azuero type from Ag13

PR32-C35-N20-3

Coarse fragments: There are 25 % of coarse to fine fragments of lithics (20%, 0.1-3 mm) and minerals (5%, 0.2–1.5 mm). The major inclusion of sherd is a mixed igneous rock-based assemblage and their monnomineralic phenocrysts(fresh and angular quartz, plagioclase, zoned plagioclase and somewhat weathered fragments). There are some obvious intrusive rocks (basic to felsic) indicating that they are from the Parita River area.
Temper: Mixed igneous rock fragments and their monomineralic phenocryst-based inclusions were possibly added. Some Dacite and their phenocrysts are very fresh to be natural inclusion of clay.
Clays: birefringent, reddish iron-rich clay with oxidized core but slightly reduced interior curve. In PPL, reduced interior and exterior surfaces sandwich reddish/oxidized paste.

Inclusions:

Mineral/ lithic frag-ment	Quartz	Plagioclase	Zircon	Biotite	Epdiote	Amphibole	Zoned feldspar
Size	0.2-0.7	0.1-0.8	0.12	0.25-0.4	0.15	0.1-0.2	0.6-0.7
Angularity	Ang	Ang	Ang	Rd	Rd	Ang	Ang
Shape	El-Eq	El-Eq	El	El	El	Eq-El	Eq, Sbh
Degree of weathering	1	1	1	1	1	1	1-2
Approx. amount	3	3	1	1	1	1	3

Mineral/ lithic frag-ment	Secondary calcite in pores	Porphritic dacite (phenocryst of plag and quartz)	Ineredite to basic volcanic rock (0.08 grains)	Iron ox-ide/ hyrdoxide	Intermediate to basic volcanic rock (heavily hematite stained)	Trachyte (w/ or without zoned plag, amphibole phenocrysts)
Size	0.2	0.7	0.2	0.1	1.9	1.8
Angularity	Ang	Rd	Ang	Rd	Rd	Rd
Shape	Eq	El	Eq	El	El	El
Degree of weathering	1	1	1	3	3	1
Approx. amount	1	2	1	1	3	2

Mineral/ lithic fragment	Rhyolite (hypo-crystalline, w/ or without pheno-cryst)	Chert (micro-crystalline to medium sized grains; 0.02-0.05 mm)	Spherulitic textured volcanic rock (hematite stained) w/ phenocryst (quartz)	Spherulitic textured volcanic rock	Rhyolite (heavily hematite stained)	Andesite/basalt
Size	0.6	0.1-0.6	1.8	0.4	0.8	1.3
Angularity	Ang	Rd	Ang	Ang	Rd	Rd
Shape	El	El	Eq	El	El	Eq
Degree of weathering	1	1-2	3	1	3	3
Approx. amount	1	1	1	1	1	1

Mineral/ lithic fragment	Granodiorite (0.35-0.5 mm grain)	Micro gabbro/Micro diorite/Dolerite (0.1-0.4 mm grain)	Tuff (Fe-rich)	Poly-Miccrocrystllin e amphibole (<0.1 mm grain)	Gabbro/diorite (0.2-0.7 mm grain, iron oxide/hydroxi de formed)	Intermediate to basic volcanic rock partially vitrified with pheocrysts
Size	0.7	1.8	0.3	0.9	2.6	1.4
Angularity	Ang	Rd	Rd	Rd	Rd	Rd
Shape	Eq	Eq	El	Eq	El	El
Degree of weathering	1	3	3	2	2	3
Approx. amount	1	1	2	1	1	1

Manufacturing technique: slab or squeezed technique because the long pores are parallel to the wall and continue. The pores are coarse with lots of open spaces.
Slip/Paint: there is no slip or paint but the exterior and interior surfaces are well smoothed.
Provenance: This sherd is from Azuero intrusive zone (Parita River mouth) because of the intrusive rock fragments, igneous rock fragment-based sand inclusions, and high variability in the inclusion types.
Similarity to ceramics from other sites: He5, other Pr32, some Ag13

PR32-C35-N20-4

Coarse fragments: There are 35 % of coarse fragments of lithics (15%, 0.1-1.8 mm) and minerals (20%, 0.1–1.5 mm). The paste is poorly sorted. Major inclusions are mixed igneous rock-based sand inclusions consisting of felsic to basic porphyritc volcanic rocks and granodiorite as well as monomineralic phenocrysts derived from volcanic rocks (plagioclase, quartz, zoned feldspar [mainly plagioclase], amphibole) and accessory minerals.
Temper: Possibly, igneous rock-based sand was added to the pase because there are significant amount of fresh monnomineralic feldspars.
Clays: reduced paste, clay is somewhat birefringent in XPL. In PPL, the paste is fairy evenly amber colored.

Inclusions:

Mineral/ lithic fragment	Quartz	Zoned-feldspar (mainly plag; can have tourmaline inclsion)	Hematite (growing in magnetite)	Magnetite	Amphibole	Plagiocase	Zircon
Size	01-1.5	0.2-0.9	1.2	0.02-0.1	0.2	0.1-0.6	0.02
Angularity	Ang	Ang	Rd	Ang	Ang	Ang	Ang
Shape	Eq-El	Eq-El, Subh	El, Eq	El-eq	El	El	Eq-El
Degree of weathering	1	1	3	1	2	1-2	
Approx. amount	3	2	1	1	2	3	1

Mineral/ lithic fragment	Augerine augite (clinopyroxene)	Biotite	Iron oxide/hydroxide	Tourmaline	Felsic to intermediate fine grained rock (heavily hematite stained; 0.15 mm grain)	Trachyte
Size	0.2	0.4	0.1	0.15	0.8	0.5
Angularity	Ang	Ang	Rd	Ang	Ang	Rd
Shape	Eq	El	Eq	El	El	El
Degree of weathering		1	3	1	2	2
Approx. amount	1	1	2	1	1	1

Mineral/ lithic fragment	Vol-canic quartz	Dacite heavily hematite stained (holohya-line with phenocryst 0.1-05 mm)	Vol-canic glass (Fe-rich)	Dacite (holocrys-talline; phencryst of amphi-bole, 0.2 mm grain)	Intermediate to basic vol-canic rock (heavily hem-atite stained, 0.1-0.15 mm grains)	Dacite: microcrys-tallin quartz and plag phenocrysts, 0.3-0.4 mm)	Andesite/basalt (heavily hema-tite stained)
Size	0.5-1.1	1	0.1-0.2	0.7	0.25	1.2	0.4
Angularity	Rd	Rd	Rd	Ang	Rd	Rd	Rd
Shape	Eq-El	Eq	El	Eq	Eq	El	Eq
Degree of weathering	1	3	3	1	3	3	3
Approx. amount	1	1	1	1	3	1	1

Mineral/ lithic fragment	Porphyritic dacite (hypocrystalline; 0.4 mm; can have phenocryst of amphibole, qtz and plag)	Rhyolite (hypocrystalline)	Rhyolite (holocrystalline; one has a phenocryst of embayed quartz)	Micro granodiorite (0.2-0.3 mm grain)	Polycrystalline quartz (0.1 mm grain)
Size	0.7	1.9	0.6	0.5-1	0.35
Angularity	Ang	Ang	Rd	Ang	Rd
Shape	Eq	Eq	Eq	El	El
Degree of weathering	2	2	2	1	1
Approx. amount	1	1	2	2	3

Manufacturing technique: possibly slabs but the paste is fairly porous and is difficult to assess the manufacturing technique
Slip/Paint: no slip but there is thin clay strip
Provenance: Intrusive zone of Parita River mouth because the sherd contains granodiorite
Similarity to ceramics from other sites: Other Pr32 and some He5 and Ag13 sherds

PR32-C35-N20-5

Coarse fragments: There are 30% of coarse fragments of lithics (2%, 0.2-0.7 mm) and minerals (28%,0.05–1.1 mm). The paste is poorly sorted. Major inclusions are fresh and angular quartz, and plagioclalse. They are derived from pyroclastics monomineralic phenocrsts which vitreous matrix that may have been present originaly have weathered away. Small amount of rock fragment inclusions are rounded rhyolite and tuff.
Temper: Pyroclastics with monomineralic phenocrysts may have been added to the paste or fallen onto the clay deposit
Clays: the clay is birefringent in XPL. In PPL, the clay is amber color with the exterior surface being oxidized, the interior core somewhat reduced and being sandwiched by non-reduced paste. Since the paste is derived from the Cordilleran pyroclstic context, it has less Fe than some other pottery Pr32 with brighter red color upon oxidation.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagioclase	Zoned feldspar (mainly plagioclase)	Zircon	Porphyritic tuff (w/ qtz phenocryst)	Epidote
Size	0.05-1.1	0.05-0.6	0.3-0.5	0.05	0.7	0.05
Angularity	Ang	Ang	Ang	Ang	Ang	Rd
Shape	El-Eq	El-Eq	El-Eq	El-Eq	El	Eq
Degree of weathering	1	1	1	1	2	2
Approx. amount	4	4	4	1	1	1

Mineral/ lithic fragment	Green amphib-ole	Magnetite	Volcanic quartz (can have fluid inclusions)	Rhyolite (heavily hematite stained)	Iron oxide/hydroxide	Volcanic chert (0.02 mm grain)	Trachyte
Size	0.15	0.03-0.2	0.2-0.4	0.7	0.1	0.25	0.5
Angularity	Ang	Ang	Ang, Rd	Rd	Rd	Rd	Rd
Shape	Eq	El-Eq	Eq, Euh, Emb	El	El	El	El
Degree of weathering	1	1	1	3	3	3	2
Approx. amount	1	1	1	1	1	1	1

Manufacturing technique: two long slabs or squeeze technique with long pores paralleling the wall.
Slip/Paint: there could be red slip on the interior and exterior surface. The exterior and interior walls are both well smoothed
Provenance: Cordilleran adakitic Quaternary La Yeguada and El Valle zones
Similarity to ceramics from other sites: Similar to CL1 pottery.

PR32-C35-N22-1

Coarse fragments: There are 55% of coarse fragments of lithics (45%,0.15 - 3 mm) and minerals (10%, 0.02 – 1.3 mm). Major inclusions are mixed volcanic rock fragments (felsic to basic), with a variety of texture, and monomineralic fresh somewhat weathered phenocrysts (plagioclase, quartz, amphibole, magnetite, biotite, etc.) derived fro volcanic rocks. There are also phytoliths that came with the clayey soil.
Temper: sand temper of porphyritic trachyte and porphyritic rhyolite with fresh phenocrysts were possibly added
Clays: The clay is birefringent in some parts and in other parts opaque. The sherd is oxidized in PPL.

Inclusions:

Mineral/ lithic fragment	Quartz (with or without apatite)	Plagio-clase	Spherulitic textured volcanic rock	Epidote	Biotite	Polycrys-talline quartz	Rhyolite/felsic volcanic rock (holocrystallinne, hematite stained) with phenocryst (zoned feldspar)
Size	0.02-1.3	0.1-0.6	1.6	0.15-0.25	0.5	0.2-0.7	0.6-1.7
Angularity	Ang	Ang	Rd	Rd	Rd	Rd	Rd
Shape	Eq-El	Eq-El	El	Eq-El	El	El	El
Degree of weathering	1	1-2	2	1	2-3	1-2	1
Approx. amount	3	3	2	1	1	1	2

Mineral/ lithic fragment	Rhyolite (hypo-crystalline; w/ or without phenocryst (e.g. embayed qtz 0.8 mm))	Basalt or andesite (w/ or without phenocrysts)	Tra-chyte	Iron ox-ide/hydroxide	Quartz crystals containing epidote coarse grains	Zircon	Phyto-liths	Mag-netite
Size	0.2-1.2	0.15-1	0.35-0.5	0.08-0.2	0.5	0.02	0.05	0.02-0.15
Angularity	Ang	Rd	Rd	Rd	Ang	Ang	Ang	Ang
Shape	El	Eq	El	El	Eq	El-Eq	El	Eq-El
Degree of weathering	2-3	4	2-3	2	1	1	1	1
Approx. amount	3	2	2	2	1	1	1	1

Mineral/ lithic fragment	Porphyritic intermediate to basic volcanic rock (heavily hematite stained)	Tuff (w/ or without heavily hematite stain)	Rhyolite (holohyaline) with spherulites	Trachyte (hematiten stained) and tuff combined fragment (w/ plag and qtz phenocrysts)	Volcanic cherts	Amphib-ole	Diorite/ gabbro
Size	1.1	0.2-1.1	0.5	1.7	0.2	0.05-0.3	1.1
Angularity	Rd	Rd	Ang	Ang	Ang	Ang	Ang
Shape	El	Eq-El	El	El	El	Eq-el	El
Degree of weathering	3	2	2	2-3	1	1-2	2
Approx. amount	1	3	1	1	1	2	2

Mineral/ lithic fragment	Rhyolite (w/ fresh biotite phenocrysts, 0.15-0.3 mm)	Ortho-pyroxene	Zoned feldspar (somewhat weathered to fresh)	Volcanic quartz	Dacite	Hematite	Intermediate to basic intrusion (heavily hematite stained; 0.25-0.4 mm grains)
Size	0.6	0.1	0.8-1.2	1.3	2.9	0.3	1.2
Angularity	Rd	Rd	Ang	Ang	Ang	Ang	Ang
Shape	Eq	Eq	Eq-El, Euh	Emb	El	Eq	El
Degree of weathering	1	1	1	1	1	3	3
Approx. amount	1	1	3	1	2	1	

Manufacturing technique: slabs or squeezed but since the inclusions are high in quantity and coarse, it is difficult to identify the technique.
Slip/Paint: the surface is smoothed on the interior and exterior. The exterior surface has some remains of slip that is somewhat opaque in XPL(but is possibly clay) and lighter color than the surface below in PPL. The slip could be somewhat vitrified.
Provenance: Mouth of Parita River with intrusives
Similarity to ceramics from other sites: Pr32, Ag13

PR32-1.16.1

Course fragments: 40% poorly sorted lithics (20%, 0.1-1 mm) and minerals (20%, 0.03-0.9 mm).
Major inclusions are porphyritic volcanic rock-based sand (mainly fesic with vitreous phases) and monomineralic phenocrysts that are plagioclase, quartz, and some hematite.
Temper: Porphyritic volcanic rock-based sand may have been added as inclusions (abundant rocks with vitreous phase remains in the inclusions which could have weathered if it was natural)
Clay: The clay is nearly opaque and not birefringent in XPL.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagio-clase	Amphib-ole	Volcanic glass (spherulitic textured)	Epidote aggregate	Biotite	Hamatite
Size	0.01- 0.9	0.03-0.7	0.1 - 0.25	0.2 mm	0.06 – 0.12	0.2	0.5
Angularity	Ang	Ang	Ang	Ang	Ang	Ang	Rd
Shape	El-Eq	El-Eq	El-Eq	El	Eq	El	Eq
Degree of weathering	1	1	1	1	1	2	3
Approx. amount	3	3	1	1	1	1	3

Mineral/ lithic fragment	Quartz aggregate (0.1-0.15 mm)	Basic volcanic rock (with possible amphibole inclusion 0.02 mm)	Zircon (PPL coloreless; XPL simple twin)	Rhyolite (vitreous; feldspar laths and can have amphibole)	Quartz aggregate (0.02 mm)with magnetite (hematite stained)	Mag-netite	Felsic to basic micro intrusive (heavily hematite stained,0.05- 0.3 mm grains)
Size	0.3-0.4	0.3	0.15	0.6	0.6	0.02-0.1	0.5
Angularity	Rd	Ang	Rd	Rd	Rd	Ang	Ang
Shape	El	El	Eq	El	Eq	Eq	El
Degree of weathering	1 or 2	2	1	2	3	1	3
Approx. amount	1	1	1	1	1	2	2

Mineral/ lithic fragment	Tuff	Porphyritic rhyolite (quartz plagioclase, or amphibole phenocryst) (hypocrystallin to holohyaline)	Basic to intermediate volcanic rock with phenocrysts (plagioclase) (hematite stained)	Rhyolite (holocrystlline to holohayalline)
Size	0.3	1.2	1	0.4-0.8
Angularity	Rd	Ang	Ang	Rd
Shape	El	Eq	Eq	Eq-El
Degree of weathering	2	2	3	2
Approx. amount	3	3	1	4

*many magnetite, hematite, or opaque materials are included in the clay matrix
Slip: There is slip (or could be surrounding sediment remans) in the exterior and the interior surface + the lip (clay from the same material as the paste) with the well prepared surface underneath (but this surface underneath has red slip/paint layer). The slip is very reduced.
Manufacturing technique: There are shrinkages seen around grains and thermal cracks. The body is slab or pressed technique and the lip was added (pores align with the lip shape).
Provenance: Azuero peninsula (with intrusives)
Similarity from Ceramics from other sites: Pr32

HE5-60-F9

Coarse fragments: 45% poorly sorted lithics (30%, 0.7-1.5 mm) and minerals (15%, 0.02-1mm). The sherd has granitic rock-based innclusions. The minerals are predominantly quartz and there are less amount of weathered possible alkali-feldspars and even less amount of weathered plagioclase.There are minor amount of coarse magnetites, and amphibole. Granitic fragments can have quartz, plagioclase, alkali-feldspars, epidote, and tourmaline. Quartz fragments can have apatite inclusions.
Clays: birefringent clay with brown color, somewhat oxidized except for the interior thin layer.
Inclusions: No addition of temper found because the mineral and lithic angularity and the degree of weathering are similar. This is natural clay.
Lithics: lithics mainly consist of large quartz (somewhat stained by magnetite), large weathered (sometimes zoned + lamellar) plagioclase (heavily stained by magnetite), and large weathered alkali-feldspar.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagioclase	Alkali-feldspar	Amphibole	Epidote	Magnetite	Biotite	Zircon
Size	0.02-1	0.4	0.1-0.3	0.05-0.6	0.1-0.15	0.05-0.3	0.08	0.18
Angularity	Sbang	Ang	Ang	Ang	Ang	Ang	Rd	Ang
Shape	Eq-El	El	Eq-El	El	Eq-El	Eq-El, Sbh	El	El
Degree of weathering	1	2	2	1-3	1-2	1-2	2	1
Approx. amount	5	1	2	Very low	1	1	1	1

Mineral/ lithic fragment	Tourmaline	Hematite	Polychrystaline quartz (0.08-0.3 mm grain-size, with prismatic tourmaline incusions)	Granite
Size	0.05	0.07-0.25	1.5	0.7
Angularity	Subang	Ang	Ang	Sugang
Shape	Eq	El	El	Eq
Degree of weathering	2	2	1	2
Approx. amount	1	1	2	4

Manufacturing technique: double alyered slabs/globs making the rim.
Slip/Paint: There is no paint in the interior or exterior, however, there might be thin clay slip in the interior surface.
Provenance: He5 type
Similarity to Pottery from Other Sites: He5 type

HE5-60-F18

Coarse fragments (temper): There are 35% poorly sorted lithics (10%, 0.1-3.5) and minerals (25%, 0.03-0.6 mm). Fine to very coarse rock and mineral fragments; most of them are single mineral grains of quartz and lesser amount of possible alkali feldspars. There are only few monomineralic grains of plagioclase found. Lithic fragments are mainly granitic rock that have quartz, alakail-feldspars, and some plagioclase. The granitic fragments can contain minor and accessory minerals of epidote (could be coarse grain) and tourmalines.
Temper: No
Clays: Under PPL, reddish somewhat reduced exterior and interior walls sandwich the reddish oxidized interior paste. In XPL the paste is birefringence.

Inclusions:

Mineral/ lithic fragment	Quartz	alkali-feld-spars	Rhyolite (hema-tite stained, fine grained)	Polychrystal-line quartz attached to weathered biotite (heavily hematite stained)	Plag-io-clase	myrmekite	epidote	biotite	granite
Size	0.03-0.6	0.03-0.6	0.1-0.7	3.5	0.35	0.2	0.03-0.1	0.05	0.5
Angularity	Ang-Sba	Ang-Sbr	Sbr	Sba	Ang-sba	Ang	Rd	Rd	Rd
Shape	El-Eq	Eq	Eq	Eq	El	Eq	Eq-El	El	El
Degree of weathering	1	2	2	2	2	2	1	1	2
Approx. amount	5	2	1	4	1	1	1	1	4

Mineral/ lithic fragment	amphibole	zircon	magnetite	Tourmaline	Feldspar with tourmaline inclusion
Size	0.05-0.15	0.1	0.08-0.3	0.07-0.2	0.2
Angularity	Ang	Ang	Ang-Rd	Rd-Ang	Sbang
Shape	El	Eq	Eq-El	Eq-El	El
Degree of weathering	1-3	1	1-2	2	2
Approx. amount	1	1	2	1	1

Manufacturing technique: undulating (squeezed around mineral particles) along with mineral grains (this is not usually found in coil built pots, possibly in slab construction) through squishing clay. It is possible that the globs of clays were pressed against something and subsequently burnished (we should experiment). Smoothing can erase the trace of pottery mold. If this is a rim sherd (possible), the pore direction does not even change at the lip, this may indicate that the pottery was made via pressing against something (like a mold technique). There is a diagonal pore-line which may indicate a manufacturing line or may be thermal shock (I am oriented toward the former).
Slip/paint: No. Some parts of the wall surfaces are chopped off due to sawing. However, the remaining areas suggest that the exterior wall surface is well prepared with smoothing because the minerals are aligned.
Provenance: Azuero intrusive granitebased clay
Similarity to Pottery from Other Sites:

HE5-61-F10

Coarse fragments: There are 40% of coarse fragments of lithics (7%, 0.4-1.2 mm) and minerals (33%, 0.02–1.2 mm). The inclusions are mainly weathered granite/granodiorite fragments and quartz, well merged to the matrix, that are possibly the remaining of the weathered granite. There are other minerals in low quantity such as epidote, amphiboles, and hematite and magnetite. Very small amount of zircon is present. Small number of fragments of rhyolites and volcanic glass are found.
Temper: The inclusions are possibly natural and not added. This clay seems to be primary clay eroded near granite/granodiorite.
Clays: burnt amber color in PPL and the clay is not birefringent in XPL (the paste seems reduced colored in PPL)

Inclusions:

Mineral/ lithic fragment	Quartz	Granite (0.5-0.7 mm)	Rhyolite (holocrystalline)	Plagioclase	Alkali-feldspar	Zircon	Magnetite	Hema-tite
Size	0.02-1.2	0.4-1.2	0.15	0.15-0.4	0.35	0.13	0.1-0.02	0.2
Angularity	Rd	Rd	Rd	Sbang	Ang	Ang	Rd	Rd
Shape	Eq-El	Eq-El	Eq	Eq-El	El	El	Eq	El
Degree of weathering	1	2	3	2	1	1	1	3
Approx. amount	5	3	1	2	2	1	1	1

Mineral/ lithic fragment	Amphibole	Epidote	Polycrystlline quartz (0.03	Secondary calcite (exterior surface)
Size	0.15	0.05	0.5	-
Angularity	Rd	Ang	Ang	-
Shape	El	Eq	El	Anh
Degree of weathering	1	1	1	2
Approx. amount	1	1	1	1

Manufacturing technique: squeezed or slab (thin long pores paralleling the wall)
Slip/Paint: none but there is secondary calcite growth on the exterior surface.
Provenance: local, Parita River mouth (granitic rock -based clay)
Similarity to ceramics from other sites: He5

HE5-61-F11

Coarse fragments: There are 45% of coarse fragments of lithics (25%, 0.15-2 mm) and minerals (20%, 0.02–1.7 mm). Major inclusions are mixed igneous rock based with intrusive rock (micro-granite) and porphyritic and non-porphyritic volcanic rock fragments between felsic to basic composition; many monomineralic coarse, fresh and angular phenocrysts of plagioclase, zoned plagioclase, and quartz as well as hornblende and possible clino pyroxene are derived from volcanic rock inclusions. There is a possible fragment of sandstone indicating, in addition to the inrusive rocks, the sherd is Azuero origin.
Temper: Igneous rocks and their monomneralic phenocryst based sand was possibly added as temper.
Clays: birefrinent in XPL and light amber color (oxidized?) across the wall in PPL.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagioclase	Zoned plagioclase	Hornblende	Augerine-augite	Hematite	Magnetite
Size	0.03-0.9	0.1-0.9	0.5-0.6	0.2-0.3	0.8	0.15	0.05-0.2
Angularity	Ang	Ang	Ang	Ang	Ang	Ang	Ang
Shape	El	Eq-El	Eq-el, Sbang	El, Euh	El	Eq	Eq-El
Degree of weathering	1	1	1	1	1	3	1
Approx. amount	3	3	3	1	1	1	1

Mineral/ lithic fragment	Epidote	Rhyolite (hypocrystalline)	Volcanic glass (heavily hematite stained)	Chert (0.02 mm grain)	Intermedite to basic volcanic rock (heavily hematite stained)	Basic volcanic rock (holohyaline)	Tuff
Size	0.3-0.4	0.2-2	0.5-1	0.7	0.5-0.7	1	0.5
Angularity	Ang	Ang	Rd	Rd	Rd	Rd	Rd
Shape	El	El-Eq	El	El	El	El	El
Degree of weathering	1	1-2	2	2	3	3	3
Approx. amount	1	3	1	1	2	1	2

Mineral/ lithic fragment	Vocanic quartz	Trachyte	Igneous fine polycryalline quartz (w/ or without hematite stain)	Rhyolite (holocrystalline [0.05-0.15 mm grains; attached to vitreous fragment)
Size	0.2-3.2	0.25-0.6	0.5	0.5
Angularity	Ang-Rd	Rd	Rd	Ang
Shape	Eq-El, Emb	El	El	Eq
Degree of weathering	1	3	2	1
Approx. amount	1	1	1	1

Mineral/ lithic fragment	Micro granite (0.1-0.4 mm grain)	Basalt/andesite w/ phenocrysts (e.g. wethered plag 0.9 mm)	Iron oxide/ hydroxide	Sandstone (or could be polycrystalline quartz w/ cement-like texture between grains)	Volcani rock with spherulitic texture (0.05 mm grain)
Size	0.5	1.5	0.1-0.2	0.6	0.5
Angularity	Ang	Ang	Ang-Rd	Rd	Rd
Shape	Eq	El	Eq-El	El	El
Degree of weathering	2	3	3	3	2
Approx. amount	1	1	2	1	1

Manufacturing technique: slabs or squeezed technique. Thick to thin, long and short pores parallel to the wall.
Slip/Paint: the exterior wall may have thin clay based slip (darker brown than the paste clay right underneat). The interior and exterior surfaces are smoothed.
Provenance: Parita River mouth near the insturive zone.
Similarity to ceramics from other sites: Pr-32 and some He5 and Ag13 sherds.

HE5-62-F1

Coarse fragments: There are35 % of coarse poorly sorted fragments of lithics (40% 0.4-1.2 mm) and minerals (20%, 0.03–1.2 mm). The major constituency is monomineralic crystals of granitic/granodioritic rocks, the rock fragments, and their associated minerals (epidotes, tourmalines, magnetites, and zircon). Plagioclase as monomineralic grains appears very low in quantity. There are miniscule amount of weathered rhyolitic fragments. Possible alkali-feldspars are difficult to distinguish from plagioclase that may not be twinning, due to weathering.
Temper: possibly none. Natural clays formed mainfly from granitic rock was used.
Clays: The clay is not birefringent. It appears opaque in XPL. In PPL, the clay is dark brown.

Inclusions:

Mineral/ lithic fragment	Quartz	plagio-clase	Alkali-feldsar (possible)	Amphi-bole	epidote	Zircon (pale grey in reflected light)	Tourm-aline	hematite
Size	0.03-1.2	0.08-0.6	0.15	0.15	0.05-0.15	0.03-0.1	0.15-0.25	0.2
Angularity	Subang-Rd	Subang	Subang	Ang	Rd	Ang	Rd	Rd
Shape	Eq-El	El	Eq-El	El	Eq	El	Eq	El
Degree of weathering	1	2-3	3	2	2	1	1	2
Approx. amount	5	1	3	1	1	1	1	1

Mineral/ lithic fragment	Rhyolite (frine grained)	Granite/granodiorite (quartz only or quartz with with weathered plagioclase, and weathered possible alkali-feldspar, epidote, or zircon)	magnetite	phytoliths	Tourmaline in qtz/fldsp
Size	0.15-0.3	1.2	0.08-0.3	0.04	0.1
Angularity	Rd	Sbang	Ang	Ang	Ang
Shape	Eq	Eq	Eq, euhedral	El	El, radiating laths
Degree of weathering	2-3	2	1-2	1	1
Approx. amount	1	4	4	1	1

Manufacturing technique: This is a section of a base. It looks like a single squeezed clay slab.
Slip/Paint: None
Provenance: Azuero intrusive (granite-based)
Similarity to ceramics from other sites: He5 sherds

HE5-62-F12

Coarse fragments: 50% or little higher percent of coarse fragments of rocks (25%, 0.1 – 2.5 mm), and minerals (25%, 0.03-1.2 mm). There are dense inclusions. The major inclusions are volcanic rocks ranging from basic to felsic compositions (mainly felsic) and monomineralic mainly fresh phenocryst grains of quartz, zoned feldspar, plagioclase, and alkali-feldspars. Minor minerals include fresh and coarse monomineralic amphibole, biotite, and magnetite. Rocks tend to be porphyric volcanic rocks or volcanic rocks fragments likely to have derived from a similar context. This has intermediate to basic intrusive rocks.
Temper: Sand including porphyritic volcanic rock and monomineralic fresh phenocrysts that is close to the parental rock may have been added or some pyroclastics may have fallen onto the volcanic rock-rich clay deposit.
Clays: The clay has lots of magnetite stains and hematite stains. interior and near inrior surface dark brown meaning they may be reduced. Birefringence is low. The interior has reddish clay, oxidized, and is birefringent.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagio-clase	Alkali-feldspar (possible)	Magnetite	Amphibole	Biotite	Rhyolite (fine grained, with or without phenocryst, with or without heavy hematite stain)
Size	0.08-1.3	0.2-0.6	0.3-1.1	0.05-0.1	0.08-0.5	0.1-0.8	0.4-0.7
Angularity	Ang	Ang	Ang	Ang	Ang	Ang	Rd
Shape	El-Eq, Sbh, Emb	El-Eq, Sbh	El-Eq	El	El-Eq	El	Eq-El
Degree of weathering	1	1	1-3	1	1	2-3	2-3
Approx. amount	5	4	3	1	1	2	3

Mineral/ lithic fragment	Vitreous bubble (with hematite stain)	Zoned fedspar	Iron oxide	Trachyte (some are heavily hematite stained)	Volcanic rock with spherulitic texture (with or without feldspar phenocryst)
Size	2.5	0.4-0.8	0.2-0.4	0.5-1.3	0.6
Angularity	Sbang	Ang	Rd	Rd	Subang
Shape	Eq	Eq-El	Eq-El	Eq	El
Degree of weathering	2	1	3	1	2
Approx. amount	1	3	3	3	1

Mineral/ lithic fragment	Vitreous bubble (with hematite stain)	Zoned fedspar	Rhyolite (glassy, with or without plagiolcalse and/or quartz phenocrysts)	Tuff and volcanic chert combined (possibly from vein)	Cristobalite (with feldspar phenocryst)	Rhyolitic rock (with glassy heavily hematite stained matrix; plagioclase, quartz, and volcanic chert inclusions)
Size	2.5	0.4-0.8	0.4-0.5	0.3	0.35	1.5
Angularity	Sbang	Ang	Sbang-Rd	Ang	Ang	Sbang
Shape	Eq	Eq-El	El-Eq	El	Eq	El
Degree of weathering	2	1	2	2	1	3
Approx. amount	1	3	3	1	1	1

Mineral/ lithic fragment	Polyrcyrtalline quartz (fine grained with heavy hematite stain)	Phytoliths	Basic volcaic rock (heavily hematite stained)	Volcanic glass (hematite stained)	Hematite	Micro basic or intermediate intrusive rocks (0.05-0.6 mm)
Size	0.3	0.03	0.7	0.5	0.3	0.6
Angularity	Rd	Rd	Rd	Rd	Rd	Ang
Shape	El	Eq	El	El	El	El
Degree of weathering	1	1	3	2	3	3
Approx. amount	1	1	1	1	1	2

Manufacturing technique: there are pores around minerals, indicating clay shrinkage. there are several short and medium length pores going parallel to the wall along the densely packed minerals and rocks. Even at the tip, the thickly tapered lip of the vessel, the clay pores are parallel as if it was pressed against a wall and finished.
Slip/Paint; birefringent clay-based slip was applied to the interior (birefringent clay that contains magnetite/opaque minerals), after the surface was being well smoothed; however, due to weathering, most of the interior surfaces is gone.
Provenance: Coastal sherd wth a shell inclusion (in LA-ICP-MS study also, this sherd belongs to PG1 the Auzero clay; it is now safe to say this is from the coast) although it has Cordillera (pyroclastics) and Azuero mixed igneous (high in intermediate to basic rocks) characteristics. There are plutonic rock fragments, characteristic of Azuero.
Similarity to Pottery from Other Sites: Intermediate type between Cordillera and Azuero (different from Cl1 with mostly pyroclastic monomineralic phenocryst type) and possibly Azuero with volcanic glass bubbles and variable (mafic to felsic) volcanic rocks with or without phenocryst.

HE5-62-F20

Coarse fragments (temper): there are inclusions of 35% of poorly sorted lithics (20%, 0.15-2.5 mm) and minerals (15%, 0.02-2.2 mm). There are many hematite stains and rock fragments and fine to coarse, like dark hematite grains. However, monomineralic quartz and felspars are angular and fresh without plagioclase with these characteristics found as phenocrysts in rock fragment inclusions in the paste. This may mean that quartz and felspar-including sand was added to the paste.
Temper: Maybe yes (fresh monomineralic quartz, plagioclase, and feldspar including sand)
Clay: birefringent with light yellow ocre color in XPL.In PPL, there are thin exterior and interior wall ayers that are reduced, sandwiching the oxidized pasate with reddish brown color.

Mineral/ lithic fragment	Quartz (can contain apatite)	Plagio-clase	Alkali-feld-spar	Bio-tite	Amphibole	Epidote	Zircon	Hematite	Magnetite
Size	0.02-2.2	0.1-0.45	0.15 - 0.5	0.1-0.08	0.05-0.15	0.01-0.15	0.05	0.15-0.8	0.05-0.1
Angularity	Ang	Ang	Ang	Rd	Ang	Ang	Ang	Rd	Rd
Shape	Eq-El	Eq-El	Eq	El	El-Eq	Eq-El	Eq	El	El
Degree of weathering	1	1	1-2	3	2-3	1	1	3	2
Approx. amount	4	2	2	1	1	2	1	5	2

Mineral/ lithic fragment	Intermediate to basic volcanic rock (heavily hematite stained)	Possible rhyolite (heavily hematite stained; fine grained)	Tuff (heavilty hematite stained	Rhyolite (some hematite stained; can have associated microcrystaline quartz aggregate)	Microcrystalline quartz (with heavy hematite stain; can have epidote inclusion)
Size	0.7-1.2	0.7	0.15-0.7	0.3-2.5	1.3
Angularity	Rd	Rd	Rd	Rd	Rd
Shape	El	El	El	E;	El
Degree of weathering	3	3	3	2	3
Approx. amount	3	2	1	3	2

Mineral/ lithic fragment	Rhyolitee (somewhat glassy; can be heavily hematite stained	Iron oxide (weathered mafic mineral)	Spherulitic textured fragment	Trachyte (hematite stained)
Size	0.4-1.3	0.15	0.15-0.3	0.6
Angularity	Sbang	Rd	Rd	Sbang
Shape	Eq-El	Eq	Eq	Eq
Degree of weathering	2-3	3	1	2
Approx. amount	3	1	1	1

Manufacturing technique: There are shrinkages caused by drying (shrinkage around large hematite inclusion) shown as pores and there is some evidence of thermal shock. This manufacturing technique is similar to others, slab/glob-pinched or pressed technique.
Slip/Paint: Birefringent clay slip may have been applied to the interior wall. Both exterior and interior walls are well smoothed.
Provenance: Pr32 type or another type with rich hematite and basic to to felsic volcanic rocks
Similarity to Pottery from Other Sites:

HE5-63-F1

Coarse fragments: There are 35% of coarse fragments of lithics (10%, 0.35-1 mm) and minerals (25%, 0.05–1 mm). The mjor inclusions are monomineralic quartz and other minerals (plagioclase, alkali feldspar, amphibole, zircon, mymekite, tourmaline) of granite and their parental granitic rock (but in terms of grain size, they are possibly microgranite). There are other rock fragments that are of volcanic origin (tuff and rhyolite).
Temper: possibly, no temper was added. The clay was gathered near the granitic parental rocks.
Clays: The clay is well reduced in the interior half of the paste and more oxidized on the exterior half (reddish burnt amber) PPL. In XPL, the clay is not birfringent.
Natural mineral and rock Inclusions:

Mineral/ lithic fragment	Quartz	Alkali-feldspar	Plagioclase	Tourmaline	Epidote	Zircon	Magnetie	Hematite
Size	0.05-1	0.1	0.1-0.3	0.1-0.15	0.15-0.2	0.05	0.1-0.15	0.1
Angularity	Ang	Sbang	Ang-Sbang	Rd	Ang-rd	Ang	Ang	Ang
Shape	Eq-El	Eq-El	Eq-El	El	Eq-El	Eq	Eq	El
Degree of weathering	1	2	2	3	1	1	1	3
Approx. amount	5	3	1	1	1	1	1	1

Mineral/ lithic fragment	Chert (microcrystalline; may have been rhyolite which feldspars weathered away)	Myrmekite	Zoned feldspar	Pyroxene /Amphibole	Granite (0.3-0.7 mm grain)	Secondary calcite (wall)
Size	0.2-0.25	0.3	0.08	0.1	0.35-1	-
Angularity	Rd	Ang	Sbang	Ang	Rd	-
Shape	Eq-El	El	Eq	El	Eq-El	-
Degree of weathering	1	1	1	2	1-2	
Approx. amount	1	1	1	1	3	1

Mineral/ lithic fragment	Biotite	Rhyolite (heavily hematite stained)	Tuff
Size	0.1	0.3	0.1
Angularity	Ang	Rd	Rd
Shape	Eq	Eq	El
Degree of weathering	3	3	1
Approx. amount	1	1	1

Manufacturing technique: This sherd is not porous. There are thin lines of pores that run, undulatingly but parallel to the wall. There are lines from the interior wall running across to the interior indicating thermal shock.
Slip/Paint: There is slip on the exterior that is clay based with pyroxene and quartz inclusion. There is no slip on the interior surface. Both surfaces are smoothed.
Provenance: Azuero intrusive (granitic)
Similarity from Ceramics from Other Sites: Only He5

HE5-63-F2

Coarse fragments: There are 45 % coarse fragments of lithics (25%, 0.1-1.85 mm); single minerals (20%, 0.05-2.2 mm). Major inclusions are igneous rocks (felsic to basic; felsic rock is abundant and can be porphyritic), plagioclase, possible alkali-feldspars, zoned feldspars, quartz, and iron oxides. There are minor amount of amphiboles and magnetites. There are scarce number of hematites and possible possible zircon (anhedral shape) and biotite. There is also an unusual possible primary calcite with the fibrous aggregated texture making an elongated grain. The primary calcite in this sherd suggests that the firing temperature was below 850°C. Coarse quartz can contain apatite or tourmaline. Since there are porphyritic volcanicr rocks with fairly fresh plagioclase, the monomineralic feldspar grains may have been derived from these rocks. Rhyolitic rock can contain embayed quartz phenocryst.
Temper: Since porphyritic rocks still contain relatively fresh plagioclase phenocrysts and monomineralic rocks, sand close to the fresh porphyritic volcanic source may have been added.
Clays: Yellow-orange throughout the wall in PPL (oxidized) and birefringent in xpl.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagio-clase	Alkali-feldspar (possible)	Shell/Aragonite	Epidote	Amphibole
Size	0.05-1.3	0.07-0.8	0.07-0.8	2.1	0.1	0.2-0.4
Angularity	Ang	Ang	Ang	Ang	Ang	Rd
Shape	Eq-El	Eq-El	Eq-El	El	eq	Eq-El, Dmd
Degree of weathering	1	1	1	1	2	1
Approx. amount	3	4	4	1	1	1

Mineral/ lithic fragment	Zoned feldsapar	Iron oxide	Epidote and polycrystaline quartz and/or rhyolite	Rhyolite (glassy; with or without hematite stain; can have embayed quartz phenocryst)	Rhyolite (micro-crystalline with blurry edges; with or without hematite stained; with or without plagioclase, and/or magnetite phenocryst)	Rhyolite (fine grained, 0.03)
Size	0.1-0.3	0.05-1.2	0.25-0.35	0.25-1.3	0.2-1.9	1.1
Angularity	Ang	Rd	Rd	Rd	Rd	Rd
Shape	Eq	El	Eq	El	El	El
Degree of weathering	1	3	2	2	2	2
Approx. amount	2	3	1	3	4	1

Mineral/ lithic fragment	Tuff	Trachyte (heavily hematite stained; with or without iron oxide phenocryst, plagioclase, and/or amphiboles)	Polycrystalline quartz (possibly from vein; grains 0.03-0.1)	Tuffacious rock attached to spherulite	Intermediate to basic volcanic rock (heavily hematite stained)	Magnetite
Size	0.1-0.4	0.5	0.5	0.15	0.6-1	0.03-0.15
Angularity	Rd	Rd	Rd	Rd	Rd	Ang
Shape	El	El	El	Eq	El	Eq-El, Sbh
Degree of weathering	2-3	3	1	1	3	1
Approx. amount	2	1	1	1	1	1

Mineral/ lithic fragment	Hematite (laths interlayered/crossed with Fe rich volcanic glass)	Hematite	Zircon	Biotite
Size	0.3	0.05	0.05	0.15
Angularity	Rd	Rd	Ang	Rd
Shape	Eq	Eq	Anh	Eq
Degree of weathering	2	3	1	2
Approx. amount	1	1	1	1

Manufacturing technique: slab/glob or clay pressed against something. Long and short pores running parallel to the vessel wall and clay undulating somewhat where there are large minerals. It could be a double layered slab/glob (when the undulation and the pores are carefully followed. There are pores around grains, indicating clay dry shrinkage (clay has higher shrinkage).
Slip/Paint: Both the interior and extrior walls are smoothed and the both walls seem to have some thin reduced/reddish clay slip (biringent) in the interior. The interior also has a deposit of secondary calcite.
Provenance: Inclusions of a shell or argoniate fragment incidates that, this sherd has the coastal origin (non-fossil)
Similarity to Pottery from Other Sites: He5-type 2/Pr32

HE5-64-F3

Coarse fragments: There are 50% of coarse fragments of lithics (20%, 0.3-1 mm) and minerals (30%, 0.05–1 mm). The paste consist mainly of granitic/micrgranitic rock based inclusions with some other igneous rocks such as vitreous rhyolite. Single minerals include weathered plagioclase, alkali-feldspar, epidote, magnetite, and amphibole. Epidote, accessary mineral of granitic rock, is present. There are alkali-felspar with tourmaline inclusions.
Temper: There is perhaps no added temper. The clayey sediment was probably gathered near the granitic rock source.
Clays: the exterior is reddish burnt amber and the interior paste is reduced (PPL). In XPL, the clayey sediment is slightly birefringent.

Inclusions: (rocks and minerals)

Mineral/ lithic fragment	Quartz	Plagio-clase	Alkali-feldspar (few have weathered tourma-line or epidote)	Zoned plagio-clase	Epidote	Amphib-ole	Chert (0.05mm grain)	Mag-netie	Hema-tite
Size	0.03-0.6	0.07-0.3	0.3 mm	0.2	0.1	0.2-0.35	0.2	0.1-0.5	0.1-0.4
Angularity	Ang	Ang	Rd-Sbang	Ang	Ang-Rd	Ang	Rd	Ang	Ang
Shape	Eq-El	Eq	El-eq	Subh	Eq	El	Eq	Anh	El
Degree of weathering	1	1	2	1	1	3	1	1	3
Approx. amount	5	3	3	2	2	1	1	2	1

Mineral/ lithic fragment	Granite/microgran-ite (0.1-0.8 mm grains)	Secondary calcite (exterior surface)	Toumaline (peacock green in PPL)	Rhyolite (holohyaline)	Rhyolite (heavily hematite stined, hypo-crystalline)	Phytoliths
Size	0.35-1.1	-	0.03	0.4	0.7	0.05
Angularity	Rd-Sbang	-	Ang	Rd	Rd	Ang
Shape	El-Rd	Anh	Eq	Eq	Eq	Eq
Degree of weathering	1-2	2	1	1	3	1
Approx. amount	3	1	1	2	1	1

Manufacturing technique: examining thin pores paraling the walls and directions of mineral undulations possible slabs with the interior and exterior having lumps.
Slip/Paint: there is no slip or paint but on the exterior surface, there is a thin layer of secondary calcite.
Provenance: This is a granitic/micro-granite based sherd (with tourmaline) but the inclusion indicates that it was produced using local resource of Parita River mouth with intrusive rock containing sediment.
Similarity to ceramics from other sites: local

HE5-64-F4

Coarse fragments: There are 30% of coarse fragments of lithics (10%, 0.15-0.7 mm) and minerals (20%, 0.03–0.9 mm). This sherd is similar to other some other sherds from He5 that are granitic/microgranitic based clays. Monomineralic grains include quartz in large quantity, alkali-feldspar, opaque minerals, and low amounts of plagioclase, minor number of pyoxene, magnetite, epidote, and zircon. There are minor amounts of quartz that include prismatic tourmaline.
Temper: Possibly, notemper was added; clayey sediment was gathered near granite parental rocks.
Clays: clay is somewhat birefringent in XPL; clay is burnt amber in PPL which the exterior seems lighter color than the interior half of the paste (possible cooking ware).

Inclusions:

Mineral/ lithic fragment	Quartz (few have tourmaline inclusions)	Alkali-feldspar	Plagio-clase	Zoned plagioclase	Zircon	Hematite	Magnetite	Epidote
Size	0.03-0.9	0.15-0.45	0.1-0.3	0.25	0.1	0.05	0.02-0.4	0.05-0.1
Angularity	Sbang	Rd	Ang	Ang	Ang	Rd	Ang-Rd	Ang-Rd
Shape	Eq-El	Eq-El	El-eq	El, Sgh	Eq-el	Eq	El, Sbh	Eq-El
Degree of weathering	1	2	1-2	1	1	3	1	1
Approx. amount	5	3	1	1	1	1	1	1

Mineral/ lithic fragment	Clinopyrox-ene	Micro-polycrys-talline quarz/chert	Granite (0.15-0.5 mm grains)	Rhyolite (holo-hyline and hy-pocrystal-line)	Myrmekite	Tourmaline	Iron ox-ide/ hydroxide
Size	0.08-0.15	0.25	0.2-0.8	0.25-0.5	0.15	0.03-0.05	0.3
Angularity	Rd-Ang	Rd	Rd-Sbang	Rd	Ang	Ang	Ang
Shape	El-Eq	El	Rd-El	El	Eq	Eq-El	Eq
Degree of weathering	1-2	1	2	2	1	2	3
Approx. amount	1	1	3	2	1	1	1

Manufacturing technique: according to pore direction and inclusion undulation, possible small lumps on the wall sandwiching a slab
Slip/Paint: there is no slip or paint but both exterior and interior surface s are well smoothed.
Provenance: Azuer intrusive (granitic)
Similarity to ceramics from other sites: He-5 only

HE5-66-F1

Coarse fragments: 40% poorly sorted lithics (25%, 0.08-1.4 mm) and minerals (15%, 0.03-1 mm). There are many hematite stained rock fragments and hematite fragments. Major inclusions are lithic fragments and monomineralic coarse quartz and alkali and plagioclase feldspars that are possibly derived from the same context as the porphyritic rock fragment inclusions. Rock fragments range from intermediate or basic to felsic rocks.
Clays: The clay is birefringent. The interior wall has light ocre and more than half toward the exterior, more reddish ocre color.
Inclusions:
Since the plagioclase feldspars derived from phenocrysts are fairly fresh, and they may not be pyroclastics in origin, sands with porphyritic rocks may have been added.

Mineral/ lithic fragment	Quartz	Plagio-clase	Alkali-feld-spar	Bio-tite	Zoned feld-spar	Amphib-ole	Tuff (hematite stained)	Polycrysta-lline quartz	Hematite
Size	0.02-1	0.1-0.6	0.2	0.05-0.4	0.2-0.6	0.2-0.25	0.2-0.5	0.4	0.15-0.8
Angularity	Ang	Ang	Ang	Rd-Ang	Ang	Ang	Ang	Rd	Rd-Ang
Shape	Eq-El	Eq-El	El	El-Eq	Eq-El, Sbh	El	El	Eq	El
Degree of weathering	1	1	1	3	1	1	3	1	3
Approx. amount	3	2	2	2	2	1	2	1	3

Mineral/ lithic fragment	Intermediate to basic volcanic rock (heavily hematite stained)	Rhyolite (with hematite stain; qtz and plag phenocrysts; faily glassy)	Rhyolite (microcrystalline/fine grained)	Epidote	Iron oxide	Zircon
Size	1-1.3	0.15-1.5	0.15-0.7	0.05-0.15	0.08-0.25	0.35
Angularity	Rd	Rd	Rd	Rd-Ang	Ang-Rd	Ang
Shape	El	El	Eq	El-Eq	El	El
Degree of weathering	3	2	2	1		
Approx. amount	2	3	2	1	1	1

Mineral/ lithic fragment	Spherulitic texture	Rhyolite (heavily hematite stain)	Tuff (heavily hematite stained)	Trachyte	Magnetite	Volcanic glass (heavily hematite stained)
Size	0.25	0.3	0.8	0.4	0.05-0.15	0.4
Angularity	Sbang	Rd	Rd	Ang	Ang	Rd
Shape	Eq	El	El	El	Eq-El	El
Degree of weathering	2	3	3	1	1	3
Approx. amount	1	1	1	1	1	1

Slip or Painting: There is a very thin opaque layer in xpl and ppl which some areas have carmine red indicating hematite rich clay. Both the interior and exterior seem to have thin birefringent clay slip. Both surfaces are well burnished.
Manufacturing technique*:* Pores are very thin and linear, mostly appearing parallel to the wall but are undulating due to large inclusions. The technique could be pressed or two slabs/globs put together.
Provenance: Pr32 type, Azuero mixed igeneous sand
Similarity to Pottery from Other Sites: *Pr32*

HE5-68-F1

Coarse fragments: There are 35% of coarse fragments of lithics (10%, 0.1-1.3 mm) and minerals (25%, 0.02–1 mm). Major inclusions are quartz derived from granite/granodiorite and other minerals (plagioclase, magnetite) and granite/granodiorite rock fragments. There are scant amount of rhyolite.
Temper: No
Clays: birefringent in XPL and in PPL, reddish amber (oxidized) on the exterior

Inclusions:

Mineral/ lithic frag-ment	Quartz	Zoned plagio clase	Plagioclase (fresh independent and wethered ones out of mico-granites)	Aam-phib-ole	Epi-dote	Granite/granodiorite (0.15-0.6 mm grain)	Magnet-ite	Tourma-line (deep green)
Size	0.02-1	0.3-0.7	0.2-0.4	0.5-0.05	0.18-0.4	0.5-1.3	0.1-0.3	0.15
Angularity	Rd	Ang	Ang	Ang	Rd	Rd	Ang, Rd	Rd
Shape	Eq-El, Anh	E1, Subh	Eq-El	Eq-El	Eq	Eq-El	Eq-El, Anh	Eq
Degree of weathering	1	2	2	1	1	2	2	2
Approx. amount	4	2	2	1	1	4	1	1

Mineral/ lithic fragment	Rhyolite (hypocrystaline, can be heavily hematite stained)	Alkali-feldspar? (very weathered)	Biotites	Phytoliths	Hematite
Size	0.1-0.9	0.6	0.15	0.05	0.15-0.3
Angularity	Rd	Ang	Rd	Ang	Rd
Shape	El	El	El	El	Eq, Anh
Degree of weathering	3	2	2	1	3
Approx. amount	1	2	1	1	1

Manufacturing technique: squeezed or constructed with globs/small slabs
Slip/Paint: no slip or paint on the surface; both surfaces are squeezed
Provenance: Azuero intrusive (granitic)
Similarity to ceramics from other sites: He5 only

HE5-68-F4

Coarse fragments: There are 40% of coarse fragments of lithics (10%, 0.08-2.3 mm) and minerals (30%, 0.03–2.9 mm). Major inclusions are pyroclstics-derived monomineralic phenocrysts and volcanic rock fragments including rhyolites, porphyritic basalt/andesite, and tuff. Pyroclstics-derived monomineralic grains include quartz, plagioclase, zoned plagioclase, volcanic quartz, magnetite, amphibole, epidote and zircon..
Clays: clays are birefringent in XPL and are mainly amber colored with reduced core in PPL.

Inclusions:

Mineral/ lithic fragment	Rhyolite (holo-hyaline)	Porphyritic andesite/ basalt	Quartz	Rhyolite (heavily hematite stained)	Plagioclase	Zoned plagioclase	Horn-blende	Epidote
Size	0.1-0.4	0.8	0.03-2.7	1.2	0.2-0.5	0.2-1.4	0.1-0.35	0.08-.15
Angularity	Rd-Ang	Rd	Rd	Ang	Ang	Ang	Ang	Ang
Shape	El	El	Eq-El	El	Eq-El	El-eq, Sbh	El, Euh	Eq
Degree of weathering	2	3	1	3	1	1	1	1
Approx. amount	2	1	3	1	3	3	2	1

Mineral/ lithic fragment	Magnetite	Dacite (w/ phenocrysts (e.g. amphibole 0.25 mm, zoned plag 0.3 mm, plag 0.5 mm)	Dacite (heavily hematite stained; phenocryst 0,1-0.4 mm)	Rhyolite (holocrystalline)	Rhyolite (hypocrystlline)
Size	0.1-0.4	0.7-2	2.2	0.2-0.4	0.2-0.6
Angularity	Ang	Ang	Ang	Rd	Rd
Shape	Eq, Emb	Eq-El	El	Eq	Eq-El
Degree of weathering	1	1	3	1	1
Approx. amount	1	3	1	2	2

Mineral/ lithic fragment	Tuff	Zircon	Volcanic quartz	Iron oxide/hydroxide
Size	0.2-0.3	0.2	0.15-1	0.05-0.1
Angularity	Rd	Ang	Ang-Rd	Rd
Shape	Eq-El	Eq	Eq	Eq
Degree of weathering	2	1	1	3
Approx. amount	1	1	1	1

Manufacturing technique: layered slabs or squeezed having elongated pores parallel to the wall.
Slip/Paint: none but the exterior surface seems to be smoothed
Provenance: Pyroclastic materials from El Valle or La Yeguada
Similarity to ceramics from other sites: Cl1, Lp8, Lp134

HE5-68-F6

Coarse fragments: There are 30% of coarse fragments of lithics (10%, 0.3-1.5 mm) and minerals (20%, 0.03–1 mm). The inclusions come mainly from granitic rock based clayey soil; quartz, alkali-fedlspar, small amount of plagioclase, amphibole, and accessory minerals such as epidote. There are some volcanic rock and their monomineralic phenocryst inclusions as well (e.g. dacite, tuff, rhyolite). Post-depositional secondary calcite is accumulating on the vessel walls (interior and exterior) and pores.
Temper: possibly no temper was is added; the clayey soil was gathered near the granitic source. Some fresh sand (monomineralic zoned plagioclase) got mixed into the clay.
Clays: the interior wall area of clayey soil is birefringent in XPL; the paste is reddish burnt amber.

Natural mineral Inclusions:

Mineral/ lithic fragment	Quartz	Alkali-feldspar	Tuff	Amphibole	Epidote	Plagioclase	Granite (grainss, 0.15-0.9 mm)	Volcanic glass
Size	0.03-0.7	0.1-0.4	1	0.15-0.8	0.1	0.15-0.4	0.4-1.1	0.9
Angularity	Rd	Rd	Ang	Ang	Rd	Ang	Rd	Rd
Shape	El-eq	Eq-el	El	Eq	Eq	El	Eq-el	El
Degree of weathering	1	2	2	1	1	1-2	2	2
Approx. amount	5	3	3	1	1	1	3	1

Mineral/ lithic fragment	Zircon	Hematite	Magnetite	Tourmaline	Granophyric texture	Dacite (phenocryst (e.g. plag 0.2 mm gran)
Size	0.05	0.05	0.03-0.2	0.03	0.3	0.4
Angularity	Sbang	Rd	Ang	Rd-Sbang	Ang	Ang
Shape	Eq	Eq	Eq-El	Eq	Eq	El
Degree of weathering		3	1	2	2	1
Approx. amount	1	1	1	1	1	1

Mineral/ lithic fragment	Secondary calcite (pores and exterior and interior walls)	Zoned plagioclase	Amphibole	Rhyolite (hypocrystalline)	Rhyolite (holocrystlline)
Size	-	0.2-0.6	0.08-0.22	0.3	0.4
Angularity	-	Ang	Ang	Rd	Rd
Shape	-	Eq-El	Eq	El	El
Degree of weathering	1	1	1	2	2
Approx. amount	2	2	1	1	1

Manufacturing technique: the interior wall has a slab and the exterior has probably two lumps added to make the wall. Pores are fine. There is a therml crack.
Slip/Paint: dark brown possible clay slip in the interior
Provenance: Azuero intrusive (granitic)
Similarity to ceramics from other sites:

HE5-69-F3

Coarse fragments: There are 35% of coarse fragments of lithics (15%, 0.3-2 mm) and minerals (20%, 0.03-2 mm). This sherd has granite-based inclusions. The granite includes quartz, alkali-feldsprs, plagioclase, amphibole and minor amount of epidote, and magnetite and hematite. There are small amont of felsic to intermediate volcani rocks. There is an epidote and mermakite fragment combination derived from the granite.
Temper: Possibly no temper.
Clays: slightly birefringent in XPL, and in PPL, oxidized (reddish brown) with some reduced exterior and interior.

Inclusions:

Mineral/ lithic fragment	Quartz	Zoned feldspars	Plagioclase	Amphib-ole	Granite (0.2-0.8 mm grain)	Magnetite	Rhyolite (phenocryst (e.g. plagioclase, quartz)
Size	0.05-1.2	0.3	0.1-0.4	0.1	0.3-2	0.2-0.8	0.15-0.5
Angularity	Rd	Ang	Ang	Ang	Rd	Ang-rd	Rd
Shape	Eq-El	Euh to Subh	Eq-El	Dmd	Eq-El	Eq-El	Eq
Degree of weathering	1-2	1	1-2	1	2	1	2
Approx. amount	4	1	2	1	4	1	1

Mineral/ lithic fragment	Alkali-feldspars (weathered)	Tourmaline (weathered, green)	Phytoliths	Zircon	Biotite (weathered)	Volcanic glass	Epidote
Size	0.3	0.05	0.05	0.05	0.07	0.2	0.1-0.15
Angularity	Ang	Ang	ang	ang	Rd	Rd	Ang
Shape	Eq-El	Eq	Eq-El	El	El	El	Eq
Degree of weathering	2	2	1	1	3	2	1
Approx. amount	1	1	1	1	1	1	1

Mineral/ lithic fragment	Hematite	Trachyte (w/ phenocryst (e.g., zoned plag 0.3 mm)	Chert	Tuff	Volcanic quartz
Size	0.1-0.3	0.5	0.1	0.1	0.1-0.2
Angularity	Rd	Ang	Rd	Rd	Rd
Shape	Eq-El	Eq	El	El	Eq
Degree of weathering	3	2	2	2	1
Approx. amount	1	1	1	1	1

Manufacturing technique: There are double layered slabs in the interior side.
Slip/Paint: possible interior wall is well smoothed
Provenance: Azuero intrusive, He5, granitic rock-based inclusions
Similarity to ceramics from other sites: He5 only

HE5-69-F8

Coarse fragments: 40% coarse fragments of lithic (10%, 0.25-2.8 mm), and single minerals (30%, 0.02-1.1 mm). The major inclusions are quartz and granitic fragments and less amount of plagioclase and possible alkali-feldspars. There are minor amount of magnetite, epidote, and amphiboles. Lithics are mostly granitic rock, with large fragments of quartz and weathered feldspars (alkali and plagioclase), there are small amount of rhyolites. Coarse mononmineralic quartz can have apatites and epidotes. There are fresh and coarse monomineralic plagioclase and zoned feldspars; small amount of volcanic ash (matric glass may have weathered away) may have fallen onto the granitic based clay. Monomineralic coarse feldspars and quartz grains can contain fine grained epidotes. There are secondary calcites forming on the interior wall of this sherd as well as the broken profile.
Temper: Possibly, no temper was added. Some volcanic ash with fresh plagioclase and amphibole phenocrysts may have fallen onto the clay deposit.
Clays: birefringent, oxidized yellowish red in the exterior and the interior surface. Deeper red-oxidization exists near the exterior surface.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagioclase	Alkali-feldspar (possible)	Tourmaline	Epidote	Amphibole
Size	0.02-0.8	0.15-0.75	0.15-0.75	0.2	0.12-0.15	0.15-0.4
Angularity	Ang	Ang	ang	Ang	Ang	Ang
Shape	Eq-El	Eq-El	Eq-El	Eq	El-Eq	El
Degree of weathering	1	1-2	1-2	2	1	1
Approx. amount	5	3	3	1	1	2

Mineral/ lithic fragment	Zoned feldspars	Biotite	Magnetite	Iron oxide	Rhyolite (glassy)	Granite (grain size 0.3-1.5 mm)
Size	0.4	0.18	0.05-0.3	0.05	0.15-0.4	0.5-3
Angularity	Ang	Rd	Ang-Sbang	Rd	Rd	Rd
Shape	Eq, Sbh	El	Eq-El	Eq	Eq	El
Degree of weathering	1	2	1	3	1	2
Approx. amount	1	1	2	1	1	4

Mineral/ lithic fragment	Phytoliths	Hematite
Size	0.15	0.1-0.25
Angularity	Ang	Ang
Shape	El	El
Degree of weathering	1-3	3
Approx. amount	1	1

Manufacturing technique: squeezed technique/slab technique. The pores lines along parallel to the wall (some undulating). There are some thermal cracks running vertical to the wall.
Slip/Paint: exterior surface is finely burnished or smoothed by aligning the mineral particles. Interior surface is also smoothed or burnished by aligning the mineral particle. The interior surface has thin red colored birefringent clay layer, indicating the application of red slip. The surface calcite is deposited as post-depositional secondary minerals.
Provenance: Azuero intrusive (granitic)
Similarity to Pottery from Other Sites: He5 type

HE5-69A-F3

Coarse fragments: 40% coarse fragments of lithics (10%, 0.3-0.9 mm) and single minerals (30%, 0.02 – 0.9 mm). They are angular to subangular particles. They are predominantly monomineralic quartz. There are lesser amount of granitic fragments, monomineralic plagioclase and possible alkali-feldspars. Feldspars can contain very fine grained (0.05 mm) amphiboles or epidotes. There are also minor amount of monomineralic amphiboles, epidotes, magnetites, zoned feldspars, and polycrystalline quart and rhyolite, and a grain of zircon. There are few possible weathered undulating amphiboles. Coarse quartz grain can contain deep green tourmalines or prismatic tourmalines and some others can contain laths of apatite. Most monomineralic minerals are derived from granitic rock. Secondary calcite is growing on a possible interior surface.
Temper: No temper is likely to have been added. The clay is granitic based.
Clays: reddish color in ppl. This clay is oxidized toward exterior and reduced in the interior.

Inclusions:

Mineral/ lithic fragment	quartz	plagio-clase	alkali-feldspar (possible)	Amphibole	Epidote	Volcanic chert	Secondary calcite	tourmaline
Size	0.03-0.8	0.1-0.6	0.1-0.4	0.05-0.3	0.15-0.3	0.15	0.1	0.07-0.5
Angularity	ang	Ang	Ang	Ang	Ang	Sbang	Ang	Ang
Shape	Eq-el	El-El	Eq-El	El	Eq- El	Eq	El	Eq
Degree of weathering	1	2	2	1-2	1	2	1	2
Approx. amount	5	3	3	1	1	1	2	1

Mineral/ lithic fragment	Polycrysalline quartz (fine grained, 0.03-0.05 mm, with plag and qrtz phenocryst)	Zircon	Iron oxide	Rhyolite (hematite stained)	Magnetite	Hematite	Zoned feldspar	Phytoliths
Size	0.8	0.1	0.15	0.4	0.03-0.5	0.05	0.25	0.05
Angularity	Rd	Ang	Ang	Ang	Ang	Rd	Ang	Ang
Shape	Eq	Eq	Eq	El	Eq-El	Eq	El	Eq-El
Degree of weathering	1 (could be 2)	1	3	2	1	3	1	1
Approx. amount	1	1	1	1	2	1	1	1

Manufacturing technique: clays are squeezed together having many short and long voids going across parallel to the wall. It seems that a lump of clay is added to the bigger flat glob of clay making the wall
Slip/Paint: There is no addition of slip or paint but the surface is somewhat smoothed. The possible interior (the sherd is too small to identify) has a secondary calcite formation.
Provenance: He5 type, Azuero intrusive (granitic)
Similarity to Pottery from Other Sites: He5 type

HE5-70-F1

Coarse fragments: 40% coarse fragments of lithics (25%, 0.35-1.8 mm) and single minerals (15%, 0.2-1.3 mm) in grain sizes. Lithics are mainly granitic rocks. Rocks are almost all granite fragments. There is one that is a quartz aggregate that comes from a vein. Monominralic inclsions are those likely to have derived from the granite because the texture and constituency are the same as the rock fragments. Ceramic pores ahd the surface has some secondary calcite growth. Feldspars having exsolution—like appearance indicates alkali-feldspars. There are some plagioclase. There is a ehedral (0.1 mm) monomineralic quartz, unusual to be a granitic origin. Granites and monomineralic quartz grains can have prismatic tourmaline growth. There are also fluid inclusions in some quartz.
Clays: The clay is not birefringent in XPL. In PPL, the clay appears reddish dark brown.
Temper: Not added because all the major inclusions have similar weathering degrees (within the same minerals) and angularities are similar.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagioclase	Alkali-feldspar	Amphibole	Epidote	Magnetite	Hematite	Granite
Size	0.05-0.5	0.15- 0.2	0.2-0.4	0.08-0.5	0.1-0.15	0.2	0.25	0.5-1.9
Angularity	Ang-Rd	Ang-rd	Ang-rd	Ang	Ang	Ang	Rd	Rd
Shape	El-Eq, Euh	El	El-Eq	El-Eq, Sbh	Eq	El	El	Eq-El
Degree of weathering	1	1-2	2	1	1	1	3	2
Approx. amount	4	2	3	1	1	1	1	5

Mineral/ lithic fragment	Secondary calcites forming in pores and sherd surface	Polychrystalline quartz (0.02-0.2 mm grain size)	Phytoliths	Biotite
Size	0.02—1	0.6	0.03	0.5
Angularity	Ang	Rd	Ang	Ang
Shape	Eq-El	Eq	Eq	Eq-el
Degree of weathering	1	1	1	3
Approx. amount	2	1	1	1

Manufacturing technique: clay pores/voids run parallel to the wall. There is not exact manufacturing line but the wall looks like the clays were squeezed together.
Slip/Paint: Wall surfaces were finely burnished/finished (aligned particles) on the exterior. Secondary calcite is growing on the exterior wall.
Provenance: Azuero intrusive (granitic)
Similarity to Pottery from Other Sites: He5 type

HE5-70-F2

Coarse fragments: There are 40% of coarse fragments of lithics (10%, 0.7-2.2 mm) and minerals (30%, 0.03–1 mm). This sherd has granite-based inclusions. Unlike other granitic paste from He5, this sherd has many possible volcanic rocks with heavy hematite stain.
Temper: no
Clays: the clay is not birefringent in XPL, and in PPL, the paste is oxidized but the interior surface is reduced

Inclusions:

Mineral/ lithic fragment	Quartz	Plagio-clase	Amphibole	Rhyolite (hypocrystl-line)	Epidote	Granite	Hematite	Rhyolite (heavily hematite stained)
Size	0.2-1	0.2-0.3	0.2	1.2	0.2	1-2.2	0.1-1.2	0.7-1.5
Angularity	Rd	Ang	Ang	Rd	Rd	Rd	Rd	Rd
Shape	Eq-El	El	Eq	El	Eq	El	Eq-El	Eq-El
Degree of weathering	1	2	2	3	1	2	3	
Approx. amount	5	1	1	2	1	4	1	4

Mineral/ lithic fragment	Alkali feldspar	Tourmaline (green)	Phytoliths	Magnetite	Polycrystaline quartz (0.1-0.2 mm grain heavily hematite stained)	Secondary cacite (exterior)
Size	0.4	0.05	0.05	0.25-0.5	1.6	-
Angularity	Ang	Rd	Ang	Ang, Rd	Rd	-
Shape	El	Eq	Eq	El, Emb	El	Anh
Degree of weathering	3	2	1	2	3	2
Approx. amount	2	1	1	1	2	2

Manufacturing technique: slabs or squeezed
Slip/Paint: no slip or paint (sediment remains on the surface) but both surfaces are smoothed
Provenance: Azuero intrusive (granitic)
Similarity to ceramics from other sites: He5 only

HE5-76-F1

Coarse Fragments: There are 35 % of poorly sorted coarse fragments of lithics (1%, 0.1-0.45 mm) and minerals (34%, 0.05–1.2 mm). Most of them are single mineral grains of: quartz, plagioclase (biaxial, parallel stripe [twinning, crystal axis is flipped], good cleavages), several feldspars show concentric zoning (composition of crystal changed as growing) – opaque grains are magnetites. The biaxial untwining feldspars seem to be plagioclase because the one that was at the right optic axes was biaxial and 2V angle was close to 90°. There are hematites and heavily hematite stained and weathered intermediate to basic round volcanic rocks, pleochroic green to yellow amphibole (hornblende?) (56/124 degree-crossed cleavage), a piece of volcanic glass varying from clear to brown containing very small opaque grains (cloudy devitrified glass containing alkali-feldspar crystals), and microcrystalline quartz/volcanic chert (speckled). Rarely, feldspars can contain fluid iclusions and apatites. There are monomineralic volcanic quartz, the size of monomineralic plagioclase phenocrysts. The clay consists of pyroclastics that had been fallen to the clay deposit or added to the clay because there are quickly weathering minerals that are fresh. Volcanic rocks are round to subangular which could come from the original clays or weathering of rock fragments in pyroclastics.
Temper: Pyroclastics that were either added or naturally fallen onto clay deposit.
Clays: uniform red-orange color clay throughout whole thickness, clay containing many small grains of all minerals above plus many tiny grains of orange iron oxides (due to break down of hematite or hornblende forming hydroxide or iron oxide), undulating (squeezed around mineral particles) along with mineral grains (this is not usually found in coil built pots, possibly slab construction) through squishing clay, under XPL clays change colors (clays are birefringent).

Mineral/ lithic fragment	Quartz	Volcanic quartz	Plagioclase	Zoned feldspars	Amphibole (possible hornblend; can have double twinning)
Size	0.05-1.2	0.1-0.5	0.15-0.8	0.35-2	0.1-0.4
Angularity	Rd-ang	Rd, Ang	Ang	Ang	Ang
Shape	Eq-El, Anh	Eq, Euh	Eq-El	Eq-El, Subh	El, Subh
Degree of weathering	1	1	1	1	1
Approx. amount	5	1	3	3	1

Mineral/ lithic fragment	Mag-netite	Chlorite (pale green in PPL; very low birefringence in XPL)	hematite	Rhyolite (microcrystalline; mainly quartz; some possible feldspars; biotite)	Polychrystalline quartz (fine-grained with some possible magnetite or quartz, with or without hematite stain)	Intermediate to basic volcanic rock (feldspar laths in reflected light, heavily hematite stained)
Size	0.05-0.15	0.08	0.6-1	0.2	0.35-1.3	0.3
Angularity	Rd	Rd	Rd	Rd	Rd	Rd
Shape	El	El	El	Eq	El	El
Degree of weathering	1-2	2	3	2	2	3
Approx. amount	2	1	2	1	1	2

Mineral/ lithic fragment	Iron oxide/hydroxide (with quartz inclusion, could have been weathered from olivine, pyroxene etc. mafic minerals)	Tuff (quartz phenocryst)
Size	0.4	1
Angularity	Rd	Sub-ang
Shape	Eq	Eq
Degree of weathering	3	2
Approx. amount	1	1

Manufacturing technique: globs of clays pressed together (one piece above another).
Slip/Paint: No slip or paint but both surfaces are smoothed.
Provenance: El Valle and La Yeguada materials with pyroclastics
Similarity to ceramics from other sites:

CL1-2-F3

Coarse fragments: There are 40% of coarse fragments of lithics (8%, 0.15-1.9 mm) and minerals (32%, 0.05 –2 mm). Major inclusions are dense fresh, angular, and coarse plagioclase, zoned plagioclase, and quartz, that are derived from pyroclastics and volcanc rock fragments (between basic to felsic composition).
Temper: There could be pyroclastic temper or ash fell on the clay deposit.
Clays: birefringent clay in xpl and amber in ppl with reduction near the interior surface.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagioclase	Zoned feldspar (mainly plag)	Hornblende	Volcanic Quartz	Chert (undulating quarz; 0.15-0.7 mm)	Iron oxide/hydroxide
Size	0.5-2	0.3-0.6	0.15-1.4	0.1-0.45	0.1-0.9	1.5	0.03-0.05
Angularity	Ang-rd	Ang	ang	Ang	Rd, Ang	Rd	Rd
Shape	E1-El	Eq-El	Eq-Rd, Sbh	Eq-el, Dmd	Eq-El, Emb	El	El
Degree of weathering	1	1	1	1	1	2	3
Approx. amount	3	3	3	2	2	2	1

Mineral/ lithic fragment	Magnetite	Dacite	Rhyolite (hematite stained)	Intermediate to basic volcanic rock (hematite stained)	Tuff	Volcanic chert
Size	0.05-0.4	0.5-1.6	0.15-0.3	0.2-0.4	0.2-0.3	0.3-2
Angularity	Ang	Ang	Ang	Rd	Rd	Rd
Shape	Eq-El, Emb	Eq	El	El	Eq	Eq
Degree of weathering	1	3	3	3	2	1
Approx. amount	2	1	1	1	2	1

Manufacturing technique: two slabs put together but the end is folded over
Slip/Paint: there is no slip but the interior surface is reduced
Provenance: Cordillera; Quaternary pycoclastics from El Valle or La Yeguada. The sherd is similar to pyroclastics included pottery (El Valle and La Yeguada) from Ag13 because of the % of rocks are high (but they are different from Azuero igneous sand type and does not have intrusives)
Similarity to ceramics from other sites: Cordilleran type

CL-2-F9

Coarse Fragments: 35% poorly sorted minerals lithics (2%; 0.3-1.2 mm) and (33%; 0.05-1.4 mm).
Major inclusions are pyroclastics with monimineralic quartz, plagioclase, and some zoned plagioclase and more minor amount of amphibole. There are some tuff and holohyaline to hypcrystaline volcanic rocks.
Temper: This could be naturally tempered due to porphyritic volcanic ash falling onto the clay deposit or may have been tempered with volcanic ash that has lost most of the vitrous phases due to weathering.
Clay: The clay is birefringent. The interior and exterior surface areas are reduced (surface the darkest and gladation toward oxidation in the interior) and the interior is oxidized. Clay center is less birefringent than the exterior.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagioclase	Biotite	Amphib-ole (horn-blende)	Epidote and quartz aggregate (0.05-0.15 mm)	Volcanic quartz	Zoned feldspar (plagioclase)	Volcanic glass (Fe-rich)
Size	0.03-1.8	0.05- 0.95	0.2–0.4	0.2	0.06	0.2-0.3	0.2-0.9	0.5
Angularity	Ang	Ang	Ang-Rd	Ang	Ang	Rd	Ang	Rd
Shape	El-Eq	El-Eq	El	El	Eq	Eq	Eq, Subh	El
Degree of weathering	1	2	3	1	1	1	2	3
Approx. amount	3	4	1	1	1	1	2	1

Mineral/ lithic fragment	Hematite	Iron oxide/ hydroxide	Magnetite	Tuff (holohyaline)	Rhyolite (hypohyaline)
Size	0.3	0.05-0.5	0.08-0.3	0.3	0.1-1.3
Angularity	Rd	Rd	Rd	Rd	Rd
Shape	Eq	Eq-El	Eq-El	Eq	Eq
Degree of weathering	3	3	1-2	2	2
Approx. amount	2	2	1	2	2

Slip: there is no slip; however, there are exterior and interior walls with reduction not on the surface but little below it.
Manufacturing Technique: only horizontal short lines. Possibly pressed on the wall
Provenance: Cordillera
Similarity from Ceramics from Other Sites: Cordilleran pots

CL1-2-F11

Coarse fragments: There are 40% of coarse fragments of lithics (5%, 0.2-0.8 mm) and minerals (35%, 0.1–0.8 mm). Rocks are round volcanic rocks including tuff, quartz aggregate (or rhyolite with mostly quartz remains) and small amount of polycrystalline quartz with some miro iron oxide inclusions. The latter is probably not intrusive fragment but is derived from veins. . Single minerals are coarse and fresh which include plagioclase, zoned plagioclase, quartz, and much less amount of alkali-feldspar, fresh clino-pyroxene, fresh orthopyroxene, fresh hornblende, weathered biotite, weathered pyroxene, and epidote. There are few coarse weathered alkali-feldspars. The fresh coarse single minerals are added as temper with some volcanic rocks that are not merged well with the paste clays. Some volcanic rock fragments that are well merged with the clay matrix must come from the original clay.
Clays: birefringent in XPL and is clean (looks levigated). In PPL, oxidized paste but with some color variation (one site is slightly more reduced)

Inclusions:

Mineral/ lithic fragment	Plagioclase	Zoned plagioclase	Amphibole	Clino-pyroxene	Quartz (some w/ fluid and apatite inclusions)
Size	0.2-1.1	0.15-1.1	0.25-0.7	0.5	0.15-1.6
Angularity	Ang	Ang	Ang	Ang	Ang
Shape	Eq-El	El-Eq, Euh	El	El	El-Eq
Degree of weathering	1	1	1	1	1
Approx. amount	3	3	2	1	3

Mineral/ lithic fragment	Epidote	Magnetite	Iron oxide	Tuff	Volcanic glass (weathered, hematite stained)	Rhyolite (hematite stained)	Volcanic chert (weathered, hematite stain)	Volcanic quartz
Size	0.12	0.2	0.08-0.4	0.18-0.6	0.35	0.25	0.8	0.2-0.9
Angularity	Ang	Rd	Rd	Rd	Rd	Rd	Rd	Ang-Rd
Shape	El	El	Eq	Eq-el	El	Anh	El	Eq, Emb
Degree of weathering	1	1	3	2	3	3	1	1
Approx. amount	1	1	1	2	1	1	1	1

Manufacturing technique: squeezed or slab construction
Slip/Paint: No slip or paint is added but exterior and interior surfaces are both well smoothed.
Provenance: the pyroclastic monomineralic phenocryst inclusions suggest they are local.
Similarity to ceramics from other sites:

Cl1-2-F13

Coarse fragments: There are 40% of coarse fragments of lithics (5%, 0.3-3.5 mm) and minerals (35%, 0.03–2.7 mm). Major inclusions are pyroclastics with monomineralic phencrysts of quartz, volcanic quartz, plagioclase, zoned plagioclase, and amphibole as well as lithics that are tuff, rhyolite, and dacite with fresh phenocrysts.
Temper: pyroclastics (fresh and angular minerals and tuff including those minerals) were added.
Clays: clays are birefringent in XPL and in PPL, amber colored in the interior and the exterior surfaces are somewhat reduced.

Inclusions:

Mineral/ lithic fragment	Quartz	Zoned plagioclase	Plagioclase	Volcnic quartz	Amphibole	Magnetite	Pyroxene
Size	0.05-1.6	0.5-1	0.1-0.7	0.15-1.3	0.05-0.4	0.1-0.25	0.3
Angularity	ang	Ang	Ang	Rd, Ang	Ang	Ang	Ang
Shape	Eq-El	Euhedral-Sbh, Eq	Eq-El	Eq, Emb	Eq-El, Dmd	Eq, Sbh	El
Degree of weathering	1	1	1	1	1	1	1
Approx. amount	3	3	3	3	2	1	1

Mineral/ lithic fragment	Phy-to-lith	Zir-con	Dacite (hematite stained, w/ phenocrysts)	Tuff	Intermediate to basic volanic rock	Rhyolite (hypo-crytalline)	Iron ox-ide/ hydroxide	Rhyolite (heavily hematite stained)
Size	0.03	0.08	0.5-0.9	0.15-2	0.3	1.2-1.8	0.1	0.4
Angularity	Ang	Ang	Rd	Ang-Rd	Rd	Rd	Rd	Rd
Shape	El	El	El	El	Eq		El	Eq
Degree of weathering	1	1	3	1	3	3	3	3
Approx. amount	1	1	1	2	1	3	2	2

Mineral/ lithic fragment	Rhyolite/dacite (holohyaline, w/ phenocryst (e.g qtz, amphibole)	Dacite (w/ phenocrysts (e.g. zoned plag, amphib; holohyaline matrix)	Rhyolite (hypocrystaline w/ micro amphibole/biotite/pyroxene)
Size	0.5	1.9	0.8
Angularity	Rd	Ang	Rd
Shape	Eq	El	El
Degree of weathering	1	2	3
Approx. amount	1	2	1

Manufacturing technique: squeezed or slabs
Slip/Paint: no slip or paint but interior and exterior surface smoothed
Provenance: pycoclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Lp134, Lp8, and some Ag13

CL1-2-F17

Coarse fragments: There are 30% of coarse fragments of lithics (10%, 0.1-2 mm) and minerals (15%, 0.02–1.1 mm). Major inclusions are pyroclastics with monomineralic phenocrysts (quartz, plagioclase, zoned plagioclase, and amphibole and other minor and accessory minerals) and volcanic rocks that include tuff, rhyolite.
Temper: Pyroclstics were added to the clayey paste or naturally fell onto the clay deposit.
Clays: The clay is birefringent in XPL. In PPL, it has a light oxidized paste with a core with thick reduction.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagioclase	Zoned plagioclase	Epidote	Tuff (w/ or without hematite stain)	Clino-pyroxene
Size	0.02-1.5	0.15-1	0.15-1.5	0.02-0.25	0.25-0.9	0.2-0.4
Angularity	Ang	Ang	Ang	Ang	Rd	Ang
Shape	Eq-El	Eq-El	Eq-el, Sbh, Euh	Eq	El	El-Eq
Degree of weathering	1	1	1	1	3	1
Approx. amount	3	3	3	1	3	1

Mineral/ lithic fragment	Amphib-ole	Bio-tite	Magnetite	Iron ox-ide/hydroxide	Rhyolite/quartz aggregate (hypo-crystalline; very weathered and merged in the matrix)	Hematite (magnetite with hematite lath growth)	Volcanic quartz
Size	0.18-0.5	0.2	0.3-0.03	0.4	0.15-1.5	0.4	0.1-1.5
Angularity	Ang	Rd	Ang	Ang	Rd	Rd	Ang
Shape	El, Dmd	El	Eq-El, Sbh	Eq	Anh	El	Eq, Emb
Degree of weathering	1	3	1	3	3	3	1
Approx. amount	1	1	1	1	3	2	1

Mineral/ lithic fragment	Volcanic chert (micro-crystalline)	Dacite	Volcanic glass (Fe-rich)	Rhyolite (hematite stained)
Size	0.8	0.5	0.15	0.4-0.7
Angularity	Rd	Ang	Ang	Rd
Shape	Eq	Eq	Eq	Eq-El
Degree of weathering	1	1	3	3
Approx. amount	1	1	1	2

Manufacturing technique: squeezed or small slabs
Slip/Paint: no slip or paint but exterior and interior surfaces are smoothed
Provenance: El Valle or Yeguada pyroclastic deposit
Similarity to ceramics from other sites: Cl1, Lp8, Lp134

CL1-3-F11

Coarse fragments: There are 25% of coarse fragments of lithics (5%, 0.3-1.5 mm) and minerals (20%, 0.15–2 mm). Major inclusions are monomineralic quartz, plagioclase, and zoned plagioclase. The igneous rock inclusions are felsic volcanic rocks of intermediate/basic to felsic composition.
Temper: No temper added and possibly, pyroclastics have fallen onto the clay deposit and weathering in situ.
Clays: The undulating clay surface has random micro-cracks. The clay is birefringent in XPL and in PPL, the paste clay matrix is evenly amber.

Inclusions:

Mineral/ lithic fragment	Quartz (multiple cracks)	Plag-ioclase	Zoned feldspar	Tuff	Amphibole	Biotite	Hematite	Volcanic glass (hematite stained
Size	0.3-2	0.15-1	0.8	0.3-0.7	0.2-0.6	0.5-0.9	0.05-0.6	0.3 mm
Angularity	Ang	Ang	Ang	Ang	Ang	Rd	Rd	Rd
Shape	Eq-El	Eq-El, Sbh	Eq	El	El	El	Eq	El
Degree of weathering	2	2	2	1	1	3	3	3
Approx. amount	3	3	2	3	1	1	1	1

Mineral/ lithic fragment	Rhyolite (hematite stained, holohyaline)	Dacite with weathered phenocrysts (magnetite, quartz, and feldspars)	Magnetite	Intermediate to basic volcanic rock (w/ phenocryst)	Iron oxide/hydroxide
Size	0.4	1.5	0.03-0.25	0.5	0.3-0.9
Angularity	Rd	Rd	Rd	Rd	Rd
Shape	El	El	Eq	El	El, Anh
Degree of weathering	3	3	1	3	3
Approx. amount	2	2	1	1	2

Mineral/ lithic fragment	Tuff
Size	0.3
Angularity	Rd
Shape	El
Degree of weathering	2
Approx. amount	1

Manufacturing technique: squeezed or slabs
Slip/Paint:The surface is weathered and is not easy to tell whether there were slip or paint.
Provenance: Pycoclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Lp134, Lp8, and some Ag13

CL1-3-F14

Coarse Fragments: 45% very poorly sorted lithics (20%, 0.2-2 mm) and minerals (25%, 0.03-1.5 mm).
Major mineral inclusions are porphyritic volcanic rock-(mainly feldsic) based sand and monomineralic phenocrysts derived from the volcanic sand (meinlay plagioclase, ess aount of quartz, and minor amount of amphibole/hornblende, and magnetite). There are no high variability in terms of mineral ad rock inclusions.
Temper: Porphyritic volcanic based-sand, close to the source, including monomineralic fresh pheocrysts may have been added to the clay (vitreous phases of rocks must not have remained significantlyl if this was natural---and this may not be volcanic ash that could have deposited naturally onto the clay surface). Some large pheoncrysts in porphyritic felsic volcanic rocks suggest that monomineralic phenocrysts are derived from these rocks.
Clays: Reddish brown core in XPL and lighter colored layer toward the interior and exterior wall.In PPL, interior is somewhat more reduced than the exterior layers but the very surface areas of exterior and interior walls are somewhat reduced.

Mineral/ lithic fragment	Quartz	Volcanic quartz	Plagioclase	Zone feldspar (mainly plagioclase)	Magnetite	Amphibole (hornblende)
Size	0.02-1.3	0.1-0.3	0.08 - 1.2	0.4-1.5	0.03-0.4	0.5
Angularity	Ang	Rd	Ang	Ang	Rd-ang	Ang
Shape	El-Eq	Eq	El-Eq	Eq-El	El-Eq, Sbh, Emb	El
Degree of weathering	1	1	1	1	1-2	1
Approx. amount	3	1	4	2	1	2

Mineral/ lithic fragment	Rhyolite(hypocrystalline, with or without phenocrysts of plagioclase and/or quartz, or biotite)	Tuff (with or without phenocrysts of plagioclase or quartz)	Dacite
Size	0.15-1.2	0.3-0.9	0.4-2
Angularity	Rd	Rd	Ang
Shape	Eq-El, Anh	Eq-El, Anh	El
Degree of weathering	2	3	1-2
Approx. amount	4	2	3

Manufacturing Technique: It is a vessel body sherd. There are horizontal pores parallel to the wall. This may mean that the pot was produced pressing the clays together.Slip/paint: No slip or paint was added onto the surface but both surfaces are smoothed.
Provenance: It is a type of Cl1 that is more similar to Ag13 (with more abundant volcanic rocks than the typical Cl1) or it could be Azuero (rock fragments range between felsic to basic type and there are no intrusives, the characteristics of abundant volcanic porphyritic sand indicate Azuero type).
Similarities to other sites: Azuero/Cordillera

CL1-3-F120

Coarse fragments: There are 30% of coarse fragments of lithics (3%, 0.2-0.7 mm) and minerals (27%, 0.03–1.7 mm). Major inclusions are monomineralic quartz, feldspars, zoned feldspars, and hornblend phenocrysts derived from pyroclastics and volcanic rocks.
Temper: Pyroclastics could have been added or fallen onto the clayey soil deposit.
Clays: birefringent in XPL and in PPL, there is somewhat reduced core and oxidized exterior paste with thin reduced exterior and interior surface.

Inclusions;

Mineral/ lithic frag-ment	Quartz	Vol-canic quartz	Plagioclase	Zoned feldspar	Hornblende	Magnetite	Hematite	Volcanic glass
Size	0.03 1.5	0.5-0.8	0.2-1.5	0.9-1	0.4	0.1-0.4	0.3	0.7
Angularity	Ang	Rd	Ang	Ang	Ang	Ang	Rd	Rd
Shape	Euh-Sbh, El	Rd, Emb	Euh-Sbh, El	Euh-Sbh	El, Euh/Dmd, Anh	Eq-El, Emb	Eq	El
Degree of weathering	1	1	1	1-2	1	1	3	3
Approx. amount	3	1	3	3	2	1	1	1

Mineral/ lithic fragment	Rhyolite (hypocrystalline)	Phyroliths	Iron oxide/ Hydroxide	Tuff	Rhyolite (heavily Hematite stained)	Intermediate to basic volcanic rock (heavily hematite stained)
Size	0.25-0.5	0.05	0.08-0.15	0.6	0.4	0.4-0.7
Angularity	Rd	Rd	Rd	Rd	Rd	Rd
Shape	Eq	El	Eq-El	El	Eq	El
Degree of weathering	2	1	3	3	3	3
Approx. amount	2	1	1	1	1	2

Manufacturing technique: squeezed or slabs
Slip/Paint: smoothed or burnished on both surfaces
Provenance: Pycoclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Lp134, Lp8, and some Ag13

CL1-3-F122

Coarse fragments: There are 40% of coarse fragments of lithics (5%, 0.1 – 1.3 mm) and minerals (35%, 0.03–1.2 mm). Major inclusions are fresh monomineralic phencrysts of pyroclastics (plagioclase, zoned feldspar, qartz, amphibole and accessory minnerals) and some porphyritic or non-porphyritic felsic volcanic rocks.
Temper: Pyroclastic sand inclusions were added or fell onto the clayey soil deposit.
Clays: birefrinegent in XPL and oxidized brown clay in PPL.

Inclusions:

Mineral/ lithic fragment	Plagioclase	Zoned feldspar (mainly plagioclas)	Quartz	Amphibole (including hornblende)	Magnetite	Iron oxide/ hydroxide	Volcanic quartz
Size	0.1-0.6	0.08-1	0.25-0.9	0.15-0.25	0.15	0.03-0.5	0.25-0.4
Angularity	Ang	Ang	Ang	Ang	Ang	Rd	Ang-Rd
Shape	Eq-El	Eq-El, Sbh	Eq-el	Eq	El	Anh	Eq, Emb
Degree of weathering	1	1	1	1	1	3	1
Approx. amount	3	3	3	2	1	2	1

Mineral/ lithic fragment	Polycrystaline quartz (from vein, 0.15 mm grain; hematitne stained)	Dacite (weathered, w/or without fresh phencrysts (e.g. plag 0.1-0.6 mm)	Volcanic glass (Fe-rich)	Tuff (hematite stained)	Polycrystalline quartz (0.03-0.05 mm grain)
Size	0.8	1-1.2	0.4-0.9	0.25	0.25
Angularity	Rd	Rd	Rd	Rd	Rd
Shape	El	El-Eq	Eq-el	Eq	El
Degree of weathering		2	3	3	1
Approx. amount	1	1	1	1	1

Manufacturing technique: small lumps and sabs
Slip/Paint: no slip or paint is added but both exterior and interior surfaces are smoothed
Provenance: The potter was produced locally. The added pyroclastic sand inclusions are from La Yeguada and El Valle.
Similarity to ceramics from other sites:

CL1-3-F124

Coarse fragments: 45% coarse fragments of lithics (3%, 0.2-1.5 mm) and minerals (42%, 0.02-1.6 mm). Major inclusions are pyroclastic monomineralic phenocrysts mainly consisting of quartz, plagioclase, zoned feldspar (mainly plagioclase), and minor amount of amphibole (hornblede), and lesser amount of magnetite.
Temper: Pyroclastics were either naturaly deposited onto the clay surface or was added:
Clays: grayish brown throughout the wall, but the interior has reddish brown thin layer at the surface (could be oxidation) in XPL and there are some birefringence. In PPL, the color is light n in the interior and the interior surface is reduced.

Mineral/ lithic fragment	Quartz	Volcanic quartz	Plagioclase	Zoned feldspar (mainly plagioclase)	Amphibole (some double twin; hornblende)	Biotite	Iron oxide/ hydroxide
Size	0.02-1.5	0.15-0.6	0.2-0,8	0.3-0.6	0.05-0.6	0.4	0.4
Angularity	Ang	Rd, Ang	Ang	Ang	Ang	Rd	Rd
Shape	Eq-El	Eq-El	Eq-El	Eq-El Sbh	Eq-El, Dmd	El	El
Degree of weathering	1	1	1	1	1	3	3
Approx. amount	4	1	4	3	2	1	1

Mineral/ lithic fragment	Magnetite	Hematite
Size	0.03-0.25	0.3
Angularity	Ang	Rd
Shape	Eq-el, Sbh	Eq, Anh
Degree of weathering	1	3
Approx. amount	1	1

Manufacturing technique: squeezed or slab
Slip/Paint/Surface finish: exterior eroded or chipped off so rugged but the interior is smoothed.
Provenance: Pyroclastics of El Valle and La Yeguada
Similarities to other sites: Cordilleran pottery

CL1-4-F17

Coarse fragments: There are 45% of coarse fragments of lithics (5%, 0.5-1.1 mm) and minerals (40%, 0.02–0.9 mm). Major inclusions are the dense amount of pyroclastics with fresh and angular monomineralic quartz, plagioclase, zoned plagioclase, and with minor amount of amphibole and magnetite. There are some rhyolite and dacite.
Temper: There are pyroclastic inclusions (fresh minerals and volcanic rocks) that may be temper or that were deposited onto the clay.
Clays: The clays are birefrigent in XPL and in PPL, with amber core and reduced exterior and interior surface.

Inclusions:

Mineral/ lithic fragment	Plagioclase	Quartz	Zoned feldspar	Amphibole	Iron oxide/hydroxid	Rhyolite (heavily hematite stained)
Size	0.2-0.6	0.05-0.8	0.2-0.8	0.05-0.3	0.1-0.3	0.6
Angularity	Ang	Ang	ang	Ang	Rd	Rd
Shape	El-Eq	El-Eq	El-Eq	El-Eq	El	El
Degree of weathering	1	1	1	1	3	3
Approx. amount	2	3	3	2	2	1

Mineral/ lithic fragment	Zircon	Rhyolite (hypocrystalline)	Volcanic glass	Magnetite	Dacite
Size	0.2	0.1-0.7	0.15-0.2	0.02-0.3	0.5
Angularity	Ang	Rd	Rd	Ang	Rd
Shape	El	El-Eq	El	Eq-El, Euh, Emb	El
Degree of weathering	1	2	3	1	2
Approx. amount	1	3	1	1	2

Manufacturing technique: The rim is produced by bending a slab and sandwiching a slab at lower part of the rim.
Slip/Paint: there is no slip or paint but both surfaces are smoothed.
Provenance: Cordillera; Quaternary pycoclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Cordilleran type

CL1-4-F35

Coarse fragments: There are 30% of coarse fragments of lithics (10%, 0.15 – 1.2 mm) and minerals (20%, 0.03–1.1 mm). Major inclusions are pyroclastics of fresh, coarse, and angular monomineralic plagioclase, zoned feldpsars, quartz, and volcanic quartz, amphibole, and magnetite in addition to volcanic rock such as dacite and rhyolite with phenocrysts and volcanic glass.
Temper: There could be pyroclastic temper or ash fell on the clay deposit.
Clays: The clay matrix is birefringent in XPL and yellowish orange in PPL.

Inclusions:

Mineral/ lithic fragment	Quartz (can have fluid inclusion and/or apatite)	Plagioclase	Zoned plagioclase	Amphibole	Magnetite	Polycrystalline quartz (0.3 mm grain)
Size	0.15-1.2	0.1-0.9	0.2-1	0.1-0.3	0.02-0.4	0.2
Angularity	Ang	Ang	Ang	Ang	Ang	Ang
Shape	Eq-El	Eq-e	Eq-El, Sbh	Eq-El	Eq-El	Eq
Degree of weathering	1	1	1	1	1	2
Approx. amount	3	3	3	1	1	1

Mineral/ lithic fragment	Volcanic glass	Tuff	Porphyritic tuff	Rhyolite (holocrystalline, w/ phenocryst (e.g. qtz 0.5 mm)	Phytoliths	Trachyte
Size	0.2-0.4	0.2-0.5	0.8	0.2-0.8	0.03-0.05	0.5
Angularity	Rd	Rd	Rd	Rd	Rd	Rd
Shape	Eq	Eq	Eq-El	Eq-El	Eq-El	El
Degree of weathering	1	1	1	1	1	3
Approx. amount	1	2	3	1	1	1

Mineral/ lithic fragment	Volcanic quartz	Dacite ((w/ phenocrysts (e.g. feld 0.1-0.8 mm)	Rhyolite holoyaline	Intermediate to basic volcanic rock (hematite stained, w phenocryst)	Iron oxide/ hydroxide	Amphibole/pyroxene aggregate (from vein)
Size	0.1-0.8	0.3-1.6	1.4	0.6	0.2	0.2
Angularity	Rd-Ang	Rd	Ang	Rd	Rd	Rd
Shape	Eq-El, Euh	El	El	El	Eq	El
Degree of weathering	1	2-3	2	3	3	3
Approx. amount	2	3	2	1	1	1

Manufacturing technique: a slab (or two slabs non-layered) and a small lump added at the end
Slip/Paint: no slip or paint but flat exterior and interior surfaces
Provenance: Pycoclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Cordilleran type

CL1-4-F39

Coarse Fragments: 30% very poorly sorted minerals (4%, 0.02-1.2 mm) and lithics (26%, 0.1-.1.2 mm). The major inclusions are heavily hematite stained natural tuff and hypocrystalline rhyolite. There are small amount of monomineralic magnetite, quartz, and plagioclase that likely to have derived from the volcanic rocks.Small number of tuff fragmenets have magnetite.
Temper: No temper was added to the clay. Volcanic rocks (mostly tuff) are heavily hematite stained.
Clays: Clay matrix that is brown in PPL has many parts that are opaque in XPL. Overall, there are some birefringence. The exterior wall is somewhat ore reduced than the interior paste in PPL.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagioclase	Tuff (heavily hematite stained)	Rhyolite	Hematite	Magnetite
Size	0.03-0.15	0.12-0.3	0.08-1.2	0.5-0.8	0.4	0.1
Angularity	Ang	Ang	Rd	Rd	Ang	Ang
Shape	El-Eq	El-Eq	Eq-El, Anh	Eq-El	El, Anh	Eq
Degree of weathering	1	1	3	3	3	2
Approx. amount	2	1	5	2	1	1

Manufacturing technique: There are horizontal pore lines that may indicate that the clays were pressed; however, there are cracks that go across the minerals between the surface walls (not cracking through the wall) (this may indicate thermal cracks). There are shrinkages around lithics. The sherd is too small to identify the manufacturing technique. Hence, the manufacturing technique is unknown.
Slip/paint: No slip is added to the exterior surface. However, the exterior is smoothed.
Provenance: This is a sherd with natural volcanic tuff-based inlucions. It does not belonging to typical Azuero or Cordillera. However, since the possible natural tuff is still existing in the clay, the pyroclastic characteristics suggest Cordillera (unusual Cordillera type).
Similarities to other sites: None

CL1-4-F44

Coarse Fragments: 50% (dense inclusions) poorly sorted lithics (2%, 0.2-0.8 mm) and minerals (48%, 0.03-1.6 mm). The major inclusions are pyroclastics with pheocrysts with monimieralic phenocrysts predominantly of plagioclase and less but abundant quartz. There are minor amount of pyroclastic-derived monomineralic amphiboles with a few with double twinning. There is a porphyritic tuff without the loss of glassy matrix.
Temper: This could be naturally tempered due to porphyritic volcanic ash falling onto the clay deposit or may have been tempered with volcanic ash that has lost most of the vitrous phases due to weathering.
Clay: Part of the clay is birefringent and other part of the clay is opaque in XPL. In XPL, it is oxidized toward near the exterior surface, the core is light ocre color, and the interior surface is oxidized.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagioclase	Zoned feldspar	Volcanic Quartz	Amphibole (hornblende)	Volcanic glass (with some striated texture)
Size	0.02-1.15	0.03-1.3	0.4-1.5	0.3-0.5	0.15-0.3	0.6
Angularity	Ang	Ang	Ang	Ang	Ang	Ang
Shape	Eq-El	El-Eq	El-Eq, Sbh	El-Eq	El	El
Degree of weathering	1	1	1	1	1	1
Approx. amount	4	4	2	1	2	1

Mineral/ lithic fragment	Porphyritic tuff (with plagioclase phenocryst)	Rhyolite (hypocrystalline with or without hematite stain)	Hemtite	Iron oxide	Magnetite
Size	0.3	0.25-0.8	0.8	0.2-0.3	0.02-0.15
Angularity	Rd	Rd	Rd	Rd	Rd-Ang
Shape	El	Eq-El	Eq-El	Eq-El	Eq
Degree of weathering	1	1-3	3	3	1-2
Approx. amount	1	2	1	1	1

Manufacturing technique*:* Many elongated minerals are facing horizontal to the vessel wall. The elongated minerals are also aligned with the pore directions (they are relatively short pores parallel to the wall), so it is likely that slabs were pressed together parallel to the wall. Also, inclusions were possibly natural inclusion because elongated minerals face the same direction, also parallel to the pores [the possible manufacturing line] as if they are part of the clay (although fresh and angular which are rare to be seen in the tropical environment that weathers plagioclase feldspars quickly) (added inclusions should not be well integrated into the clay matrix). The elongated inclusions that are very small also face the same direction which adds to the assumption that inclusions were natural, not added.Slip/Paint*:* No particularip or paint but the exterior remaining surface is smoothed.
Provenance: Pyroclastics from El Valle and La Yeguada
Similarities to other sites: Cordilleran pottery

Cl1-4-F48

Coarse fragments: There are 35% of coarse fragments of lithics (5%, 0.3-0.7 mm) and minerals (30%, 0.03–1.8 mm). Major inclusions are monominralic angular and fresh quartz, plagioclase, and zoned feldpsars and minor minerals of amphibole and magnetite and smaller amount of volcanic rocks (intermediate/basic to felsic). There are weathered intermediate to basic intrusive rock fragments.
Temper: Pyroclasitcs were added as temper or fell onto the clay deposit.
Clays: birfringent in XPL and in PPL, the interior clay matrix is reduced and it is more oxidized (amber colored) toward the exterior.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagioclase	Zoned feldspars	Amphibole	Magnetite	Hematite
Size	0.03-1.3	0.2-0.8	0.3-0.9	0.2-0.7	0.03-0.2	0.1
Angularity	Ang	Ang	Ang	Ang	Ang, Rd	Rd
Shape	Eq-El, Sbh	El-Eq	Eq, Sbh	Eq-El	Eq-El, Emb	Eq
Degree of weathering	1	1	1	1	1	3
Approx. amount	3	3	3	2	1	1

Mineral/ lithic fragment	Rhyolite (hematite stained)	Volcanic quartz	Iron oxide/ hydrxide	Itermediate to basic volcanic rock 0.03-0.15 mm grain)	Chert	Very weathered intermediate to basic intrusive rock (0.25 mm grain)
Size	0.3-0.7	0.3-1.8	0.1-0.15	1.2	0.4	1.1
Angularity	Rd	Rd	Rd	Ang	Rd	Ang
Shape	El	El, Emb, Euh	Eq	El	El	El
Degree of weathering	3	1	3	3	2	3
Approx. amount	2	2	1	2	1	

Manufacturing technique: slabs or squeezed
Slip/Paint: the interior is smoothed but the exterior is not or is weathered.
Provenance: This sherd has a very weathered insturive rock fragment as well as fresh and angular monomineralic phenocryst from pyroclastics. The sherds is probably a mixture of Azuero clayey sediment and the added El Valle and La Yeguada pyroclastics.
Similarity to ceramics from other sites:Azuero and Cordilleran mixed kind?

Cl1-4-F50

Coarse fragments: There are 40% of coarse fragments of lithics (7%, 0.1-3 mm) and minerals (33%,0.03 –2 mm).Major inclusions are momineralic fresh and angular quartz, plagioclase, zoned plagioclase, amphibole, and pyroxene as well as minor amount of intermediate to felsic volcanic rocks.
Temper: Pyroclasitcs were added as temper or fell onto the clay deposit.
Clays: birefringent in XPL; and in PPL, oxidized paste with some reduction on the interior surface.

Inclusions:

Mineral/ lithic fragment	Quartz	Volcanic quartz	Plagio-clase	Zoned feldspars (mainly plagioclase)	Phyto-liths	Horn-blende	Pyroxene (clino-pyroxene?)	Zircon
Size	0.03-1.2	0.15-2	0.15-1	0.3-1	0.05	0.1-0.7	0.2	0.15
Angularity	Ang	Rd	Ang	Ang	Rd	Ang	Rd	Ang
Shape	Eq-El	Eq-El, Emb	Eq-El, Euh-Sbh	Eq, Euh-Sbh	El	Eq-el	Eq	Eq
Degree of weathering	1	1	1	1	1	1	1	1
Approx. amount	3	2	3	3	1	2	1	1

Mineral/ lithic fragment	Magnetite	Rhyolite (hypocrystalline)	Tuff (glassy, hematite stained)	Intermediate to basic volcanic rock with phenocrysts (quartz, plagioclase)	Volcanic glass	Dacite (heavily hematite stained; phenocrysts (magnetite, plag; 0.15-0.6 mm grain)
Size	0.02-0.1	0.1-0.35	0.3	0.8	0.25	1.5-3
Angularity	Ang	Rd	Rd	Rd	Rd	Rd-Ang
Shape	Eq-El, Emb	Eq-El	El	El	Eq	El
Degree of weathering	1	1	3	2	3	3
Approx. amount	1	3	1	1	1	2

Manufacturing technique: a lump of clay added to the glob of clay/squeezed clay
Slip/Paint: exterior has clayey slip with reduced color, on a smoothed surface
Provenance: Pycoclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Lp134, Lp8, and some Ag13

Cl1-44-F8

Coarse fragments: There are 45% of coarse fragments of lithics (10%, 0.1-0.7 mm) and minerals (35%, 0.05–1.5 mm). This sherd has dense inclusions.Major inclusions are pyroclastic materials including the monomineralic crystals of quartz, volcanic quartz, plagioclase, zoned feldspars, amphibole, and magnetite as well as volcanic rocks ranging between felsic to basic compoeisitio (rhyolite, tuff, dacite, and andesite/basalt)
Temper: Pyroclasitcs were added as temper or fell onto the clay deposit.
Clays: birefringent in XPL and in PPL, oxidize core with some reduction on the exterior and interior.

Inclusions:

Mineral/ lithic fragment	Quartz	Volcanic quartz	Plagioclase (fresh)	Zoned feldspars	Amphib-oles	Magnetite	Hematite	Phyto-liths
Size	0.07-1	0.1-1.5	0.2-1	0.2-0.8	0.05-0.5	0.03-0.35	0.15-0.3	0.05
Angularity	Ang	Rd	Ang	Ang	Ang	Ang	Rd	Ang
Shape	Eq-El, Euh	Resorbed, Rd, 1/2 circle	Eq-El	Euh-Sbh , Eq	Eq-El	Eq-El, Emb	El	El
Degree of weathering	1	1	1	1	1	1	3	1
Approx. amount	3	1	3	3	2	1	1	1

Mineral/ lithic fragment	Zircon	Dacite (w/ phenocrysts [e.g. zoned plag 0.15-0.2 mm, quartz, amphib 0.03 mm])	Tuff	Polycrystaline quartz w/ undulation texture	Chert	Rhyolite (hypocrystalline; w/ or without phenocrysts (e.g. qtz 0.6 mm)
Size	0.05	0.2-0.9	0.3-0.8	0.8	0.7	0.6-0.7
Angularity	Ang	Rd	Ang-Rd	Ang	Rd	Ang-Rd
Shape	El	Eq	El	El	El	El
Degree of weathering	1	3	2-3		2	2
Approx. amount	1	3	2	Very low	2	3

Mineral/ lithic fragment	Intermediate to basic volcanic rock	Rhyolite (heavily hematite stained)	Andesite/basalt
Size	0.3-0.8	0.3-0.1.3	0.4
Angularity	Rd	Rd-Ang	Rd
Shape	El	Eq	El
Degree of weathering	2	3	2
Approx. amount	2	2	1

Manufacturing technique squeezed or slab construction
Slip/Paint: There is no addition of slip but the interior is smoothed. The exterior is not smoothed or has been weathered.
Provenance: Pycoclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Lp134, Lp8, and some Ag13

CL1-44-F10

Coarse fragments: There are 35% of coarse fragments of lithics (5%, 0.2-1) and minerals (30%, 0.2–1.5). Major inclusions are fresh and angular plagioclase, quartz, volcanic quartz, and zoned plagioclase that are pyroclastic inclusions with minor amount of amphibole, and magnetite along with some felsic volcanic rocks (tuff, rhyolite).
Temper: There could be pyroclastic temper or ash fell on the clay deposit.
Clays: Amber colored in PPL with exterior surface being slightly more reduced. In XPL, the clay is birefringent.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagio-clase	Zoned plagioclase (can have apatite inclusion)	Amphibole	Opaque minerals	Rhyolite (heavily hematite stained)	Iron ox-ide/ hydroxide	Hematite
Size	0.05-1.7	0.1-0.5	0.5-0.9	0.2-1	0.1-0.3	0.4-0.9	0.1	0.2
Angularity	Ang	Ang	Ang	Ang	Rd	Ang	Rd	Ang
Shape	Eq-El	El-Eq	Eq	El-Eq, Dmd	Eq-El, Sbh, Emb	El	Eq	El
Degree of weathering	1	1		1	1	3	3	3
Approx. amount	4	3	3	2	1	3	1	1

Mineral/ lithic fragment	Phy-to-liths	Zir-con	Rhyolite (hypo-crystal-line)	Tuff	Intermediate to basic vol-canic rock (very weathered)	Rhyolite/polycrys-talie quartz (holo-crystalline, 0.02 mm)	Polycrystal-line quartz (0.1 mm)	Volcanic quartz
Size	0.02	0.1	1	0.5	0.5	0.8	0.2-0.3	0.15-1
Angularity	Ang	Rd	Rd	Ang	Rd	Rd	Rd	Rd-ang
Shape	El-Eq	Eq	El	Eq-El	E1	El	Eq-El	Eq-El, Sbh
Degree of weathering	1	1	2	2	3	2	2	1
Approx. amount	1	1	1	1	1	2	2	2

Manufacturing technique: double layered lumps and a slab
Slip/Paint: there is no slip or paint but the surface is smoothed
Provenance: Pycoclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Lp134, Lp8, and some Ag13

CL1-45-F2

Coarse fragments: There are 35% of coarse fragments of lithics (5%, 0.2-0.7 mm) and minerals (30%, 0.03–1.3 mm). Major inclusions are fresh and angular monomineralic quartz, volcanic quartz, zoned fledspars (mostly plagioclase), and minor amount of amphibole; they are derived from added pyroclastics. There are also However, igneous rocks that are found, mainly rhyolites and rhyolitic tuff, do not have large, fresh and angular feldspar phenocrysts. Nonetheless, they could all come from the pyroclasitcs.
Temper:Pyroclasitcs were added as temper or fell onto the clay deposit.
Clays: The clay is birefringent in XPL, and in PPL, oxidized but the interior is somewhat reduced.

Inclusions:

Mineral/ lithic fragment	Quartz	Volcanic quartz	Zoned feldpsars	Plagioclase	Amphibole	Volcanic glass (Fe-rich)	Magnetite
Size	0.03-1.1	0.15-1	0.3-1.5	0.2-0.8	0.1-0.35	0.25	0.03-0.2
Angularity	Ang	Rd	Ang	Ang	Ang	Rd	Ang
Shape	Eq-El	Eq	Euh-Sbh, Eq-El	Eq	Eq-El	Eq	Sbh, Eq
Degree of weathering	1	1	1	1	1	1	1
Approx. amount	3	1	3	3	2	1	1

Mineral/ lithic fragment	Hema-tite	Phyto-liths	Biotite	Rhyolite (holocrys-talline)	Iron ox-ide/hydroxide	Dacite	Rhyolite (hypo-crystalline)
Size	0.15	0.05 mm	0.05-0.1	0.3-0.7	0.03-	0.4	0.2-0.7
Angularity	Rd	Ang	Rd	Rd-Ang	Rd	Ang	Ang
Shape	Eq	Eq-El	El	Eq-El	Eq	El	El
Degree of weathering	3	1	3	1	3	1	1
Approx. amount	1	1	1	2	1	2	2

Manufacturing technique: slabs (double layered because there is a place where pores parallel to the wall ending on the interior surface.
Slip/Paint: possibly, the exterior has the clay-based red slip
Provenance: Pyroclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Lp134, Lp8, and some Ag13

CL1-45-F4

Coarse fragments: There are 40% coarse fragments of lithics (20%, 0.1-1.5 mm) and minerals (10%, 0.02-1.5 mm). Major inclusions are volcanic rock-based sand inclusions and fresh monnimineralic phenocrysts (ainly of quartz, plagioclase, and zoned feldspars)
Temper: Although this sherd has many porphyritic felsic volcanic rocks (rhyolite and tuff), they tend to be weathered. Hece, the inclusions could be natural.
Clays: The clay is birefringent in XPL. In PPL, brown colored paste with some reduction in the interior

Mineral/ lithic fragment	Quartz	Plagioclase	Zoned feldspar (mainly plagioclase)	Hematite	Amphibole	Magnetite	Trachyte (hematite stied, with phenocryst of biotite)
Size	0.2-1.3	0.2-1.5	0.3-0.8	0.7	0.2-0.6	0.05-0.3	0.9
Angularity	Ang	Ang	Ang	Ang	Ang		Ang
Shape	Eq-El	Eq-El	Eq, Sbh	Eq, Anh	Eq-El	Eq	El, Anh
Degree of weathering	1	1	1	3	1-2	1	3
Approx. amount	4	3	3	1	2	1	1

Mineral/ lithic fragment	Rhyolite (hypocrystalline, with or without hematite stain, with or without phenocyrts of amphibole, quartz, and plagioclase)	Tuff (with or without phenocryst)	Quartz aggregate (hypocrystallin, 0.1-0.3) with hematite stain in sections	Intermediate to basic volcanic rock fragment (heavily hematite stained, 0.1 mm grains)
Size	0.15-2	0.3-0.7	0.7	0.7
Angularity	Rd	Rd-Ang	Rd	Ang
Shape	Eq-El, Anh	Eq-El, Anh	Eq	El
Degree of weathering	2-3	2-3	2	3
Approx. amount	4	2	1	1

Manufacturing technique: squeezed or slab method (parallel to the wall throughout the paste)
Slip/Paint/Surface finish: No slip or paint are applied on the surface but both exterior and interior surfaces are smoothed.
Provenance of clay: Probably El Valle and Le Yeguada-based paste with felsic to basic volcanic rocks but the amount of rocks are unusualy high for the typical ones of this type; alternative interpretation is the Azuero (but anomaly because porphyritic volcanic sand was no added but was perhaps natural)
Similarity to Ceramics form other sites:

Cl1-45-F8

Coarse fragments: There are 50% of coarse fragments of lithics (20%, 0.2-1 mm) and minerals (30%, 0.05–2 mm). The inclusions are dense. There are abundant igneous rock fragments that are mainly felsic volcanic rocks (rhyolite) which some have phenocrysts. The monomineralic fresh and angular mineral fragments of quartz, plagioclase, alkali-feldspars, suggest there is pyroclastic temper but the sherd has more volcanic rock fragments than other sherds from Cl1 with the Cordillera origin. It could be that the clay was not levigated. Half of the zone d feldpsars are plagioclase.
Temper: Pyroclasitcs were added as temper or fell onto the clay deposit.
Clays: birefringent in XPL and in PPL, reduced in the interior clay matrix and oxidized in the exterior but the interior surface is reduced.

Mineral/ lithic fragment	Quartz	Plagioclase	Hornblende	Hematite	Magnetite	Phyto-liths	Zoned feldspar	Dacite
Size	0.05-2	0.15-0.9	0.1-0.5	0.15	0.2-0.5	0.05	0.5-1.5	0.4-1.3
Angularity	Ang	Ang	Ang	Rd	Ang	Ang	Ang	Ang
Shape	Sbh, Eq-El	Eq-El	Dmd; El	Eq	El	Eq	Euh-Sbh, Eq-El	El
Degree of weathering	1	1	1	3	1	1	1	1-3
Approx. amount	3	3	3	1	1	1	3	3

Mineral/ lithic fragment	Rhyolite (hypo-crystalline)	Iron oxide/hydroxide	Rhyolite (heavily hematite stined w/ phenocrysts)
Size	0.1-1.2	0.8	0.9
Angularity	Rd	Ang	Rd
Shape	Eq-El	El	El
Degree of weathering	1	3	3
Approx. amount	3	2	2

Manufacturing technique: double layered slabs and the lip slab is folded over
Slip/Paint: No slip or paint (the birefringent layered on the surface is possibly the residue from the soil)
Provenance: Pyroclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Lp134, Lp8, and some Ag13

Cl1-45-F13

Coarse fragments: There are 45% of coarse fragments of lithics (15%, 0.3-1.8 mm) and minerals (30%, 0.08–0.8 mm). Major inclusions are monomineralic pheocrysts of fresh and agular quartz, volcanic quartz, plagioclase, and zoned feldspars. Felsic volcanic rocks are also fairly abundant.
Temper: pyrocastics were added or fell onto the clay deposit
Clays birefringent in XPL, in PPL interior surface is reduced but the paste is semi-oxidized.

Inclusions:

Mineral/ lithic fragment	Quartz	Volcanic quartz	Plagioclase	Zoned feldpsars	Hornblende	Tuff (Fe-rich)	Hematite
Size	0.03-1	0.2	0.3-0.7	0.3-0.8	0.2-0.8	0.6	0.2
Angularity	Ang	Rd	Ang	Ang	Ang	Rd	Ang
Shape	Eq-El	Eq	Eq-El, Euh-Sbh	Euh-Sbh	Eq-El, Dmd	El	Eq
Degree of weathering	1	1	1	1	1	3	3
Approx. amount	3	1	3	3	2	1	1

Mineral/ lithic fragment	Rhyolite (hypocrystalline)	Magnetite	Dacite (can be heavily hematite stained)
Size	0.15-1.8	0.2-0.4	0.7-1.8
Angularity	Rd	Rd	Rd
Shape	El	Eq-El, Sbh	El
Degree of weathering		1	2-3
Approx. amount	3	1	3

Manufacturing technique: slab or squeezed
Slip/Paint No slip or paint added. The clayey slip-like materal on the surface sees to be sediment residues. The interior and exterior surfaces are well smoothed.
Provenance: Pyroclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Lp134, Lp8, and some Ag13

CL1-45-F16

Coarse fragments: There are 40% of coarse fragments of lithics (5%, 0.25-2.8 mm) and minerals (35%, 0.01–1 mm). Major inclusions are monomineralic phenocrysts consisting of plagioclase, quartz, zoned feldspar, amphibole, ad magnetite. There are also felsic to intermediate/basic volcanic rocks of which dacites include fresh phenocrysts of plagioclase.
Temper: pyrocastics were added or fell onto the clay deposit
Clays: birefringent clays in XPL and in PPL, the clay matrix is semi-oxidized except for some of the exterior surface

Inclusions:

Mineral/ lithic fragment	Quartz	Volcanic quartz	Zoned feldpsars	Clinopyroxene?	Hematite	Plagioclase
Size	0.02-1.2	0.15-0.6	0.5-1.3	0.1-0.3	0.1	0.15-1
Angularity	Ang	Rd	Ang	Ang	Ang	Ang
Shape	Eq-El, Sbh	Eq	Euh-Sbh	El-Eq	Eq	Eq-El
Degree of weathering	1	1	1	1	3	1
Approx. amount	3	1	3	1	1	3

Mineral/ lithic fragment	Magnetite	Tuff	Rhyolite (w/ or without hematite stained)	Amphibole	Porphyritic tuff	Intermediate bo basic volcanic rock (heavily hematite stined)	Dacite (w/ or without hematite stain)
Size	0.15-0.25	0.3	0.2-2.8	0.08-0.2	0.35	0.4-0.6	0.5
Angularity	Ang	Rd	Rd	Ang	Ang	Rd	Rd
Shape	Eq-El, Euh	El	Eq-El	Eq-El, Dmd	Eq	El	El
Degree of weathering	1		3	1	3	3	2
Approx. amount	2	1	3	2	1	2	1

Manufacturing technique: slabs or squeezed
Slip/Paint No slip or paint added but the interior surface is smoothed
Provenance: Pyroclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Lp134, Lp8, and some Ag13

LP8-34-2.01-1

Coarse fragments: there are 35% coarse fragments of rocks (5%, 0.1-0.7) and minerals (about 30%, 0.02-1.1). Major inclusions are monomineralic phenocrysts of pyroclastics (plagioclase, zoned plagioclase, quartz) that have lesser amount of twinning hornblende and even less quantity of magnetite. Phenocrysts of oned feldspar can be subhedral and quartz contains round volcanic quartz. There are some rhyolite, tuff, and dacite fragments in the section.
Temper: Fresh pyroclastics with monomineralic phenocrysts and some volcanic rock matrix may have been added or they could have been fallen onto the clayesy soil deposit.
Clays: The clayey sediment is amber color in PPL. The interior and exterior areas and core are all oxidized. The clay is birefringent.

Mineral/ lithic fragment	Quartz	Plagoclase	Volcanic quartz	Tuff	Iron oxide/hydroxide	Hornblende (multiple twinning)
Size	0.03-0.9	0.03-1.1	0.1-0.25	0.25	0.2	0.05-0.7
Angularity	Ang	Ang	Rd	Rd	Ang	Ang
Shape	Eq-El, Anh	Eq-El, Sbh	Eq	El	El	Eq-El, Dmd
Degree of weathering	1	1 (few 2)	1	2	2	2
Approx. amount	3	4	1	1	1	1

Mineral/ lithic fragment	Dacite	Tuff	Rhyolite (hypocrystalline)	Zoned plagioclase	Hematite	Magnetite
Size	0.8	0.15	0.1-0.2	0.3-0.9	0.15	0.05-0.4
Angularity	Rd	Rd	Ang	Ang	Rd	Ang
Shape	El	El	El	Eq-El, Sbh	Eq	Eq-El, Emb
Degree of weathering	3	3	1	1	2	1
Approx. amount	1	1	1	3	1	1

Manufacturing technique: The pore lines are parallel to the wall so squeezed or slab construction.
Slip/Paint/Surface finish: The surface seems quite eroded but the lip looks smoothed.
Provenance of temper: Pyroclastics of El Valle or La Yeguada. However, the amount of volcanic rocks is less than what exists in thin sections of the clayey sediments from the El Valle and La Yeguada contexts.
Similarity to Ceramics form other sites: Cordilleran ceramics (Cl1, Ag13, and Lp134)

LP8-37-2.01-1

Coarse fragments: There are 30% of coarse fragments of lithics (10%, 0.3-0.9 mm) and minerals (20%, 0.03-1.4 mm). Major inclusions are pyroclastics with monomineralic phenocrysts (plagioclase, quartz, zoned feldspars) and some volcanic rocks (felsic to basic) with dacite having phencrysts that are similar to the monomineralic phencrysts. Secondary gibbsites are found around feldspars and rock fragments and their phenocrysts have secondary gibbsites. Secondary gibbsites in pores indicate that they are post-depositially formed minerals.
Temper: Pyroclastics with monomineralic phenocrysts may have been added or they have been deposited onto the clay deposit.
Clays: the clay is nearly opaque in XPL and is not birefringent. The matrix clay is light amber in PPL.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagioclase w/ or without gibbsite growth	Zoned feldspar (mostly Plagioclase) w/ or without gibbsite growth	Magnetite	Amphibole	Volcanic quartz
Size	0.03-0.9	0.5-0.4	0.25-1.2	0.1-0.6	0.2-0.4	0.08
Angularity	Ang	Ang	Ang	Ang	Ang	Rd-Ang
Shape	Eq-El	Eq-El	Eq-El	Eq-El	El, Dmd	Eq
Degree of weathering	1	1-3	1	1	1	1
Approx. amount	3	3	3	1	2	1

Mineral/ lithic fragment	Porphyritic intermediate to basic volcanic rock (heavily hematite stained, gibbsite growth; 0.2 mm laths)	Rhyolite (hypocrystalline; w/ or without gibbsite growth)	Intermediate to basic volcanic rock (heavily hematite stained; w/ qtz phenocryst)	Dacite (w/ phenocrysts (e.g. plag, zoned feld, pyroxene)
Size	0.7	0.3-0.8	0.7-0.8	0.8-1
Angularity	Rd	Rd	Ang	Rd
Shape	Eq	El	El	Eq-El
Degree of weathering	3	2-3	3	1-2
Approx. amount	1	3	2	3

Manufacturing technique: pores are mainly parallel to the wall but have those that are the thermall shock cracks. It is difficult to comprehend the manufacturing technique.
Slip/Paint: slip and paint do not exist or the surface is rugged (non-smooth) that the evidence may have been gone.
Provenance: Pyroclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Cordilleran type

LP8-38-2.01-1

Coarse fragments: There are 45% of coarse fragments of lithics (15%, 0.15-0.7 mm) and minerals (30%, 0.03-1.8 mm). Major inclusions consist of monomineralic phenocrsyts (including quartz, plagioclase, zoned plagioclase, amphibole, biotite) derived from pyroclastics. There are some volcanic rocks with phenocrysts. Gibbsites are not observed in pores.
Temper: Pyroclastic sand could have been added or have fallen onto the clayey soil deposit.
Clays: birefringent in XPL, in PPL, it is amber color

Inclusions:

Mineral/ lithic fragment	Quartz	Volcanic quartz	Plagioclase	Amphibole	Biotite	Rhyolite (hypocrystalline) w/ or without phynocrysts; w/ or without hematite stain
Size	0.03-1.8	0.4	0.15-0.8	0.1-0.7-	0.2	0.3
Angularity	Ang	Rd	Ang	Ang	Rd	Rd
Shape	Eq-El	El	Eq-El	Euh	El	Eq-El
Degree of weathering	1	1	1-2	1	2	2
Approx. amount	4	1	3	3	1	3

Mineral/ lithic fragment	Cristobalite	Polycrstaline quartz (grain: 0.03-0.25 mm)	Zoned plagioclase	Magnetite
Size		0.3	0.2-0.8	0.05-0.2
Angularity		Rd	Ang	Ang
Shape		El	Eq, Sbh	Eq-El
Degree of weathering		2	1	1
Approx. amount	1	3	2	2

Manufacturing technique: Probably lumps of clays were squeezed together.
Slip/Paint: The surface is eroded and slip or paint are not observed
Provenance: Pyroclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Cordilleran type

LP8-38-2.01-2

Coarse fragments: There are 50% of coarse fragments of lithics (15%, 0.2-1.4 mm) and minerals (35%, 0.05-1.5 mm). There are dense inclusions of mainy monomineralic pyroclastics consisting of plagioclase, zoned plagioclase, quartz, amphibole, and magnetite. There are volcanic rock fragments of lesser amout than monomineralic phenocrysts. Gibbsites are observed in pores and around plagioclase.
Temper: Pyroclasticcs were added as temper or fell onto the clayey soil deposit.
Clays: It is biofringent in XPL; it is amber in PPL.

Inclusions:

Mineral/ lithic fragment	Plagioclase	Zoned plagioclase	Quartz	Volcanic quartz	Amphibole	Iron oxid/hydroxide
Size	0.2-0.6	0.2-2	0.03-1.2	0.3	0.1-0.4	0.1
Angularity	Ang	Ang	Ang	Ang	Ang	Rd
Shape	Eq-El	Eq-El	Eq-El	Euh	El, Euh	Eq
Degree of weathering	1	1	1	1	1-2	3
Approx. amount	2	3	3	1	2	1

Mineral/ lithic fragment	Gibbsite	Intermediate to basic volcanic rock (w/ hematite stain)	Rhyolite (hypocrystaline; w/ or without hematite stain)	Volcanic glass (Fe-rich)	Rhyolite (holo-crystalline)	Magnetite
Size	0.02-0.05	0.35	0.2-0.5	0.35	0.3	0.03-0.4
Angularity	Sbang	Rd	Rd	Rd	Rd	Rd
Shape	Eq	El	Eq-El	El	El	Eq, Emb
Degree of weathering	3	3	3	3	1	1
Approx. amount	3	1	3	1	1	1

Mineral/ lithic fragment	Polycrystalline quartz (w/ some including coare grains; grains: 0.02-0.2 mm)	Tuff
Size	0.8-0.9	0.6
Angularity	Ang	Ang
Shape	El	Eq
Degree of weathering	2	2
Approx. amount	2	1

Manufacturing technique: Lumps seem to be added , at the rim as double layers.
Slip/Paint: No slip or paint are observed in thin sections.
Provenance: Pyroclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Cordilleran type

LP8-144-1.47-1

Coarse fragments: There are 45% of coarse fragments of lithics (5%, 0.2 – 0.9 mm) and minerals (40%, 0.03 – 1.2 mm). Major inclusions are pyroclastics with monomineralic phenocrysts (quartz, plagioclase, zoned plagioclase, and volcanic quartz) and felsic volcanic rock inclusions. There are some secondary gibbsite growth in pores.
Temper: Temper has been added or pyroclastics have fallen onto the clayey soil deposit.
Clays: reddish amber colored paste in PPL with soe reduction on the walls; clayey sediment is birefringent in XPL.

Inclusions:

Mineral/ lithic fragment	Biotite	Zircon	Quartz	Plagioclase	Zoned plagioclase	Magnetite	Hematite (growth in magnetite)	Rhyolite (heavily hematite stained)
Size	0.2-0.3	0.03	0.1-1.1	0.1-1	0.35-1.2	0.08-0.4	0.8	0.9
Angularity	Rd	Ang	Ang	Ang	Ang	Ang	Rd	Rd
Shape	El	El	Eq-El	Eq-El	Eq-El , Sbh	Eq-El, Sbh, Emb	El	Eq
Degree of weathering	3	1	1	1	1	1	3	3
Approx. amount	1	1	3	3	3	1	1	1

Mineral/ lithic fragment	Amphibole	Rhyolite (hypocrystalline)	Volcanic quartz
Size	0.2-0.4	0.1-1	0.1-1.2
Angularity	Ang	Rd	Rd-Ang
Shape	Eq-El, Euh	El	Eq-El
Degree of weathering	1	1	1
Approx. amount	2	3	2

Secondary mineral (associated with weathering of aluminous silicates)

Mineral/ lithic fragment	Gibbsite
Size	0.03-0.05
Angularity	Ang
Shape	Eq
Degree of weathering	3
Approx. amount	1

Manufacturing technique: two slabs layered on an exterior slab.
Slip/Paint: possibly, there is no slip (clayey sediment from buria is attached t the wall)
Provenance: Pyroclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Cordilleran type

LP8-95-1.45-1-1 (LP8-94-1.45-1-1)

Coarse fragments: There are 45% of coarse fragments of lithics (8%, 0.2-1 mm) and minerals (32%, 0.03–1.8 mm). Major inclusions are pyroclstics with monomineralic phenocryst of plagioclase, zoned feldspar, amphibole, and plagioclase as well as felsic to ntermediate/basic volcanic rock fragments. Feldspars, pores, rock fragments have secondary gibbsite growth.
Temper: Pyroclstic temper was added or or had fallen onto the clay deposit
Clays: birefringent in XPL and amber colored paste in PPL

Inclusions:

Mineral/ lithic fragment	Quartz	Zoned feldspar (somewhat weathered with gibbsite)	Amphibole	Polycrystalline quartz	Plagioclase	Intermediate to basic volcanic rock
Size	0.02-1.5	0.2-1.8	0.15-0.45	0.45	0.15-0.3	0.4
Angularity	Ang	Ang	Ang	Rd	Ang	Rd
Shape	Eq-el	Eq-El, Sbh	Eq-El, Dmd	Eq	El	Eq
Degree of weathering	1	1-3	1	3	1-3	3
Approx. amount	3	3	2	1	3	2

Mineral/ lithic fragment	Rhyolite (hypocrystalline)	Mag-netite	Phyto-liths	Gibbsite (around rock and feldspar fragments)	Rhyolite (heavily hematite stained; w/ phenocrysts)	Dac-ite	Intermediate to basic volcanic rock (heavily hematite stained)
Size	0.2-1	0.08-0.3	0.05	0.05-0.15	0.7	1.6	0.6
Angularity	Rd	Ang	Ang	Rd	Ang	Rd	Ang
Shape	El	El-Eq, Euh, Emb	El	Eq	Eq	Eq	El
Degree of weathering	2	1	1	3	3	3	3
Approx. amount	2	1	1	3	1	1	2

Manufacturing technique: slabs or squeezed
Slip/Paint: clay slip in the exterior with micro magnetite inclusions
Provenance: Pyroclastics from La Yeguada or El Valle
Similarity to ceramics from other sites: Cl1, Lp134, and some Ag13

LP8-114-1.57-1-1

Coarse fragments: There are 50% of coarse fragments of lithics (10%, 0.15-1.5 mm) and minerals (35%, 0.02–2.2 mm). Major inclusions are pyroclstics with monomineralic phenocryst of plagioclase, zoned feldspar, plgiocase, amphibole, and magnetite. There are also minor amout of volcanic rock (felsic to basic) fragments. Feldspars , rock fragments, and pores have gibbsite growth in cracks and edges.
Temper: Temper of porphyritic materials were added or fell onto the clay deposit
Clays: birefringent in XPL and the paste with somewhat reduced in the interior core of the paste in PPL.

Inclusions:

Mineral/ lithic fragment	Quartz	Zoned plagioclase feldspar (fresh, gibbsite growth)	Zoned feldspar (fresh with gibbsite growth)	Hornblende	Volcanic quartz	Rhyolite (feldspar phenocrysts have gibbsite growth)	Gibbsite	Polycrystalline quartz (volcanic)
Size	0.02-1.3	0.3-2.2	0.2-2	0.4	0.2-0.3	0.15-1	0.05-0.15	0.2
Angularity	Ang	Ang	Ang	Ang	Rd	Rd	Rd	Ang
Shape	Eq-El	Eq-El	Eq, Sbh	El-Eq	Eq-El	Eq-El	Eq	Eq
Degree of weathering	1	1-3	1-3	1	1	3	3	2
Approx. amount	3	3	3	1	1	3	3	1

Mineral/ lithic fragment	Dacite	Hematite	Magnetite	Volcanic glass	zircon	Intermediate to basic volcanic rock (w/ or without heavy hematite stain)	Iron oxide/ hydroxide	Micro iron oxide and quartz aggregate
Size	0.7-1	0.3	0.02-0.4	0.3-0.5	0.05	0.2-1	0.1-0.2	0.5
Angularity	Rd	Ang	Ang	Rd	Ang	Rd	Rd	Rd
Shape	El	El	Eq	Eq-el	El	El	El	
Degree of weathering	3	3	1	3	1	3	3	3
Approx. amount	3	1	1	1	1	1	1	1

Manufacturing technique: slab or squeezed with se thera shock traces
Slip/Paint: The surface is weathered but some of the interior surface may have clay-base slighty birefringent red slip.
Provenance: Pyroclastics from La Yeguada or El Valle
Similarity to ceramics from other sites: Cl1, Lp134, and some Ag13

LP8-114-1.57-1-2

Coarse fragments: There are 45% of coarse fragments of lithics (10%, 0.1-1.5 mm) and minerals (35%, 0.03–1.7 mm). Major inclusions are pyroclastics with monomineralic phenocrysts (quartz, zoned plagioclase, hornblende, pyroxene, magnetite) and volcanic rocks, with or without phenocrysts, ranging between felsic to basic composition. There are gibbsite growths in the pores of the clay paste as well as in the cracks and around feldspar grains. There are gibbsite growths around plagioclase, zone plagioclase, pores, and rock fragments.
Temper: Temper of porphyritic materials were added or fell onto the clay deposit
Clays: birefringent in XPL and somewhat oxidized paste with somewhat reduced core toward the exterior in PPL.

Inclusions:

Mineral/ lithic fragment	Quartz	Zoned plagioclase feldspar (fresh but with some gibbsite growth; mainly plag)	Horn-blende	Ortho-pyroxene	Gibbsite	Tuff (w/ or without hematite stain, w/ or without phenocrysts of amphibole, zoned feldspar)
Size	0.03-1.9	0.4-1.5	0.1-0.5	0.4	0.05-0.1	0.1-1.2
Angularity	Ang	Ang	Ang	Ang	Rd	Rd
Shape	Eq-El	Eq	Eq-El	El	Eq	Eq-El
Degree of weathering	1	1-3	1-2	1	3	2
Approx. amount	3	3	1	1	3	1

Mineral/ lithic fragment	Microcrystaline to somewhat coarse grained polycrystalline quatz	Magnetite	Phytoliths	Rhyolite (hypocrystalline)	Porphyritic basalt/andesite	Dacite
Size	0.4	0.08-0.25	0.05	0.7-1.5	1.2	0.9-1.2
Angularity	Rd	Ang	Ang	Rd	Ang	Ang
Shape	El	Eq-el	El	Eq-El	El	Eq-El
Degree of weathering	1	1	1	2-3	3	2
Approx. amount	1	1	1	2	1	3

Manufacturing technique: there are undulating pores that are faily long and large along large grains. There are traces of thermal shocks. The manufacturing technique is likely to be either slab or squeezed.
Slip/Paint: Possible clay-based red slip in the interior with some birefringence. The surfaces of this sherd is weathered and appear to be not so well smoothed but the original state is unknown.
Provenance: Pyroclastics from La Yeguada or El Valle
Similarity to ceramics from other sites: Cl1, Lp134, and some Ag13

<u>LP8-120-1.35-1</u>

<u>Coarse fragments:</u> There are 50% of coarse fragments of lithics (10%, 0.2-1 mm) and minerals (40%, 0.02–1.7 mm).Major inclusions are pyroclastics-derived monomineralic henocrysts (zoned plagioclase, plagioclase, quartz, amphibole, and magnetite) as well as dacite and rhyolite. There is no gibbsites formedd around feldspars or in paste pores or around plagioclase and volcanic rocks.
<u>Temper:</u> Pyroclastic materials were added of fell onto the clay deposit.
<u>Clays:</u> birefringent in XPL and the paste s has somewhat oxidized clay in PPL.

<u>Inclusions:</u>

Mineral/ lithic fragment	Quartz	Zoned feldspar (mainly plagioclase)	Plagioclase	Hematite	Magnetite	Aphibole	Dacite	Zircon
Size	0.02 – 1.7	0.4-0.8	0.3-0.7	0.3	0.03-0.15	0.1-0.4	0.6	0.1
Angularity	Ang-rd	Ang	Ang	Ang	Ang	Ang	Rd	Ang
Shape	Eq-El	Eq	Eq	Eq	Eq-El	Eq-El	El	El
Degree of weathering	1	1	1	3	1	1	1	1
Approx. amount	3	3	2	1	1	2	1	1

Mineral/ lithic fragment	Rhyolite (w/ or without phenocryst)	Biotite	Intermediate to basic volcanic rock (hematite stained)	Phytoliths	Iron oxide/ hydroxide	Volcanic quartz	Tuff
Size	0.15-0.8	0.05	1.2	0.05	0.05-0.15	0.2	1
Angularity	Rd	Rd	Rd	Rd	Rd	Rd	Ang
Shape	Eq	El	El	Eq-El	El	Eq	Eq
Degree of weathering	1	3	2	1	3	1	3
Approx. amount	1	1	1	1	1	1	2

<u>Manufacturing technique:</u> slab or squeezed. Ther are small amount of traces of thermal shocks.
<u>Slip/Paint:</u> there is no traces of slip or paint but some remaining surface (exterior or interior unknown) shows smoothing.
<u>Provenance:</u> Pyroclastics from La Yeguada or El Valle
<u>Similarity to ceramics from other sites</u>: Cl1, Lp134, and some Ag13

LP8-122-1.35-1

Coarse fragments: There are 50% of coarse fragments of lithics (10%, 0.3-1 mm) and minerals (40%, 0.02–1.3 mm). Major inclusions are fresh and angular monomineralic phenocrysts of quartz, zoned feldspars (some are plagioclase), and felsic to basic volcanic rocks with or without phenocrysts. There are gibbsite, secondary mineral, growth in the paste pores and around feldspars and hematites, indicating post-depositional alteration.
Temper: Pyroclastic monomineralic phenocrysts were added or fell onto the clay deposit.
Clays: birefringent, hematite stained, the section is fairly oxidized

Inclusions:

Mineral/ lithic fragment	Quartz	Zoned feldspars (mainly plag)	Clino-pyroxene	Amphibole (fresh to semi-fresh	Polycrystaline quartz (coarse to fine grains)	Hematite	Intermediate to basic volcanic rock (can have weathered large phenocrysts)
Size	0.02-1.3	0.3-1.5	0.6	0.15-1 mm	1	0.2	0.7-1.2
Angularity	Ang	Ang	Ang	Ang	Ang	Rd	Rd
Shape	Eq-El	Eq-El	El	Eq-El, Dmd	El	El	El
Degree of weathering	1	1	1	1-2	1	3	3
Approx. amount	3	4	1	1	2	1	1

Mineral/ lithic fragment	Magnetite	Tuff (hematite stained	Rhyolite (hematite stained; with or without quartz and feldspar phenocrysts)	Dacite or rhyolite (hematite stianed, large plagioclase phenocrysts)	Gibbsite (in paste pores)
Size	0.25	0.5	0.6	1.2 mm	0.03-0.05
Angularity	Ang	Rd	Rd	Rd	Rd
Shape	Euh-subh, Anh	El	Eq-El	El	Eq
Degree of weathering	1	3	2	2	3
Approx. amount	1	1	1	1	3

Mineral/ lithic fragment	Microcrystline quartz (hematite stained)	Phytoliths	Plagioclase	Intermediate to basic volcanic rock (w/ plag phenocrysts 1.2 mm grain)	Volcanic quartz
Size	0.4	0.05	0.1-0.5	1.3	0.05-0.15
Angularity	Rd	Rd	Ang	Rd	Rd
Shape	Eq	Eq	Eq-El	El	Eq
Degree of weathering	1-3	1	1-2	3	1
Approx. amount	1	1	3	1	1

Manufacturing technique: slabs construction with a couple of addition of lumps on the interior surface.
Slip/Paint: interior and exterior surfaces are both eroded and not smooth
Provenance: Pyroclastics from La Yeguada or El Valle
Similarity to ceramics from other sites: Cl1, Lp134, and some Ag13

LP8-126-1.35-3-1

Coarse fragments: There are 50% of coarse fragments of lithics (5%, 0.2-0.35 mm) and minerals (10%, 0.02–1 mm). Major inclusions are fresh and angular quartz, zoned feldspars, plagioclase and minor amount of alkali-feldspars, amphiboles, pyroxene, and magnetites derived from porphyritics. Zoned feldspars tend to not have twinning and if they are twinned, tend to have simple twinning. There are also intermediate to felsic volcanic rocks. The original minerals may be mainly quartz in a form of fine sizes.
Temper: the paste has poorly sorted inclusions; fresh and angular added phenocrysts and porphyritic rhyolites were added
Clays: the clay is birefeingent in XPL. It is fairly oxidized (amber color) in PPL.

Inclusions:

Mineral/ lithic fragment	Quartz	Zoned feldspar	Plagioclase	Amphibole	Ortho-pyroxene	Rhyolite (with or without phenocryst: pyroxene, quartz))	Iron oxide/ hydroxide
Size	0.02-1.5	0.3-1	0.15-0.35	0.35-0.08	0.5	0.15-0.25	0.15
Angularity	Ang	Ang	Ang	Ang	Ang	Rd	Rd
Shape	Eq-El	Eq, Sbh	Eq-El	Eq-El	El	Eq-El	Eq
Degree of weathering	1	1	1	1	1	1	3
Approx. amount	4	3	2	1	1	2	1

Mineral/ lithic fragment	Magnetite	Volcanic glass (hematite stained)	Hematite	Volanic quartz	Rhyolite (hypocrystalline)	Intermediate to basic volcanic rock
Size	0.05-0.15	0.4	0.15-0.3	0.25	0.2-0.4	0.3
Angularity	Ang	Rd	Rd	Rd	Rd	Rd
Shape	Eq-El, Emb, Euh	Eq	Eq	Eq	Eq	Eq
Degree of weathering	1	3	3	1	2	3
Approx. amount	1	1	1	1	2	1

Manufacturing technique: squeezed or slab constructed
Slip/Paint: the interior may have slip which is somewhat opaque in XPL and somewhat birefringent; it is hematite stained. It could be hematite-rich clay
Provenance: Pyroclastics from La Yeguada or El Valle
Similarity to ceramics from other sites: Cl1, Lp134, and some Ag13

LP8-135-2.01-1 (1.47-1)

Coarse fragments: 40% coarse fragments of rocks (5%, 0.2-0.6) and minerals (about 35%, 0.02-1.6). The major inclusions are pyroclastics derived monomneralic phencrysts (pagiolcase, quartz, zoned plagioclase) and minor and accessory minerals. The amount of rock fragments are low.
Temper: Fresh pyroclastics with monomineralic phenocrysts and some volcanic rock matrix may have been added or they could have been fallen onto the clayesy soil deposit.
Clays: The clay is not birefringent (possibly low firing temperature?). Thin layer of both surfaces are more oxidized (they are darker brown) than the thick core. The clay is amber color in PPL.

Mineral/ lithic fragment	Quartz	Plagioclase	Zoned plagioclase	Epidote aggregate	Magnetite	Hematite
Size	0.03-1.9	0.1-1.6	0.25-1.4	0.2	0.05-0.2	0.2
Angularity	Ang	Ang	Ang	Ang	Ang	Ang
Shape	Eq-El, Sbh	Eq-El	Eq, Sbh	El	Eq-El	Eq
Degree of weathering	1	1	1	2	1	3
Approx. amount	3	4	2	1	1	1

Mineral/ lithic fragment	Phyto-liths	Amphibole (some twinning)	Rhyolite (hypo-crystalline)	Volcanic glass	Porphyritic tuff (quartz phenocrysts) (hematite stained)	Volcanic quartz
Size	0.03	0.1-0.8	0.15-0.6	0.15	0.25	0.5
Angularity	Ang	Ang	Rd	Rd	Rd	Rd
Shape	Eq	Eq-El, Dmd	El	Eq	El	Eq
Degree of weathering	1	1	2	1	3	1
Approx. amount	1	2	2	1	1	1

Manufacturing technique: pores are parallel to the wall.
Slip/Paint/Surface finish: none. The seeminglybirefringent slip in the interior seem to be sediment attached after deposition
Provenance of clay: Pyroclastics from El Valle or La Yeguada), however, in this sherd, rock fragmens are much scarcer than clayey soil and sand samples collected from the Cordilleran area.
Similarity to Ceramics form other sites: Cordilleran ceramics (Cl1, Ag13, and Lp134)

LP8-150-1.47-4-1

Coarse fragments: 40% coarse fragments with rock (3%, 0.15-0.7 mm) and minerals (37%, 0.03-2 mm). Major inclusions are monomineralic phenocrysts (plagioclase quartz, and some zoned feldspars) from pyroclstics and rhyolites and lesser mount of tuff. Feldspars, volcanc rocks, and pottery pores have secondary gibbsite growth. Possibly, feldspars were originally fresh when the pottery was produced and the humid condition of Lp8 cuased them to weather with gibbsite formation.
Temper: Fresh pyroclastics with monomineralic phenocrysts and some volcanic rock matrix may have been added or they could have been fallen onto the clayesy soil deposit.
Clays: dark brown-orange clay with birefringence but near the exterior, there is a darker reddish brown sediment which could be the remains of slip. The interior surface has micacious clay layer on top of hematite (?) rich dark brown layer deposited post-depositionally.

Mineral/ lithic fragment	Quartz	Porphyritic Rhyolite (quartz phenocryst) (hypocrystalline)	Plagioclase (with secondry gibbsite growth)	Zoned plagio-clase/ feldspar	Rhyolite (heavily hematite stained)	Tuff (holo-hyailine)	Volcanic glass (Fe-rich)
Size	0.03-2	0.15-0.5	0.15-0.8	0.3-1	0.5-0.7	0.15	0.1
Angularity	Ang	Rd	Ang	Ang	Rd	Rd	Ang
Shape	Eq-El, Anh	Eq	Eq-El	Eq-El	Eq-El, Anh	El	Eq
Degree of weathering	1	2	2	2	3	2	3
Approx. amount	4	2	4	2	1	1	1

Mineral/ lithic fragment	Secondary gibbsite (pores, around plagioclase, and volcanic rocks)	Magnetite	Amphibole	Volanic quartz	Latite (rich in weathered biotite/amphibole) (0.03 mm grain)	Rhyolite/tuff (heavily hematite stained)
Size	0.05-0.1	0.02-0.3	0.08-0.2	0.15	0.15	0.3-1
Angularity	Ang-Rd	Ang, Rd	Ang	Rd	Rd	Rd-Ang
Shape	Eq-El	Eq, El	Eq-El, Euh/dmd	Eq	Eq	Eq-El
Degree of weathering	3	1	1	1	3	3
Approx. amount	2	1	1	1	1	2

Manufacturing technique: folded over rim (long folding) which one clay is shorter and ends before another layer that is covering it.
Slip/Paint/Surface finish: clayey minerals are deposited on the surface post-depositionally. Similar to LP8-176-1.59-2-1, the weathere rim surface has some remaining of red slip containing magnetite, opaque minerals (ilmenite?), rhyolite, feldspar, and quartz fragments.
Provenance of clay: Pyroclastics fromEl Valle or La Yeguada)
Similarity to Ceramics form other sites: Cordilleran ceramics (Cl1, Ag13, and Lp134)

LP8-154-1.47-4-1

Coarse fragments: There are 45% of coarse fragments of lithics (10%, 0.15-0.6 mm) and minerals (%, 0.03–1.3 mm). Major inclusions are monominneralic fresh coarse grains of quartz (up to very coarse), plagioclase, and zoned feldspars, and minor amount of amphiboles and magnetite derived from pyroclastics. Small amount of gibbsites are forming around and in cracks of plagioclase, alkali-feldspars and zoned feldspars as well as voids in paste. Rocks fragments are rhyolites, volcanic cherts, dacite, and volcanic glass, all rounded with some to heavy weathering.
Temper: Pyroclastics sand may have been added to the paste or may have fallen onto the clay deposit
Clays: birefringent in XPL and amber color in PPL.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagio-clase	Zoned feldspar	Amph-ibole	Epidote (with plagioclase)	Intermediate to basic volcanic rock (heavily hematite stained)	Gibbsite (forming around plagioclase, and voids
Size	0.03-1.3	0.08-0.5	0.8-0.25	0.15-0.25	0.1	0.1	0.02-0.05
Angularity	Ang	Ang	Ang	Ang	Rd	Ang	Rd
Shape	Eq-El,	Eq-El,	Eq, Sbh--Ehd	Eq-El, Dmd	Eq	Eq	Eq-El,
Degree of weathering	1	1	1	1	1	3	3
Approx. amount	3	3	3	1	1	1	2

Mineral/ lithic fragment	Rhyolite (weathered, with or without hematite stain)	Volcanic chert	Dacite	Volcanic glass (w/ or without hematite stain)	Magnetite	Hematite
Size	0.1-0.3	0.2	0.4	0.15	0.02-0.1	0.2
Angularity	Rd	Rd	Rd	Rd	Rd-Ang	Ang
Shape	Eq-El	El	El	El	Eq, Emb	Eq
Degree of weathering	2-3	1	1	2-3	1	3
Approx. amount	3	2	1	2	1	1

Mineral/lithic fragment	Phytolith	Christobalite
Size	0.05	0.2
Angularity	Rd	Rd
Shape	El	El
Degree of weathering	1	1
Approx. amount	1	1

Manufacturing technique: slabs or squeezed
Slip/Paint: A wall (unknown whether exterior or interior may have some red slip but on none-burnished surface
Provenance: Pyroclastics from La Yeguada or El Valle
Similarity to ceramics from other sites: Cl1, Lp134, and some Ag13

LP8-164-1.59-2-1

Coarse fragments: There are 45% of coarse fragments of lithics (5%, 0.2-0.7 mm) and minerals (40%, 0.03–1 mm). Major inclusions are coarse monomineralic quarz, plagioclase, and zoned feldspars. There are minor amount of amphiboles and magnetite ad volcanic rock frgments ranging between felsic to intermediate/basic composition. Secondary gibbsites are growing around plagioclase and zoned feldspars, alkali-feldspars as well as edges of pores. Possibly, pyroclastic sand temper was added to the paste.
Temper: Pyroclastics sand was added or fell onto the clay deposit.
Clays: Birefringent in XPL and ambered colored in PPL.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagioclase (w/ gibbsite growth)	Zoned feldspars (including plagioclase) (gibbsite growth)	Horn-blende	Mag-netite	Gibbsite	Volcanic chert
Size	0.03-1	0.2-0.5	0.2-1	0.08-0.7	0.05-0.1	0.02-0.05	0.15-1
Angularity	Ang	Ang	Ang	Ang	Ang	Rd	Rd
Shape	Eq-El, Sbh	Eq-El	Eq-El	Eq-El	Eq-El, Sbh	Eq-El	El
Degree of weathering	1	2	2	3	1	3	1-2
Approx. amount	3	3	3	2	1	3	1

Mineral/ lithic fragment	Tuff	Intermediate to basaltic volcanic rock (hematite stained; converted to iron hydroxide to clay minerals)	Rhyolite (w/ or without t hematite stain; holocrystlline to holohyaline)	Clino-pyroxene	Phyto-liths	Volcanic glass
Size	0.4	0.5	0.25	0.1	0.05	0.3
Angularity	Rd	Rd	Rd	Rd	Ang-Rd	Rd
Shape	El	El	Eq	Eq	Eq-El	El
Degree of weathering	3	3	3	1	1	1
Approx. amount	1	1	3	1	1	1

Manufacturing technique: squeezed or slab
Slip/Paint: none
Provenance: Pyroclastics from La Yeguada or El Valle
Similarity to ceramics from other sites: Cl1, Lp134, and some Ag13

LP8-167-1.59-2-1

Coarse fragments: There are 50% of very fine to very coarse fragments of lithics (5%, 0.2-1.3 mm) and minerals (45%, 0.03 –1.9 mm). Major inclusions are coarse to very coarse monomineralic quartz, plagioclase, zoned feldpsars, amphiboles and magnetites were derived from pyroclastics along with felsic to intermediate/basic volcanic rocks.
Temper: pyroclastics were added or fell onto the clay deposit.
Clays: birefringet in XPL and amber colored in PPL with some reduction on the interior surface.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagioclase (some heavily weathered to fresh)	Zoned feldspars	Amphibole	Biotite	Magnetite	Gibbsites
Size	0.03-1.9	0.15-0.9	0.25-1	0.1-0.5	0.1	0.05-0.35	0.02
Angularity	Ang	Ang	Ang	Ang	Rd	Ang	Rd
Shape	El-Eq	El-Eq	Eq-El, Sbh	Eq-El	El	Eq-el, Sbh, Emb	Eq-El
Degree of weathering	1	1-3	1-3	1	2	1	3
Approx. amount	3	3	3	1	1	1	2

Mineral/ lithic fragment	Tuff (heaviy hematite stained)	Polychrystaline quartz	Phyto-liths	Tuff with polychryistaline quartz, coarse fragment of hematite phenocryst	Hematite (laths growing on magnetite)	Intermediate to basic volcanic rock (hematite stainedw/ phenocrysts (e.g. amphibole, zoned plag, qtz))
Size	0.8	0.1-0.55	0.05	0.6	0.1	0.2-1.4
Angularity	Rd	Rd	Ang	Ang	Ang	Ang
Shape	Eq-El	Eq-El	Eq-El	El	El	El
Degree of weathering	3	1	1	3	3	3
Approx. amount	1	1	1	1	1	2

Manufacturing technique: squeezed or slab; there are remains of thermal shock shown in pore directions going horizontal from the exterior wall to the nearby minerals.
Slip/Paint: there is application of clay birefringent red slip in the exterior
Provenance: Pyroclastics from La Yeguada or El Valle
Similarity to ceramics from other sites: Cl1, Lp134, and some Ag13

LP8-170-1.59-2-1

Coarse fragments: There are 40% of coarse fragments of lithics (5%, 0.15-1.1- mm) and minerals (35%, 0.03–1 mm). Major inclusions are fresh and angular mainly monomineralic quartz, and fairy fresh to wethered plagioclase and zoned feldspar, derived from pyroclastics. There are minor amount of fresh amphiboles, magnetites and much less, possible ortho and clino pyroxene. There are some felsic volcanic rocks. Gibbsites are growing around plagioclase and zoned feldpsars as well as in pores of the paste.
Temper: Pyroclastics were added as temper or had fallen onto the clay deposit.
Clays: birefringent in XPL and amber colored in PPL

Inclusions:

Mineral/ lithic fragment	Quartz	Volcanic quartz	Plagio-clase (with gibbsite growth)	Zond-feldspar (mainly plag) (some with gibbsite growth)	Horn-blende	Biotite	Poly-crystalline quartz	Rhyolite (hypo-crystalline)
Size	0.03-1	0.08	0.2-1	0.2-0.9	0.05-0.2	0.05	0.2-0.25	1.1
Angularity	Ang	Rd	Ang	Ang	Ang	Rd	Rd	Rd
Shape	Eq-el	Eq	Eq-El, Sbh	Eq-El, Sbh	Eq-El	El	Eq	Eq
Degree of weathering	1-2	1	1-2	1-2	1	2	2	2
Approx. amount	3	1	3	3	2	1	1	1

Mineral/ lithic fragment	Clino-pyroxene	Volcanic glass	Secondary Gibbsite	Ortho-pyroxene	Rhyolite (hypocrystalline, w/ phenocrysts (e.g. zoned plag, 1,2 mm; qtz, 0..3 mm); w/ or without hematite stained)
Size	0.12	0.1	0.03-0.08	0.15	0.3-1.6
Angularity	Ang	Rd	Rd	Ang	Ang
Shape	El	El	Eq-El	Eq	Eq-El
Degree of weathering	1	1	3	1	2-3
Approx. amount	1	1	2	1	3

Mineral/ lithic fragment	Magnetite	Phytoliths	Iron oxide/hydroxide	Tuff	Crystobolite
Size	0.02-0.4	0.05-0.07	0.2-0.6	0.05	0.05
Angularity	Ang	Ang	Rd	Rd	Rd
Shape	Eq-El	Eq-el	Anh	Eq	Eq
Degree of weathering	1	1	3	2	1
Approx. amount	1	1	2	1	1

Manufacturing technique: slab or squeezed
Slip/Paint: red clay-based slip on the exterior and interior
Provenance: Pyroclastics from La Yeguada or El Valle
Similarity to ceramics from other sites: Cl1, Lp134, and some Ag13

LP8-174-1.59-2-1

Coarse fragments: There are 45% of coarse fragments of lithics (5%, 0.25-1.5 mm) and minerals (35%, 0.03–1.2 mm). Major inclusions are monomineralic and fresh plagioclase, zoned plagioclase, quartz, amphibole, and magnetite. There are very minor amount of pyroxene. Epidote is included in a possible rhyolite although epidote occurrence in volcanic rocks is rare. Some quartz have apatite incluions. There are small amount of gibbsite growth in pores and around plagioclase andn volcanic rocks and in pores.
Temper: Pyroclastics were added or fell onto the clay deposit
Clays: birefringent and possibly partially vitrified in XPL but in PPL, somewhat oxidized and amber-colored. There is a slight reduction on a surface (unknown interior or exterior).

Inclusions:

Mineral/ lithic fragment	Quartz	Volcanic quartz	Plag-ioclase	Zoned feldspars (part of them is plagioclase)	Amphibole (hornblende	Biotite	Rhyolite (holocrystalline) with epidote inclusion
Size	0.03-0.8	0.15-0.25	0.25-0.4	0.8	0.1-0.3	0.1	0.3
Angularity	Ang	Rd	Ang	Ang	Ang	Rd	Rd
Shape	Eq-El, Euh	Eq	Eq-El	Eq, Sbh-Euh	Eq-El	El	Eq
Degree of weathering	1	1	1	1	1	3	2
Approx. amount	3	1	3	3	1	1	1

Mineral/ lithic fragment	Second-ary gibbs-ite	Ortho-pyrox-ene	Zircon	Polychrystal-ine quartz	Crytobal-ite	Rhyolite (hypo-crys-talline)	Dacite	Iron ox-ide/ hydroxide
Size	0.05-0.1	0.05-0.1	0.05 0.25	0.2-0.8	0.15	0.5	3.7	0.05-0.2
Angularity	Rd	Rd	Ang	Rd	Rd	Rd	Rd	Rd
Shape	Eq	Eq-El	Sbh	El	El	Eq-El	El	Anh, El
Degree of weathering	3	3	1	2	1	2	2	3
Approx. amount	2	1	1	1	1	1	2	2

Mineral/ lithic fragment	Volcanic glass	Intermediate to basic volcanic rock (heavily hematite stain)	Phyto-liths	Tuff (hematite stained)	Mag-netite	Rhyolite (holo-crystalline)	Clino pyroxene
Size	0.1-0.35	0.7	0.05	0.4	0.05-0.5	0.8	0.3
Angularity	Ang	Ang	Ang	Rd	Ang-Rd	Rd	Ang
Shape	Eq	El	El	Eq	Eq, Emb	Eq	El
Degree of weathering	3	3	1	3	1	1	1
Approx. amount	2	1	1	1	1	2	1

Manufacturing technique: thermal shrinkages is visible. There are other elongated and thin pores parallel to the wall that re unconncected; it is difficult to interpret the manufacturing technique.
Slip/Paint: One side of the wall is oxidized but it is likely not the slip (the same mineral inclusions from the interior paste).Surface smoothing is not visible.
Provenance: Pyroclastics from La Yeguada or El Valle
Similarity to ceramics from other sites: Cl1, Lp134, and some Ag13

LP8-176-1.59-2-1

Coarse fragments: 45% coarse fragments of rocks (0.2-0.6 mm, 5%) and minerals (0.03-1.3 mm, 40%). Major inclusions are monomineralic phenocrysts (plagioclase quartz, and some zoned feldspars) from pyroclstics and rhyolites and lesser mount of tuff. Feldspars, volcanc rocks, and pottery pores have secondary gibbsite growth. Possibly, feldspars were originally fresh whe the pottery was produced and the humid condition of Lp8 cuased them to weather, with gibbsite formation.
Temper: Fresh pyroclastics with monomineralic phenocrysts and some volcanic rock matrix may have been added or they could have fallen onto the clayey soil deposit.
Clays: oxidized from the interior to the exterior surface. Amber colored clayey sediment in PPL.

Mineral/ lithic fragment	Quartz	Plagio-clase	Vocanic quartz	Iron oxide/ hydroxide	Rhyolite (hypo-crystalline)	Amphib-ole	Second-ary gibbsite	Zoned plgio-clase
Size	0.05-1.9	0.1-1.2	0.05-0.15	0.05-0.4	0.15-1	0.1-0.3	0.03-0.05	0.1-0.7
Angular-ity	Ang	Ang	Rd	Rd	Rd	Ang	Rd-Ang	Ang
Shape	Eq-El, Anh	Eq-El	Eq	Eq-El, Anh	Eq	Eq, El, Diamond	Eq-El, Anh	El, Sbh
Degree of weather-ing	1	2	1	3	2	2	3	1
Approx. amount	4	4	1	1	3	1	2	2

Mineral/ lithic fragment	Polycrystaline quartz (vein, holocrystallline, 0.05 mm grain)	Magnetite	Rhyolite (heavily hematite stained)	Tuff (heavily hematite stained
Size	0.7	0.05-0.3	0.5	0.25
Angularity	Ang	Ang	Rd	Ang
Shape	El	Eq-El, Sbh	Eq	Eq
Degree of weathering	1	1	3	3
Approx. amount	1	1	1	1

Manufacturing technique: double slabs at the bottom of the rim an another slab added to make the top part of the rim/lip. There are some dry-shrinkage crakcs on the sherd.
Slip/Paint/Surface finish: Slip that is dark brown in PPL and opaque in XPL with opaque minerals (ilmente?), rhyolite, and iron oxide/hydroxide, and quartz inclusions is on the interior (thick) and exterior (thin). The surface is eroded as a whole and is difficult to assess the surface finish; however, since the reddish slip is attached well to the surface, it is considered slip as opposed to post-depositional sediment.
Provenance of clay: it is from the quaterary volcanic zone of Cordillera (El Valle or La Yeguada), however, in this sherd, rock fragmens are much scarcer than clayey soil and sand samples collected from the Cordilleran area. This sherd has post-depositional secondary gibbsite growth.
Similarity to Ceramics form other sites: Cordilleran ceramics (Cl1, Ag13, and Lp134)

LP8-182-1.59-2-1

Coarse fragments: There are 35% of coarse fragments of lithics (3%, 0.1-0.9- mm) and minerals (42 %, 0.03–2 mm). Major inclusions are pyroclastics with monomineralic phenocrysts of quartz, zoned feldspar, plagioclase, amphibole, and probably small amout of pyroxene. There are also some volcanic rocks with large phenocrysts.
Temper: Pyroclastics were added as temper or had fallen onto the clay deposit.
Clays: birfriengent in XPL and oxidized (amber colored) in PPL with some reduced core.

Inclusions:

Mineral/ lithic fragment	Quartz	Zoned feldspar (mainly plagioclase)	Dacite	Plagioclase	Amphibole (hornblende)	Clino-pyroxene	Gibbsite
Size	0.03-2	0.2-1.3	0.7-0.8	0.1-0.4	0.08-0.8	0.1	0.02-0.05
Angularity	Ang	Ang	Rd	Ang	Ang	Ang	Rd
Shape	Eq-El	El-Eq, Sbh	El	Eq-El	El	El	Eq-El
Degree of weathering	1	1-2	1	1	1	1	3
Approx. amount	3	3	1	2	2	1	2

Mineral/ lithic fragment	Rhyolite (holo-crystalline)	Micro-polycrystalline spherulitic textured rock	Rhyolite (heavily hematite stained; w/ or without pheoncryst)	Tuff	Volcanic quartz	Phytoliths	Volcanic glass
Size	0.08-0.1	0.6	0.23	0.2	0.1-0.3	0.05	0.2
Angularity	Rd	Rd	Rd	Rd	Rd	Ang	Rd
Shape	Eq-El	El	Eq	El	Eq	Eq-el	El
Degree of weathering	2	2	3	2	1	1	3
Approx. amount	1	3	1	1	1	1	1

Mineral/lithic fragment	Orthopyroxene	Magnetite
Size	0.05	0.05-0.15
Angularity	Rd	Ang
Shape	Eq	Eq-el
Degree of weathering	1	1
Approx. amount	1	1

Manufacturing technique: squeezed of slab (or pinch)
Slip/Paint: No slip and the surface is weathered.
Provenance: Pyroclastics from La Yeguada or El Valle
Similarity to ceramics from other sites: Cl1, Lp134, and some Ag13

LP134-56-6-F109

Coarse fragments: There are 40% of coarse fragments of lithics (10%, 0.25-3.2 mm) and minerals (30%, 0.03–1.8 mm). Major inclusions are pyroclastics with monmneralic pheoccrysts (quartz, plagioclase, zoned plagioclase, amphibole) as well as volcanic rocks (with or without phenocryts) ranging between felsic to intermediate/basic composition.
Temper: Pyroclastics were added or fell onto the clay deposit.
Clays:birefringent in XPL and is uniformly amber colored in PPL.

Inclusions:

Mineral/ lithic fragment	Quartz	Volcanc quartz	Plagioclase	Amphibole	Zoned feldspars	Zircon	Polycrystalline quartz
Size	0.02-0.7	0.3	0.15-0.2	0.1-0.5	0.2-0.3	0.05	0.2-0.4
Angularity	Ang	Rd	Ang	Ang	Ang	Ang	Rd
Shape	Eq-el	Eq-El, Emb	Eq-El	Eq-El, dmd	Eq-El, Sbh	El	El
Degree of weathering	1	1	1	1	1	1	2
Approx. amount	4	1	3	2	4	1	2

Mineral/ lithic fragment	Tuff	Polycrystal-ine quartz w/ undulating texture	Dacite	Magnet-ite	Hema-tite	Rhyolite(hypocrystaline w/ or without hematite stain; without or with-out phenocryst (e.g. quart))	Possible intermediate to basic volcanic rock w/ heavy hem-atite stain
Size	0.25-0.04	0.3	0.3-0.7	0.03-0.07	0.07-0.1	0.15-0.6	1.9
Angularity	Rd	Rd	Rd	Ang	Rd	Rd	Rd
Shape	El	Eq	El	Eq-El	Eq	El	El
Degree of weathering	1	1	1-2	1	3	1-3	3
Approx. amount	1	1	3	1	1	3	1

Manufacturing technique: a long slab/pinch of clay may have been used to fold the clay into two making the rim.
Slip/Paint: the surface is very smooth o the exterior and interior. No slip or paints were added.
Provenance: Cordillera, Pyroclastics from La Yeguada or El Valle
Similarity to ceramics from other sites: Cl1, Lp8, and some Ag13

LP134-82-176-F246

Coarse fragments: There are 35% of coarse fragments of lithics (5%, 0.1-1 mm) and minerals (30%, 0.03-1.4 mm). The inclusions are mainly derived from the pyroclastics that contain monomineralic phenocrysts of quartz, plagioclase, amphibole, and magnetite and some volcanic rocks.
Temper: Pyroclastics sand was added or they fell onto the clay deposit.
Clays: It is birefringent in XPL and is amber color in PPL. The interior is reduced and has burnt amber color in PPL.

Inclusions:

Mineral/ lithic fragment	Quartz	Vol-canic Quartz	Plagio-Clase	Zoned plagio-clse	Amphib-ole	Mag-net-ite	Rhyolite (hema-tite stained)	Polycrystal-line quartz (hematite staine)	Iron ox-ide/ hydrox-ide
Size	0.03-1.4	0.6-1.4	0.2-0.7	0.3-0.4	0.1-0.5	0.03-0.25	0.1-0.15	0.1-0.25	0.1
Angularity	Ang	Ang-Rd	Ang	Ang	Ang	Ang	Rd	Rd	Rd
Shape	Eq-El	Emb, Eq	Emb, ang	Anh	Eq-El	Eq-El, Emb	Eq-El	Eq	Eq
Degree of weathering	1	1	1	1	1	1	3	2	3
Approx. amount	4	1	3	2	2	1	2	2	1

Manufacturing technique: Slabs are being squeezed together
Slip/Paint: None
Provenance: Pyroclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Cordilleran type

LP134-83-F168

Coarse fragments: There are 45% of coarse fragments of lithics (3%, 0.2 – 0.25 mm) and minerals (42%, 0.03–2 mm). Major inclusions are monomineralic pyroclastics-derived phennocrysts of quartz predomiant), plagioclase, zoned plagioclase, and amphibole as well as some magnetite and very few possible pyroxene. There are few volcanic rock fragments of felsic (most) to intermediate/basic composition. There are two fragments of zircon.
Temper: possibly pyroclastics were added or fell onto the clay deposit.
Clays: clay is somewhat birefringent in XPL, but amber color in PPL

Inclusions:

Mineral/ lithic fragment	Quartz	Plagio-clase	Zoned feld-spar	Am-phib-ole	Tuff	Phy-to-liths	Rhyotlite (heavily hematite stained)	Intermediate to basic volcanic rock (heavily hematite stained)	Iron ox-ide/hy-droxide
Size	0.03-2	0.18-0.3	0.25-0.3	0.1-0.2	0.2	0.1	0.15-0.5	0.4	0.1
Angular-ity	Ang	Ang	Ang	Ang	Rd	Ang	Rd	Rd	Rd
Shape	Eq-El	Eq-El	Eq-El	Eq-El	Eq	El	Eq	Eq	Eq-El
Degree of weather-ing	1	1	1	1	1	1	3	2	3
Approx. amount	5	3	3	2	1	1	1	1	1

Mineral/ lithic fragment	Biotite	Ortho-pyroxene	Poly-crystaline quartz	Volcanic quartz	Zircon	Hema-tite	Mag-netite	Polycrystline quartz with coarse grains
Size	0.5	0.15	0.15-0.3	0.3	0.15	0.15	0.03-0.25	0.3
Angularity	Rd	Ang	Rd	Rd	Ang	Rd	Ang-	Rd
Shape	El	El	Eq	Eq	Eq	El	Eq-El, Embayed	eq
Degree of weathering	3	1	1	1	1	3	1	1
Approx. amount	1	1	2	1	1	1	2	1

Manufacturing technique: this sherd has pores incliningly cutting across s the wall making layers. Minerals oriente toward thoset directionality as well. It could be that this sherds is built using a coil technique or small slabs by layering them.
Slip/Paint: The exterior and interior have slip (darker gray color/reduced than the paste underneath); the wall underneath the slip is smoothed
Provenance: Pyroclastics from La Yeguada or El Valle
Similarity to ceramics from other sites: Cl1, Lp8, and some Ag13

LP134-148-30-F105

Coarse fragments: There are 35 % of coarse fragments of lithics (10%, 0.1-0.8- mm) and minerals (25%, 0.05-1 mm). Major inclusions are pyroclastics-derived monomineralic phenocrysts of plagioclase, zoned plagioclase, and quartz and minor and accessory minerals; rock fragments range between dacitic (can have fresh phenocrysts) to rhyolite and tuff.
Temper: pyroclastics were added to the paste or fell onto the clayey soil deposit.
Clays:The clay is light brown and birefringent in XPL. Amber colored paste with slight reduction all around the walls and lip in PPL

Inclusions:

Mineral/ lithic fragment	Quartz	Polycrys-talline quartz	Tuff (w/ or without hematite stain)	Biotite	Iron oxide/ hydroxide	Magnetite
Size	0.05-0.3	0.2	0.1-0.8	0.15	0.1-0.15	0.03-0.15
Angularity	Rd-Sbang	Rd	Rd	Rd	Rd	Ang
Shape	Eq-El	El	El	El	El	Eq-El
Degree of weathering	1	2	1-3	1	3	1
Approx. amount	3	1	3	2	1	1

Mineral/ lithic fragment	Plagioclase	Zoned plagio-clase	Horn-blende	Dacite	Rhyolite	Volcanic quartz	Zircon	Phytoliths
Size	0.1-1	0.2-0.7	0.15-0.25	0.25	0.2-0.9	0.1-0.4	0.15	0.07
Angularity	Ang	Ang	Ang	Rd		Ang-Rd	Ang	Ang
Shape	Eq-El	Eq-El, Sbh	El, Dmd	El	Eq-El, Anh	Euh, Eq	Eq	Eq
Degree of weathering	1	1	1	1	1	1	1	1
Approx. amount	3	3	1	1	3	1	1	1

Manufacturing technique: either folded over rim or two slabs pressed together to make the rim and the lip
Slip/Paint: no slip or paint. The surface is well smoothed.
Provenance: Pyroclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Cordilleran pottery (Cl1, Lp8)

LP134-150-14-F108

Coarse fragments: There are 40% of coarse fragments of lithics (8%, 0.1-0.8 mm) and minerals (32%, 0.05–0.7 mm). Major inclusions are coarse fragments of fresh plagioclase (0.08-0.6 mm), zoned plagioclase and quartz that are monomineralic phenocrysts derived from pyroclastics. Zoned feldspars are especially abundant. Rock fragments are mainly felsic (tuff, rhyolite to dacite).
Temper: pyrocladsitics may have been added or they may have fallen onto the clayey soil deposit.
Clays:The clays are non-birefringent in XPL and it is reduced in PPL.

Inclusions:

Mineral/ lithic fragment	Plagio-clase	Quartz	Zoned feldspar (mainly plag; can have glassy volcanic rock matrix attached)	Hornblende	Dacite w/ phenocrysts (e.g. fresh zoned feldspar, 0.4 mm)
Size	0.08-0.6	0.05-0.9	0.1-0.8	0.05-0.7	0.6-0.9
Angularity	Ang	Ang	Ang	Ang	Rd
Shape	Eq-El	Eq-El	Eq-El, Sbh, Euh	Eq-el, Dmd	Eq
Degree of weathering	1	1	1	1	1
Approx. amount	3	3	4	2	2

Mineral/ lithic fragment	Magnetite	Hema-tite	Polycrystalline quartz (0.03-0.1 mm grain)	Zoned feldspar	Rhyolite (heavily hematite stain)	Rhyolite (holohyaline)
Size	0.05-0.25	0.1	0.3	0.1-0.8	0.35	0.3-0.6
Angularity	Ang	Rd	Rd	Ang	Rd	Rd
Shape	Eq-El, Sbh, Emb	Eq	Eq	Eq-El, Sbh, Euh	Eq	Eq-El
Degree of weathering	1	3	2	1	3	1
Approx. amount	1	1	1	4	1	3

Mineral/ lithic fragment	Rhyolite (hypocrystalline)	Tuff	Volcanic chert (microcrystalline)	Rhyolite (holocrystalline)	Volcanic glass	Volcanic quartz (can have fluid inclusion)
Size	0.5	0.25	0.25	0.25	0.1	0.1-0.7
Angularity	Ang	Ang	Rd	Rd	Rd	Rd
Shape	El	El	El	Eq	El	Eq-El, Emb
Degree of weathering	3	3	1	1	3	1
Approx. amount	1	1	1	1	1	1

Manufacturing technique: double layered slabs and small amount of clays added at the tip of the lip.
Slip/Paint: there is no slip or paint
Provenance: Cordillera; pyroclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Cordilleran pottery

LP134-150-16-F96

Coarse fragments: There are 30% of coarse fragments of lithics (22%, 0.14-1.9 mm) and minerals (8%, 0.05–0.6 mm). Major inclusions are mainy felsic volcanic rocks (many are weathered and mainly felsic) and monomineralic phencrysts. It is unclear whether this is local pyroclastic-based or has Azuero prphyritic volcanic rock-based sand, although the former is possibly the case.
Temper: This paste could contain added volcanic sand-based temper or some pyroclastics fell onto the clay deposit with abundant weathered volcanic rock fragments.
Clays: birefringent n XPL and in PPL, amber color with some reduction on the exterior side of the paste.

Inclusions:

Mineral/ lithic fragment	Quartz	Pla-gio-clase	Am-phib-ole	Hema-tite	Vol-canic glass	Rhyo-lite (heavily hema-tite stained)	Mag-netite	Epi-dote	Rhyolite (holo-hyaline)	Volcanic chert with phenocryst (quartz 1 mm)
Size	0.03-0.5	0.1-0.6	0.1-0.2	0.2	0.5	0.4-1.7	0.05-0.15	0.08-0.2	2.2	1
Angularity	Ang	Ang	Ang	Rd	Rd	Ang	Ang	Ang	Rd	Rd
Shape	Eq-El	Eq-El	Eq	Eq	Eq	El	Eq-El, Euh, Sbh	Eq	Eq	Eq
Degree of weathering	1	1	1	3	3	3	1	1	2	1
Approx. amount	3	2	1	1	1	3	1	1	1	1

Mineral/ lithic fragment	Rhyolite (w/ spherulitic texture and poly-crytalline quartz)	Intermediate to basic volcanic rock (heavily hematite stained)	Rhyolite (holocrystalline)	Tuff	Volcnic rock w/ granophyric texture	Iron oxide/ hydroxide	Dacite	Biotite	Volcanic quartz
Size	0.9	0.1-0.3	0.3-1.7	1.1	0.55	0.1	1	0.1	0.2
Angularity	Rd	Rd	Rd	Ang	Ang	Rd	Rd	Rd	Rd
Shape	El	El-Eq	Eq-El	Eq	Eq	El	El	E1	Eq
Degree of weathering	3	3	3	3	2	3	3	2	1
Approx. amount	2	3	3	3	1	2	2	1	1

Manufacturing technique: double sabs with some clay added to the tip of the flat ip to create the form.
Slip/Paint: no slip or paint added
Provenance: Unclear but possibly local (Cordilleran volcanic and pyroclastics deposit) because the variability in rocks and minerals are not high comare to Azuero materials (e.g Pr32).
Similarity to ceramics from other sites: possibly Cordillera

LP134-150-150-F103

Coarse fragments: There are 45% of coarse fragments of lithics (7%, 0.4-1.3 mm) and minerals (38%, 0.03–2 mm). Major inclusions are monomineralic phenocrysts of quartz, zoned feldspars, plagioclase, and hornblende, and magnetite derived from pyroclastics as well as rock fragments consisting of mainy fesic to some intermediate/basic composition.
Temper: : pyrocastics were either added as temper or may have been deposited naturaly on the clay
Clays: birefringent in XPL, light amber color in PPL with semi-reduced core and semi-oxidized exterior and interior.

Inclusions:

Mineral/ lithic fragment	Quartz (some have apatite inclusions)	Zoned feldspars (at least half of them plagioclase)	Plagioclase	Hornblende	Clino-pyroxene	Spherulitic textured volcanic rock
Size	0.03-1.3	0.15-0.9	0.08-0.5	0.2-1.1	0.2	0.3
Angularity	Ang	Ang	Ang	Ang	Ang	Rd
Shape	Eq-El	Eq-El, Sbh	Eq-el	Eq-El, Dmd	El, Emb	El
Degree of weathering	1	1	1	1	1	1
Approx. amount	4	3	3	2	2	1

Mineral/ lithic fragment	Volcanic quartz	Biotite	Magnetite	Hematite	Dacite (hematite stained; with phenocrysts: volcanic quartz, plagioclase)
Size	0.7	0.15	0.02-0.35	0.15	0.6-2.2
Angularity	Rd	Rd	Ang	Ang	Rd
Shape	Eq	El	Eq-El, Emb	Eq	El
Degree of weathering	1	1	1	3	1
Approx. amount	1	1	1	1	2

Mineral/ lithic fragment	Intermediate to basic volcanic rock (heavily hematite stained)	Tuff (with or without phencrysts: feldspar, amphibole, quartz; with or without hematite stain)	Rhyolite (holocrystalline)	Phytoliths	Zircon	Trachyte
Size	0.3	0.15-0.4	0.1-0.4	0.05	0.08	0.4
Angularity	Rd	Rd	Rd	Ang	Ang	Rd
Shape	El	Eq	Eq	El-Eq	El	Eq
Degree of weathering	3	1-3	1	1	1	3
Approx. amount	1	2	2	1	1	1

<u>Manufacturing technique:</u> double layered slabs with interior surface carefuly finished placing another thin layer of clay. Both exterior and interior have well smoothed surface.
<u>Slip/Paint:</u> exterior and interior has hematite-rich red slip in the interior surface.
<u>Provenance:</u> Pyroclastics from La Yeguada or El Valle
<u>Similarity to ceramics from other sites</u>: Cl1, Lp8, and some Ag13

LP134-151-20-F278

Coarse fragments: There are 45% of coarse fragments of lithics (10%, 0.2-1.2 mm) and minerals (35%, 0.03-1.7 mm). This sherd has a dense inclusion of pyroclastics with monominerali phenocrysts such as quartz, plagioclase, zoned plagioclase, amphibole, and magnetite. There are also less but a fair amount of volcanic rocks. The sherd is similar to other ceramics produced in the Pacific Cordillera.
Temper: pyroclastics sand may have been added or fell onto the clayey soil deposit.
Clays: The paste matrix is birefringnet in XPL and amber color in PPL.

Inclusions:

Mineral/ lithic fragment	Quartz	Volcanic Quatz	Plagioclase	Zone Plagioclase	Amphibole	Polycrystalline quartz (grains: 0.1-0.3 mm, w/ without hematite stain)
Size	0.03-1.7	0.5-1.3	0.2-0.6	0.3-0.7	0.2-0.5	0.25-0.7
Angularity	Ang, Rd	Rd	Ang	Ang	Ang	Ang, Rd
Shape	Eq-El	Emb, Eq	Eq-El	Eq-El, Sbh	Eq-El	Eq
Degree of weathering	1	1	1	1	1	2
Approx. amount	4	1	3	4	2	3

Mineral/ lithic fragment	Rhyolite (hypocrystalline; w/ or without quartz phenocryst)	Magnetite	Hematite	Iron oxide/hydroxide	Phytoliths
Size	0.3-0.7	0.1-0.6	0.1-0.2	0.15	0.03-0.1
Angularity	Rd	Ang-Rd	Rd	Rd	Ang
Shape	Eq-El	Euh, El, Emb	Eq	El	Eq-El
Degree of weathering	3	1	3	3	1
Approx. amount	2	2	2	1	1

Manufacturing technique: two slabs seem to be pressed together.
Slip/Paint: There is no slip or paint
Provenance: Pyroclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Cordilleran type

LP134-151-F165

Coarse fragments: There are 30% of coarse fragments of lithics (7%, 0.35-1.2 mm) and minerals (23 %, 0.01–2 mm). Major inclusions are coarse and fresh pyroclastics-derived monomineralic, zoned feldspar, plagioclase, quartz, with minor and accessory minerals. There are porphyritic dacite and rhyolite and tuff with or without phenocrysts.
Temper: Pyroclastics were added or fell onto the clayey soil deposit.
Clays: birefringent in xpl and is burnt amber in PPL.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagioclase	Zoned feldspar	Hornblende	Clinopyroxene
Size	0.02-1.9	0.5-0.7	0.6-1.8	0.2-1.2	0.5
Angularity	Ang	Ang	Ang	Ang	Ang
Shape	Eq-El	Eq-El	Eq-El, Sbh	Eq-El	El
Degree of weathering	1	1	1	1	1
Approx. amount	3	3	3	2	1

Mineral/ lithic fragment	Rhyolite (hypocrystalline)	Magnetite	Iron oxide/hydroxide	tuff/rhyolite (weathered/heavily hematite stained)	Tuff (well merged w/ clay)
Size	0.4-0.7	0.03-0.35	0.1	0.3-0.7	0.15-0.3
Angularity	Rd	Ang	Rd	Ang	Rd
Shape	Eq	Eq-El, Euh	El	El	El, Anh
Degree of weathering	1	1	1	3	2
Approx. amount					

Mineral/ lithic fragment	Volcanic quartz	Polycrsytalline quartz (0.05 mm grain) and pagioclase phecryst (1 mm)	Dacite (can be hematite stained) w/ phenocrysts (e.g. qtz, plag, amphib, zoned plag 0.5 mm)	
Size	0.15-0.9	1.2	0.3-0.8	
Angularity	Ang-Rd	Ang	Rd	
Shape	Eq, Euh, Emb	El	El	
Degree of weathering	1	1	2-3 (phenocrysts are fresh)	
Approx. amount	1	1	1	

Manufacturing technique: squeezed. There are only elongated pores parallel to the wall without the indication of joints.
Slip/Paint: none
Provenance: Pyroclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Cordilleran pottery (Cl1, Lp8)

LP134-161-F1

Coarse fragments: There are 50% of coarse fragments of lithics (15%, 0.25-1.6- mm) and minerals (30%, 0.03 – 1.7 mm). Major inclusions are monomineralic quartz, plagioclase, zoned plagioclase and minor amount of amphibole and magnetite. There is weathered biotite. The tuff fragments are nearly holohyaline (that can contain fresh amphibole and feldspar lath phenocryst). The sherd is reltively iron oxide/hydroxide-rich.
Temper: possibly pyroclastics were added or fell onto the clay deposit.
Clays: birefringet in XPL and amber colored in PPL.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagioclase	Zoned plagioclase	Amphibole	Biotite	Rhyolite (holocrytalline)
Size	0.03- 1.7	0.15-0.4	0.3-1	0.25-0.5	0.1	0.2
Angularity	Ang	Ang	Ang	Ang	Rd	Rd
Shape	El-Eq, Sbh	El	El-Eq, Sbh-Euh	Eq-El	El	Eq
Degree of weathering	1	1-2	1-2	1	3	2
Approx. amount	4	3	3	2	1	1

Mineral/ lithic fragment	Intermediate to basic volcanic rock (w/ or without phenocrysts; w/ or without phenocryst)	Tuff	Rhyolite (holohyaline)	Rhyolite (hypo-crystalline)	Phytoliths	Volcanic quartz
Size	0.5-0.6	0.15-0.2	0.25-2	0.3	0.05	0.1-1
Angularity	Rd	Rd	Rd	Rd	Ang	Ang, Rd
Shape	Eq	Eq	Eq	Eq	Eq-El	Eq-El
Degree of weathering	3	2-3	2	2	1	1
Approx. amount	3	2	1	1	1	1

Manufacturing technique: there are thermal crack evidence as well as manufacturing lines of squeezed or slab (pinch of globs)
Slip/Paint: surface is deteriorated
Provenance: Pyroclastics from La Yeguada or El Valle
Similarity to ceramics from other sites: Cl1, Lp8, and some Ag13

LP134-161-F91

Coarse fragments: There are 45 % of coarse fragments of lithics (5%, 0.25-0.9 mm) and minerals (40%, 0.02 – 1 mm). Major inclusions are monomineralic fresh phenocrysts of quartz, volcanic quartz, plagioclase, zoned plagioclase, amphiboles, and magnetite that are derived from pyroclastics. The amphiboles are hornblendes (possibly both the twinned and non-twinned grains). Rock fragment inclusions consist of mainly felsic volcanic rocks but there may also be heavily hematite stained intermediate/basic volcanic rocks. The clay matrix is rich in iron oxide/hydroxide
Temper: pyrocastics were either added as temper or may have been deposited naturally on the clay, or both.
Clays: birefringent in XPL and in PPL, oxidized reddish amber colored

Inclusions:

Mineral/ lithic fragment	Quartz	Volcanic quartz	Plagioclase	Zoned feldspar	Hornblende	Volcanic chert	Rhyolite (hypocrystalline)
Size	0.03-0.8	0.15-1	0.1-0.5	0.3-0.8	0.1-0.2	0.3	0.15
Angularity	Ang	Rd	Ang	Ang	Ang	Rd	Rd
Shape	Eq-el	Eq-el	Eq-el	Eq-El, Sbh	Eq-El, Dmd	El	Eq
Degree of weathering	1	1	1	1	1	1	1
Approx. amount	4	1	3	3	2	1	2

Mineral/ lithic fragment	Tuff (with or without hematite stain, w/ or without polychrystaline quartz aggregate attachment)	Hematite	Magnetite	Volcanic glass (crypto-crstalline	Trachyte	Tuff (with spheruitic texture attachment, possibly from vein)	Biotite (weathered, hematite stained)
Size	0.25	0.1-0.25	0.03-0.2	0.4	0.4	0.3	0.2
Angularity	Rd	Rd	Ang	Rd	Rd	Ang	Rd
Shape	Eq	El	El	El	El	El	Eq
Degree of weathering	1-3	3	1	3	1	1	3
Approx. amount	2	1	2	1	2	1	1

Mineral/ lithic fragment	Intermediate to basic volcanic rock (heavily hematite stained)	Iron oxide/hydroxide
Size	0.7	0.02-0.1
Angularity	Rd	Rd
Shape	El	Eq-El
Degree of weathering	3	3
Approx. amount	1	3

Manufacturing technique: two slabs put togather to make the rim
Slip/Paint: all surfaces are soothed but there is no slip
Provenance: Cordillera, Quaternary adakitic pyroclastics from La Yeguada or El Valle
Similarity to ceramics from other sites: Cl1, Lp8, and some Ag13\

LP134-161-125-F243

Coarse fragments: There are 45% of coarse fragments of lithics (8%, 0.2-0.7 mm) and minerals (37%, 0.03-1.3 mm). Major inclusions are pyroclastics with monomneralic phenocrysts (e.g. quartz, zoned feldspar, amphibole, magnetite) and lesser amount of volcanic rocks. This sherd looks like the typical Monagrillo Pacific Cordilleran type with dense inclusion of this kind.
Temper: pyroclastic sand was added or fell onto the clayey deposit
Clays: birefringent in XPL and is amber in PPL. The interior is somewhat reduced.

Inclusions:

Mineral/ lithic fragment	Quartz	Volcanic Quartz	Plagioclase	Zoned plagioclase	Amphibole	Magnetite
Size	0.03-1.3	0.15-0.8	0.2-0.3	0.2-0.7	0.1-0.4	0.08-0.35
Angularity	Ang	Rd	Ang	Ang	Ang	Ang
Shape	Eq-El,	Sbh, Eq	El	Eq-El, Sbh	Eq-El	Eq-El
Degree of weathering	1	1	1	1	1	1-2
Approx. amount	4	2	2	4	2	2

Mineral/ lithic fragment	Rhyolite (hypocrystalline, w/ or without phenocryst)	Polcrystalline quartz	Biotite	Iron oxide/hydroxide		
Size	0.2-0.4	0.3-0.6	0.15	0.05		
Angularity	Rd	Rd	Rd	Rd		
Shape	Eq-El	Eq	El	Eq		
Degree of weathering	2	2	3	3		
Approx. amount	3	2	1	1		

Manufacturing technique: layered slabs pressed together
Slip/Paint: none
Provenance: Pyroclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Cordilleran type

LP134-195-26-F236

Coarse fragments: There are 35% of coarse fragments of lithics (5%, 0.4-1 mm) and minerals (30%, 0.03 – 1.6 mm). Major inclusions are pyroclstics-derived monomineralic phenocrysts of quartz, plagioclase, zoned feldspar, amphibole, and volcanc quartz as well as dacite and rhyolitic rock fragments.
Clays: the clay is somewhat birefringent in XPL. In PPL, the sherd is greyish burnt amber in PPL.

Inclusions:

Mineral/ lithic fragment	Quartz	Volcanic quartz	Plagioclase	Zoned feldspar	Amphibole	Hematite
Size	0.03-1.5	0.15-1.5	0.2-0.7	0.3-0.6	0.4	0.05
Angularity	Ang	Rd	Ang	Ang	Ang	Ang
Shape	Eq-El	El, Emb	Eq-El	Eq-El	El	El, Euh
Degree of weathering	1	1	1	1	1	3
Approx. amount	4	1	3	3	1	1

Mineral/ lithic fragment	Magnetite	Rhyolite (w/ or without hematite stain, with or without quartz phenocryst; holocrystaline)	Trachyte (w/ or without hematite stain; with zoned feldspar phenocrysts)	Dacite (zoned plagioclase phenocrysts)	Tuff	Coarse polychrystalline quartz (from vein, very fine to coarse grained)
Size	0.05-0.3	0.1-1.1	0.2-0.6	0.4-0.8	0.6	0.2
Angularity	Ang	Rd	Rd	Rd	Rd	Rd
Shape	El	Eq-El	Eq	El	El	El
Degree of weathering	1	1-3	1-3	1	1	1
Approx. amount	1	3	1	3	2	1

Mineral/ lithic fragment	Zircon	Intermediate to basic volcanic rock (hematite stained with phenocrysts of hematite, amphibole,)	Phytoliths	Iron oxide/hydroxide w/ volcanic rock
Size	0.1	0.7	0.05	0.4
Angularity	Ang	Rd	Ang	Rd
Shape	El	El	Eq	Eq
Degree of weathering	1	3	1	3
Approx. amount	1	1	1	1

Manufacturing technique: double layered slabs (globs)/pinched at the rim connected to a single layered glob.
Slip/Paint: but the surface is unsmoothed and the reddish color on the lip, exterior and tinterior surface seem to be the result of surface oxidation.
Provenance: Pyroclastics from La Yeguada or El Valle
Similarity to ceramics from other sites: Cl1, Lp8, and some Ag13

LP134-199-19-F92

Coarse fragments: There are 45% of coarse fragments of lithics (15%, 0.2-1.7 mm) and minerals (30%, 0.15–1.2 mm). Major inclusions are monomineralic phenocrysts from pyroclastics and dacites (intermediate to basic volcanic rocks are more minor) indicating that the paste is Cordillearn in origin. However, in this sherd, unlike typical sherds from the Cordillera found in Cl1, there are abundant rock fragments.
Temper: Pyroclastics sand was added or deposited onto the clayey soil.
Clays: There is some birefringence in XPL and in PPL, amber

Inclusions:

Mineral/ lithic fragment	Quartz	Volcanic quartz (fluid inclusions)	Plagioclase	Zoned feldspar (mainly plag)	Dacite w/ phenocrysts (e.g. zoned feld 0.3 mm)	Volcanic glass
Size	0.15-1.1	0.25-1.2	0.2-1.5	0.1-	0.5-1	0.4
Angularity	Rd	Rd	Ang	Ang	Rd	Rd
Shape	Eq, Emb	Eq, Emb	Eq-El, Sbh	Eq-El, Sbh, Euh	El	El
Degree of weathering	1	1	1	1	1-2	3
Approx. amount	3	1	3	3	4	1

Mineral/ lithic fragment	Iron oxide/hydroxide	Zircon	Intermediate to basic volcanic rock with polycrystalline quartz	Clinopyroxene	Biotite	Hornblende
Size	0.35	0.1	1	0.4	0.2	0.2-0.5
Angularity	Rd	Ang	Rd	Ang	Rd	Ang
Shape	Eq-El	El	El	El, Euh	El	Eq-El, Dmd
Degree of weathering	3	1	3	1	2	1
Approx. amount	2	1	1	1	1	1

Mineral/ lithic fragment	Mico-polychrystalline quartz and iron oxide/hydroxide intertwined)	Cristobolaite	Intermediate to basic volcanic rock (holocrystalline)	Rhyolite	Magnetite	Hematite stain (laths) on quartz
Size	0.5	0.2	0.5	0.1	0.08-0.4	0.3
Angularity	Rd	Rd	Rd	Rd	Ang	Ang
Shape	Eq	Eq	El	Eq	Eq-El, Euh	Eq
Degree of weathering	3	1	2	1-2	1	3
Approx. amount	1	1	2	1	1	1

Manufacturing technique: a large slab and a smaller one added to create the rim/lip
Slip/Paint: No slip or paint added
Provenance: Pyroclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Cordilleran type

LP134-202-218-F107

Coarse fragments: There are 45% of coarse fragments of lithics (5%, 0.2-1.2 mm) and minerals (40%, 0.03–0.8 mm). Major inclusions are pyroclastics-derived monomineralic plagioclase, quartz, zoned feldspar, amphibole, and magnetite along with felsic to basic volcanic rock fragments.
Temper: Temper was added or fell onto the clay deposit.
Clays birefringent in XPL and mainly burnt amber colored paste (some reduced and oxidized zones)

Inclusions:

Mineral/ lithic fragment	Quartz	Zoned feldspar (mainly plagioclase)	Plagioclase	Amphibole	Phytoliths	Intermediate to basic volcanic rock
Size	0.03-1.8	0.5-1.8	0.2-0.7	0.8	0.03-0.05	0.1-0.3
Angularity	Ang	Ang	Ang	Ang	Ang	Rd
Shape	Eq-El	Eq-El	Eq-El	Eq-El	Eq-El	El
Degree of weathering	1	1	1	1	1	2
Approx. amount	4	3	3	1	2	1

Mineral/ lithic fragment	Tuff	Rhyolite (with or without feldspar phenocrysts, hypocrystalline)	Rhyolite (w/ phencrysts, holocrystalline)	Volcanic chert	Andesite/basalt	chlorite
Size	0.1-0.35	0.15-3.2	0.15-0.3	0.15	0.4-1	0.08 m
Angularity	Rd	Rd	Rd	Rd	Rd	Rd
Shape	El	Eq-El	El	Eq	El	Eq
Degree of weathering	1	1	1	1	1-3	
Approx. amount	2	3	2	1	2	1

Mineral/ lithic fragment	Dacite	Trachyte	Magnetite
Size	0.3-1.2	1	0.03-0.35 mm
Angularity	Rd	Rd	Rd
Shape	El	El	Eq-El, Emb
Degree of weathering	1	3	1
Approx. amount	3	1	1

Manufacturing technique: a small slab/pinched or squeezed glob with to layer s; there are also shrinkage cracks
Slip/Paint: the sherds is well burnished but no slip or paint seem to have been applied.
Provenance: Pyroclastics from La Yeguada or El Valle
Similarity to ceramics from other sites: Cl1, Lp8, and some Ag13

LP134-282-27-F95

Coarse fragments: There are 45% of coarse fragments of lithics (10%, 0.03-1.2 mm) and minerals (35%, 0.03-1.2 mm). Major inclusions are pyroclastics with monomineralic phenorysts (e.g. quartz, plagioclase, zoned plagioclase, amphibole, magnetite) as well as volcanic rocks such as rhyolite and basic to intermediate volcanic rocks. The inlusions is dense, similar to other Pacific Cordilleran pottery.
Temper: pyroclastic sand may have been added or have fallen onto the clayey sediment.
Clays: birefringnet in XPL and oxidized on the exterior and the nterior but thecore is reduced.

Inclusions:

Mineral/ lithic fragment	Quartz	Volcanic quartz	Plagioclase	Zoned plagioclase	Amphibole	Rhyolite (hematite stained, w/ or without phenocryst)
Size	0.03-1.3	0.7	0.1-0.4	0.2-1.3	0.1-0.3	0.3-0.8
Angularity	Ang	Rd	Ang	Ang	Ang	Rd
Shape	Eq-El	Eq	Eq-El	Eq-El	Eq-El	E1
Degree of weathering	1	1	1	1	1	3
Approx. amount	3	1	2	3	2	3

Mineral/ lithic fragment	Intermediate to basic volcanic rock (	Magnetite	Hematite
Size	0.8	0.3	0.2
Angularity	Rd	Ang	Rd
Shape	El	El, Anh	El
Degree of weathering	3	1	3
Approx. amount	2	2	1

Manufacturing technique: two slabs may be pressed together bu a longer slab is slighty folded over to shape the lip.
Slip/Paint: Probably, there is no slip (the interior surface is reduced)
Provenance: Pyroclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Cordilleran type

LP134-236-F97

Coarse fragments: There are 45% of coarse fragments of lithics (5%, 0.52.1 mm) and minerals (40%, 0.03-1.5 mm). Major incusions are monomineralic phenocrysts including quartz, plagioclase, amphibole, and magnetite. Quartz is particularly abundant. There are some felsic to basic volcanic rocks.
Temper: pyroclastic sand temper may have been added or have fallen onto the clayey soil deposit
Clays: the clay matrix is birefringent in XPL and is evenly amber in PPL.

Inclusions:

Mineral/ lithic fragment	Quartz	Volanic quartz	Plagioclase	Zoned plagioclase	Amphibole	Rhyolite (heavily hematite stained)
Size	0.03-1.5	0.2-0.4	0.1-0.3	0.2-1.2	0.1-0.9	0.25-0.6
Angularity	Ang	Rd, Ang	Ang	Ang	Ang	Rd
Shape	Eq-El	Eq-El, Euh	Eq-El	Eq-El, Sbh	Eq-El	Eq
Degree of weathering	1	1	1	1	1	3
Approx. amount	5	2	2	3	2	2

Mineral/ lithic fragment	Magnetite	Intermediate to basic volcanic rock (heavily hematite stained)	Hematite	Volcanic chert
Size	0.05-0.2	2.1	0.2	0.5
Angularity	Ang, Rd	Ang	Rd	Ang
Shape	Euh, Anh, Emb	El	Anh, Eq-El	Eq
Degree of weathering	1	3	3	1
Approx. amount	2	2		

Manufacturing technique: two slabs seem to be placed together and the longer slab is folder over to make the lip.
Slip/Paint: No slip/paint seem to be added but the area away from the lip of the interior surface is reduced.
Provenance: Pyroclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Cordilleran type

LP134-271-18-F100/LP134-208-18-F100

Coarse fragments: There are 50% of coarse fragments of lithics (5%, 0.15 -1 mm) and minerals (45%, 0.02–1.2 mm). Inclusions are predominantly monmineralic pyroclastics of plagioclase, quartz, zoned feldspar, biotite, amphibole, and magnetite of pyroclastic origin. There are also felsic to intermediate volcanic rock fragments with or without phenocrysts. Sherds from Lp134, in general, have more phytoliths than other sites.
Temper: pyroclastic inclusions were added or landed on clay deposit
Clays: clays are birefringet in XPL and amber colored in PPL.

Inclusions:

Mineral/ lithic fragment	Quartz	Zoned feldspars	Plagio-clase	Horn-blende	Biotite	Magnetite	Iron ox-ide/hydroxide	Volcanic quartz
Size	0.02-1.2	0.1-0.7	0.15-0.6	0.08-0.9	0.25	0.02-0.35	0.05-0.2	0.05-0.45
Angularity	Ang	Ang	Ang	Ang	Rd	Ang	Rd	Rd
Shape	Eq-el	Eq-el, subhedral	Eq-el	Eq-el, diamond	El	Eq-el, euhedral	Eq	Eq
Degree of weathering	1	1	1	1	1	1	3	1
Approx. amount	4	4	3	2	1	2	2	1

Mineral/ lithic frag-ment	Tuff (with or without plagioclase and quartz phenocrysts)	Rhyolite (hypo-crytalline; with or without phe-norsyt of feld-spar)	Polychrys-talline quartz and iron ox-ide/hydrox-ide	Vitrified and weathered vol-canic rock possibly of mafic to intermediate com-position (w/ micro laths)	Phytoliths	Hematite
Size	0.3-1	0.2-0.35	0.8	0.15	0.03-0.05	0.05
Angularity	Rd	Rd	Rd	Rd	Ang	Rd
Shape	El	El	El	El	Eq-El	Eq
Degree of weathering	1	1	2	2	1	3
Approx. amount	3	3	1	1	1	1

Mineral/ lithic fragment	Polychrystaline quartz (w/ phenocryst)	Dacite	Biotite	Volcanic glass with hematite stain
Size	0.3	0	0.2	0.05
Angularity	Rd	Ang	Rd	Rd
Shape	El	El	El	Eq-El
Degree of weathering	1	1	1	3
Approx. amount	1	1	1	2

Manufacturing technique: double layered slabs making the rim
Slip/Paint: no-slip, smoothed surface
Provenance: Pyroclastics from La Yeguada or El Valle
Similarity to ceramics from other sites: Cl1, Lp8, and some Ag13

LP134-282-27-F95

Coarse fragments: There are 30% of coarse fragments of lithics (8%, 0.25-1.2 mm) and minerals (22%, 0.03–1.3 mm). Major inclusions are fresh and angular coarse plagioclase, quartz, and zoned plagioclase as well as amphibole and possible clinopyroxene and accessory minerals. The minerals tend to be merged well with the matrix clayey soil. There are minor amount of basic/intermediate to felsic (rhyolites) volcanic rocks.
Temper: Pyroclastics were added as inclusions or fell onto the clayey soil deposit. Since the inclusions are well merged with the matrix, the latter is more likely
Clays the core is heavily reduced. There were organic materials in the core when it was fired. The surrounding exterior and the interior walls are greyish amber color in PPL. In XPL, the paste is birefringent.

Inclusions:

Mineral/ lithic fragment	Polycrystalline quartz (volcanic chert attached to coarser qtz aggregate)	Intermediate to basic volcanic rock (feldspar laths, 0.1 mm, heavily hematite stained)	Clinopyroxene	Rhyolite (heavily hematite stained; holocrystalline)
Size	1.3	0.8	0.15	0.4-0.5
Angularity	Rd	Rd	Rd	Rd
Shape	Eq	El	El	Eq
Degree of weathering	2	3	1	3
Approx. amount	1	2	1	1

Mineral/ lithic fragment	Plagioclase	Zoned plagioclase	Quartz	Amphibole	Magnetite
Size	0.1-0.8	0.2-1.1	0.1-1.5	0.1-0.2	0.03-0.1
Angularity	Ang	Ang	Ang	Ang	Ang
Shape	El-Eq	El-Eq, Sbh	El-Eq	El-Eq	Eq-El
Degree of weathering	1	1	1	1	1
Approx. amount	3	3	3	1	1

Mineral/ lithic fragment	Volcanic quartz (can have fluid inclusions)	Biotite	Dacite (w/ phenocrysts (e.g. 0.3 mm)	Rhyolite (holocrystalline)			
Size	0.3-0.7	0.15	0.65-0.9	0.5			
Angularity	Rd	Rd	Rd	Rd			
Shape	Eq, Emb	El	El	Eq			
Degree of weathering	1	2	3	1			
Approx. amount	2	1	2	1			

Manufacturing technique: double layered slabs that make the rim but one slab is longer and is folded over to meet the shorter slab on the interior side wall. The pores are parallel to the wall.
Slip/Paint: There is no slip or paint. The interior wall is more soothed than the exterior wall. Some part of the interior surface is reduced.
Provenance: Pyroclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Cordilleran pottery (Cl1, Lp8)

LP134-293-F101

Coarse fragments: There are 25% of coarse fragments of lithics (5%, 0.25-1.1 mm) and minerals (20%, 0.03–1.9 mm). Major inclusions are fresh, coarse, and angular monomineralic plagioclase, zoned feldspar, and quartz derived from pyroclastics and mostly felsic volcanic rocks (without phenocrysts).
Temper: Pyroclastics probably have fallen onto the clay deposit or may have fallen onto the deposit.
Clays: birefringent in XPL. Amber colored paste with some reduced linear spots in PPL.

Inclusions:

Mineral/ lithic fragment	Quartz (can have fluid and apatite inclusions)	Plagio-clase	Zoned feldspar (mainly plag)	Epidote	Clino-pyroxene	Hornblende
Size	0.03-1.25	0.1-0.6	0.15-1.9	0.1	0.1-0.2	0.15
Angularity	Ang	Ang	Ang	Rd	Ang	Ang
Shape	El-Eq	El-Eq	El-Eq	Eq	El	El-Eq
Degree of weathering	1	1	1	1	1	1
Approx. amount	1	3	2	1	1	1

Mineral/ lithic fragment	Magnetite	Iron oxide/hydroxide	Tuff	Spherulite	Quartz aggregate (0.2 mm grain;from vein)	Rhyolite (hematite stained)
Size	0.03-0.25	0.03	0.05-0.1	0.35	0.4-0.8	1
Angularity	Ang	Rd	Ang	Rd	Rd	Rd
Shape	Eq, Emb, Sbh	Eq	Eq	El	El-Eq	El
Degree of weathering	1	3	2	2	2	3
Approx. amount	1	1	2	1	1	1

Mineral/ lithic fragment	Volcanic quartz	Rhyolite	Intermediate to basic volcanic rock (heavily hematite stained)	Zircon	Volcanic chert
Size	0.2-0.3	0.4	0.6	0.05	0.2
Angularity	Ang-Rd	Rd	Rd	Ang	Rd
Shape	Eq	El	Eq	Eq	Eq
Degree of weathering	1	2	3	1	1
Approx. amount	1	1	1	1	1

Manufacturing technique: A slab folded over making the rim.
Slip/Paint: The interior seems to be well smoothed. No slip or paint added.
Provenance: Pyroclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Cordilleran pottery

LP134-297-F39

Coarse fragments: There are 15% of coarse fragments of lithics (2%, 0.3-1.2 mm) and minerals (13%, 0.03 – 1 mm). The inclusions are scarce. Inclusions are predominantly monomineralic quartz, zoned feldspars, and plagioclase derived from pyroclastics. There are some volcanic rocks of felsic to basic composition.
Temper: Possibly pyroclastics naturally fell onto the clay deposit (considering the scarcity of inclusions)
Clays: birfringent in XPL, the sherd is amber colored and has some reduced core in PPL.

Inclusions:

Mineral/lithic fragment	Quartz	Plagioclase	Zoned feldspar	Hornblende	Rhyolite (with or without phenocrysts; hypocrystalline)
Size	0.03-1	0.1-0.4	0.3-0.6	0.08-0.7	0.5-1.2
Angularity	Ang	Ang	Ang	Ang	Rd
Shape	Eq-El	Eq-El	Eq-El, Euh, Sbh	Eq-El, Dmd	Eq-El
Degree of weathering	1	1	1	1	2
Approx. amount	4	3	4	1	3

Mineral/ lithic fragment	Intermediate to basic volcanic rock	Hematite	Polycrystalline quartz	Phytoliths	Hydrothermally altered quartz	Magnetite
Size	0.4-0.8	0.2	0.3	0.03-0.05	0.35	0.02-0.3
Angularity	Rd	Rd	Rd	Ang	Rd	Ang
Shape	El	El	Eq-El	Eq-El	Eq	Eq-El
Degree of weathering	3	3	1	1	1	1
Approx. amount	2	1	1	1	1	1

Mineral/ lithic fragment	Iron oxide/ Hydroxide	Zircon
Size	0.03-0.1	0.03
Angularity	Rd	Ang
Shape	Eq-El	Eq
Degree of weathering	3	1
Approx. amount	3	1

Manufacturing technique: Manufacturing technique is unknown because the thin pores that are parallel to the wall are short and not connected. This may indicate pores caused by shrinkage (Reedy 2008)
Slip/Paint: the exterior and the interior of the rim are well polished and the interior surface has some reduction.
Provenance: Pyroclastics from La Yeguada or El Valle
Similarity to ceramics from other sites: Cl1, Lp8, and some Ag13

LP134-297-2-F279

Coarse fragments: There are 45% of coarse fragments of lithics (5%, 0.2-0.25 mm) and minerals (40%, 0.05-0.1 mm). Pyroclastics-derived fresh and angular minerals (e.g., quartz, plagioclase, amphibole), especially zoned and non-zoned plagioclase, predominate as inclusions. There are minor amount of weathered felsic to basic volcanic rocks. The sherd has a collared rim, and it probably belongs to pottery from the Sarigua or the tail end of the Monagrillo period.
Temper: Pyroclastic sand was added or fell onto the clayey soil deposit.
Clays: paste matrix is birefringent in XPL but is amber in PPL.

Inclusions:

Mineral/ lithic fragment	Quartz	Volcanic quartz	Plagioclase	Zoned plagioclase	Amphibole	Magnetite
Size	0.05-1	0.8	0.1-1	0.08-1	0.05-0.6	0.03-0.25
Angularity	Ang	Rd	Ang	Ang	Ang	Ang
Shape	Eq-El	El	Sbh, Eq-El	Sbh, El	Eq-El, Sbh	Eq-El, Sbh
Degree of weathering	1	1	1	1	1	1
Approx. amount	3	1	3	4	2	2

Mineral/ lithic fragment	Polycrystalline quartz (grain, 0.05 mm)	Rhyolite (hypcrystalline)	Rhyolite (holohyaline, heavily hematite stained)	Dacitic	Intermediate to basic volcanic rock (heavily weathered)
Size	0.25	0.3	0.3	0.4	0.2
Angularity	Rd	Rd	Rd	Rd	Rd
Shape	El-Eq	El	Eq	El	El
Degree of weathering	2	2	3	3	3
Approx. amount	2	2	1	2	1

Manufacturing technique: Squeezed technique.
Slip/Paint: None
Provenance: Pyroclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Cordilleran type

LP134-305-15-F94

Coarse fragments: There are 30% of coarse fragments of lithics (5%, 0.2-0.45 mm) and minerals (25%, 0.03–1.3 mm). Major inclusions are monomineralic phenocrysts of pyroclastics such as quartz, plagioclase, zoned plagioclase as well as glassy felsic volcanic rocks (tuff, rhyolite) and minor amount of dacite.
Temper: Pyroclastic materials may have been added to the paste or fell onto the clayey deposit
Clays: birefringent in XPLand in PPL, amber through the paste.

Inclusions:

Mineral/ lithic fragment	Quartz	Volcanic quartz (can have fluid inlusions)	Plagioclase	Zoned plagioclase	Tuff	Dacite
Size	0.03-1.3	0.15-0.4	0.1-0.4	0.15-0.8	0.2-0.25	0.5
Angularity	Ang	Ang-Rd	Ang	Ang	Rd	Rd
Shape	Eq-El	Eq, ubh	Eq-El	Eq-El Sbh,	Eq	Eq
Degree of weathering	1	1	1	1	1-3	3
Approx. amount	3	1	2	3	2	1

Mineral/ lithic fragment	Magnetite	Iron oxdie/hydroxide	Volcanic glass (Fe-rich)	Rhyolite (hypocrystalline)	Amphibole	
Size	0.05-0.3	0.15	0.1	0.1-0.15	0.05-0.3	
Angularity	Ang	Rd	Rd	Rd	Ang	
Shape	Eq-El, Euh, Emb	Eq	Eq	Eq	Eq-El, Dmd	
Degree of weathering	1	3	3	2	1	
Approx. amount	2	1	1	1	1	

Manufacturing technique: slabs or pressed
Slip/Paint: no slip or paint added
Provenance: Pyroclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Cordilleran type

LP134-313-F150

Coarse fragments: There are 35% of coarse fragments of lithics (5%, 0.15-1 mm) and minerals (30%, 0.02–1.5 mm). Major inclusions are pyroclastics with monomineralic phenocrysts (quartz, plagioclase, zoned plagioclase, and volcanic quartz) and felsic predominantly vitreous volcanic rock inclusions.
Temper: Temper has been added or pyroclastis have fallen onto the clayey soil deposit.
Clays: Birefringent in XPL and in PPL, manly amber interior and more oxidized amber in the exterior.

Inclusions:

Mineral/ lithic fragment	Quartz	Volcanic quartz (can have fluid inclusions)	Plagioclase	Zoned plaagioclase	Tuff	Rhyolite (hypocrystaline)
Size	0.03-1.5	0.15-0.9	0.1-0.7	0.2-1	0.15-0.4	0.25-0.5
Angularity	Ang	Ang-Rd	Ang	Ang	Rd	Rd
Shape	Eq-El	Eq-El, Emb	Eq-El	Eq, Sbh	Eq	El
Degree of weathering	1	1	1-2	1-2	2	1
Approx. amount	3	2	3	3	2	

Mineral/ lithic fragment	Rhyolite (heavily hematite stained, hypocrystalline)	Volanic chert	Iron oxide/hydroxide	Amphibole	Magnetite	Hematite growth on magnetite
Size	0.5-1.2	0.3	0.08-0.3	0.15-0.7	0.1-0.25	0.2
Angularity	Rd	Rd	Rd	Ang	Ang	Ang
Shape	El	El	El	Eq-El	Eq-El, Euh	El
Degree of weathering	3	1	3	1	1	3
Approx. amount	2	1	2	2	1	1

Mineral/ lithic fragment	Vermiculite	Zircon				
Size	0.15	0.15				
Angularity	Rd	Ang				
Shape	El	El				
Degree of weathering	1	1				
Approx. amount	1	1				

Manufacturing technique: possibly, double layered slabs.
Slip/Paint: no slip or paint added
Provenance: Pycoclastics from El Valle or La Yeguada
Similarity to ceramics from other sites: Cordilleran type

LP134-318-37-F281

Coarse fragments: There are 35% of coarse fragments of lithics (25%, 0.1-1.4 mm) and minerals (10%, 0.02-0.25 mm). This is an unusual sherd amongst sherds that are from the Early Ceramic period because most mineral and lithic grains are quite weathered. There are several rock fragments of intermediate to basic micro intrusive rocks. Mineral inclusions are mainly quartzs but there are less amount of untwined and weathered feldspars.
Temper: No
Clays: Birefringent in XPL but it is amber-colored in PPL.

Inclusions:

Mineral/ lithic fragment	Polycrytalline quartz (heavily weathered; grains: 0.05 mm)	Micro-Granodioritic rock (heavily weathered; grains: 0.2-0.25mm)	Rhyolite (holohyaline)	Volcanic glass with quartz grains surrounding the grain	Quartz	Feldspar (untwining, weathered)
Size	0.35	0.5	0.4	0.5	0.03-0.25	0.15-0.25
Angularity	Rd	Rd	Rd	Rd	Rd-Ang	Ang
Shape	El	El	Eq	El	Eq-El	El
Degree of weathering	3	3	3	3	2	3
Approx. amount	2	4	2	2	3	2

Mineral/ lithic fragment	Zircon	Hematite	Biotite
Size	0.05	0.02-0.1	0.05
Angularity	Rd	Rd	Rd
Shape	El	E1-El	El
Degree of weathering	1	3	3
Approx. amount	1	1	1

Manufacturing technique: Possible layered slabs
Slip/Paint: None
Provenance: Azuero intrusive
Similarity to ceramics from other sites: Azuero type

#1-14

Coarse fragments: There are 2 % of scarce poorly sorted fragments of lithics (1.5%, 0.6-0.8 mm) and minerals (0.5%, 0.05–0.5 mm). Most of the paste is clay. The inclusions are extremely weathered volcanic rocks, merged with clays, and some weathered mineral grains. There are hematite grains as well.
Clays:the clays are somewhat birefringent in XPL and light reddish brown in PPL. The clays are matured clays with very little rock fragments left.

Inclusions:

Mineral/ lithic fragment	Quartz	Iron oxide	Feldspar	Rhyolite (hypocrystalline to holohyaline)	Volcanic chert	Intermediate basic feldspar containing (0.1 mm fine grained) rock fragment
Size	0.05-0.15	0.1-0.3	0.2	0.2	0.15-0.4	0.3
Angularity	Rd	Rd	Ang	Rd	Rd	Rd
Shape	Eq-El, Anh	Eq-El, Anh	El	Eq	Eq	Eq
Degree of weathering	3	3	3	3	2	3
Approx. amount	2	5	1	2	1	1

Mineral/ lithic fragment	Hematite	Magnetite				
Size	0.03-0.1	0.05				
Angularity	Ang	Ang				
Shape	Eq	Eq				
Degree of weathering	3	2				
Approx. amount	2	1				

Similarity to pottery: little amount of inclusions and there is no particular identifier

#1-17

Coarse fragments: There are 20% of poorly sorted fragments of lithics (10%, 1.5-2.2 mm) and minerals (10%, 0.05-1 mm). The clays is granitic or ganodioritic (feldspars that can be tested with 2V, are untwined plagioclase) with coarse quartz and feldspars and their monomineralic grains. There are also abundant very weathered biotites. This is similar to He-5 clays with granite but the #1-17 clay does not contain tourmaline.
Clays: the clay is red and very oxidized (similar to some Zapotal clay) in PPL

Inclusions:

Mineral/ lithic fragment	Quartz	Iron oxide	Granite (similar to granite fragments or granitic/granodio-ritic pottery inclu-sions from He5) (0.4-0.8 mm coarse grained feldspar [alkali?] and quartz)	Feldspar (possibly from gra-nitic/granodio ritic frag-ment), large 2V (>80°) biax+, labora-dorite?	Magnetite with re-placement by hematite or hematite	Biotite
Size	0.05-1	0.1-0.5	1.4	0.5-0.7	0.15-0.4	0.1-0.15
Angular-ity	Ang	Rd	Ang	Ang	Ang	Ang
Shape	Eq-El	Eq-El, Anh	Eq, Anh	El, Anh	Eq-El Anh	Eq-El
Degree of weather-ing	1	3	Quartz:1 Fedlspars:2	1-2	2-3	3
Approx. amount	5	4	3	2	1	2

Mineral/ lithic fragment	Intermediate to basic volcanic rock (0.03-0.1 mm fine grained)	Coarse quartz aggregate (from granitic or granodioritic fragment) (0.2-1.5 mm grain)
Size	0.3	1.5
Angularity	Ang	Ang
Shape	Eq	Anh
Degree of weathering	3 (iron-oxide and hematite stain)	1
Approx. amount	1	3

Similarity to pottery: He5 granitic pottery (or possible pottery made with materials from Azuero Santa Maria, intrusive area) because this clayey sediment has 2 granitic fragments and monomineralic quartz. The clayey sediment has much more iron oxides/hydroxides and are weathered.

#1-19

Coarse fragments: There are 35% of moderately sorted fragments of lithics (10%, 0.3-3.7 mm) and minerals (25%, 0.02-0.4 mm). The paste has mostly fine grained weathered and dense inclusions. The clayey sediment has a geological identifier intrusive igneous rock (intermediate to basic, plagioclase-rich and less amount of quartz). The clayey sediment itself has weathered quartz, feldspars, and iron oxides/hydroxides.
Clays: reddish burnt amber-colored clay in PPL

Inclusions:

Mineral/ lithic fragment	Quartz	Feldspar (mainly plagioclase)	Intermediate to basic intrusive igneous rock (heavily hematite stained, can have iron oxide/hydroxide)	Amphibole	Epidote	Iron oxide/iron hydroxide
Size	0.05-0.3	0.1-0.4	3.7	0.1	0.1	0.03-0.4
Angularity	Ang-Rd	Ang	Ang	Ang	Rd	Rd
Shape	Eq-El	Eq-El	El, Anh	Eq	Eq	Eq-El
Degree of weathering	2	3	3	3	3	3
Approx. amount	3	4	4	2	1	5

Mineral/ lithic fragment	Hematite	Magnetite (with hematitereplacement)	Rhyolite (hypcrstlline)			
Size	0.1-0.25	0.15	0.3			
Angularity	Ang	Ang	Rd			
Shape	Eq	El	Eq			
Degree of weathering	3	2	2			
Approx. amount	2	1	1			

Similarity to pottery: Paste has Azuero characteristic with weathered clayey sediments

#2-6

Coarse fragments: There are 25% of poorly sorted fragments of lithics (12%, 0.2-2 mm) and minerals (13%, 0.1–1.2 mm). The major inclusions of clayey sediment are rhyolite, intermediate to porphryritic basic volcanic rocks and some coarse to very coarse monomineralic phenocrysts.
Clays: oxidized reddish clay in PPL.

Inclusions:

Mineral/ lithic fragment	Plagioclase	Zoned plagioclase	Quartz	Intermediate to basic volcannic rock (can be porphyritic)	Rhyolite (heavily hematite stained)	Rhyolite (holohyaline, hypocrystalline)
Size	0.2-1	0.8	0.1-1.1	0.7-2.2	1.5	0.2-1.2
Angularity	Ang	Ang	Ang	Rd	Rd	Rd
Shape		Euh	Eq-El	Eq	Eq	Eq-El
Degree of weathering	1-2	1	1	3	3	3
Approx. amount		1	3	3	2	4

Mineral/ lithic fragment	Tuff	Micro granite	Quartz (with undulation?)	Iron Oxide/hydroxide	Alkali-feldspar	Epidote
Size	0.4	0.45	0.3	0.05-0.15	0.3	0.15-0.3
Angularity	Rd	Rd	Ang	Rd	Ang	Ang
Shape	El	Eq	Eq	Eq-El	Eq	Eq
Degree of weathering	3	2	2	3	1	1
Approx. amount	1	1	1	2	1	1

Mineral/ lithic fragment	Magnetite
Size	0.05-0.2
Angularity	Ang
Shape	Eq
Degree of weathering	2
Approx. amount	2

Similarity to pottery:Similar to pottery inclusions found in Azuero (e.g. Zapotal (Pr32)) with rhyolite, intermediate to basc volcanic rocks, intrusive igneous rock, and monomineralic phenocryts derived from volcanic rocks. However, the density of inclusions in this clayey sediment is much lower than most Azuero-type pottery.

#2-7

Coarse fragments: There are 40% of very poorly sorted fragments of lithics (5%, 0.4-2.4 mm) and minerals (35%, 0.05 mm). The clayey soil has a large fragment of secondary calcite (4 mm) mixed with iron oxide and feldspar or a secondary calcite ball that has no other incusion. These and iron oxides/hydroxies, and quartz are major inclusions. There is a possible weathered fragment of granite. Monomineralic coarse quartz and possible alkali-feldspar could be derived from thi granite. There are intrusive igneous intermediate to basic rock (feldspars, magnetite replaced by hematite) that is heavily hematite stained.
Clays: Reddish brown in PPL with many weathered iron oxides.

Inclusions:

Mineral/ lithic fragment	Iron oxide/hydroxide	Secondary calcite	Poly-micro-crystallined quartz (hematite stained, 0.02 mm grain)	Coarse quartz aggregate (hematite stained, 0.3-0.6 mm grain)	Volcanic rock (hematite stained)	Amphibole
Size	0.05-0.8	0.8-4	0.4	2	0.25	0.05
Angularity	Rd	Ang	Ang	Ang	Rd	Ang
Shape	Eq-El, Anh	Eq-El	El	El	El	Eq
Degree of weathering	3	3	3	1	3	3
Approx. amount	5	4	2	3	2	1

Mineral/ lithic fragment	Biotite	Quartz	Feldspar (plag and possible K)	Granite (hematite stained, 0.3 mm grain)	Rhyolite (holocrystalline) with quartz phenocryst (0.6 mm)	Intrusive intermediate to basic igneous rock (heavily hematite stained)
Size	0.2	0.2-0.9	0.1-0.4	0.8	0.6	0.15-0.4
Angularity	Rd	Rd	Ang	Ang	Ang	Rd
Shape	El	Eq	Eq-El	El	El	El
Degree of weathering	2	2	2	2	2	3
Approx. amount	1	3	3	1	2	2

Mineral/ lithic fragment	Rhyolite (holohyaline)	Quartz, feldspar, amphibole aggregate (0.05-0.1 mm)	Magnetite replaced by hematite	Hematite		
Size	0.3	0.3	0.05	0.1		
Angularity	Ang	Ang	Ang	Rd		
Shape	El, Anh	El	Eq	El		
Degree of weathering		1	3	3		
Approx. amount		1	1	1		

Similarity to pottery: Azuero coastal pottery (granitic fragments, intrusive intermediate to basic igneous rock, and porphyritic rhyolite) from the mouth of Santa Maria area although natural secondary calcite (predepositional) is absent in pottery. Minerals and rock fragments that are very wethered in this clayey soil suggests that more fresh sand temper is added in Monagrillo pottery from Santa Maria mouth area.

#3-9

Coarse fragments: There are 30% of very poorly sorted fragments of lithics (10%, 0.35-1.3 mm) and minerals (20%, 0.05-1.1 mm). The clay has predominantly quartz, iron oxide/hydroxide, hematite, and larger grains of intermediate to basic heaviy hematite staned vocanic rocks.
Clays:reddish brown clay in PPL

Inclusions:

Mineral/ lithic fragment	Quartz	Iron oxide/iron hydroxide	Biotite	Intermediate to basic volcanic rock with phenocryst (heavily hematite stained, fine mineral grains (0.02 mm matrix in reflected light but with larger phenocrysts 0.15 mm)	Intermedite to basic volcanic rock with some phenocrysts (heavily hematite stained) with hematite stained matrix having no visible grains	Hematite
Size	0.05-1.3	0.05-0.4	0.2	1.2	1.4	0.05-0.7
Angularity	Ang	Rd	Rd	Rd	Rd	Rd
Shape	Eq-El	Eq-el	Eq	Eq-El	El	Eq-El
Degree of weathering	2	3	3	3	3	3
Approx. amount	4	4	3	3	3	4

Mineral/ lithic fragment	Plagioclase
Size	0.05-0.1
Angularity	Ang
Shape	Eq
Degree of weathering	2
Approx. amount	1

Similarity to pottery: this clay does not have intrusive inclusions or pyroclastics-derived fresh monomineralic phenocrysts, typical of those in Cordillera. So, this type of cay cannot be petrographically be the identifier of sources.

#3-13

Coarse fragments: There are 30% of coarse fragments of lithics (15%, 0.5-1 mm) and minerals (15%, 0.05–1.2 mm). Major inclusions are very weathered mixed felsic to basic/intermediate volcanic rocks and weathered monomineralic phenocrysts derived from them.
Clays: the clay is reddish in PPL, being oxidized.

Inclusions:

Mineral/ lithic fragment	Quartz	Epidote	Tuff (hematite stained)	Iron oxide/hydroxide	Intermediate to basic volcanic rock (hematite stained)
Size	0.1-1.2	0.1	0.1-0.15	0.05-0.1	0.5-0.6
Angularity	Ang	Eq	Eq	Rd	Rd
Shape	Eq-El, Anh	Anh	Rd	Eq	El
Degree of weathering	2	3	3	3	3
Approx. amount	4	1	3	2	4

Mineral/ lithic fragment	Rhyolite (hemaite stained)	Hematite	Plagioclase	Volcanic glass (holohyaline; Fe-rich)	Amphibole
Size	0.25-1	0.15-0.55	0.2	0.15	0.1-0.2
Angularity	Rd	Ang	Ang	Rd	Ang
Shape	Eq	El	Eq	Eq	El
Degree of weathering	3	3	3	3	2
Approx. amount	4	3	1	1	2

Similarity to pottery: the paste inclusions (heavily weathered volcanic rock-based sand with monomineralic phenocrysts) without intrusive igeneous rocks are difficult to indicate the similarity with pottery. However, the aspect of having volcanic sand-inclusions is similar to Azuero (typical in Pr-32) pottery, although in the latter, sand inclusions are much fresher.

#4-5

Coarse fragments: There are 15% of very poorly sorted fragments of lithics (14%, 0.2-0.8 mm) and minerals (1%, 0.03-0.25 mm). The clayey sediment has very little variability in minerals and rock fragments. The clay is derived from rhyolite or volcanic ash turned clays. There are only quartz and iron oxide or hydroxide minerals and polycrystalline quartz or chert, volcanic glass, rhyolite, and tuff.
Clays: the clay is reddish brown in PPL

Inclusions:

Mineral/ lithic fragment	Micro-poly-crystalline quartz or chert (0.03-0.05 mm) (hematite stain)	Rhyolite (hypo-crystalline)	Quartz	Iron oxide/ hydroxide	Volcanic glass (heavily hematite stained) (0.05 mm, grain)	Intermediate to basic volcanic rock (very heavily hematite stained and weathered)
Size	0.3-0.9	0.2-1.2	0.03-0.6	0.1-0.15	0.6	0.5
Angularity	Rd	Rd	Ang	Rd	Rd	Rd
Shape	El-Eq, Anh	El-Eq, Anh	Eq-El	El	E1, Anh	Eq, Anh
Degree of weathering	2	2-3	2	3	3	3
Approx. amount	3	5	3	1	1	1

Mineral/ lithic fragment	Tuff (hematite stained, holohyaline)	Magnetite
Size	0.5-0.9	0.1
Angularity	Rd	Rd
Shape	Eq-El	Eq
Degree of weathering	3	2
Approx. amount	1	1

Similarity to pottery: There is no identifier of differences between Azuero and Cordillera because this sample is based on non-porphyritic volcanc rock and the sample contains no intrusive rock. However, this is similar to Cl1 sherd that has no pyroclastics nor monomineralic phenocryst inclusions.

#4-6

Coarse fragments: There are 10% of very poorly sorted fragments of lithics (9.5%, 0.1-0.7 mm) and minerals (0.5%, 0.1-0.6 mm). The major inclusions are felsic volcanic rocks (rhyolite). Major inclusions are rhyolite and rhyolite that include iron oxide/hydroxide. There are hardly any mineral that retains the identiable state because they turned into iron oxide/hydroxide except for one possible heavily weathered feldspar grain and micro magnetites.
Clays: The clayey sediments has reddish ochre color and hematite stains. Rocks and minerals included are hematite stained and weathered.

Inclusions:

Mineral/ lithic fragment	Rhyolite (holocryst alline) with iron oxide or hydoxide	Spherulitic rock with iron oxide/hydroxide	Rhyolite (hypocrystlline) (hematite stained)	Iron oxide/hydroxide (some have high interference color but very weathered to be identify the orignal mineral type)	Feldspar (weathered) (non-twining plagioclse?)
Size	0.3	0.2-0.7	0.3-0.7	0.1-0.15	0.6
Angularity	Rd	Ang	Rd	Rd	Ang
Shape	El	Eq, anh	El, Anh	Eq, Anh	El
Degree of weathering	3	2	4	3	3
Approx. amount	2	2	5	2	1

Mineral/ lithic fragment	Magnetite
Size	0.02
Angularity	Ang
Shape	Eq-El, Anh
Degree of weathering	2
Approx. amount	1

Similarity to pottery: The clay has heavily weathered felsic volcanic rock fragments that, it is difficult to suggest the pottery that is similar to this. There is no particular pottery similar to this but texturally, rhyolite and spherulitic textured volcanic rock with iron-oxide or hydroxide should be examined.

#5-3

Coarse fragments: There are 25% of very poorly sorted fragments of lithics (15%, 0.6-2.2 mm) and minerals (10%, 0.02-2.5 mm). Major inclusions are very weathered basic to intermediate volcanic rocks, intermediate to basic porphyritic volcanic rocks, and monomineralic phenocrysts. Perhaps clayey soil is produced from weathering of porphyritic volcanic rocks of Cordillera (pyroclastics zone).
Clays: burnt amber in PPL

Inclusions:

Mineral/ lithic fragment	Quartz	Plagioclase (monomineralic phenocryst of porphyritic volcanic rocks) (plag can include pyroxene and amphibole inclusions)	Intermediate to basic volcanic rock (very hematite stained matrix with possible feldspar laths in reflected light) with carse to very coarse (0.8-1.2 mm) phenocrysts (plag, augerine-augite?)	Amphibole	Intermediate to basic volcanic rock with heavy hematite stain	Pyroxene (basal sections, octagonal)
Size	0.02-1	0.6-2.5	2.2	0.5	0.6	0.2-0.4
Angularity	Ang-Rd	Ang	Ang	Ang	Rd	Ang
Shape	Eq-El	Eq	El, Anh	El-Eq	Eq	Eq
Degree of weathering	2	2	3	1-2	3	1
Approx. amount	3	3	4	2	4	2

Mineral/ lithic fragment	Magnetite	Tuff (holohyaline)	Iron oxide	Zoned feldspar
Size	0.05-0.2	0.15	0.1	0.5
Angularity	Ang	Rd	Rd	Ang
Shape	Eq-El, Anh	Eq	El	Eq
Degree of weathering	2	2	3	2
Approx. amount	2	2	2	1

Similarity to pottery: Cordilleran but those without monomneralic pyroclastic-derived phenocrysts--- the inclusions seem like they are from weathered volcanc rocks with phenocrysts. There is no intrusive rocks in this sediment.

#7-5

Coarse fragments: There are 3% of poorly sorted fragments of lithics (2.8%, 0.05-1.5 mm) and minerals (0.2%, 0.03-0.6 mm). Major inclusions are basic to intermediate heavily hematite stained volcanic rocks and tuff. Minor mineral inclusions are silt to medium sand sized quartz; iron oxide.
Clays: light brown with small amount of inclusions in PPL.

Inclusions:

Mineral/ lithic fragment	Quartz	Iron oxide/ hydroxide	Tuff	Rhyolite	Basic to intermediate volcanic rock (very hematite stained; very fine grained [0.02-0.07] minerals in reflected light)	Magnetite
Size	0.03-0.6	0.05-1.5	0.05-0.2	0.7	0.3-0.9	0.15
Angularity	Ang	Rd	Rd-Ang	Ang	Rd	Ang
Shape	Eq-El	Eq-El	Eq-El	El	Eq	Eq
Degree of weathering	1	3	2	1	3	2
Approx. amount	2	1	4	1	5	1

Mineral/ lithic fragment	Plagioclase	Zircon	Hematite	Amphibole
Size	0.4	0.08	0.35	0.2
Angularity	Ang	Ang	Ang	Ang
Shape	El, Anh	El, prismatic	El	Eq
Degree of weathering	1	1	3	1
Approx. amount	1	1	1	1

Similarity to pottery: There is no particular pottery that can be said that it is similar to this clay because there is no specific geological unit identifier in this clay.

#9-1

Coarse fragments: There are 50% of well sorted fragments of lithics (40%, 0.2-1.4 mm) and minerals (10%, 0.05-0.15 mm). The major incusions are primary clay with weathered holocrystalline (some hypocrystalline) volcanic rocks (felsic) and minerals are those derived from these rock fragments (quartz and iron oxide).
Clays: Reduced colored greyish brown clay.

Inclusions:

Mineral/ lithic fragment	Rhyolite (holocrystaline to hypocrystalline) (quartz, iron oxide)	Quartz	Iron oxide/hydroxide	Hematite
Size	0.2-0.4	0.05-0.1	0.1	0.5
Angularity	Rd	Rd	Rd	Rd
Shape	Eq, Anh	Eq	Eq-El	Eq, Anh
Degree of weathering	3	3	3	3
Approx. amount	4	5	3	1

Similarity to pottery: there is no particular sherd that is similar to this primary clay based on rhyolite with many quarz and iron oxide inclusions.

#9-3

Coarse fragments: There are 30% of well sorted fragments of lithics (25%, 0.15-7.5 mm) and minerals (5%, 0.1-0.4 mm). Rhyolite and tuff are the major inclusions in this clay.Very fine minerals/fragments of iron oxide or hydroxide and quartz are in large very weathered and hematite stained tuff/rhyolite and some non-hematite stained tuff/rhyolite. The clayey soil is heavily hematite stained.
Clays: reddish brown clay

Inclusions:

Mineral/ lithic fragment	Rhyolite (holocrystaline, 0.05 mm quarta grains)	Rhyolite (hpocrstlline)	Iron oxide/hydroxide	Tuff	Quartz	Hematite
Size	0.25	0.8	0.1-0.4	0.1-1	0.05-0.1	0.15
Angularity	Rd		Rd	Rd	Ang	Rd
Shape	Eq	El	Eq-El	Eq-El	Eq-El, Anh	Eq
Degree of weathering	3	3	3	3	3	3
Approx. amount	1	2	3	5	1	1

Similarity to pottery: this does not have a particular geological unit signature other than being volcanic ash-based clays.

#10-15

Coarse fragments: There are 2% of poorly sorted fragments of lithics (1.5%, 0.25-0.8 mm) and minerals (0.5%, 0.1-0.5 mm). Major inclusions are tuff (holohyaline) and rhyolite. Some of these felsic volcanic rocks are hematite stained. There are small amount of monomineralic quartz, hematite, and feldspar, and iron oxide/hydroxide. There are one or two epidote and biotite fragments.
Clays: Amber colored in PPL. The clayey paste has hematite stains.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagioclase	Tuff (holohyaline)	Epidote	Hemaite	Biotite
Size	0.1-0.5	0.3	0.1-0.8	0.1	0.15-0.3	0.15
Angularity	Ang	Ang	Ang, Rd	Rd	Rd	Rd
Shape	Eq-El, Anh	Eq	Eq-El	El	Eq-El, Emb, Sbh	El
Degree of weathering	1-2	1	2	2	3	2
Approx. amount	2	1	5	1	3	1

Mineral/ lithic fragment	Rhyolite (very hematite stained)	Rhyolite (hypocrystalline)	Feldspar (weathered with possible	Iron oxide/hydroxide
Size	0.2	0.1-0.3	0.35	0.05-0.4
Angularity	Rd	Rd	An	Rd
Shape	Eq	Eq-El	El	Eq-El
Degree of weathering	3	2	3	3
Approx. amount	1	3	1	2

Similarity to pottery: Volcanic-ash-turned clay. This could produce Cordilleran clays.

#10-16

Coarse fragments: There are 10% of poorly sorted fragments of lithics (6%, 0.3-0.8 mm) and minerals (4%, 0.05-0.6 mm). Major inclusions are weathered monomineralic phenocrysts from pyroclastics, iron oxide/hydroxide, and holohyaline tuff well merged with clayey soil. The clayey sediments if porphyritic tuff –based.
Clays: ochre-colored clayey sediment (PPL) with partial hematite stains

Inclusions:

Mineral/ lithic frag-ment	Tuff	Plagioclase and non twinning feldspars	Spheru-lite	Iron ox-ide/hy-drxide	Hematite	Rhyolite (holohyaline)
Size	0.2-0.6	0.08-0.7	0.1	1	0.1-0.2	0.5
Angularity	Rd	Ang	Rd	Rd	Ang	Rd
Shape	Eq-El, Anh	Eq-El, Sbh, Anh	Eq	Anh	Eq-El, Sbh, Emb	Anh
Degree of weathering	2-3	2-3	2	3	3	3
Approx. amount	5	4	1	3	1	1

Similarity to pottery: The pyroclastics inclusions (with monomineralic phenocrysts) are similar to *Cordilleran pottery* derived from materials from Quaternry volcanic eruption but the phenocrysts are weatherd unlike some fresh monomineralic phenocrysts observed from Coedilleran pottery. This may indicate that volcanish ash (with monomineralic phenocrysts) was added to pottery.

#10-18

Coarse fragments: There are 25% of poorly sorted fragments of lithics (10%, mm) and minerals (15%, 0.05-1 mm). Clayey soil is derived from pyroclastics with rhyolite (heavily hematite stained) and weathered to very weathered monomineralic phenocrysts (quartz, plagioclase, zoned feldspar). Plagiolase includes euhedral forms, indicating that they are phenocrysts. There could be a minor amount of alkali-feldspar.
Clays: Reddish amber in PPL

Inclusions:

Mineral/ lithic fragment	Quartz	Alkali feldspar?	Plagioclase	Rhyolite	Rhyolite (heavily hematite stained,)	Hematite
Size	0.03-0.3	0.5	Eq-	0.15-0.3	0.15-0.6	0.05-0.4
Angularity	Ang	Ang	Ang	Rd	Rd	Rd
Shape	Eq-El	Eq, Sbh	Eq-El, Euh, Sbh	Eq	Eq, Anh	Eq-El, Anh
Degree of weathering	2	3	2-3	2	3	3
Approx. amount	3	2	3	2	5	2

Mineral/ lithic fragment	Zoned fledpsar	Porphyritic rhyolite (matrix hematite stained; feldspar weathered))		
Size	0.6	0.6		
Angularity	Ang	Rd		
Shape	Eq, Sbh	El, Anh		
Degree of weathering	2	3		
Approx. amount	1	1		

Similarity to pottery: Monomineralic pyroclastic phenocrysts and rhyolite indicate that they are similar to Cordilleran type pottery. However, this clayey sediment has more weathered phenocrysts, which may suggest that pyroclastic sand was added as inclusions to pottery paste.

#10-20 [SAND]

Sand: hypocrystalline and holocrystalline rhyolites are the major constituecy of the sand with some phenocryst sized plagioclase, and amphibole)

Sand grain descriptions:

Mineral/ lithic fragment	Plagioclase	Rhyolite (holo-hyailine)	Rhyolite (may or may not be hematite stained; hypocrystal-line, 0.05-0.1 mm grain)	Amphibole (Hornblende)	Porphyritic intermediate to basic volcanic rock (very hematite stained) with fresh amphibole pheocryst (0.9 mm)	Volcanic chert (microcrystalline, hematite stained)
Size	0.2-0.4	0.6-2.1	0.3-0.9	0.4-0.9	1.1	0.8
Angularity	Ang	Ang	Rd	Ang	Ang	Rd
Shape	Eq-El	Eq, Anh	Eq	Eq-El, Euh	Eq, Anh	Eq-El
Degree of weathering	1-2	2	2	1	3	1-2
Approx. amount	2	3	5	2	1	3

Mineral/ lithic fragment	Alkali-fedlspar?	Hematite	Rhyolite with phenocrysts (biotite, hematite 0.3-0.8 mm)	Iron oxide/ hydroxide	Quartz	Biotite (aggregate of laths)
Size	0.3-0.7	0.2-1.6	1	0.9	0.3-0.5	0.6
Angularity	Ang	Rd-Ang	Rd	Rd	Ang	Ang
Shape	Eq	Eq-El, Anh	Eq	Eq	Eq	Eq
Degree of weathering	2	3	3	3	1	3
Approx. amount	1	2	1	3	2	1

Mineral/ lithic fragment	Polycrystalline quartz-like rhyotlite (grin 0.05 mm; there is a fragment with zircon inclusion + magnetite)
Size	0.8
Angularity	Ang
Shape	Eq
Degree of weathering	3
Approx. amount	2

Similarity to pottery: Similar to the pyroclastic inclusions and monomineralic phenocrysts but the amount of volcanic rock fragments are too high for some Cordilleran pottery that have mainly monominralic pyroclastic-derived phenocrysts

MUÑOZ 3

Coarse fragments: There are 20% of poorly sorted fragments of lithics (3%, 0.3-0.6mm) and minerals (17%, 0.03-1.6 mm). Major inclusions are monomineralic phenocrysts of porphyritic pyrolastics in or derived from vitrous rhyolite becoming clay.
Clays: Vitreous rhyolite texture (with phenocrysts) extist alternatingly with birefringent clay in XPL. In PPL, the clay has alternatingly reddish burnt amber (oxidized) and lighter greyish amber.

Inclusions:

Mineral/ lithic fragment	Quartz	Volcanic quartz	Amphibole	Plagioclase	Zoned feldspar	Iron oxide/hydroxide
Size	0.03-1.6	0.1-0.7	0.1-0.25	0.15-0.5	0.6	0.25-0.3
Angularity	Ang	Rd	Ang	Ang	Ang	Rd
Shape	Eq-El	El	El-Eq	Eq	Eq	Eq-El, Anh
Degree of weathering	1	1	2	2	2	3
Approx. amount	4	1	1	3	1	2

Mineral/ lithic fragment	Hematite	Zircon	Magnetite (including ones with ilemenite laths)	Alkali-fedlspar	Rhyolite (holocrystalline; 0.05 mm grain)	Rhyolite (hypocrystalline)
Size	0.7	0.15	0.05-0.3	0.7	0.15	0.7
Angularity	Rd	Rd	Ang	Ang	Rd	Rd
Shape	Eq	El	El-Eq, Anh	Eq-El	Eq	El
Degree of weathering	3	1	1	2	3	2
Approx. amount	3	1	2	2	1	2

Mineral/ lithic fragment	Rhyolite (holohyaline)			
Size	Matrix alteraating with clay, anhedral			
Angularity	--			
Shape	Anh			
Degree of weathering	2-3			
Approx. amount	5			

Similarity to pottery: Pyroclastics with monomineralic phenocryts sugget they are similar to the Cordilleran pottery; however, phenocrysts are not fresh, which may indicate that volcanic sand was added to Cordilleran pottery with fresh phenocrysts.

CABU 1

Coarse fragments: There are 50% of poorly sorted fragments of lithics (20%, 0.2-1.2 mm) and minerals (30%, 0.03-1.2mm). Major inclusions are pyroclastics-derived monomineralic phenocrysts and the matrix rhyolitic volcanic rocks becoming clays.
Clays: Greyish amber volcanic rock-based matrix and alternating hematite stained clay in PPL. In XPL, some parts of clayey sediment is birefringent.

Inclusions:

Mineral/ lithic fragment	Quartz	Plagioclase	Iron oxide/ hydroxide	Zoned feldspar (with or without apatie laths)	Rhyolite (hyocrystalline)	Rhyolite (holocrystalline)
Size	0.03-1.2	0.1-0.35	0.03-0.1	0.3-0.9	0.4-1.2	0.1
Angularity	Ang	Ang	Rd	Ang	Rd	Ang
Shape	Eq-El	Eq-El	Eq-El	El, Sbh	Anh	Anh
Degree of weathering	1-2	2-3	3	2	2-3	2
Approx. amount	4	3	2	2	5	2

Mineral/ lithic fragment	Intermediate to basic volcanic rock (heavily hematite stained and weathered)	Zircom	Rhyolite (hevily hematite stained)	Magnetite	Biotite	Amphibole
Size	0.3	0.05	0.7	0.03-0.35	0.2	0.08-0.5
Angularity	Rd	Ang	Rd	Ang	Ang	Ang
Shape	Anh	Emb?	Eq	El, Sbh, Anh, Emb	Anh	Eq-el
Degree of weathering	3	1	3	1	3	1-3
Approx. amount	2	1	1	1	1	2

Mineral/ lithic fragment	Epidote			
Size	0.2			
Angularity	Rd			
Shape	Anh			
Degree of weathering	3			
Approx. amount	1			

Similarity to pottery: This clayey sediment sample is very similar to Cordilleran pottery with pyroclastics and their monomineralic phenocrysts. However, feldspar phenocrysts in this clayey sediments sample are more weathered and the boundary with clays is blurry. Also, the amount of volcanic fragments are much higher than some Cordilleran pottery with scarce volcanic rock fragments.

LIMON 1

Coarse fragments: There are 25% (difficult to determine because clays sedimet and volcanic rock boundary is blurry) of very poorly sorted fragments of lithics (20%, 0.15-5 mm) and minerals (5%, 0.1-0.7 mm). Major inclusions are rhyolitic rock-based clay. There are scarce amount of quarz, iron oxide/hydroxide inclusions, hematite, and amphiboles but mostly grains are heavily weathered losing original form and becoming part of the clay matrix. This volcanic-rock-based clay does seem to have very small amount of phenocrysts but is different from the pyroclastics with monomineralic phenocrysts found in the Pacific Cordillera. The clay has heavily hematite stained fragments of felsic volcanic rocks.
Clays: reddish burnt amber in PPL, heavily hematite stained dark red colored in XPL, non-birefringent at this stage.

Inclusions:

Mineral/ lithic fragment	Rhyolite (hypocrystalline)	Felsic volcanic rock (heavily hematite stained, with or without magnetite, iron oxide/hydroxide phenocryst)	Iron oxide/ hydroxide	Quartz	Hematite	Amphibole
Size	0.15-0.8	5	0.1-0.7	0.4	0.1	0.3
Angularity	Ang-Rd	Rd	Rd	Ang	Ang	Rd
Shape	Eq, Anh	Anh	Eq-El	Anh	Eq	El
Degree of weathering	3	3	3	3	3	3
Approx. amount	5	5	5	1	1	1

Mineral/ lithic fragment	Polycrystalline quartz (grain 0.1 mm)
Size	0.5
Angularity	Ang
Shape	El
Degree of weathering	2
Approx. amount	1

Similarity to pottery: There is no particular similarity to pottery or this clayey sediment can be the matrix paste for pottery if sand temper is to be mixed into this. This sample is different from the Cordilleran pyroclastics with monoineralic phenocrysts.

LP8-7

Coarse fragments: There are 20% of moderately sorted fragments of lithics (5%,0.2 -1.2 mm) and minerals (15%, 0.05–0.3 mm). Volcanic rocks, mainly rhyolite, are the base for the clayey sediment although the sediment also seems to contain small amount of extremely weathered intermediate to basic volcanic rock fragments. Mineral inclusions are all extremely weathered (e.g. altered to iron oxides/hydroxides); even quartz fragments end to be cracked, fragmented, and without the original forms. Magetites have altered to hematites.Some rhyolitic rocks seem to have been originally porphyritic retaining quartz phenocrysts.
Clays: oxidized and the color is reddish brown in PPL.

Inclusions:

Mineral/ lithic fragment	Quartz	Rhyolite	Iron oxide/ hydroxide	Rhyolite (hematite stained; holohyaline)	Intermediate to basic volcanic rock (0.08 mm grain) (can be alternating with hypocrystlline texture)	Hematite
Size	0.05-0.6	0.05-0.5	0.08-0.3	0.3-1.7	0.5	0.05-0.4
Angularity	Ang-Rd	Rd	Rd	Ang, Rd	Rd	Rd
Shape	Anh	Eq-El, Anh	Anh	El-Eq, Anh	Eq, Anh	El, Anh
Degree of weathering	2	2-3	3	3	3	3
Approx. amount	3	5	3	5	2	1

Similarity to pottery: can be the Cordilleran pottery matrix because the clayey sediment has volcanic rock-based (or porphyritic volcanic) origin; however, there is no fresh pyroclastics with monomineralic phenocrysts found in the typical Coridilleran pottery type.

SAN JUAN 1

Coarse fragments: There are 35% of coarse fragments of lithics (20%, 0.3-0.9 mm) and minerals (15%, 0.05–0.6 mm). Major inclusion sin this sherd are holohyaline rhyolite and lesser amount of intermediate t basic volcanic rocks with heavy hematite staines. Minerals and rocks fragments are extremely weathered that except for a quartz fragment, it is difficult to determine the original forms.
Clays: Burnt amber alternating with light greish amber in PPL. The clay is heavily hematite stained in XPL.

Inclusions:

Mineral/ lithic fragment	Rhyolite (holocrystalline; 0.05-0.1 mm grain)	Intermediate to basic volcanic rocks (heavily hematite stained; can have some glassy groundmass)	Iron oxide/ hydroxide	Hematite (and magnetite with hematite laths)	Alteromorph (alumino-silicate)	Quartz
Size	0.8	0.9	0.05-0.3	0.05-0.5	0.15	0.6
Angularity	Rd	Rd	Rd	Rd, Ang	Rd	Ang
Shape	El	El, Anh	Eq-El, Anh	Eq, Anh	Eq	El
Degree of weathering	2	3	3	3	3	1-2
Approx. amount	3	3	2	3	1	2

Mineral/ lithic fragment	Rhyolite (holohyaline; can have quartz phenocryst)	Polycrystalline quartz (0.05 m)	Ziron	Altered feldspar (?)
Size	0.3-0.6	0.4	0.05	0.3
Angularity	Rd	Rd	Ang	
Shape	Anh	Eq	El	
Degree of weathering	3	3	2	
Approx. amount	5	1	1	

Similarity to pottery: This clay type (rhyolites and intermediate to basic volcanic rocks) can be the matrix for the Cordilleran pottery clays but lacks the fresh, pyroclastics-deried monomineralic phenocrysts included in pottery.

EV-15 [SAND]

Coarse fragments: There are coarse fragments of lithics (0.25-2.6 mm) and minerals (0.15–2 mm). Rock and mineral ratios are about 1:1. Major inclusions are volcanic fresh porphyritic rock fragments (rhyolite, and dacite) and monomineralic phenocrysts that are plagioclase, zoned plagioclase (including euhedral ones), quartz and volcanic quartz, derived from pyroclastics.

Sand Inclusions:

Mineral/ lithic fragment	Plagioclase	Zoned plagioclase	Quartz	Vocanic quartz	Hornblende	Magnetite
Size	0.6-1.6	0.3-1.5	0.25-1	0.5-1.7	0.25-1.1	0.05-0.8
Angularity	Ang	Ang	Ang	Rd	Ang	Ang
Shape	Eq, Sbh	Eq, Sbh, Euh	Eq-El, Anh	Eq	Eq-El, Dmd	Eq, Anh
Degree of weathering	1	1	1	1	1	1
Approx. amount	4	4	2	2	2	1

Mineral/ lithic fragment	Biotite	Tuff	Rhyolite	Dacite	Epidote	Micro-polycrystlline biotite
Size	0.3	0.4-1.2	0.6	0.8-2.1	0.2	0.8
Angularity	Rd	Rd	Rd	Rd	Ang	Ang
Shape	El	El	Eq	El	Eq	Eq
Degree of weathering	2	1	2	1-2 (phenocrysts are fresh but matrix can be more weathered)	1	2
Approx. amount	1	2	3	4	1	1

Similarity to pottery: Similar to Cordilleran pottery that is found in Ag13, with fresh monnomneralic phenocrsyts from pyroclastics and volcanic rocks. The freshness of phenocrysts are exactly the typical Cordilleran pottery from the Pacific foothills pottery.

EV-16 [SAND]

Coarse fragments: There are coarse fragments of lithics (0.3-1 mm) and minerals (0.1–1.2 mm). The ratio of rocks and minerals are 3:2. The rock fragments are somewhat differet from EV-15 because they are mainly rhyolite and lesser amount of tuff and small number of basic volcanic rock fragments. Pyroclastic monomineralic phenocrysts are existent.

Sand Inclusions:

Mineral/ lithic fragment	Rhyolite (hypocrystalline)	Plagioclase	Quartz	Tuff	Zone plagioclase	Amphibole (can have double twinning)
Size	0.3-0.9	0.3-1.2	0.1-1	0.7	0.3-1	0.05-0.7
Angularity	Ang-Rd	Ang	Ang	Rd	Eq	Ang
Shape	El, Anh	Eq	Eq-El	Eq	Sbh	Eq-El
Degree of weathering	2	1	1	1	1	1
Approx. amount	4	4	2	1	3	2

Mineral/ lithic fragment	Iron oxide	Magnetite	Andesite/basalt	Polycrystaline quartz (0.05 mm grain)	Dacite
Size	0.4	0.15-0.5	0.5	0.6	0.7-1.1
Angularity	Rd	Rd	Rd	Rd	Ang
Shape	El, Anh	Eq	El	Eq, Anh	El
Degree of weathering	3	1	2	1	1
Approx. amount	1	2	1	1	2

Similarity to pottery: Cordilleran type pottery with fresh monomineralic pyroclastic phenocrysts

EV-22 [SAND]

Coarse fragments: There are coarse fragments of lithics (0.6-2.2 mm) and minerals (0.1–1.7 mm). The ratios of lithic to minerals are about 1:1. Rocks fragments are mainly porphyritic hypocrystalline rhyolite and lesser amount of porphyritic tuff and few porphritic andesite. Rock framgments are the parental materials for the fresh monomineralic phenocrysts in ths pyroclastics sand.

Sand Inclusions:

Mineral/ lithic fragment	Plagioclase	Quartz	Amphibole	Zoned plagioclase	Andesite (porphyritic)	Tuff (holohyalie; porphyritic)
Size	0.3-1.6	1-2.3	0.3-1.2	0.3-2.5	3.5	1.5
Angularity	Ang	Ang	Ang	Ang	Rd	Rd
Shape	Eq-El	Eq-El, Sbh	Eq, El, Euh	Eq, Sbh, Euh	El	Eq
Degree of weathering	1	1	1	1	2	2
Approx. amount	3	3	2	4	1	1

Mineral/ lithic fragment	Rhyolite (hypcrystalline; porphyritic)	Magnetite
Size	0.8-1	0.05-0.6
Angularity	Rd	Rd
Shape	El	Eq
Degree of weathering	3	2
Approx. amount	4	1

Similarity to pottery: Cordilleran pottery has the constituency of this type of pyroclastics volcanic sand. Clays from Cl1 pottery, for example, tends to have less of the matrix volcanic rocks but that in Ag13 tends to be similar to this sand inclusion.

MUÑOZ 1

Coarse fragments: There are 40% of coarse fragments of lithics (10%, 03-1 mm) and minerals (30%, 0.05–1.5 mm). Major inclusions are pyroclastics with monomineralic phenocrysts of plagioclase, quartz, zoned plagioclase, and lesser amount of amphibole and magnetite in addition to rhyolitic rock merging with the matrix clayey sediment or existing as an independent fragment.
Clays: The clay is reddish color in PPL

Inclusions:

Mineral/ lithic fragment	Quartz	Zoned feldspar	Rhyolite (hypocrystal line to holohyaline)	Amphibole	Volcanic quartz	Intermedite to basic volcanic rock (heavily hematite stained)
Size	0.03-1.6	0.15-1.2	0.2-1	0.2-0.5	0.1-0.8	1
Angularity	Ang	Ang	Rd	Ang	Rd	Rd
Shape	Eq-El	Eq-El, Subh	Eq-El	Eq-El	Eq-El	El, Eq
Degree of weathering	1	1	1-2	1-2	1	3
Approx. amount	3	3	3	2	1	2

Mineral/ lithic fragment	Magnetite	Hematite (can be laths in growing in magnetite)	Plagioclse	Tuff (heavily hematite stained)	Iron oxide/hydroxide
Size	0.1-0.5	0.1-0.15	0.2-0.8	0.25-0.5	0.1-0.3
Angularity	Rd-Ang	Ang	Ang	Rd	Rd
Shape	Eq, Sbh, Emb	Sbh	Eq-El	Eq	Eq
Degree of weathering	1	3	1	3	2-3
Approx. amount	2	1	3	1	2

Similarity to pottery: It is similar to the Cordilleran type pottery with monominerlic phenocryts from the pyroclastic inclusions.

QUIROS

Coarse fragments: There are 50% of coarse fragments of lithics (40%, 0.15-2.5 mm) and minerals (10%, 0.7–1.5 mm). Major inclusions are felsic volcanic rocks and their fresh phenocrysts. Monomineralic phenocrysts derived from the rock are reltively minor (if the observation that clayey soil portion is low and most inclusions are perhaps rocks fragmets in this section).
Clays: The clayey sediments is greyish brown in PPL. Clayey soil in the matrix is similar to the abundant volcanic rock fragment and it is difficult to distinguish the matrix and the inclusions. The clayey sediment with abundant rock framgnets does not look matured.

Inclusions:

Mineral/ lithic fragment	Iron oxide.hydroxide	Amphibole	Quartz (can be part of the volcanic rocks)	Plagioclase (can be part of the volcanic rocks)	Zoned feldspar	Dacite (with phenocrysts of plagioclase, amphibole and quartz)
Size	0.2-0.7	1.2	0.1-0.8	0.2-1.3	0.6-0.8	1.5-2.2
Angularity	Rd	Ang	Ang	Ang	Ang	Ang
Shape	Eq-El, Anh	Eq	Eq	Eq-El, Sbh	Eq, Sbh	Eq, Anh
Degree of weathering	3	1	1	1	1	1
Approx. amount	1	2	3	4	3	3

Mineral/ lithic fragment	Tuff (with plagioclse and amphibole phenocrysts)	Rhyolite		
Size	3.6	0.3-2.7		
Angularity	Ang	Ang-Rd		
Shape	El	Eq-El		
Degree of weathering	1	1		
Approx. amount	2	3		

Similarity to pottery: This clayey soil is similar to Cordilleran pottery in terms of monomineralic phenocrysts from volcanic rocks but the latter has an excessive amount of volcanic rocks compared to the clay.

HE5-DO2

Coarse fragments: 35% coarse fragments of lithics (25%, 0.3-4.5 mm) and single minerals (10%, 0.03-0.6 mm). Major inclusions are felsic volcanic rocks and volcanic rocks that are heavily hematite stained (which could originally have been intermediate to mafic rocks which minerals other than quartz have been weathered losing forms, as well as fine to coarse sized quartz and hematites and iron oxides. There are minor mount of magnetite and epdiote. A granitic or quartz aggregate fragment is included in one of the hematite stained rhyolite. Microcrystalline rhyolite can have heavy hematite stain may have originally been mafic rock fragment. There is another porphyritic hevily weathered and hematite stained, vitreous volcanic rock with a quartz phenocrysts. This fired clay up to 750°C and soaked 15 minutes, have weathered quartz rich volcanic rock and monomineralic quartz. The sherd contain mostly weathered fragmets and resistant minerals. It does not look like Monagrillo sherds with granitic rock-based or fresh volcanic rock fragment-rich clays.

Mineral/ lithic fragment	Quartz	Alkali-feldspar (possible)	Rhyolite (crypto-crystalline (0.05-0.15, heavily hematite stained)	Microcrystaline biotite aggregate (possibly from vein, 0.02 mm grain size)	Rhyolite (holocrys-talline, 0.05-0.15 mm)	Rhyolite (micro-crystalline; 0.02 mm; hematite stain)
Size	0.03-0.6	0.1	0.9-4.5	0.8	2.2	0.7
Angularity	Ang-Sbang	Ang	Rd	Rd	Rd	Rd
Shape	Eq-El	El	Eq-El, Anh	El	El	Eq, Anh
Degree of weathering	2	1	3	2	3	3
Approx. amount	4	1	5	1	2	2

Mineral/ lithic fragment	Iron oxide	Epidote	Magnetite	Volcanic rock (vitreous, heavily hematite stined, with a quartz phenocryst, 0.4 mm)	Hematite
Size	0.05	0.15	0.02-0.15	1	0.07-0.15
Angularity	Rd	Rd	Sbang	Rd	Rd
Shape	Eq	Eq	Eq-El	El, Anh	El
Degree of weathering	3	2	2	3	Eq
Approx. amount	3	1	1	1	3

HE5-SH1

Coarse fragments: 40% coarse fragments of lithics (5%, 0.2-1.2 mm) and single minerals (20%, 0.03-1.4 mm); there are clays globs (10% 0.2-04 mm). Major inclusions are quartz, ironoxides, and volcanic rock fragments and weathered rocks and globs of clays. Since this clay sample was not processed, needed, or mixed well and made into thin sections, it has globs of clays (with finer and scarcer inclusions than inside the clay slab. The absence of this pronounced clay glob existence in pottery means that potters were careful about homogenizing, mixing, neading clays during their preparation.
Secondary calcite is forming outside the edges of the clay slab indicating that it may have formed during the firing process. A couple of pieces of shell (calcium carbonate) are outside the clay seeming to be separated from the clay during firing.
The characteristic of clay rich iron oxide inclusions indicate a very weathered state. However, there are small numbers of fresh plagioclase mixed into this clay, perhaps because this sample includes sediment derived from Parita River for being located right by it.

Mineral/ lithic fragment	Quartz	Hematite (including hematite laths crossing and having feldspar growth in between)	Iron oxide	Volcanic chert	Trachyte (with hematite stain)	Clay glob (with small number of fine quartz, magnetite, iron oxide; amphibole, plagioclase,alkali-feldspars and quartz)
Size	0.03-1.4	0.2	0.15-0.4	0.2-0.4	0.2	0.4-1.7
Angularity	Sbang	Rd	Rd	Rd	Rd	Rd
Shape	Eq-El		Eq-El	Eq-El	El	Eq-El
Degree of weathering	3	3	3	2	3	3
Approx. amount	4	2	4	2	2	4

Mineral/ lithic frag-ment	Polychrys-talline quartz with epidote (0.03-0.5)	Am-phi-bole	Iron oxide glob (with heavy hematite stainecontaining pheno-crysts)	Rhyolite (hypocrys-talline) with polycrystalline quartz (0.03)	Epi-dote	Rhyolite (hypo-crystalline)	Piso-litic baux-ite	Mag-netite
Size	0.35-0.5	0.2	1.2	0.25	0.1-0.15	0.5	0.07	0.04-0.25
Angularity	Rd	Ang	Rd	Sbang	Ang	Rd	Rd	Rd-Ang
Shape	Eq	El	El	Eq	Eq	Eq	Eq	Eq-El
Degree of weathering	2	2	3	2	2	2	3	2-3
Approx. amount	2	1	1	1	1	1	1	2

Mineral/ lithic fragment	Plagioclase	Alkali-feldspar (possible)	Rhyolite (holohyaline)	Crystobalite	Intermediate to basic volcanic rock (heavily hematite stained)	Biotite
Size	0.1-0.3	0.2	0.25-0.8	0.25	0.4	0.12-0.22
Angularity	Ang	Ang	Sbang	Sbang	Rd	Rd
Shape	Eq-El	El	El	Eq	Eq	El
Degree of weathering	1-2	2	2	1	3	3
Approx. amount	1	1	3	1	1	1

CL-TP-3

Coarse fragments: There are 10% coarse fragments of lithics (0.5%, 1-1.3 mm) and minerals (9.5%, 0.1-.5 mm). Major inclusions are silt sized weathered biotite and coarse fragments of weathered biotites and magnetites. However, the amount of inclusions are low. The amount of quartz is low in this clayey soil. Some rock fragments are very weathered biotite aggregates with volcanic glass and rhyolites. This clay is similar to the sherd: CL4-F39.

Mineral/ lithic fragment	Biotite	Iron oxide/hydroxide	Magnetite and magnetite with laths of hematite	Hematite	Quartz	Rhyollite (very weathered)	Biotite aggregates with volcanic glass (heavily weathered)
Size	0.05-1	0.3	0.02-0.4	0.03-1.7	0.03-0.15	1.1-1.3	1.5
Angularity	Rd	Rd	Rd	Rd	Ang	Rd	Rd
Shape	Eq-El	Eq-el	Eq-El	Eq	Eq	Eq-El	El, Anh
Degree of weathering	2-3	3	3	3	2	3	3
Approx. amount	5	3	3	2	1	2	2

CL-B-6

Coarse fragments: There are 25% coarse fragments of lithics (15%, 0.15-3.5 mm) and minerals (10%, 0.03-1 mm. Major inclusions are holocrystalline to hypocrystlline rhyolites and monimineralic silt to very fine sized quartz grains and hematite. There are also some volcanic cherts.

Mineral/ lithic fragment	Rhyolite (hypocrystalline)	Rhyolite (holocrystalline)	Quartz and iron oxide/hydroxide (heavily hematite stain)	Quartz aggregate (0.1-0.8 mm)	Quartz
Size	0.6-3.3	0.4-2.5	5	0.1-1.5	0.03-0.3
Angularity	Rd	Rd	Rd	Rd	Ang
Shape	Eq, Anh	Eq, Anh	Eq, Anh	Eq, Anh	Eq-El
Degree of weathering	3	2	3	3	2
Approx. amount	4	3	2	2	3

Mineral/ lithic fragment	Volcanic chert	Hematite	Iron Oxide/hydroxide
Size	0.2	0.1-1.7	0.15
Angularity	Rd	Ang	Rd
Shape	Eq	Eq	
Degree of weathering	2	3	3
Approx. amount	2	3	1

CL-B-7

Coarse fragments: There are 25% coarse fragments of lithics (10%, 0.2-4 mm) and minerals (15%, 0.08-0.4 mm). Major inclusions are very weathered rhyolite (containing very weathered feldspars) and other quartz-rihyolite and monomineralic very fine sized quartz grains as well as hematites . Inclusions are well merged with the matrix.

Mineral/ lithic fragment	Rhyolite (holocrystalline; hematite stained)	Rhyolite (hypocrystalline; can be heavily hematite stained)	Quartz	Iron oxide/hydroxide	Amphibole	Hematite
Size	0.05-4	0.4-2.2	0.02-0.3	0.03-0.15	0.15	0.2-0.4
Angularity	Subang	Rd	Ang	Rd	Ang	Rd
Shape	Eq-El; Anh	Eq	Eq-El	Eq	El	Eq
Degree of weathering	3	3	2	3	2	3
Approx. amount	3	2	4	2	1	3

Mineral/ lithic fragment	Quartz aggregate	Volcanic chert
Size	0.1-0.4	0.2
Angularity	Ang	Rd
Shape	El	Eq
Degree of weathering	1	2
Approx. amount	1	1

CL-TP-4

Coarse fragments: There are 40%, very poorly sorted coarse fragments of lithics (20%, 0.1-6 mm) and minerals (20%, 0.02-1mm). Major inclusions are hematite, quartz, and rhyolites.

Mineral/ lithic fragment	Hematite	Quartz	Iron oxide/hydroxide	Quartz aggregate (can be hemaite stained; 0.05-0.3 mm)	Rhyolite (holocrystalline)	Tuff
Size	0.03-1.8	0.05-2	0.1-0.7	0.2-0.8	0.25	1
Angularity	Ang	Ang	Ang	Ang	Rd	Rd
Shape	Eq-El	E1-El, Anh	Eq-El	Eq, Anh	Eq	Eq
Degree of weathering	3	1-2	3	1	2	3
Approx. amount	4	3	1	2	1	1

Appendix A.3. Results of provenance analysis by petrography, TOF-LA-ICP-MS, and P-XRF

Petrography: 1 is Azuero granitic rock-based inclusions; 2 is mixed igneous sand-based inclusions with or without intrusive rock inclusions; 3 is pyroclastics inclusions; LA-ICP-MS: 1 is Azuero origin clay matrix; 2 and 3 are El Valle and La Yeguada origin clay matrix; P-XRF: 1 is El Valle and La Yeguada type -clayey sediments and 2 is Azuero mixed igneous sand or intrusive rock based clayey soils; 14C is in uncaliberated BP.

Sample	Petrography	LA-ICP-MS	P-XRF	Provenance	Assoc. Uncalib. 14C BP
Cl1-2-F2	N/A	N/A	2	Az	a level above 4520±100
Cl1-2-F3	3	3	un	Crd	a level above 4520±100
Cl1-2-F9	3	N/A	1	Crd	a level above 4520±100
Cl1-2-F11	3	3	un	Crd	a level above 4520±100
Cl1-2-F13	3	un	un	Crd?	a level above 4520±100
Cl1-2-F17	3	3	1	Crd	a level above 4520±100
Cl1-2-F23	N/A	N/A	1	Crd	a level above 4520±100
Cl1-2-F29	N/A	N/A	un	Un	a level above 4520±100
Cl1-3-F11	3	3	un	Crd	4520±100
Cl1-3-F14	2 or 3	3	un	Crd?	4520±100
Cl1-3-F18	N/A	3	1	Crd	4520±100
Cl1-3-F19	N/A	Un	2	Az	4520±100
Cl1-3-f29	N/A	N/A	1	Crd	4520±100
Cl1-3-f46	N/A	N/A	1	Crd	4520±100
Cl1-3-f120	3	3	un	Crd	4520±100
Cl1-3-f122	3	Un	un	Crd?	4520±100
Cl1-3-f124	3	3	1	Crd	4520±100
Cl1-3-F129	N/A	N/A	1	Crd	4520±100
Cl1-3-f130	N/A	N/A	1	Crd	4520±100
Cl1-3-f133	N/A	N/A	un	Un	4520±100
Cl1-3-f137	N/A	1	1	Mix	4520±100
Cl1-4-f11	N/A	3	1	Crd	5180±100
Cl1-4-f15	N/A	N/A	1	Crd	5180±100
Cl1-4-F17	3	N/A	un	Crd	5180±100
Cl1-4-f32	N/A	N/A	un	Un	5180±100
Cl1-4-f35	3	3	1	Crd	5180±100
Cl1-4-F39	un (possible Cordillera)	N/A	1	Crd?	5180±100
Cl1-4-f44	3	3	1	Crd	5180±100
Cl1-4-F47	N/A	N/A	1	Crd	5180±100
Cl1-4-F48	3	N/A	un	Crd	5180±100
Cl1-4-f49	N/A	N/A	un	Un	5180±100
Cl1-4-f50	3	3	1	Crd	5180±100
Cl1-4-f56	N/A	3	1	Crd	5180±100
Cl1-4-F60	N/A	3	1	Crd	5180±100

Sample	Petrography	LA-ICP-MS	P-XRF	Provenance	Assoc. Uncalib. 14C BP
Cl1-4-f62	N/A	N/A	un	Un	5180±100
Cl1-4-f82	N/A	1	1	Mix	5180±100
Cl1-44-f2	N/A	3	1	Crd	two levels above 3770±80
Cl1-44-f8	3	3	1	Crd	two levels above 3770±80
Cl1-44-f10	3	3	1	Crd	two levels above 3770±80
Cl1-44-F17	N/A	3	N/A	Crd	two levels above 3770±80
Cl1-45-f1	N/A	N/A	un	Un	a level above 3770±80
Cl1-45-f2	3	3	1	Crd	a level above 3770±80
Cl1-45-f4	2 or 3	3	1	Crd?	a level above 3770±80
Cl1-45-f8	3	N/A	1	Crd	a level above 3770±80
Cl1-45-f10	N/A	3	1	Crd	a level above 3770±80
Cl1-45-f13	3	3	1	Crd	a level above 3770±80
Cl1-45-f16	3	3	1	Crd	a level above 3770±80
Cl1-45-f36	N/A	N/A	un	Un	a level above 3770±80
AG13-2-U1-F1	3	3	1	Crd	4250±100
Ag13-5-U1-f1	3	Un	2	Mix	4250±100
Ag13-6-u1-f1	2	1	2	Az	4250±100
Ag13-6-u1-f2	2 and 3	3	2	Mix	4250±100
Ag13-6-u1-f3	2	Un	2	Az	4250±100
Ag13-8-u1-f1	2	Un	2	Az	4250±100
Ag13-8-u1-f2	3	1	un	Mix	4250±100
Ag13-8-u1-f3	2	1	2	Az	4250±100
Ag13-9-u1-f1	2 or 3	1	un	Az/Mix	4250±100
Ag13-22-u2-f1	3	3	1	Crd	4250±100
Ag13-22-u2-f43	N/A	N/A	1	Crd	4250±100
Ag13-29-u3-f6	N/A	N/A	2	Az	4250±100
Ag13-29-U3-F14	N/A	N/A	1	Crd	4250±100
Ag13-30-u3-f3	N/A	3	1	Crd	4250±100
Ag13-31-u3-f8	N/A	3	2	Mix	4250±100
Ag13-32-u3-f1	2	1	2	Az	4250±100
Ag13-32-u3-f2	2	1	2	Az	4250±100
Ag13-32-u3-f3	3-	1	1	Mix	4250±100

Sample	Petrography	LA-ICP-MS	P-XRF	Provenance	Assoc. Uncalib. 14C BP
Ag13-32-u3-f4	N/A	N/A	2	Az	4250±100
Ag13-32-U3-F5	N/A	1	1	Mix	4250±100
Ag13-32-u3-f6	N/A	N/A	2	Az	4250±100
Ag13-32-u3-f7	N/A	N/A	2	Az	4250±100
Ag13-32-U3-F12	N/A	3	N/A	Crd	4250±100
Ag13-32-U3-F53	N/A	N/A	2	Az	4250±100
Ag13-32-u3-f55	N/A	N/A	1	Crd	4250±100
Ag13-32-U3-F56	N/A	N/A	un	Un	4250±100
Ag13-32-U3-F57	N/A	N/A	2	Az	4250±100
Ag13-32-U3-F58	N/A	N/A	Un	Un	4250±100
Ag13-32-U3-F60	N/A	N/A	Un	Un	4250±100
Ag13-32-U3-F61	N/A	N/A	1	Crd	4250±100
Ag13-33-u3-f4	N/A	3	2	Mix	4250±100
Ag13-33-u3-f5	N/A	3	2	Mix	4250±100
Ag13-33-U3-F10	N/A	N/A	2	Az	4250±100
Ag13-33-U3-F11	N/A	N/A	2	Az	4250±100
Ag13-33-U3-F12	N/A	N/A	Un	Un	4250±100
Ag13-34-u3-f1	3	Un	1	Crd	4250±100
Ag13-34-u3-f2	2	1	2	Az	4250±100
Ag13-34-u3-f4	N/A	3	2	Mix	4250±100
Ag13-34-u3-f6	N/A	3	2	Mix	4250±100
Ag13-34-u3-f7	N/A	Un	1	Crd	4250±100
Ag13-35-u3-f1	2	1	2	Az	4250±100
Ag13-35-u3-f2	2	Un	2	Az	4250±100
Ag13-39-u3-F6	N/A	Un	N/A	Un	4250±100
Ag13-109-U5-F2	N/A	N/A	Un	Un	4250±100
Ag13-109-u5-f4	N/A	N/A	1	Crd	4250±100
Ag13-110-U4-F2	N/A	N/A	2	Az	4250±100
Ag13-111-U5-F1	N/A	N/A	2	Az	4250±100
Ag13-111-U5-F2	N/A	N/A	Un	Un	4250±100
Ag13-113-U4-F2	N/A	N/A	2	Az	4250±100
Ag13-114-u4-f1	3	3	1	Crd	4250±100
Ag13-116-u4-f1	3	3	1	Crd	4250±100
Ag13-116-u4-f2	3	3	Un	Crd	4250±100
Pr32-C35-N9-1	2	1	2	Az	younger than 4010±100
Pr32-C35-N9-2	2	1	2	Az	younger than 4010±100
Pr32-C35-N9-3	2	1	2	Az	younger than 4010±100
Pr32-C35-N9-4	2	1	2	Az	younger than 4010±100

Sample	Petrography	LA-ICP-MS	P-XRF	Provenance	Assoc. Uncalib. 14C BP
Pr32-C35-N12-1	2	1	2	Az	4010±100
Pr32-C35-N12-2	2	1	2	Az	4010±100
Pr32-C35-N12-3	2	1	2	Az	4010±100
Pr32-C35-N12-4	2	1	2	Az	4010±100
Pr32-C35-N14-1	2	1	2	Az	older than 4010±100
Pr32-C35-N14-2	2	1	2	Az	older than 4010±100
Pr32_C35_N14_3	2	1	2	Az	older than 4010±100
Pr32-C35-N14-4	2	1	2	Az	older than 4010±100
Pr32-C35-N17-1	2	1	2	Az	older than 4010±100
Pr32-C35-N17-2	2	1	2	Az	older than 4010±100
Pr32-C35-N20-1	2	1	2	Az	older than 4010±100
Pr32-C35-N20-2	2	1	2	Az	older than 4010±100
Pr32-C35-N20-3	2	1	2	Az	older than 4010±100
Pr32-C35-N20-4	2	1	2	Az	older than 4010±100
Pr32-C35-N20-5	3	un	2	Mix	older than 4010±100
Pr32-C35-N22-1	2	1	2	Az	older than 4010±100
Pr32-1-1-F20	N/A	N/A	2	Az	3500±80
Pr32-1-1-f34	N/A	1	2	Az	3500±80
Pr32-1-2-f14	N/A	1	2	Az	3500±80
Pr32-1-3-F10	N/A	N/A	1	Cr	3500±80
Pr32-1-3-F16	N/A	N/A	2	Az	3500±80
Pr32-1-3-F32	N/A	N/A	2	Az	3500±80
Pr32-1-3-f135	N/A	1	2	Az	3500±80
Pr32-1-4-f16	N/A	1	2	Az	3500±80
Pr32-1-4-F77	N/A	N/A	1	Cr	3500±80
Pr32-1-5-f75	N/A	1	2	Az	3500±80
Pr32-1-6-f4	N/A	1	2	Az	3500±80
Pr32-1-8-f7	N/A	1	2	Az	3500±80
Pr32-1-9-f1	N/A	1	2	Az	3500±80
Pr32-1-9-F2	N/A	N/A	un	Az	3500±80
Pr32-1-10-f2	N/A	1	Un	Az	3500±80
Pr32-1-13-f4	N/A	1	2	Az	3500±80

Sample	Petrography	LA-ICP-MS	P-XRF	Provenance	Assoc. Uncalib. 14C BP
Pr32-1-14-f1	N/A	1	2	Az	3500±80
Pr32-1-15-f20	N/A	1	2	Az	3500±80
Pr32-1-15-F29	N/A	N/A	2	Az	3500±80
Pr32-1-15-F52	N/A	N/A	2	Az	3500±80
Pr32-1-16_1	2	1	2	Az	3500±80
Pr32-1-16-f17	N/A	1	2	Az	3500±80
Pr32-1-16-F24	N/A	N/A	2	Az	3500±80
Pr32-1-17-f14	N/A	1	2	Az	3500±80
Pr32-1-17-ext-f2	N/A	1	2	Az	3500±80
Pr32-1-19-f4	N/A	1	2	Az	3500±80
Pr32-1-19-F7	N/A	N/A	2	Az	3500±80
Pr32-1-19-F8	N/A	N/A	un	Az	3500±80
Pr32-1-20-f2	N/A	1	2	Az	3500±80
He5-60-F4	N/A	N/A	2	Az	a level above 3385±75
He5-60-f9	1	1	2	Az	a level above 3385±75
He5-60-f10	N/A	1	2	Az	a level above 3385±75
He5-60-f16	N/A	1	2	Az	a level above 3385±75
He5-60-f18	1	1	2	Az	a level above 3385±75
He5-60-f63	N/A	N/A	2	Az	a level above 3385±75
He5-61-f10	1	1	2	Az	a level above 3385±75
He5-61-f11	2	1	2	Az	a level above 3385±75
He5-61-F13	N/A	N/A	2	Az	a level above 3385±75
He5-61-F22	N/A	N/A	2	Az	a level above 3385±75
He5-61-f23	N/A	N/A	2	Az	a level above 3385±75
He5-61-f27	N/A	N/A	2	Az	a level above 3385±75
He5-62-f1	1	N/A	2	Az	3385±75
He5-62-f2	N/A	N/A	2	Az	3385±75
He5-62-f6	N/A	N/A	2	Az	3385±75
He5-62-f12	2	1	2	Az	3385±75
He5-62-f20	2	1	2	Az	3385±75
He5-62-f22	N/A	N/A	un	Un	3385±75
He5-63-f1	1	1	2	Az	later than 3385±75 younger than 3615±80

Sample	Petrography	LA-ICP-MS	P-XRF	Provenance	Assoc. Uncalib. 14C BP
He5-63-f2	2	1	Un	Az	later than 3385±75 younger than 3615±80
He5-63-f5	N/A	N/A	2	Az	later than 3385±75 younger than 3615±80
He5-64-f2	N/A	N/A	2	Az	later than 3385±75 younger than 3615±80
He5-64-3	1	1	2	Az	later than 3385±75 younger than 3615±80
He5-64-f4	1	1	2	Az	later than 3385±75 younger than 3615±80
He5-64-f5	N/A	N/A	2	Az	later than 3385±75 younger than 3615±80
He5-66-f1	2	1	2	Az	later than 3385±75 younger than 3615±80
He5-68-f1	1	N/A	2	Az	later than 3385±75 younger than 3615±80
He5-68-f4	3	Un	1	Crd	later than 3385±75 younger than 3615±80
He5-68-f6	1	1	2	Az	later than 3385±75 younger than 3615±80
He5-69-f2	N/A	N/A	2	Az	ca. 3615±80
He5-69-f3	1	N/A	2	Az	ca. 3615±80
He5-69-f5	N/A	N/A	Un	Un	ca. 3615±80
He5-69-f8	1	N/A	2	Az	ca. 3615±80
He5-69a-f2	N/A	N/A	2	Az	ca. 3615±80
He5-69a-f3	1	Un	2	Az	ca. 3615±80
He5-70-f1	1	Un	2	Az	older than 3615±80
He5-70-f2	1	N/A	N/A	Az	older than 3615±80
He5-76-f1	3	2	Un	Crd	older than 3615±80
Pr14-22-1	2	1	2	Az	2820±50-2640±60
Pr14-24-1	2	Un	2	Az	2820±50-2640±60
Pr14-25-1	2	Un	2	Az	2820±50-2640±60

Sample	Petrography	LA-ICP-MS	P-XRF	Provenance	Assoc. Uncalib. 14C BP
Lp8-34-2.01-1	3	Un	1	Crd	ca. 3410±40 to 3200±50
Lp8-37-2.01-1	3	N/A	1	Crd	ca. 3410±40 to 3200±50
Lp8-38-2.01-1	3	N/A	1	Crd	ca. 3410±40 to 3200±50
Lp8-38-2.01-2	3	3	1	Crd	ca. 3410±40 to 3200±50
Lp8-94-1.45-1-1	3	Un	1	Crd	ca. 3410±40 to 3200±50
Lp8-114-1.57-1-1	3	2	1	Crd	ca. 3410±40 to 3200±50
Lp8-114-1.57-1-2	3	Un	1	Crd	ca. 3410±40 to 3200±50
Lp8-120-135-1	3	Un	1	Crd	ca. 3410±40 to 3200±50
Lp8-122-1.35-1	3	2	1	Crd	ca. 3410±40 to 3200±50
Lp8-126-1.35-3-1	3	2	1	Crd	ca. 3410±40 to 3200±50
Lp8-135-1.47-1	3	2	1	Crd	ca. 3410±40 to 3200±50
Lp8-144-1.47-1	3	Un	1	Crd	ca. 3410±40 to 3200±50
Lp8-150-1.47-4-1	3	2	1	Crd	ca. 3410±40 to 3200±50
Lp8-154-1.47-4-1	3	Un	1	Crd	ca. 3410±40 to 3200±50
Lp8-164-1.59-2-1	3	N/A	1	Crd	ca. 3410±40 to 3200±50
Lp8-167-1.59-2-1	3	2	1	Crd	ca. 3410±40 to 3200±50
Lp8-170-1.59-2-1	3	3	1	Crd	ca. 3410±40 to 3200±50
Lp8-174-1.59-1	3	2	1	Crd	ca. 3410±40 to 3200±50
Lp8-176-1.59-2-1	3	3	1	Crd	ca. 3410±40 to 3200±50
Lp8-182-1.59-2-1	3	2	1	Crd	ca. 3410±40 to 3200±50
Lp134-32-166-f252	N/A	N/A	1	Crd	No 14C/Inciso
Lp134-56-6-f109	3	1	1	Mix	No 14C/Monagrillo
Lp134-59-f60	N/A	N/A	1	Crd	No 14C/Monagrillo
Lp134-71-f98	N/A	Un	1	Crd	No 14C/Monagrillo

Sample	Petrography	LA-ICP-MS	P-XRF	Provenance	Assoc. Uncalib. 14C BP
Lp134-71-162-f251	N/A	N/A	2	Az	No 14C/Inciso
Lp134-75-f198	N/A	N/A	1	Crd	No 14C/Monagrillo
Lp134-82-176-f246	3	N/A	1	Crd	No 14C/Inciso
Lp134-83-31-f102	N/A	2	1	Crd	No 14C/Monagrillo
Lp134-83-f168	3	N/A	1	Crd	No 14C/Monagrillo
Lp134-90-f2	N/A	N/A	2	Az	No 14C/Monagrillo
Lp134-90-151-f268	N/A	N/A	1	Crd	No 14C/Inciso
Lp134-140-24-f287	N/A	2	1	Crd	No 14C/Inciso
Lp134-148-30-f105	3	2	1	Crd	No 14C/Monagrillo
Lp134-148-156-f241	N/A	2	1	Crd	No 14C/Monagrillo
Lp134-150-14-f108	3	2	1	Crd	No 14C/Monagrillo
Lp134-150-16-F96	3	Un	2	Mix	No 14C/Monagrillo
Lp134-150-f63	N/A	N/A	2	Az	No 14C/Monagrillo
Lp134-150-150-f103	3	2	1	Crd	No 14C/Monagrillo
Lp134-151-20-f278	3	N/A	1	Crd	No 14C/Inciso
Lp134-151-21-f110	N/A	2	1	Crd	No 14C/Monagrillo
Lp134-151-f165	3	N/A	1	Crd	No 14C/Monagrillo
Lp134-151-178-f247	N/A	N/A	2	Az	No 14C/Inciso
Lp134-152-f193	N/A	N/A	1	Crd	No 14C/Monagrillo
Lp134-161-125-f243	3	Un	1	Crd	No 14C/Inciso
Lp134-161-f1	3	N/A	1	Crd	No 14C/Monagrillo
Lp134-161-f91	3	2	1	Crd	No 14C/Monagrillo
Lp134-170-25-f106	N/A	2	1	Crd	No 14C/Monagrillo
Lp134-182-35-f89	N/A	N/A	2	Az	No 14C/Monagrillo

Sample	Petrography	LA-ICP-MS	P-XRF	Provenance	Assoc. Uncalib. 14C BP
Lp134-183-131-f250	N/A	N/A	2	Az	No 14C/Inciso
Lp134-195-26-f236	3	2	1	Crd	No 14C/Monagrillo
Lp134-199-19-f92	3	Un	1	Crd	No 14C/Monagrillo
Lp134-202-218-f107	3	2	1	Crd	No 14C/Monagrillo
Lp134-209-f208	N/A	N/A	1	Crd	No 14C/Monagrillo
Lp134-224-f4	N/A	N/A	1	Crd	No 14C/Monagrillo
Lp134-225-175-f256	N/A	N/A	un	Un	No 14C/Inciso
Lp134-228-f161	N/A	N/A	1	Crd	No 14C/Monagrillo
Lp134-236-f97	3	2	1	Crd	No 14C/Monagrillo
Lp134-241-241-f114	N/A	2	1	Crd	No 14C/Monagrillo
Lp134-271-18-F100/Lp134-208-18-f99	3	2	1	Crd	No 14C/Monagrillo
Lp134-271-f6	N/A	N/A	1	Crd	No 14C/Monagrillo
Lp134-282-27-f95	3	2	1	Crd	No 14C/Monagrillo
Lp134-293-f101	3	N/A	1	Crd	No 14C/Monagrillo
Lp134-293-f194	N/A	N/A	1	Crd	No 14C/Monagrillo
Lp134-297-2-f279	3	N/A	1	Crd	No 14C/Inciso
Lp134-297-f39	3	N/A	1	Crd	No 14C/Monagrillo
Lp134-305-15-f94	3	2	1	Crd	No 14C/Monagrillo
Lp134-313-f150	3	N/A	1	Crd	No 14C/Monagrillo
Lp134-318-37-f281	2	Un	2	Az	No 14C/Inciso
Lp134-312-f61	N/A	N/A	1	Crd	No 14C/Monagrillo
Lp134-319-128-f87	N/A	N/A	2	Az	No 14C/Monagrillo

Sample	Petrography	LA-ICP-MS	P-XRF	Provenance	Assoc. Uncalib. 14C BP
Lp134-A35P-36-F88	N/A	N/A	1	Crd	No 14C/Inciso
Sf9-h20-3	N/A	1	2	Az	2920±180
Sf9-h20-6	N/A	1	2	Az	2920±180
Sf9-j20-2-3	N/A	N/A	2	Az	2920±180
Sf9-b60-1	2	1	2	Az	2920±180
Sf9-b61-1	2	1	2	Az	2920±180

APPENDIX B:
INFERRING PRODUCER'S INTENDED FUNCTIONS: MONAGRILLO POTTERY LIFE HISTORY STUDIES (~4500-3200 B.P.)

(to be submitted to *Latin American Antiquity*)

1. Abstract

Monagrillo pottery, the first ware of Panama (~4500-3200 B.P.), emerged in the context of the farming of domesticated root and seed crops. Systematic archaeological investigations of the ceramic technology have not been conducted and vessel functions are not well known. My study incorporates the life history framework of behavioral archaeology and archaeometric methods to reconstruct Monagrillo pottery production steps and their inter-site and inter-source variability. The research infers the technical steps that producers had chosen in order to reach acceptable performance characteristics. From the prioritized performance characteristics, inferences are made about the intended functions of vessels. My research suggests that Monagrillo pottery was produced in the Pacific foothills and on the northeastern Azuero coast, and possibly in the Pacific plains. No pottery was found to have been made in the Caribbean slopes. Ceramics were all *thermal shock resistant* and *effective for heating.* Thus, I infer that the vessels' intended function was for cooking. The Pacific foothills wares were also *impact resistant* for transport in the rugged and hilly terrain, sometimes across the Cordillera. The Pacific plains site, an intermediate site, had a much higher proportion of decorative ware than other sites and also contained ceramics transported from the Pacific Cordillera and

Azuero. The unusual variability of pottery found at this site suggested that the site was used for special purposes such as communal gathering, feasting, and exchange.

2. Introduction

The emergence of ceramics is a topic of major interest to archaeologists researching sedentarization processes and food production in northern South America and southern Central America (Cooke 1995, 2005; Cooke and Ranere 1992c; Oyuela-Caycedo 1995, 1996; Oyuela-Caycedo and Bonzani 2005; Piperno and Pearsall 1998; Raymond 1998; 2008; Raymond et al. 1998; Roosevelt 1995; Zarillo et al. 2008). The research foci, especially at the beginning, were oriented toward hypotheses suggesting technological diffusion from South America (Fonseca Zamora 1997; Ford 1969; Meggers 1997; Meggers et al. 1965; Willey 1971) and the reaction against this perspective (Bischof 1967; Collier 1968; Hoopes 1994; Lathrap 1967).

Pottery origins in the Central American land bridge have been debated since the 1950s, and the ceramics of Panama, Monagrillo (~4500-3200 B.P.), have played a major role in the debate. This pottery appears to be the earliest ceramic tradition in the region, roughly contemporary to the Tronadora pottery (~2000-500 B.C.) of northwest Costa Rica (Hoopes 1994). Today, due to the advances in paleobotanical research, we have an understanding that pottery emerged in the context of long-term domesticated plant (e.g., squash, arrowroot, maize, manioc, achira, llerén, and chili pepper) production with species being transmitted rapidly between Meso/Central and the South American heartlands of domestication, beginning in the early Holocene (Dickau 2005; Perry et al. 2007; Piperno 1998, 2009; Piperno and Pearsall 1998). It is not difficult to infer that domesticated plant dispersal accompanied the transmission of farming-related technological knowledge including pottery. Although the earliest South American ceramics are associated with a hunting and gathering economy (Oyuela-Caycedo 1995, Roosevelt 1995; Oliver 2008), food-producing societies of Ecuador, with Valdivia vessels emerging by 4400 B.C. (Zeidler 2003), and of Colombia, with Cancana wares, beginning 4170 B.P. or 2890 cal B.C. (Beta-245565) (Santos Vecino 2010, 2011), have dates somewhat earlier or contemporary with dates of Monagrillo pottery. Ceramic production knowledge in Panama may have been transmitted from South America and was adopted and technically modified by potters who responded to local needs. Nonetheless, we do not know the adoption processes and possible function of this pottery. Therefore, my paper focuses on the investigation of potters' intended functions for Monagrillo wares by examining pottery life history and technical steps and variability, inferring inter-site and inter-source prioritized performance characteristics. (e.g., Skibo 2012).

3. Archaeological context

In this section, I describe the archaeological context from the Late Preceramic (~7000-4500 B.P.) to the Early Ceramic (~4500-3200 B.P.). Dates in B.P. as ranges, appearing in this text, are estimated uncalibrated radiocarbon dates based on the ranges of radiocarbon dates obtained from each time period (e.g., Cooke 2005). Some archaeologists separate the Early Ceramic period into two groups (see Cooke 1995; 2005). The first period is Early Ceramic A and the second period is Early Ceramic B, with the period B having the Sarigua ware dated to ~3200-2500 B.P. This article deals with the Early Ceramic A with Monagrillo vessels.

3.1. The Late Preceramic Period (~7000-4500 B.P.)

The Monagrillo period was preceded by the Late Preceramic (ca. 7000-5000 B.P.) (Cooke 2005; Cooke and Jiménez 2004, 2008) in central Panama, which was a time of significant economic and settlement shifts compared with the Early Preceramic period (10,000-7000 BP). The number and size of settlements increased by fifteen to twenty-fold along Río Santa María in the Pacific foothills running toward Parita Bay (Cooke and Ranere 1992c; Dickau 2005; Piperno and Pearsall 1998; Weiland 1984) (Figure 8). About 200 possible hamlets or extended family units belonging to these sites are known from this time period (Cooke and Ranere 1992c: 269), with most sites being less than 1 ha (Piperno and Pearsall 1998). The site density was the highest on the Pacific plains, foothills, and in the Pacific Cordillera (Cooke and Ranere 1992c:263). According to microbotanical research, people adopted small kernel maize with soft glumes by 7000 BP (Cooke 2005; Piperno et al. 1985; Piperno 2009) and sweet manioc (*Manihot esculenta*) between 7000-6000 BP (Dickau 2005). Chili pepper starch grains were found on ground stone along with maize and domesticated yam in a context dated to 5600 B.P. at the Aguadulce shelter (Perry et al. 2007). There is macrobotanical evidence for cultivated palms (e.g., oil palms and peyibaye) and other fruit trees (Dickau 2005). Lerén and arrowroot had declined by this time. Therefore, the Late Preceramic period already had well-developed mixed seed and root crop agriculture (Piperno et al. 2000:896). The presence of domesticated dogs, perhaps used for hunting by 7000-6000 B.P., has led archaeologists (Cooke and Ranere 1992a; Piperno and Pearsall 1998:219) to consider that, except for the white-tailed deer that survives in secondary forests, hunting caused terrestrial fauna to decline, which led to an increase in the procurement of coastal resources.

Paleoenvironmental research (Piperno and Pearsall 1998; Piperno et al. 1991) derived from lake (la Yeguada) cores suggests that along with the transition to dry climatic conditions, there is evidence of very high frequencies of burnt vegetation between 7000 and 5000 B.P., indicating slash and burn agriculture, and an increase in the amount of secondary forest taxa and grass pollen between 6000 and 5000 B.P.

During this time, chipped stone tools were made using unifacial and bipolar reduction techniques; edge-ground cobbles were made with ground stone technology (Cooke and Ranere 1992b:125). Rockshelters became permanent or semi-permanent dwellings (Cooke and Ranere 1992c:263). There is evidence for shellfish collecting and fishing on the coast, at Cerro Mangote (0.175 ha), by the paleo-coastline of the mouth of Río Santa María. In terms of coastal resources, Cerro Mangote, a small shell midden, was formed with the evidence of exploitation of mollusks, crabs, and fish in tidal habitats, and shorebirds, raccoons, deer, and iguana (Dickau 2005:75-76). However, an isotope study of human bone from burials, giving younger dates probably due to contamination (Peres 2001), suggests that fish did not contribute significantly to the diet and people more often consumed terrestrial fauna; females probably consumed more C3 plant foods and shellfish, whereas males consumed more fish and terrestrial fauna (Norr 1991). Population pressure may have forced people to occupy Caribbean slopes that were less optimal locations for agriculture and for wild plant collection (Griggs 2005). Manatee bones found in Cerro Mangote indicate transportation or contacts between Caribbean coastal and the Pacific coastal occupants (Griggs 2005; Cooke and Ranere 1992c:268).

3.2. The Early Ceramics period (~4500-3200 B.P.)

Although Cooke (1995) has suggested the inception of ceramics to be as early as ~3800 B.C., pottery coming from Ladrones rock shelter's (Cl1) securely undisturbed and uncontaminated context is placed at ~2900 B.C. However, when coastal shell midden sites, such as Monagrillo (He5) (Willey and McGimsey 1954), are included, the conservative dates for Monagrillo pottery are estimated to be between ~4500-3200 B.P. (e.g., Cooke 2005; Hansell 1979; Ranere and Cooke 1996). This pottery is found on the northeastern Azuero coast along Parita Bay, Pacific plains, foothills, and the Cordillera, as well as on the Caribbean slope of central Panama, but not east of El Valle, or in southern and western Azuero (Figure 8).

Monagrillo pottery emerged without changes in ground and chipped-stone tool technology, but the quantity of ground stone increased, and this time period is also marked by an increase in numbers of coastal sites (Cooke 2005; Cooke and Ranere 1992b, 1992c; Dickau 2005; Piperno and Pearsall 1998; Ranere and Cooke 1996). Cerro Mangote was abandoned by the Early Ceramic period and new pottery-containing middens appeared: Pr32 (4010±100 and 3500±80 B.P.) by the mouth of Río Santa María, He5 (ca. 4400-3000 B.P.), He18, and He12 by the mouth of Río Parita. Shell middens were 7.5 to 17 times larger compared to those of the Late Preceramic. Just as in the previous period, people were inferred to be living in hamlet-sized units (Cooke and

Ranere 1992a). At five rock shelters (Cl1, Ag13, Sf9, Cl2, Los Santanas), Late Preceramic deposits were found below Monagrillo deposits (Ranere and Cooke 1992b, 1992c). Cl2 (Corona) rockshelter was probably sporadically visited for jasper procurement and stone tool manufacture with subsequent transportation of the products (Valerio Lobo 1985). At Pr32 (Zapotal) (3.1 ha, maximum population, ~500) (Cooke 2005), one oval thatched dwelling was found with stick-and-cane walls, a centralized hearth, a cache of edge ground cobbles, a ceramic figurine, and fragments of ceramic vessels (Cooke 1995, 2005:143; Cooke and Ranere 1992b; Dickau 2005; Peres 2001). At Monagrillo (He5) (1.4 ha), there was no evidence of floors, but Willey and McGimsey (1954:87) found clay fragments with pole or reed impressions, which indicated structures. La Mula-Sarigua (Pr14) at this time was only 1.3 ha (Cooke and Ranere 1992b).

In terms of subsistence, marine resources found at shell middens include small shoaling fish taxa, caught without use of boats or gill nets (Cooke 1995 despite Cook 1992; Cooke and Jiménez 2004; 2008; Dickau 2005), but possibly via barrier traps set in the intertidal zones (Cooke 2005:142). Peres (2001:131) has also suggested that Zapotal occupants possibly used tidal nets, cast nets, traps, and poisons (and Peres also includes gill-nets), for coastal resource procurement. At Zapotal, formal tools were also absent and even expedient chipped stone tools were scarce (Peres 2001:133), but there were some remains of peccary and white-tailed deer (Cooke and Ranere 1992a). At the Monagrillo site, edge ground cobbles, pestles, and metates/mortars as well as a fragment of a stone bowl were found, but Willey and McGimsey (1954) reported only a small number of chipped stone scrapers. Terrestrial faunal remains, however, included white-tailed deer, peccary, and raccoon. At interior rockshelters such as Cl1 (Cueva de los Ladrones), in the Pacific foothills, and Ag13 (Aguadulce), in the Pacific plains, fish remains include small estuarine taxa. Archaeologists infer that fish were transported inland after salting and drying (Cooke 1995). In the case of Ag13, about half of the assemblage consists of freshwater species and the other half, estuary resources (Cooke 1995; Cooke and Jiménez 2008). Sweet potato was incorporated into the diet during this time. Maize became more important, although not yet the staple (Norr 1995); squash, manioc, and palms continued to be cultivated and other kinds of tree fruit (e.g., algarrobo, nance), were consumed (Dickau 2005). At Ag13, charcoal of American oil palm (*Elaeis oleifera*) and wine palm (*Acrocomia mexicna*) was dominant (Cooke 2005:178), and the former was found only at Ag13 among sites in central Panama (Dickau 2005:162).

Paleoenvironmental evidence from lake cores of La Yeguada suggests that there was significant destruction of secondary forest, and by 4200 B.P., a decrease in particulate carbon and an increase in grass, while there was a low frequency of primary trees. There was deforestation and agricultural intensification in the Pacific foothills, which may have resulted in the population expanding to the lowland toward the coast (Bush et al. 1992; Piperno et al. 1991; Piperno and Pearsall 1998:294-295). Vegetational data from Ag13 also suggest that the coastal plain had heavy land degradation around the beginning of the Early Ceramic period (Piperno and Pearsall 1998:295).

3.3. Previous early pottery descriptions

Monagrillo pottery, according to visual analysis, has been described (Cooke 1995; 2005; Willey and McGimsey 1954:58-67) as having: (1) sand temper; (2) coil construction, (3) wall thickness ranging between 3-20 mm, averaging 9 mm; (4) mainly rounded base, often thicker than the wall, but some that are slightly flattened; rims with flat and rounded lips, but including thickened and folded lips, that tended to be slightly thicker than the rim; (5) low variability in forms with mainly bowls and jars without neck or collar, or attached legs, and less frequently plates; (6) decorations, uncommon, included red slip on the rim, and incisions and punctations; the surface tended to be smoothed; firings had poor reduction and oxidation control; (7) Moh's hardness of 4.5 to 5, relatively well fired, some being used for cooking, as inferred from the exterior soot. Although the quantity of ceramics previous researchers examined was impressive and observations were meticulous, visual analysis has limitations. For example, sand temper and natural sand inclusions are difficult to distinguish and require further tests. The somewhat high values on the Moh scale may have resulted from tests on rock or mineral inclusions along with the clay matrix. Iizuka's initial studies of sherds of Cl1 and He5 showed that although there were sherds with the clay matrix reaching 4.5-5 on the Moh scale, the majority were between 2.5-3.5. The 'moderate' firing temperature described by Willey and McGimsey (1954:58) is ambiguous and requires reassessment via re-firing tests.

Monagrillo pottery technology has previously been characterized as the initial crude attempt at production without much energy investment, made whenever needed. It employed locally available clays; the technology was conservative and homogeneous among sites; coil lines are visible due to poor joining, and rims were unskillfully finished, causing difficulty in diameter measurement (Cooke 2005; Cooke and Ranere 1992c:269).

In terms of preservation, Weiland (1984:43) suggests that in the coastal zone, Monagrillo pottery is perhaps uncommon due to poor preservation in the saline environment and, with the absence of pottery, the distinction between Late Preceramic and Early Ceramic Periods is difficult to make (Cooke and Ranere 1992c:270). Cooke (1995) observes that Ladrones (Cl1) pottery is more friable than that of He5, perhaps due to the environment (wetter), and Griggs (2005) agrees that the absence of Monagrillo ware in open sites close to La Yeguada is caused by high precipitation.

3.4. Selected sites and samples

In this project, eight sites from different environmental zones were chosen (Figure 8). Ceramic samples were taken from the following places: (1) shell middens of the Azuero, He5 (Monagrillo), Pr32 (Zapotal), and Pr14 (La Mula-Sarigua); (2) Pacific plains rockshelter, Ag13 (Aguadulce); (3) Pacific foothills rockshelters, Cl1 (Cueva de los Ladrones), Lp134 (Cebollal), and Sf9 (Carabalí), and (4) a rockshelter on the Caribbean slope, Lp8 (Calaveras). All samples except those from Lp8 are stored at the Smithsonian Tropical Research Institute (STRI) (Pr32: mainly Proyecto Santa María's 1984 and some of Giausserand's 1987, He5: Ranere's 1975, Block 2, Ag13: Ranere's 1975 and 1997, Cl1: Bird and Cooke's 1974, Pr14: Hansell's 1983, Sf9: Valerio and Proyecto Santa María´s 1983 and 1985, and Lp134: Mayo's 2006 (see Appendix B.1) (Cooke 1995; Griggs 2005; Hansell 1988; Peres 2001; Sánchez 2007; Valerio 1985)). Sherds from Lp8 were borrowed from John Griggs (2005), the excavator. The number and relative frequencies of sherds studied from each site vary by analytical technique, and will be specified in the methods section.

Radiocarbon dates from the selected sites are presented in Table 21. Dates from He5, TEM-109, SI-2841, and TEM-208 are considered unreliable due to the possibility of the beach deposit being mixed with cultural materials when the area was an active shoreline (Cooke 1995). The occupational history of both Pr32 and He5 includes (1) the Pre-midden period, prior to when the optimal coastal environment had formed for resource procurement, (2) the Midden period, which had intensive occupation, and (3) the Post-midden period, after the albina (salt flats) had expanded and use had significantly decreased (Hansell 1979; Ranere and Hansell 1978; Peres 2001). Occupational history, elevations, seasonality, levels of average annual precipitation, and site sizes are found in Table 22.

4. Technological theory

4.1. Technological theory

Since technology (artifacts and tools) is fundamental for human survival, from the earliest archaeological history it has been used to establish relative chronology and distinguish cultural groups. Later, mainly in North American processualism, artifacts as technology were interpreted to have adaptive functions (Binford 1962), and were used to understand human behavior, including site functions and settlement patterns for inferring socio-political and economic organization. Changes in patterns were used to infer social changes, which were correlated with environmental changes. More recently, the post-processual approach emphasized technological changes occurring due to culture contacts, technology and its relationship to social boundaries, and the agency perspectives including decisions of artifact producers and users of different ages and genders.

Today, archaeologists who focus on studies of artifacts employ diverse theoretical and analytical approaches. For example, “technological style” (Lechtman 1977, 1984; Lechtman and Merill 1977), developed by Lechtman and her colleagues at the Massachusetts Institute of Technology, influenced by Cyril Stanley Smith, and the *chaîne-opératoire* (operational sequence) of Leroi-Gourhan (Lemonnier 1992:26; Stark 1998:6), incorporating ideas of Marcel Mauss, are used to reconstruct artifact production processes. Raw material choices, production operations, and labor organization have been inferred with the focus on cultural style and constraints governing producers’ technical choices. Similarly, this perspective is pursued in terms of “technological choice” (Dietler and Herbich 1998; Gosselain 2000; Lemonnier 1993; Sillar and Tite 2000), “social construction of technology” (e.g., Bijker et al. 1987; Killick 2004; Pfaffenberger 1992), and *chaîne-opératoire* with an agency emphasis (Dobres 2000). Others study ecological constraints on technology and production from the perspective of “ceramic ecology” (e.g., Arnold 1985; Kolb 1988; Matson 1965) and multi-dimensional craft production (Costin 2001). Moreover, the behavioral archaeology approach proposes to infer artifact producers’ decisions viewed from technical choices and performance characteristics of finished products, through behavioral chain and life history studies (Schiffer 1987, 1995, 2004, 2011; Schiffer and Skibo 1997; Skibo 2012). These varied intellectual lineages are well summarized by Shimada (2007:1).

Archaeometrists and other artifact analysts operate under the premise that artifacts in their laboratory had passed through raw material procurement, production, use, deposition, and post-depositional alterations (Maggetti 1982). Reconstruction of an artifact's *life history* involves all processes, including diagenesis, allowing us to distinguish at a fine scale the changes in material properties that occurred at each stage. I think that the archaeometry and the behavioral *life history* approaches are aligned in terms of the incorporation of the entire life from production to the final stage of laboratory studies. Combining these approaches may help not only to reconstruct each technological step at a fine scale but also permits the inference of intended functions and the constraints on artifact producers. Therefore, my study adopts the *life history* approach proposed in behavioral archaeology (Skibo 2012; Schiffer 1995) while incorporating methods used by archaeomaterialists to make interpretations about the intended function of Monagrillo pottery.

4.2. Behavioral life history approach

Behavioral archaeologists theorize that during artifact production producers, building on technological knowledge, make decisions in relation to the finished product's required performance characteristics so that the product is capable of carrying out its intended functions. Performance characteristics are weighted (because improvement in one performance may degrade another performance characteristic) in order to achieve the intended functions. To obtain acceptable performance characteristics, producers try to overcome situational factors, such as heavy vessels difficult to transport, unnecessarily long drying time, or cracks that occur during drying or firing. The identification of weighted performance characteristics is made in relation to the activities of the life history. When the product meets a society's functional requirements—i.e., technofunctions for utilitarian purposes, sociofunctions for communicating social meanings, ideofunctions for conveying ideological messages; and emotive functions for evoking human emotions (Schiffer 2011:23)—the technology stabilizes because artisans follow the known recipes. However, when social, political, or ideological change occurs, a new functions are required, which foments technological change. Producers then begin to experiment to meet the performance characteristics required for the new functions in the altered functional field. If feedback from users suggests that the product is not working appropriately, experiment and technological change continue. However, if the purchaser and the maintainer of a product are different from the user, especially in cases of asymmetric power relations, users' preferred performance characteristics may have little influence on artifact design (Schiffer 1995, 2011; Schiffer and Skibo 1997).

Technological change often happens when producers benefit from markets and compete among each other (Schiffer 1992:11, 46-49, 50-51; 1996; 2002; 2005; 2011). Producers consider performance characteristics relating to processes such as production, use, and maintenance. Because technology and activities are interrelated, the adoption of new materials changes other materials and the activities' components (Schiffer 1992, 1995). Similarly, when it comes to a complex technological system (CTS), the technology functions in a system consisting of interacting artifacts, people, and environmental phenomena (Schiffer 2005:486), and invention of occur as a cascade as per Schiffer's (2011) Cascade Model. In non-complex societies, a CTS may be an irrigation system, bow and arrow, or cooking technology. In the case of ceramics in this context, a CTS not only includes cooking activities but also ritual activities. In a CTS, cascade-like inventions occur because the new technology initially may have certain performance shortcomings (symbolic or utilitarian), and to solve these, more inventions are needed. Behavioralists insist that technological change and performance characteristics are interrelated, and once change occurs in part of the technological system it will induce changes in other parts (e.g., Schiffer 2005, 2011).

Schiffer (1995:57) proposes that *behavioral chain* analysis allows the inference of many associated activities at an archaeological site. According to him, the behavioral chain is all the sequentially related activities in the life history of a cultural element (e.g., artifact, technology) as it exists in a given system. In this scheme, a single activity includes the interactions between an energy source, such as a person, and the cultural element(s). By inferring the cultural elements associated with a single activity it is possible to reconstruct other activities conducted at a site. In this sense, behavioral chain analysis leads to inferences about activities and special uses at the site. Reconstructing production processes, examining variability in each production step, inferring weighted performance characteristics, and the artifact producer's expectations all can be used to make further inferences about expected artifact uses at sites and across time and space.

In summary, behavioral archaeology allows inferences about social phenomena, during periods of change and of stability, through the study of variability at each step of the production process, from raw material procurement to the finished product, distinguishing between human-induced and environmental processes that contribute to variability in the analyzed artifacts. It also allows the assessment of intended functions (whether socio, techno, emotive or ideofunctions). The behavioral approach helps to reconstruct past human behavior and society through micro-levels of elemental analysis, such as processes in an artifact's life history, viewed as a behavioral chain, comparing them with those of associated materials, spaces, and activities, as well as their variability. In turn, the analysis can be extended to make interpretations about small task groups, household, communities, and ethnic groups to larger regions and states (Schiffer 1992). This approach theoretically allows the macro-scale understanding of social organization. The life history approach, in addition, helps distinguish between systemic context (the pre-depositional state) and archaeological context (after deposition). My study adopts the behavioral approach, and reconstructs pottery life histories by site and production zones. From the observations and variability of technological steps, this study infers weighted performance characteristics of vessels and makes assumptions about the pottery producers' intended functions.

4.3. Performance characteristics

In order to infer the intended functions of Monagrillo pottery, we need to understand technological steps taken in earthenware production related to various performance characteristics.

Strength

Archaeometrists experiment on vessels' resistance to stress. There are many kinds of strength, and each has associated measures, including impact strength (Neupert 1994; Schiffer and Skibo 1987; Skibo et al. 1989), resistance to intergranular fracture affecting the course and rate of abrasion (Schiffer and Skibo 1987, 1989), resistance to breakage, shattering, deformation (Rice 1987:228), and fracture (sustained load or stress) (Tite et al.

2001) as well as, in terms of working properties, wet strength allowing rapid construction without breakage (Schiffer and Skibo 1987).

Impact resistance (Shepard 1954:27; Skibo et al. 1989:125) and fracture strength (Tite et al. 2001) are higher in non-tempered than in tempered pottery. The impact strength of organic temper is demonstrated to be lower than sand temper (Skibo et al. 1989:124-125); however, low density and light weight fiber-tempered vessels would have higher impact strength than sand tempered wares (Schiffer and Skibo 1987). Organic tempered ware, having high porosity, is correlated with low strength; however, since organic tempered vessels are significantly lighter than mineral tempered pottery, the vessels should be less susceptible to breakage due to dropping impacts (Skibo et al. 1989:139). Impact resistance increases significantly with higher firing temperature (Mabry et al. 1988; Schiffer and Skibo 1987:607). Although pottery with thicker walls is more resistant to impact at a stationary state, when such a vessel is dropped, it is prone to breakage (Schiffer and Skibo 1987:607). When impact resistance is high, transportability is also high (Schiffer and Skibo 1997).

Toughness—withstanding a short-term load or stress—is different from strength (Tite et al. 2001). Unlike strength, which increases with higher firing temperatures and lower temper, toughness is higher when the concentration of temper is higher and the firing temperature is lower. Angular grains (e.g., which can be added as temper by crushing rocks or as natural fresh angular pyroclastic phenocrysts) give a tougher body than rounded grains (Shepard 1954:27; Rice 1987), but a less tough body than mica and wollastonite (West 1992), platy, and fibrous tempers (Tite et al. 2001).

Thermal shock resistance

Cooking pots undergoing repeated use over fire require thermal shock resistance that deters the formation of catastrophic cracks and fracture during rapid changes in temperature; such pottery normally contains a high concentration of inclusions/temper (Tite et al. 2001: 313, 322). The addition of temper lessens the thermal mismatch in clays, which causes thermal cracks to be induced during firing (Robinson 1968:550-551, cited in Rice 1987:367). In a cooking pot, tempering of 40% in the paste matrix is common (Skibo 2012). It is optimal to fire pottery at lower temperatures since differential thermal expansion and conductivity in a pot cause thermal-stress-driven fracture (Tite et al. 2001). Overall, the addition of temper material itself, regardless of temper morphology or thermal expansion, improves thermal shock resistance by impeding crack propagation (Bronitsky and Hamer 1986; Schiffer and Skibo 1987; 1997; Skibo et al. 1989:132-133; West 1992:138). Also, globular rather than angular-shaped vessels have higher thermal shock resistance at the junction between the base and the wall (Tite et al. 2001:316). Thermal shock resistance is increased with thinner walls (Braun 1983; Schiffer and Skibo 1997). As mentioned above, lower fired vessels also have higher thermal shock resistance and more toughness (Schiffer and Skibo 1997; Tite et al. 2001)

Heating effectiveness

Heating effectiveness is defined as the rate of temperature rise in water contained in vessels placed over a heat source (Schiffer 1990:373). In terms of tests conducted with dry vessels imitating the first minutes of cooking, those with at least some interior surface permeability had better heating effectiveness than impermeable wares (e.g., those with resin coating) because water conducts heat better than air; however, since those with highly permeable interior surfaces evaporated water from the exterior surface their heating effectiveness was poor (Schiffer 1990:375, 377). When a heating effectiveness test was conducted with water-saturated vessels, vessels with resin coated interiors performed the best and those with finger-smoothed interiors the worst. Additionally, with this test condition, vessels with exterior polishing, slipping, and smudging performed well but not finger-smoothed ones (Schiffer 1990:378). When these ceramics had an impermeable interior, exterior surface treatments did not have a significant effect on heating effectiveness (Schiffer 1990:378). Heating effectiveness is also increased with thinner vessel walls (Braun 1983; Eerkens 2005); addition of sand or any mineral temper significantly improves the heating effectiveness compared to untempered or organic tempered wares (Schiffer and Skibo 1997; Skibo et al. 1989:130).

Permeability

When a liquid such as water or alcohol is to be contained for a long time, low porosity and dense inclusions are optimal (Rice 1987:231) but often organic tempered pottery has high porosity and high permeability (Skibo et al. 1989). However, if permeability is too high for liquid storage, minerals contained in water may eventually seal the pores or the pottery producer can add resin, lime water, vegetal material, and slip or burnishing on the vessel surface to decrease permeability (Rice 1987:231-232; Schiffer and Skibo 1987). As suggested in the preceding section, permeability of interior and exterior surfaces significantly affects heating effectiveness (Schiffer 1990). Low-fired vessels, although highly permeable, may not be optimal for a liquid transportation or its long-term storage, but they can have high cooling effectiveness (i.e., amount of temperature drop due to evaporative cooling, although eventually pores can clog) for drinking water (Schiffer and Skibo 1987:605; Skibo et al. 1989).

Storability

Thick walls and bases exclude moisture and are suitable for storing dry contents such as seeds (Rice 1987:227).

Abrasion Resistance

Abrasion resistance is about withstanding contacts from scratching and scraping, such as when cooking vessels are cleaned after use, pottery is moved on afloor, and sherds are transported by fluvial processes (Schiffer and Skibo 1989:102; Skibo 2012; Skibo et al. 1989). Pottery is prone to abrasion, for example, when there are intergranular fractures (clay-clay and clay temper) and/or there are tribochemical mehenisms such as water weakening intergranular bonds (Schiffer and Skibo 1989:102). Sand tempered pottery has been shown to have higher abrasion resistance than organic tempered wares (Skibo et al. 1989; Schiffer and Skibo 1989). Clay composition that tends to cause glassy states provides higher abrasion resistance and higher firing temperature dramatically increases this resistance (Schiffer and Skibo 1989; Skibo et al. 1989). Organic-tempered vessels are more susceptible to abrasion than sand- or untempered-wares at lower temperatures and harder temper is more resistant to abrasion than softer temper; tightly bonded temper particles are more resistant to abrasion than untempered vessels (Schiffer and Skibo 1989:107; Skibo et al. 1989). Surface treatment also alters the states of abrasion resistance. Smoothing and polishing gives temporary abrasion resistance until the exterior is removed; smudged surfaces and resin coatings also provide better abrasion resistance (Skibo et al. 1997). When abraded ceramics are deposited, it also induces rapid post-depositional breakdown (Skibo et al. 1989). Sharper, harder, and larger abraders (e.g., sand and metal) can cause higher abrasion rates (Schiffer and Skibo 1989). Abrasion resistant characteristics are also optimal for vessel maintenance during use.

Ease of manufacture and expedience

Organic temper is considered to improve clay plasticity (Shepard 1954:52-53) and also workability (Schiffer and Skibo 1987; Skibo et al. 1989). Whereas plasticity is the extent of force necessary in forming clays without cracking, workability is the ceramic producer's assessment of clays in producing an intended shape by a specific forming technique (Skibo et al. 1989:184). Addition of manure and sand temper both increase workability right after the mixture (Skibo et al. 1989:136). Souring manure-tempered pastes for a couple of weeks increases wet strength and thus provides better workability compared to sand-tempered or unsoured manure-tempered wares (Skibo et al. 1989:136). Sand-tempered paste dries quicker than the organic-tempered paste and untempered paste has the slowest paste drying rate (Schiffer and Skibo 1992; Skibo et al. 1989).

When vessels are built taller, especially with thin walls, they need higher skill and energy investment because the wall may slump or warp, losing its form during drying. Thicker walls are thus more workable for large vessels (e.g., Rice 1987:367). Ease of manufacture is also possessed by using the pinch-pot technique, but for larger vessels the slab technique can be used (Schiffer and Skibo 1987:604). Slab technique is considered by artisans today to be easier than coiling or throwing (Schiffer and Skibo 1987:604).

In terms of expediency in pottery making, the slab construction technique and mining of already moist clay can be adopted. Mining clay in the wet season does not require extensive clay preparation; it can be used immediately (Skibo et al. 1989).

Transportability

As noted above, impact resistance and lightweight vessels increase transportability. In addition, instead of having lightweight fiber temper, vessel walls can be thinned to offset the higher weight caused by, for example, sand temper. The rough surface of the vessel additionally helps one to grip the body, making the ware more transportable (Rice 1987:232). Also, when liquid is to be transported, it is optimal to have a very small mouth (Skibo 2012). In addition, vessel forms can be made to nest well, for transportation, with open mouths; small wares are also more portable than large vessels (Schiffer and Skibo 1987).

Accessibility of Contents

For ease of removing its contents, a vessel requires a large orifice or relatively open mouth (Skibo 2012:5)

Capacity

Vessels with large capacities could indicate communal instead of individual use.

Resistance to weathering

In hot and humid tropics, quick weathering of vessels can be problematic for users (e.g., Iizuka 2013). To offset this problem, vessels can be fired high to provide durability but not to a vitrified state since a glassy surface is vulnerable to weathering.

5. Methodology

5.1. Pottery sourcing

Sourcing was done by conducting (1) petrography of pottery (n =134), raw clayey soils (n = 28), and sand (n = 4), which identified minerals and rock fragment inclusions, (2) time-of-flight laser ablation, inductively coupled plasma mass spectrometry (TOF-LA-ICP-MS), obtaining quantitative geochemical data of the clay matrix of pottery (n = 161), and (3) portable x-ray fluorescence (P-XRF) acquiring semi-quantitative bulk composition of pottery (n = 263) via net peak area energy intensity data. Results from these analyses were combined and pottery was classified according to possible source groups. Petrography of sherds was also compared to the petrography of raw clayey soils and sand gathered from central Panama in distinct geological units related to archaeological sites.

5.2. Temper

Thin sections were studied for 134 sherds derived from He5 (n = 21), Pr14 (n = 3), Pr32 (n = 21), Ag13 (n=20), Cl1 (n = 23), Sf9 (n = 2), Lp134 (n = 24), and Lp8 (n = 20), using Olympus BX-51 and BH2 petrographic microscopes in the optical laboratory at the School of Anthropology, University of Arizona and Nikon Eclipse 50i POL petrographic microscope at STRI. The possibility of added inclusions was tested via examination of the density of inclusions and their degree of weathering, especially of quickly altering minerals, such as plagioclase, and those in rock fragments in the thin sections.

This method was potentially effective in this area because Monagrillo pottery paste consists of clayey sediment, igneous rocks, and their mineral inclusions. The total inclusions percent, the lithic and mineral inclusions by percent, weathering stage of inclusions, size ranges, and their quantity were recorded for Monagrillo pottery classified by source types and by source. Thin sections of raw clayey soil and sand samples that were identified as sources of Monagrillo pottery were used for comparisons with the degree of weathering, quantity, and size ranges.

In addition, since thermal shock resistance, heating effectiveness, and impact resistance for transportation can be the pottery producers' prioritized performance characteristics, size, type variability, and quantity of temper by sources were recorded.

5.3. Pottery manufacturing techniques

Visual analyses of sherds (n = 2533) enabled recording of both the locations and directions of the cracks on the surface, thickened and thinned areas of the wall, step fractures, indentations, and joints and where porosity is concentrated at the joints (Appendix B.1). Cracks, step fractures, uneven thickness of the wall, and indentations often occur where clay elements were joined during manufacture. Information from both exterior and interior surfaces and sections from four directions were recorded.

While the above petrographic thin sections were being examined (n = 134), I conducted the manufacturing study in thin sections by observing the directionality and lengths of pores, as well as their association with the directionality of elongated mineral grains.

Additional analysis of manufacturing technique was conducted by adopting xeroradiography (Xerox Medical System 120) (n = 66). Xeroradiography is an optimal method to understand the internal structure of ceramics. The edges and density gradients are enhanced due to the use of an electrostatically charged selenium plate that has charge dispersal depending on the density and edge effects of the ceramic paste (Vandiver 1988:145). This method allows the detection of location and alignment of pores and their extent, which in turn provides evidence of the manufacturing technique (Vandiver 1988:145). Xeroradiography of sherds from Cl1 and He5 were run at the Smithsonian Museum Conservation Institute (MCI). Prior to running the xeroradiography, I classified Monagrillo sherds according to thickness because the voltage of xeroradiography should be reduced when thinner sherds are processed. I classified sherds with thickness of > than or = to 11 mm to be radiographed using 65 kV, < than 11 mm or = to 8 mm at 60 kV, < than 8 mm or = to 6 mm at 55 KV, < than 5 mm or = to 4 mm at 50 KV, and < than 4 mm at 45 KV. Under the guidance of Ronald Cunningham at MCI, I took radiographs of Monagrillo pottery from Cl1 and He5, including large fragments and small pieces. Pores exhibited on radiographs were later drawn on superimposed transparent sheets. Step fractures and cracks on the exterior and interior surfaces and profiles of broken edges from four directions also were drawn. Locations of pores from radiographs, the drawings of cracks and step fractures, and the actual sherds were then superimposed for comparison. Fourteen sherds from the He5 site and fourteen sherds from Cl1 site, all of them large enough for the analysis of manufacturing techniques, were studied. A Xerox Medical System 120 later became the property of the Department of Materials Science and Engineering (MSE) at the University of Arizona (UA). At MSE-UA, I took additional xeroradiographs increasing the number of Monagrillo sites where pottery had been excavated (adding, Ag13, Lp134, Lp8, and Pr32), under the guidance of Pemela

Vandiver. Petrography and xeroradiography were used to examine elongation and direction of pores, and ultimately to identify areas where clay segments were joined in sherds. This information then was compared with locations, directions, and quantities of pores present in sherds.

5.4. Vessel forms and thickness

Vessel forms (bowl or jar) and thickness range (n = 2291) of body parts (rim, body, and base or near base) were recorded (Appendix B.1) and were grouped by sites. Body parts by thickness ranges (rim, body, base and near base) were then grouped by production zones and compared.

5.5. Surface Decoration

Since decorative and red slipped sherds were low in number (n = 101), comparisons were done counting numbers of sherds by site without conducting comparisons among source types.

5.6. Firing temperatures

Original firing temperatures were estimated by examining the microstructural features of sherds using scanning electron microscopy (SEM) energy dispersive spectroscopy (EDS) on a Hitachi S-2460 at MSE-UA and FEI Quanta 200 Environmental Scanning Electron Microscope (ESEM with integrated Oxford Energy Dispersive X-ray spectroscopy (EDS) at the the Institute for Integrated Research on Materials, Environment, and Society (IIRMES) at California State University, Long Beach (CSULB).

According to Rice (1987:427), when clay is heated and chemical transformation occurs, the microstructural changes remains frozen until the pottery is re-fired above the original firing temperature. The point at which the microstructural change occurs marks the upper boundary of the original firing temperature range. A requisite of this experiment is that sherd composition undergoes no changes during burial. For example, additions of soluble salts can cause changes to the thermo-physical properties of a pottery sample, e.g., melting at a lower temperature. In order to meet this requirement, the sherds selected for this experiment were screened so that no salts were present on their surfaces. EDS measurements ensured that the composition of the examined area was representative of the clay and not nearby mineral inclusions or salt accretions.

I broke off a fragment from the edge of each sherd and divided it into 7 small fragments of about 1 mm each. The sizes needed to be small because large chunks of porous ceramics can out-gas or give difficulty in maintaining the high vacuum inside the SEM chamber. Porous ceramic samples more easily induce charging in SEM and disturb the acquisition of high-quality images. The chipped off pieces of ceramic were first aligned on a brick. Fragments coming from the same sherd were placed in a line. The locations of these fragments on the brick and numbers assigned to each sherd were recorded. These fragments were fired using Lindberg Furnace 1400 at the Laboratory for Cultural Materials at MSE-UA. They were fired starting at 500ºC, and the temperature was maintained for 15 minutes. Firing was continued at each 100ºC interval up to 1100ºC. A fragment from each sample was taken out of the furnace at each firing temperature interval. I then placed three pieces from each sample per SEM stub and recorded its characteristic color and mapped the location of the piece and the fired temperature on a separate sheet. The samples were then sputter coated with Au-Pd at MSE-UA. At IIRMES, samples were sputter coated with Au. Sherd fragments were imaged at 10,000X.

In addition, ceramic thin sections were examined to identify states of mineral decomposition of calcium carbonate. Additionally, porosity of sherds seen in xeroradioraphy was recorded and classified as low, medium, and high.

6. Results

6.1. Clays and Temper

Since the sourcing result is described in detail in Iizuka (2013), it is summarized only briefly here (see Figure 7). Three major sources were identified through petrography: (1) Azuero granitic rock-based clays, (2) Azuero mixed igneous sand-based clays with or without intrusive rock fragment inclusions, and (3) Pacific Cordilleran pyroclastics including clays from El Valle and La Yeguada volcananic materials. Raw clayey soils gathered and made into petrographic thin sections also confirmed this result. LA-ICP-MS (bivariate plot of yittrium and tallium) classified pottery into three types and P-XRF (bivariate plot of Ga and Nb), into two groups. From LA-ICP-MS, sherds that belonged to one chemical group were compatible with two of the Azuero types from petrography, two groups overlapped with the pyroclastic Cordilleran petrographic group. From P-XRF, one bulk compositional groups overlapped with two Azuero petrographic groups and one with one Cordilleran pyroclastic group. As a whole, all the methods showed that Azuero and the Pacific foothills ceramics had distinct sources. Ag13 had a larger amount of pottery transported from both the Pacific foothills and Azuero compared to the rarer occasions in which pottery transport occurred between Azuero and the Pacific foothills. Ag13 also had some pottery with petrographic and/or combined petrographic and geochemical characteristics with mixed Azuero and cordilleran mixed signatures. All pottery found at the rockshelter in the Caribbean slope was transported from the Pacific foothills.

Overall, comparisons of lithic and mineral inclusions by percent (Table 23 through Table 27) suggested that pottery has a much smaller amount of lithics compared to raw clayey soils and raw sand from the pyroclastic context. The percent of inclusions was also about 10% on average, higher in pottery than in El Valle raw clayey soils with pyroclastic inclusions. Petrographic observation of pottery thin sections and raw clayey soil sections suggested that for the Pacific foothills pyroclastics group, abundance percent ranges and monomineralic phenocryst size ranges were acceptably similar. Ranges of the degree of weathering of plagioclase, feldspars (unidentified), and zoned feldspars suggest that they were fresher in pottery than in raw clayey soils; however, pottery feldspar freshness was similar to pyroclastic sand gathered in the geological unit, the El Valle Formation. Therefore, it was interpreted that potters possibly added local fresh pyroclastic sand, as temper, containing abundant fresh monomineralic phenocrysts, to the raw clayey soil (Table 23,

Table **24**, and Table 25).

The same can be said for the Azuero mixed igneous sand pottery. The lithic and mineral inclusion ratio was reversed in the pottery compared to inclusions in raw clayey soil, although the overall percent of inclusions was similar. The freshness of feldspars and amphiboles was higher in pottery than in raw clayey soil. Whereas some of the former contained pyroxenes, the latter did not. Pyroxene is a quickly altering mineral. Thus, having little or no pyroxene in the sourced raw clayey soil, but some fresh examples in the pottery indicated that perhaps mixed igneous sand temper was added.

The Azuero granitic inclusion-based ceramics had a higher percent of overall inclusions than the sourced granitic raw clayey soil sample. However, the lithic and mineral abundance ratios and sizes were similar in both pottery and raw clayey soil.

In thin sections, clearer indications of possible added inclusions were found in the Azuero mixed igneous sand group. In this group, feldspar inclusions in pottery thin sections tended to be too fresh to be the natural inclusions of clayey soils, given that the northeastern Azuero environment is in the hot and humid tropics with wet and dry seasons. This pottery group compared to raw clayey soils from northeastern Azuero had fresher inclusions.

The total percent inclusions and the ratios of lithic and mineral inclusions were compared by source types and sites (Table 26 and Table 27). Total inclusion percent were: (1) cordilleran group, 25-50% (average 40.6%), (2) mixed igneous group, 15-50% (average 32.9 %), and (3) Azuero group, 20-55% (average 38%). All groups had relatively high average total percent inclusions. When inclusion percentages were compared by site, Lp8 (44.5%) was higher in average total percent inclusions than, for example, Ag13 (34.7%), Pr32 (36%), and Lp134 (38.1%).

6.2. Manufacturing technique

All three methods—visual, ceramic thin section, and xeroradiography—were employed to analyze manufacturing techniques and indicted that almost all the ceramics at all studied sites were produced via joining small slabs and lumps with significant overlaps that created layers. Especially from visual studies, the layering of slabs is obvious (Figure 9). Thin section analyses suggested that the majority of pottery had squeezed or layered slab/lump construction; elongated minerals and elongated pore directions were parallel to the walls. This preferred orientation of inclusions and pores suggests that the vessel walls were pressed against a harder wall during construction. Although there is no standardization in vessel forms, there could have been a container, mold, or a spherical hole dug into the ground, for example, that the vessels under construction were placed against. Xeroradiography alone produced less useful results due of the insufficiency of pores that could indicate joints, or due to the high porosity of some of the vessels; however, combined with visual and thin section studies, most sufficiently large xeroradiographed sherds indicated a slab and lump technique (for example, all of studied and identifiable sherds that were xeroradiographed) (Figure 9, Table 28, Appendix B.1).

6.3. Vessel forms and thickness

Vessels that were classified as bowls and jars showed little form-based variability among sites; however, wall thickness (presented with thickest wall area measurement) did differ. Although the average thickness of the thickest areas of rim sherds was similar, Pr32 was slightly thicker. In terms of body thickness, Pr32 and He5 were the thickest, followed by Ag13 and Lp8. Sherds from Cl1 and Lp134 had the thinnest vessel bodies. Regarding vessel base thickness, Ag13 and Pr32 had the thickest sherds followed by He5. The base thickness of Cl1 and Lp134 were much lower on average than the coastal and the Pacific plains sherds. Overall, Pr32 had thicker walls among all sites (Table 29, Figure 10, Appendix B.1).

When vessel thickness was classified by source types, it showed that pottery produced in the Pacific Cordillera was thinner than wares made in the northeastern Azuero coast (Table 30, Figure 11). Pottery with mixed signatures had similar rim and body wall thickness to Cordilleran vessels but there was no sherd of this type identified as a basal sherd for comparisons.

6.4. Surface decoration

The surface decoration research suggested that pottery excavated from Ag13 had a significantly higher proportion of decorated ware (10.8%, n = 31) compared to other sites (range between 2.7% to 5%, Table 31). When all available sherds from plain and decorated wares from selected blocks at Ag13 were examined by Richard Cooke at STRI, he reported that decorated sherds made up 83 of the total 446 sherds. This can be calculated to be 18.6%, a much higher proportion than my count. Hence, my finding that sherds excavated from Ag13, having a higher proportion of decorated sherds than the other major Monagrillo sites studied, is not likely to be an exaggeration. The low decorative sherd percent (2.7%) at Pr32 site should be accurate because most sherds studied were from a pit from the Proyecto Santa María (1984) instead of from Giausserand's excavation (1987) which many diagnostic sherds were taken to France.

The possible slips identified on the surface of ceramic thin sections may have been erroneous perhaps due to surface oxidation or reduction, surface use and diagenesis-related chemical alteration that caused changes in clay birefringence and mineral constituents. In addition, some burial-related sediment may remain and provide misleading results. Alternatively, thin sections could have detected the original slip and paint, nearly weathered or difficult to distinguish at a finer scale with visual color examination. In this study, sherds with visually identifiable slips were used for the quantitative comparisons including those that had slip layers identified in thin-section samples.

6.5. Firing temperatures

The firing temperature evaluation via SEM-EDS was not straightforward since, although some rounding of clay particles occurred at elevated temperatures, there were Monagrillo sherds that did not reach the vitrification state at 1000°C when fired at a ramp of 100°C increments with the holding time of 15 minutes. Depending on the sherd and the area of clay particles examined, however, there were a number of cases in which significant sintering and melting would not occur even up to 1100°C. In those sherds, except for two sherds (Pr32-C35-N14-3; Lp134-208-18-F99/Lp134-271-18-F100), rounding of clay particles allowed the approximate assessment of firing temperatures. This meant that the Pacific side of Central Panama surrounding Parita Bay had clayey sediments that are relatively refractory.

According to the results of SEM-EDS-based on the microstructural analyses of refired sherds, *by sites*, firing temperature ranges were the following: (1) Cl1 (n = 6), 650°C and 950°C, (2) Ag13, 650°C and 850°C (n = 5), (3) Pr32 (n = 3), 650°C and <1050°C, (4) He5 (n = 2), 850°C, (5) Lp8 (n = 2), 950°C, and (6) Lp134 (n = 2), 850°C and <1050°C. Most of Cl1 (n = 5) were fired to 950°C and most of Ag13 (n = 4), between 650°C and ~700°C (Figure 13, Table 32 and Table 33). Pr32 had a wide temperature range. Other sites (He5, Lp8, and Lp134) were only tested with two sherds. Overall, firing temperatures classified by sites indicated that sites in the Pacific and Caribbean slopes have firing temperatures mostly around 950°C with one at 850°C and another at 650°C. Pacific plains and Azuero coastal sites had varied temperatures, between 650°C and <1050°C, but most sherds were fired between 650 and 850°C with exceptions of one 950°C and another <1050°C. The Pacific and Caribbean slope vessels were higher fired than Pacific plains and Azuero coastal ceramics. Porosity evaluated with results from xeroradiographs also yielded similar results. Sites with low temperature ranges had sherds with higher porosity and higher temperatures had lower porosity ranges.

The firing temperatures assessed with SEM-EDS by *source* were in accord with temperatures compared by *site* (Table 33). For the vessels confirmed to be produced on the Pacific slopes (n = 8), firing temperatures ranged between 650°C and 950°C, except for one ambiguous result of <1050°C. Overall, with the exception of one at 650°C and the ambiguous temperature of <1050°C, all others were fired between 850°C and 950°C with most at 950°C. On the other hand, ceramics confirmed to be produced in Azuero (n

= 5) had four being fired between 650°C and ~700°C with another sherd with an unchanging microsctructure up to ~1050°C and evaluated to be <1050°C (Table 33). However, sherds with mixed sources (n = 2) had firing temperatures that ranged between 850°C and 950°C but the sample size is too small. Firing temperatures evaluated from porosity viewed in xeroradiographs also had similar results to those obtained with SEM-EDS.

Inference of firing temperatures from mineral inclusions in thin sections was limited. A shell fragment in one sherd was the only temperature identifier (<700-850°C). Biotite was not an appropriate mineral because of the relatively high decomposition temperature, sometimes reaching up to 1150°C (Frame 2004) (Table 32 and Table 33).

Overall, accurate firing temperature assessment was difficult; however, general results led to the conclusion that ceramics produced in the Pacific slope sites were fired at higher temperatures; pottery produced in northeastern Azuero tended to be relatively low fired (see Appendix B.1).

7. Discussion

In this section, I infer performance characteristics weighted by Monagrillo ceramic producers. This will be used to infer intended functions.

7.1. Intended functions

Technofunction

Monagrillo pottery has a high average inclusion percent, ranging between 34.7 to 44.5 % by site, and all ceramics have mineral and rock fragment inclusions. They are consistent with vessels made for a cooking function. The high percent of mineral inclusions (Skibo 2012) provides adequate *heating effectiveness* (Schiffer 1990; Schiffer and Skibo 1997; Skibo et al. 1989) and good *thermal shock resistance* (Bronitsky and Hamer 1986; Schiffer and Skibo 1987, 1997; Skibo et al. 1989; West 1992) as does thinner walls. Hansell's (1979:102-103) research on the Monagrillo shell midden (He5) fauna indirectly supports the cooking use. She suggests that at the midden, the shellfish were pot boiled. Shellfish do not show evidence of smashing or of being wedged opened, and tools that could have served as wedges were not encountered at the site. Charred shellfish were not found; thus broiling or roasting was unlikely to have been the cooking method. Although pits, possible earth ovens, found in previous excavations could have been used for steaming shellfish, Hansell (1979) suggests the higher occurrence of pottery at this site indicates boiling in pottery as the shellfish preparation method. A large portion of Monagrillo pottery includes somewhat open to closed jars, optimal for cooking use, such as for boiling food. In Monagrillo vessel fragments from He5 and Pr32, I also encountered those with encrusted carbonized residues in the interior. Pottery thus was often used for and designed for cooking.

In terms of firing temperatures by source, pottery produced in the Pacific foothills (found in Cl1, Lp134, and Lp8) tended to have higher firing temperatures and lower porosity compared to ceramics made in the Azuero coast, suggesting that Pacific foothills produced vessels have higher *strength.* Vessels with granitic rock-based clays found only at He5 (Azuero type 1) were close in terms of porosity range to Cordilleran vessels. Pr32, from the Azuero coast, tended to have porous pottery. The site-based firing temperature test results via SEM-EDS, from Pr32 and He5, ranged between ~650-950°C and

<1050°C. However, the result could be misleading because higher ones tended to be sherds with origins in Pacific foothills and plains. Overall, however, the reliable lower temperatures obtained via SEM-EDS and high proportion of high porosity vessels in Pr32 suggests that Azuero-produced pottery, especially Azuero type 2, was fired at relatively lower temperatures compared to the Pacific foothills vessels. Pottery having mixed signatures yielded firing temperature results similar to Cordillera but the number of sherds tested for porosity was too small for proper evaluation.

The assessment of *strength* combined with the results of pottery production zone and transportation patterns suggests that topographic features and precipitation may have necessitated vessels that have fairly high *impact resistance* and *resistance to weathering*. In the foothills zone, pottery transportation required moving up and down from less than 100 m a.s.l. to up to ~400 m a.s.l. to and from the Cl1 rockshelter, and even climbing to higher elevations reaching ~800 m (Figure 14), in order to directly reach the Caribbean foothills. Vessels had to be *impact resistant.* From the study of post-depositional alteration, sherds found at Lp8, made in the Pacific foothills, had gibbsite growth in pores (Iizuka 2013) indicating that significant weathering occurred post-depositionally due to the hot and humid conditions of the nearly perennially wet Caribbean side (Figure 14). The higher fired characteristics of Pacific foothills vessels helped overcome intensive weathering when used in the Caribbean slopes.

The high percentage of inclusions in Monagrillo vessels gives decreased *impact resistance* compared to untempered vessels. This result is Monagrillo pottery with a design effective for cooking use; *impact resistance* is thus constrained to be a secondary performance characteristic, as suggested by Schiffer and Skibo (1997:42). Perhaps to offset the decreased *impact resistance* due to the prioritized cooking function, potters in the Pacific foothills made ceramics with higher firing temperatures. In addition, thinner vessel walls of the Pacific foothills (Figure 11) provided a lighter body, increasing *transportability,* as required for distribution in difficult topographic areas.

With regard to *transportability,* vessels transported to Lp8 from the Pacific foothills had orifice diameter ranges of 9 to 30 cm, with the average of 22.8 cm. Although the sample size at Lp8 is small, these vessels were smaller to average in size and thus were, for example, easier to transport compared to some significantly larger vessels found at Cl1 (e.g., max. 54 cm) and at Ag 13 (e.g., max. 46 cm). Transcordilleran transport to Lp8 must have required *impact resistance*, *resistance to weathering*, and *transportability* (Figure 14). When vessels were transported, however, they must have contained local resources available in the seasonally dry Pacific foothills.

Similarly, unlike vessels produced in the Pacific Cordillera, Azuero-made pottery had thicker walls and lower firing temperature ranges with higher porosity but, akin to Cordilleran wares, had a high content of mineral inclusions. Therefore, I infer that *thermal shock resistance* and *heating effectiveness* were prioritized performance characteristics, consistent with the inference that vessels were designed for cooking, but thinness of walls was not weighted because *transportability* was not prioritized. Topographically, northeastern Azuero on the Parita Bay coast is flat, not requiring significant *impact resistance* and effective *transportability* performance (Figure 14).

Since low-fired pottery is not optimal for *abrasion resistance*, such a performance characteristic was not prioritized in Azuero. If pottery was mainly used for boiling shellfish, abrasions that normally occur through stirring activities did not pose significant constraints.

Inferring from orifice diameter and vessel forms, pottery found at shell middens of He5 and Pr32 were, in general, similar to pottery that was deposited at Pacific plains and foothills sites (Table 29). This lack of differences allows no further inferences.

It is of interest that my sourcing research turned up a couple of Azuero-produced Monagrillo pottery fragments from Carabalí (Sf9), ~60-70 km inland from Parita Bay, situated in the Pacific foothills. Carabalí is at a lower elevation than ~300 m a.s.l. and receives a similar annual average precipitation as Lp8 on the Caribbean slope but is on the seasonally dry Pacific side. Although, until recently, ceramics were produced by a local potter here, this area may not have been preferred as a ceramic production zone by Monagrillo potters who opted for the much drier Parita Bay zone for production. The sample size of Sf9 is too small and requires further testing; however, seasonally the driest zone being the ceramic production location during the Monagrillo period indicates that potters weighted *ease manufacture* in dry conditions.

With respect to long-term liquid *storability*, high-fired pottery with low porosity found in the Pacific foothills pottery has low *permeability*; however, the globular vessels that tend to have relatively large orifices compared to the body are not effective for long-term liquid storage. Vessels with high porosity, on the other hand, found in Azuero-made wares, have high cooling effectiveness optimal for keeping drinking water. Monagrillo pottery from the Cordillera could have been used for storing liquids and Azuero vessels were for the *cooling effectiveness* of water, but since vessel forms have no production zone-based differences and the performance characteristics of vessel forms are not uniquely suited for liquid storage, these were perhaps not the prioritized performance characteristics.

From this life history study of Monagrillo pottery, previous hypotheses (Cooke 2005; Cooke and Ranere 1992c) about potters prioritizing *expediency* in production are not supported. Cooke and Ranere (1992c) write that the orifice was poorly finished suggesting lack of skills. It has also been suggested that ceramics were made quickly, whenever needed, using materials that were available locally (Cooke and Ranere 1992c). As examined in Iizuka (2013), porous, high sand inclusions, and low fired characteristics of Azuero-produced pottery are optimal for cooking functions. In my research, the small size of rim sherds, large orifice diameters of some sherds, and non-standardized characteristics of production made the diameter measurements difficult in Monagrillo pottery; however, it is likely that if vessels in Azuero were intended for a utilitarian function such as cooking, the careful finish of the rim and lip may not have been weighted. In addition, from the sourcing research, I learned that pottery producers at He5 making Azuero granitic inclusions-based vessels had already targeted ceramic raw material mines in the vicinity of the Azuero coast, from the beginning of pottery manufacture, even when the site was at the active shoreline, prior to the formation of lagoons when people began to visit frequently and occupy longer term. The same clay sources continued to be used throughout the period (in the surrounding area, raw clays show petrographic variability suggesting pastes with different inclusions were available). Hence, the specific raw materials could have been selected for *technofunctional* reasons. The *expediency* of raw material procurement hence was not prioritized as far as the selection of raw materials is concerned and does not support previous hypotheses.

Nonetheless, when manufacturing technique is taken into consideration in terms of *ease of manufacture* and *expediency*, the use of slab and lump forming techniques identified in Monagrillo vessels indicates that *ease of manufacture* and *expediency* were prioritized in vessel construction. Also, sand temper is known to increase the workability of clay because it makes the clay dry quicker than organic-tempered or untempered clays (Schiffer and Skibo 1987; Skibo et al. 1989). The dense sand inclusions in Monagrillo pottery could have enhanced *ease of manufacture* through heightened workability; however, if ceramics were produced during the dry season (Iizuka 2013), when excessive water and plasticity do not constrain the production, the dense sand inclusions do not need to be a prioritized performance characteristic. Therefore, the prioritization of *ease of manufacture* and *expediency* is found in the slab forming technique, but weightings of other performance characteristics did not seem to significantly increase workability.

Sociofunction

My research suggests that Ag13 had unique socio-functions. The investigation including careful visual examination suggested that Ag13 had a much higher proportion of decorated vessels than other Monagrillo sites (Figure 12).

The provenance results show that Ag13 had a high proportion of finished vessels transported from the Pacific foothills and Azuero coast. Some vessels showed mixed

Azuero and Pacific foothills source signatures. Ag13 had the highest vessel variability by source types. According to Cooke, Block 3 of Ranere's Ag13 excavation from 1975 produced materials that are stored at STRI and was examined for this project, had dates consistent with the stratigraphy. In my ceramic research, sherds from Block 3 contained Azuero, Cordillera, and Mixed Azuero and Cordilleran source types, throughout the sequence, although data mainly come from geochemistry due to the smaller sample sizes of thin sections studied. This suggests that Ag13 had both Cordillera and Azuero produced ceramics transported to the site and possible local production occurred throughout its Monagrillo period occupation. Possible reasons for having variability in sources at Ag13 are (1) the occupants of the rockshelter frequently received guests who transported vessels to this site, (2) Ag13 residents visited the Pacific foothills sites and the Azuero coast, frequently bringing back non-local vessels, (3) residents of Azuero and Pacific foothills sites came to Ag13 where there were no permanent residents, for resource procurement, or (4) Ag13 site occupants imported vessels from the Azuero and Pacific Cordillera. Number four is unlikely because Ag13 is situated in a location close to Parita Bay, where pottery production occurred. The occupants perhaps produced intermediate types of vessels, and Monagrillo ceramics were mainly utilitarian vessels not requiring a high degree of specialization; importing was not necessary. Therefore, although different factors caused higher pottery variability in Ag13 than in other sites, uncommon activities that caused such variability occurred throughout Ag13 site's Monagrillo sequence.

This site has evidence of diverse subsistence-related practice. Paleobotanical remains at Ag13 have abundant charred remains of American oil palm (*Elaeis oleifera*) followed by wine palm (*Acrocomia Mexicana*). To date, the American oil palm that produces an oily nut has been identified only at this site in central Panama (Cooke 1995; Dickau 2005:162). Ag13, a rockshelter having a maximum living space between two large boulders, 10 by 12 m, is debated to be either a habitation site (Ranere and Hansell 1978; Peres 2001:55), for example by small groups (Cooke and Jiménez 2008:51), or a place occasionally used for foraging (Cooke 1995: 179, 2005). By 5800 B.P. at this site, maize, manioc, and squash were cultivated. Ground stones held traces of maize starch grains, domesticated yams, and chili peppers (Perry et al. 2007); maize phytoliths in the soils of ceramic-containing layers indicated maize cultivation (Cooke 1984; Piperno 2006, 2009; Piperno et al. 1985). Faunal remains indicated that animals from different habitats, terrestrial, freshwater, and estuaries, were consumed, including white-tailed deer, local mud turtle, and coastal crab and shellfish (Cooke 1995:179; Hansell 1979). The shallow water species are described to be similar to the Monagrillo site (Ranere and Hansell 1978:51). From the context of the Late Preceramic period, which had similar archaeological remains to the subsequent period except for ceramics, evidence of cannibalism has been found. Five individuals were butchered and their bone marrow had been extracted (Ranere and Hansell 1978:52). There were greenstick fractures and evidence of burnt parietal bones (Hansell 1979:10-11). Ag13 has unusual variability in the evidence for many kinds of subsistence practice.

The unusual pottery sources, an elevated proportion of decorated sherds, wide range of evidence of food, and human consumption by earlier residents engaged in a similar lifeway, all indicate that this site was ‘different.’ I suggest that if Ag13 sometimes received visitors from the Pacific foothills and the Azuero coast and palm fruit and diverse other plant and animal foods were consumed at those occasions, the site may have had a function for ‘communal gathering.’ Exchanges of Cordilleran and Azuero coastal resources from relatively sedentary communities (Iizuka 2013) could have occurred. I argue this because Pr32, also situated by the mouth of Río Santa María, at less than 20 km distant, has predominantly Azuero-produced ceramics. Pr32 has only one sherd studied with petrography and geochemistry to have mixed Azuero and Corilleran signatures, and two sherds with Cordilleran signatures researched only with geochemistry. Pacific slope occupants rarely visited Pr32 carrying their vessels containing local resources. Instead, ceramics produced at and/or nearby Pr32 were transported to Ag13. In addition, if this site with the function of localized resources, palm nut procurement, was the reason for the vessel variability, other sites also with localized resources, such as with coastal resources, should have the vessel variability as well. I infer that Ag13 had the functions of a meeting, feasting, and exchange place for coastal and foothills communities involving decorated vessels, if not, the occupants had special access to diverse food and artifacts from both zones, in comparisons with people of other sites.

Recent studies done on decoratied ceramic variability and inter-site distribution patterns in the U.S. Southwest via social network analysis can be used to assess this argument. Sites that functioned as brokerage places within networks are found at archaeological social boundaries, located at intermediate points (Peeples and Haas 2013). In central Panama, ethnohistorically, a possible chief's house in Natá on the Pacific plains, by northern Parita Bay, has been reported to have functioned as the trading location of maize, fish, and crabs (Espinosa 1994 in Carvajal 2010: 69). Polities at this type of junction location in later Pre-Colombian Panama collected regional raw materials and crafts and redistributed valued goods, controlling long distance exchange (Helms 1979:34-35). Ag13, in a similar intermediate location between the Azuero coast and the Pacific Cordillera could have had an exchange or brokerage function or residents there had access to diverse goods compared to others, prior to the emergence of complex social organization in central Panama.

7.2. Shared tradition/social constraints

Some ethnographic and ethnoarchaeological studies (Arnold 1981, 1989; Gosselain 1998; Reina and Hill 1978) done among Austronesian and non-Austronesian language speakers of New Guinea (Key 1973 in Arnold 1981), traditional pottery producing Mayan communities of Guatemala highlands consisting of several linguistic groups (Reina and Hill 1978:205), Yoruba and Nupe groups of Nigeria (Cardew 1978 in Arnold 1981), pottery communities in Tikul of Mexico (Arnold 1989), and potters from 21 linguistic groups and 7 linguistic entities of Cameroon (Gosselain 1998), have offered inferences about the relationship between social boundaries and ceramic production. According to those studies, ceramic manufacturing/forming techniques and linguistic groups have associations, but not other production processes such as firing technique or surface treatment. This is hypothesized to be due to a potter's motor habits learned subconsciously during childhood along with language learning, both of which are resistant to change even when potters move from one group (e.g., village) to another (Arnold 1989; Gosselain 1998:94). Ethnographic studies showed that technological transmission of pottery is kin-based (Arnold 1989), and normally does not cross linguistic boundaries in traditional communities. If techniques were learned outside the linguistic group, it was within fifty kilometers or less (Gosselain 1998). The manufacturing techniques from all sites examined visually, in thin sections, and xeroradiography gave consistent results: pottery was produced using highly overlapping and irregular sized, pressed or squeezed slabs and small lumps, for vessel forming, except for a few identifiable samples and sherds that were too small for identification. Vessel lips were finished by folding of a longer slab, with one slab continued on the rim, or with a couple of layers of slabs. The clayey sediments Monagrillo potters preferred to mine are also procured by potters today in the El Valle (pyroclastics), Penonomé (pyroclastics), and Azuero (granitic clay at La Arena). However, today’s potters hand build these vessels using thick coils and a wheel. Therefore, in addition to the *ease of manufacture* and *expediency* the slab technique offers, as mentioned above, the Monagrillo potters’ choice of layered slabs and lump techniques also indicates their homogeneous learning framework, implying relatedness. In this case, the slab technique can be interpreted as a *social constraint*, preserving a tradition.

8. Conclusions

Monagrillo pottery emerged in the context of fairly sedentary farming communities cultivating domesticated seed and root crops. People also intensively harvested palm fruit when it was available. They had a rich mixed diet including maize, but before maize had become a staple. People also engaged in hunting, fishing, and shellfish collecting.

In my study, technological variability in Monagrillo pottery was examined, incorporating archaeometric methods, comparing vessels classified by excavated sites and by source types. The focus was on making inferences about the intended functions of vessels by adopting the behavioral life history approach. My results indicate that Monagrillo pottery had the primary prioritized performance characteristics of *thermal shock resistance* and *heating effectiveness;* thus, I infer that vessel producers made pottery intending it for cooking use, both in the Pacific Cordillera and on the Azuero coast. In addition to the primary cooking function, performance characteristics of *impact resistance, transportability,* and *resistance to weathering* were prioritized by Pacific Cordilleran pottery producers, although secondarily, because Pacific foothills vessels were transported in rugged topographic zones as well as being distributed to the highly humid Caribbean side. In the Caribbean zone, production is difficult and its nearly perennially wet climate quickly weathers pottery. Azuero-produced vessels were frequently transported to Ag13; however, since given the flat topography, providing *impact resistance* and *transportability* was not so much of a concern for producers. When pottery was transported outside the production zone, it was likely to have contained local resources unavailable at the destination.

Sherds from Ag13 showed the evidence of a special-purpose location with a much higher percentage of decorated sherds, mainly Mongrillo red-slipped ware, than any other sites. Vessels were frequently transported not only from Azuero but also from the Cordillera. The Ag13 site also had the evidence of diverse subsistence practice. Therefore, I infer that the Ag13 site, used to procure palm nuts, had an unusual *sociofunction* such as a place for meetings, feasts, and exchange for the relatively sedentary communities of Azuero and the Cordillera. Ag13, in the intermediate location between the coast and the Cordillera had a social junction function prior to the emergence of complex societies in central Panama, when such functions are observed in the intermediate locations.

The absence of variability in manufacturing technique in Monagrillo ceramics, having the slab construction, suggests two aspects: *ease of manufacture* and *expediency* as well as the social relatedness of Azuero and Cordilleran vessel producers.

I conclude that the first pottery of Panama, which predominantly consisted of plain ware, was produced by potters living in fairly sedentary and related communities of the Azuero and the Paific Cordillera. Vessels were engineered through technical steps that potters emphasized based on prioritized performance characteristics, in response to the need for the effective cooking containers required for the increasingly sedentary agricultural life style with diverse diet. Pacific Cordilleran potters also made secondary technical choices reacting to the requirement for their vessel use in rugged terrain and transportation to the nearly perennially wet Caribbean zone that quickly weathers pottery. The rockshelter in the Pacific plains, the intermediate area of communities in the Azuero and Cordillera, was possibly used for gathering of people from both zones. Future studies should be done testing and comparing these results and conclusions, obtained from ceramic analyses, with other archaeological evidence from this time period.

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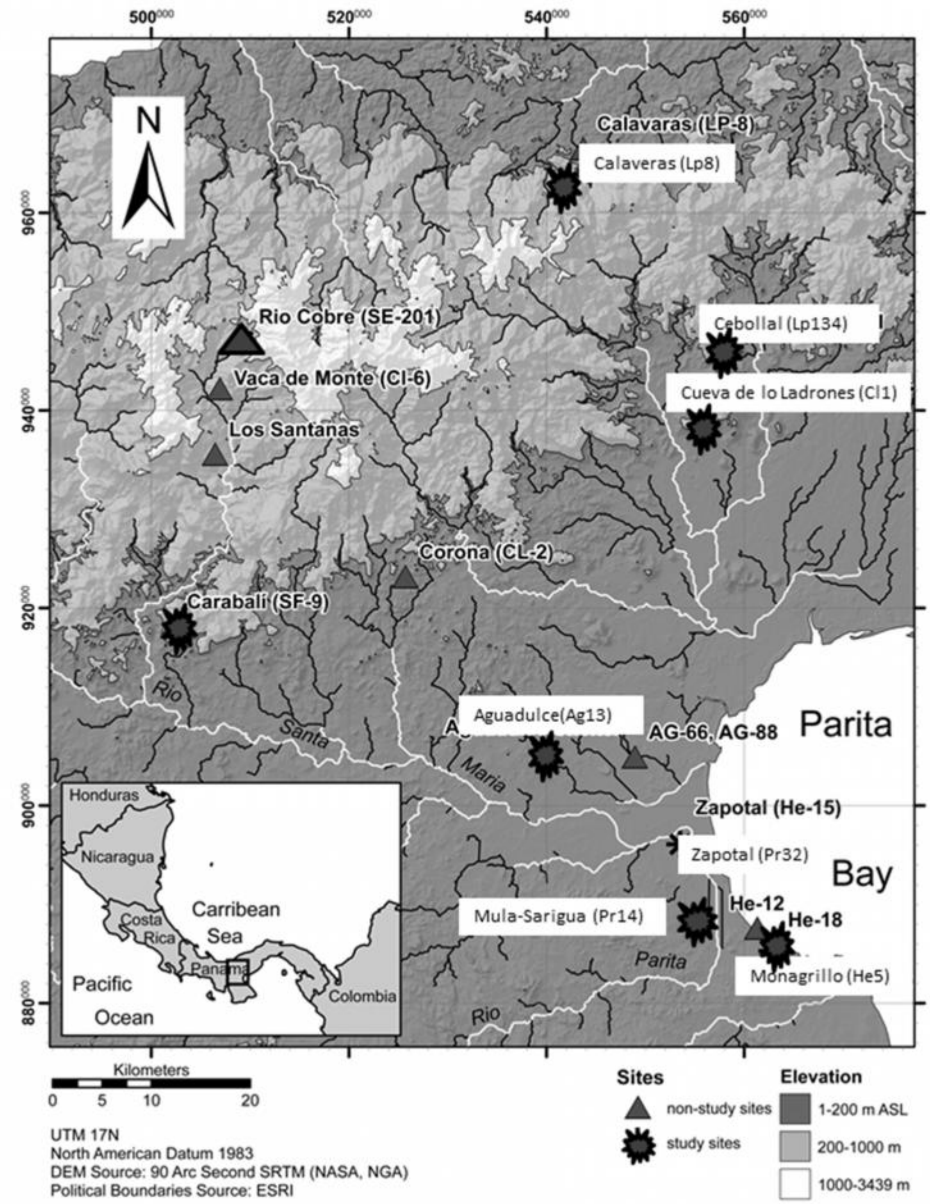

Figure 8. Map of Monagrillo sites.
The original map was made by Randall Haas, adopted from Environmental Systems Research Institute (ESRI) ArcGIS (2008) and 90 Arc Second Shuttle Radar Topography Mission (SRTM) (2008), and was modified by Iizuka.

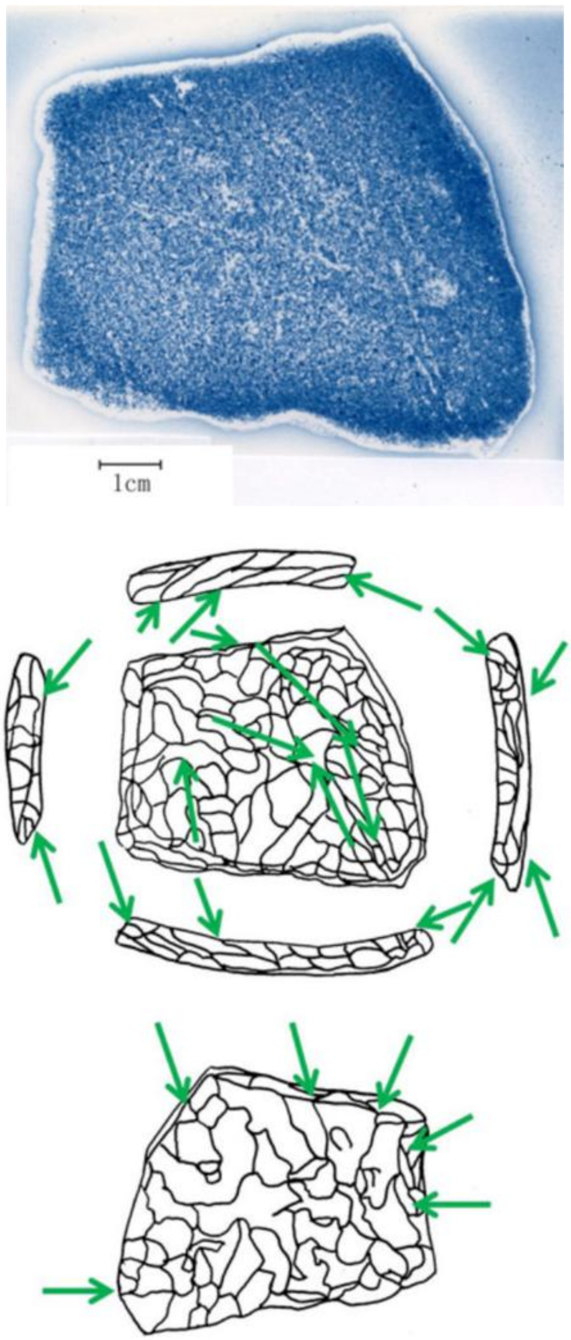

Figure 9. Images from xeroradiography (above) and drawing (below) of a Monagrillo sherd (Cl1-45-13).

Xeroradiograph has clear manufacturing lines where clays were joined, represented as lines (white) with high porosity. The manufacturing lines from the visual analytical study (bottom) overlap in the possible areas of joints.

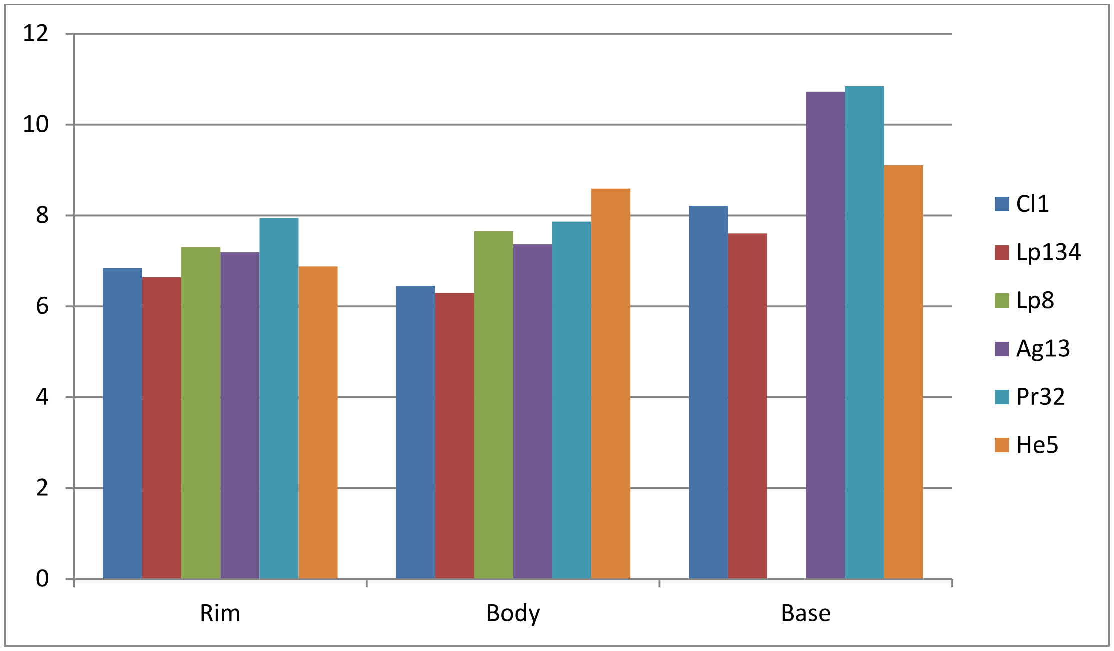

Figure 10. The thickest part of rim, body, and base walls (in mm) compared by sites.
He5 that has petrographic type 1 (granitic inclusions) and type 2 (mixed igneous sand). He5 type 1 had the thickest average body thickness of all sites but did not have sufficient number of samples to evaluate the base thickness; therefore, the results from He5 type 1 and 2 were merged here as an Azuero type.

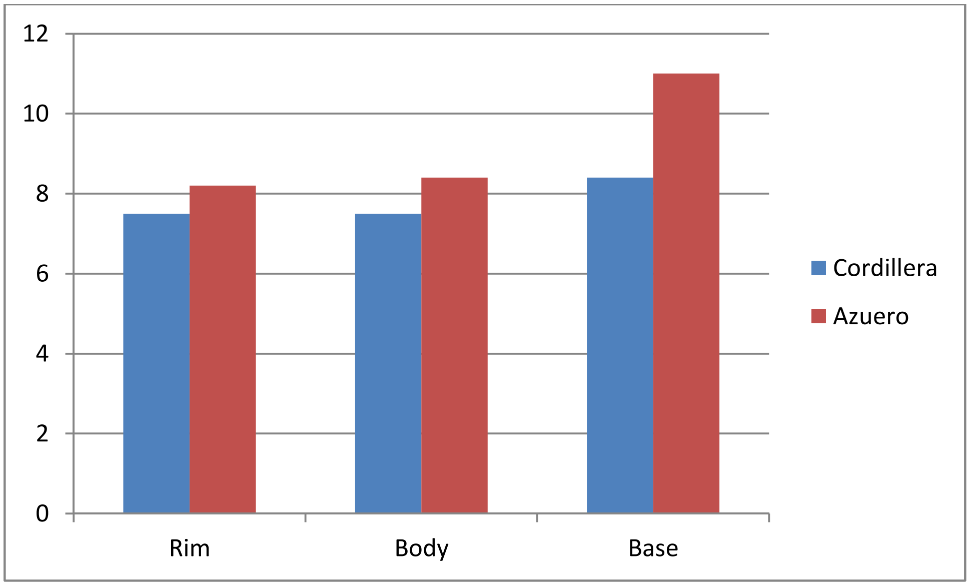

Figure 11. Rim, body, and base thickness average (mm) comparisons by source types.
These comparisons were based on sources, Pacific Cordillera (n = 50) and Azuero (n = 48) types, after the combined results from three provenancing methods: petrography, TOF-LA-ICP-MS, and P-XRF. Mixed type was not included because the sample size was small (n = 7) and there was no pottery sample from the vessel base.

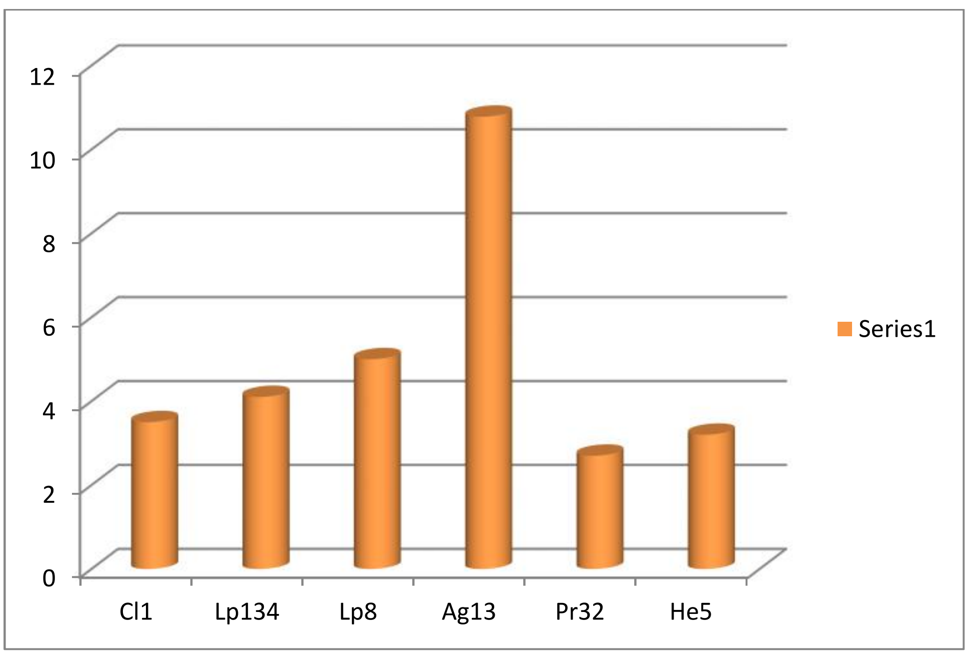

Figure 12. Comparisons of percentages of decorative sherds at major sites.
The range is between ~2.7 (Pr32) and 10.8 (Ag13).

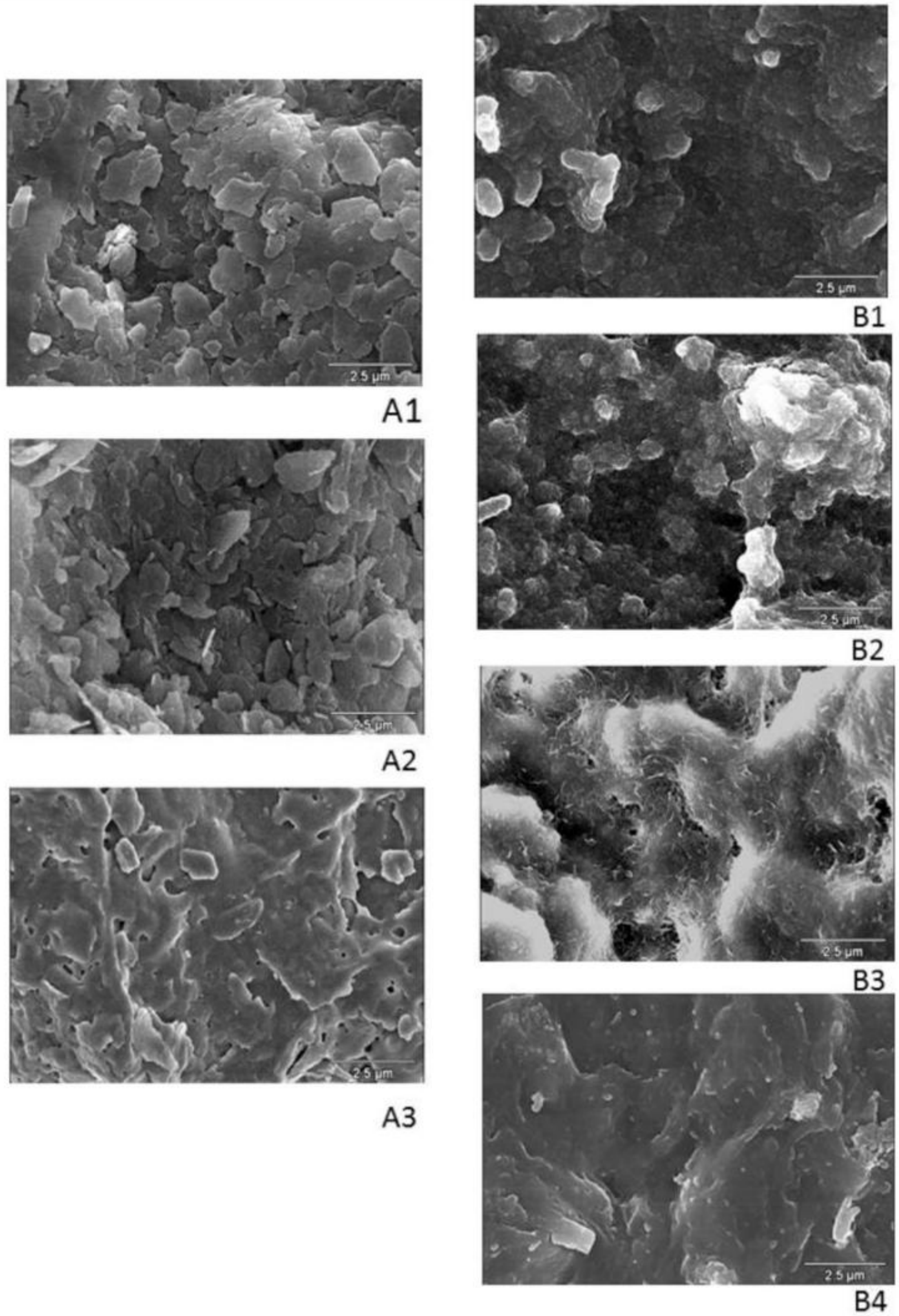

Figure 13. Examples of microstructural images of refired sherds obtained with field emission SEM-EDS.

The left column with A1 to A3 is from Cl1-45-F26 and the right column with B1 to B4 is from He5-76-F1. All the images were obtained with 10,000X magnification with 15kV, accelerating voltage. These images are from the following temperatures: A1 (original), A2 (900 °C), A3 (1,000°C), B1 (original), B2 (800°C), B3 (900°C), and B4 (1,000°C). Cl1-45-F26 was fired at ~950°C and He5-76-F1 at ~850°C inferred from the temperature of the microstructural change.

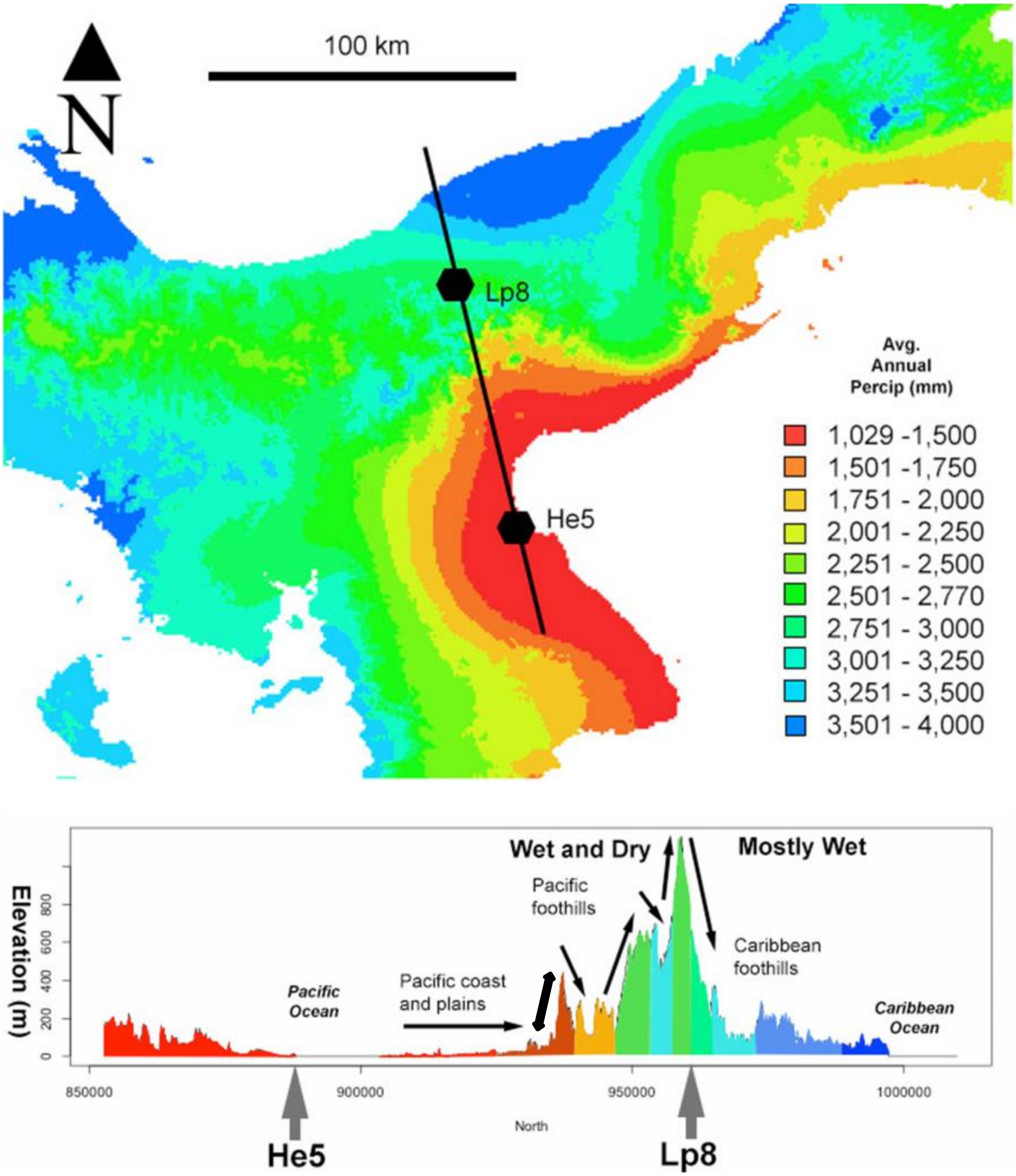

Figure 14. The transect of central Panama adopted from Griggs (2005) and modified.
X-axis represents UTM values, Y axis shows the elevation in meters. Figure data [United States Geological Survey (USGS), digital elevation model and precipitation information: http://www.worldclim.org/methods] were produced by Randall Haas and modified by Iizuka. Vertical elevation figure is being exaggerated. Note pottery produced in the Pacific coast is mostly produced, used, and transported in the lowland with wet and dry seasons. On the other hand, vessels produced in the Pacific foothills were made in the seasonally dry area and circulated in the rugged topography, which sometimes included the transcordilleran transportation to the perennially wet Caribbean zone that inhibited ceramic production and that quickly weathered vessels.

SITE	DATE	CONTEXT	LAB.NO.	MATERIAL	Cal Age 2s	SD	BP	SD
Aguadulce	1997	Zone B, 12-17 cm bs	UCR-3418	Phytoliths in milling stone	cal BC 3017 - 2833	60	4250	60
Carabalí	1987	CP20, Lev 9 (40-45cm)	Beta-19101	Charcoal	cal BC 1530 - 785	180	2920	180
La Mula-Sarigua	1983	Feature 242S417E	Beta-21898	Shell	cal BC 500-200	60	2640	60
La Mula-Sarigua	1983	Feature 242S417E	Beta-6016	Shell-o	cal BC 760-415	50	2820	50
Ladrones	1974	A0, Lev7/8, 71-76 cm	TEM-122	Charcoal	cal BC 2570-2130	80	3880	80
Ladrones	1974	A1, Lev2b, on rock	TEM-124	Charcoal	cal BC 3520-2910	100	4520	100
Ladrones	1974	A1, Lev3, 30-45 cm	TEM-119	Shell-o	cal BC 3780-3355	100	5180	100
Ladrones	1974	A2A, Lev 4	TEM-120	Shell-o	cal BC 2495-2100	80	3770	80
Ladrones	1974	A2A, Lev 5	TEM-121	Shell-o	cal BC 2655-2180	90	3860	90
Ladrones	1974	A2A, Lev 6	TEM-123	Charcoal	cal BC 5900-5620	90	6860	90
Monagrillo	1975	B2East, 20-30 cm	SI-2838	Charcoal	cal BC 1885-1510	75	3385	75
Monagrillo	1975	B2East, 50-60 cm	SI-2839	Charcoal	cal BC 2105-1205 & 2040-1530	100	3485	100
Monagrillo	1975	B2East, 95-100 cm	SI-2840	Charcoal	cal BC 2200-1750	80	3615	80
Monagrillo	1975	B2East, 100-100 cm	TEM-109	Charcoal	cal BC 4520-4060	100	5495	100
Monagrillo	1975	B2East, 110-120 cm	SI-2841	Charcoal	cal BC 4375-3980	95	5385	95
Monagrillo	1975	B2East, 164-169 cm	TEM-208	Shell-o	cal BC 2920-2110	160	4350	165
Zapotal	1987	C32 Ext	Beta-20849	Shell-p	cal BC 2025-1675	70	3850	70
Zapotal	1987	C35	Beta-21389	Shell-n	cal BC 2345-1800 & 1790-1785	100	4010	100
Zapotal	1987	C2/3, Grey Zone	Beta-20850	Shell-p	cal BC 1635-1275	80	3520	80
Zapotal	1987	TP, Ext, L3	Beta-9574	Shell-o	cal BC 1615-1255	80	3500	80
Zapotal	1987	C22	Beta-21388	Shell-a,n	cal BC 1725-1400	70	3610	70
Calaveras	1998	unit 1.47, feature 4, 55-60 cm	Beta-131423	Carbonized wood	cal BC 1540-1395	50	3200	50
Calaveras	1998	unit 1.45, feature 1, 70-80 cm	Beta-131421	Carbonized wood	cal BC 1620-1390	60	3210	60
Calaveras	1998	unit 1.59, feature 2, 40-45 cm	Beta-131425	Carbonized wood	cal BC 1695-1450	50	3300	50
Calaveras	1998	unit 2.01, 80-90 cm	Beta-143855	Carbonized wood	cal BC 1770-1620	40	3410	40

Table 21. Radiocarbon chronology of the Early Ceramic sites studied.
The radiocarbon dates are from Richard Cooke (personal communication 2006); en.ancientmaize.com/micro_samples/379; Griggs (2005); Piperno et al. (2000); Anthony Ranere (personal communication 2012). The calibration of Aguadulce radiocarbon date was done by Iizuka using CALIB radiocarbon calibration program 6.1

	Site Type	Elevation (a.s.l)	Location, Closest Major river, Distance from present shoreline	Maxium size and/or number of inhabitants	Chronology	Seasonal-ity	Annual Precipita-tion
Cl1	Rock shelter	~400 m	Pacific foothills, Río Grande 25 km (Peres 2001)	30x15 m, 10-20 people (Bird and Cooke 1978:285-286)	~4850 to 3820 B.P. (Peres 2001) with intensive occupation after 3860±90 ca. B.P. (Cooke (1995)	Wet and Dry	~1500-2000 mm (Griggs 2005:35; Piperno et al. 1985)
Lp134	Rock shelter	~120 m	Pacific foothills, Río Grande, ~25-30 km	< Ag13	~4500-3200 B.P.	Wet and Dry	~1500-2000 (Griggs 2005:35)
Sf9	Rock shelter	~270 m (Iizuka 2011)	Pacific foothills, Río Santa María, ~60-70 km	13 x 6 m	~4500-3200 B.P.	Wet and Dry	3000-3500 mm (Tommy Guadria 1988 in Dickau 2005:63)
Lp8	Rock shelter	~180 m (Griggs 2005)	Caribbean foothills, Coclé del Norte, 28.5 km from the Caribbean coast (Griggs 2005)	27 m²	~4500-3200 B.P. with intensive occupation after 3500 B.P?	Perennially Wet	3000 mm (Griggs 2005)
Ag13	Rock shelter	~20 m (Iizuka 2011)	Pacific plains, Santa María, 17 km (Peres)	12 x10 m (Ranere 1975)	~4500-3200 B.P.	Wet and Dry	1000-1800 mm (Cooke and Ranere 1992b)
He5	Shell Midden	~20 m	Northeastern Azuero coast, Parita	1.4 ha, 200 people (Isaza 2007)	Pre-Midden: 4400-4000 B.P. Midden: 4000-3500 B.P. Post-midden: 3500-1050 B.P.	Wet and Dry	1000-1400 mm (Cooke 1984:282)
Pr32	Shell midden	~20 m (Iizuka 2011)	Northeastern Azuero coast, Santa María	3.1 ha, 500 people (Isaza 2007)	Pre-midden: 4000-3500 B.P. Midden:	Wet and Dry	1000-1400 mm (Cooke 1984:282)
Pr14	Shell midden	~20 m (Iizuka 2011)	Northeastern Azuero coast, Parita	1.3 ha, 50 people (Isaza 2007)	~4500-2500 B.P., with major occupation late Monagrillo (?)	Wet and Dry	1000-1400 mm (Cooke 1984:282)

Table 22. Occupational history, elevation, location, size, number of occupants, and the environmental condition of Mongrillo sites studied for this project.

Petrg group	**Inclusion %**			**Plg**			**K-fld**			**Zn-fd**		
	Incl% (Avr)	Lith % (Avr)	Minr% (Avr)	Ab	Sz	Wth	Ab	Sz	Wth	Ab	Sz	Wth
Granite	30-45 (37.9)	7-30 (15.1)	10-33 (22.7)	<1-<20	0.07-1	1.8	<1-<20	0.03-0.75	2.1	<1-<5	0.2-0.7	1.17
Mixd Igneous	20-55 (37.5)	15-33 (22.4)	5-25 (15.1)	<1-<50	0.03-1.5	1.15	<1-<50	0.04-1.1	1.25	<1-<20	0.1-1.4	1.04
Pyroclastics	15-50 (39.4)	2-15 (6.6)	13-48 (32.4)	<1-≥50	0.05-1.8	1.2				<1-<50	0.05-2.2	1.12

Petrg group	**Amph**			**Px**			**Bt**		
	Ab	Sz	Wth	Ab	Sz	Wth	Ab	Sz	Wth
Granite	<1-<5	0.05-0.8	1.6				<1	0.05-0.15	2.3
Mixd Igneous	<1-<5	0.05-0.6	1.19	<1	0.1-0.8	1	<1-<5	0.03-0.9	2.3
Pyroclastics	<1-<20	0.05-1.8	1.11	<1	0.05-0.6	1	<1	0.05-0.9	2.35

Table 23. Petrographic data: pottery inclusions.
Comparisons of inclusions by source types, with abundance (Ab), size (Sz), and weathering degrees (Wth). This table shows petrographic data of pottery inclusions. ‘Avr’ is average, ‘Incl’ is inclusions, ‘Lith’ is lithics, and ‘Minr’ is minerals. ‘Plg’ is plagioclase, ‘K-fld’ is K-feldspar, ‘Amph’ is amphibole, ‘Px’ is pyroxene, and ‘Bt’ is biotite.

	Avr Incl%			Plag			K-fld (?)			Fld		
	Incl%	Lith%	Minr%	Ab	Sz	Wth	Ab	Sz	Wth	Ab	Sz	Wth
Granite	25	12	13							≥1-<5	0.5-0.7	1.5
Mxd Igneous	35	11.8	23.3	<1-<5	0.1-0.3	1.5				<1-<50	0.1-2	2.3
Pyrclstcs	28.1	12.9	15.2	<1-<50	0.1-1.3	2	≥1-<5	0.7	2	≥1-<50	0.08-0.7	2.75

	Z-fd			Amphib			Bt		
	Ab	Sz	Wth	Ab	Sz	Wth	Ab	Sz	Wth
Granite							<1-<5	0.1-0.15	
Mxd Igneous				<1-<5	0.05-0.2	2.7	<1	0.12-0.22	2.5
Pyrclstcs	<1-<20	0.15-1.2	1.6	≥1-<5	0.08-0.8	1.5	≥1	0.15-0.2	2.5

Table 24. Petrographic data: raw clayey soil inclusions.
Comparisons of inclusions by source types, with abundance (Ab), size (Sz), and weathering degrees (Wth). This table shows petrographic data of raw clayey soil inclusions. 'Avr' is average, 'Incl' is inclusions, 'Lith' is lithics, and 'Minr' is minerals. 'Plg' is plagioclase, 'K-fld' is K-feldspar, 'Fld' is feldspar, 'Z-fld' is zoned feldspar, 'Amph' is amphibole, and 'Bt' is biotite.

	lithic:mineral (%)		Plag			Z-fd			Amphib			Bt		
			Ab	Sz	Wth	Ab	Sz	Wth	Ab	Sz	Wth	Ab	Sz	Wth
Granite														
Mxd Igneous														
Pyrclstcs	60	40	≥1-<50	0.2-1.6	1.1	≥5-<50	0.3-2.5	1	≥1-<5	0.05-1.2	1	<1	0.3	2

Table 25. Petrographic data: raw sand inclusions.
Comparisons of inclusions by source types, with abundance (Ab), size (Sz), and weathering degrees (Wth). This table shows raw sand inclusions. 'Avr' is average, 'Incl' is inclusions, 'Lith' is lithics, and 'Minr' is minerals. 'Plg' is plagioclase, 'Z-fld' is zoned feldspar, 'Amph' is amphibole, and 'Bt' is biotite.

		Inclusion %			Plg			K-fld			Zn-fld		
		Incl% (Avr)	Lith % (Avr)	Min%	Ab	Sz	Wth	Ab	Sz	Wth	Ab	Sz	Wth
Source by 3 combined methods	Cordillera	25-50 (40.6)	1-15 (6.8)	15-48 (33.2)	<1-<50	0.03-1.5	1.1				<1 - <50	0.1-2.2	1.1
	Mixed	15-50 (32.9)	2-10 (6)	10-45 (27)	≥5 - ≥50	0.05-1.25	1.1				≥1 - <50	0.2-1	1.1
	Azuero	20-55 (38)	5-45 (21.6)	5-33 (16.5)	<1-<50	0.03-1.5	1.3	<1-<50	0.03-1.1	1.6	<1-<20	0.1-1.4	1
2 Azuero Petrographic types and 3 combined methods	Azuero 1	30-50 (38.3)	7-30 (16.8)	15-33 (21.4)	<1-<20	0.05-0.6	1.7	≥1 - <20	0.03-0.6	1.9	<1 - <5	0.2-0.6	1
	Azuero 2	20-55 (38)	5-45 (22.7)	5-25 (15.3)	<1-<50	0.03-1.5	1.2	<1-<50	0.04-1.1	1.1	<1 - <20	0.1-1.4	1

		Amph			Px			Bt		
		Ab	Sz	Wth	Ab	Sz	Wth	Ab	Sz	Wth
Source by 3 combined methods	Cordillera	<1-<20	0.05-1.8	1.1	<1 - <5	0.05-0.6	1.2	<1 - <5	0.05-0.9	2.2
	Mixed	<1 - <5	0.1-3	1				<1	0.1-0.2	2.5
	Azuero	<1 - <5	0.02-0.8	1.3	<1-<5	0.03-1.2	1.3	<1 - <5	0.03-1.2	2.3
2 Azuero Petrographic types and 3 combined methods	Azuero 1	<1	0.05-0.8	1.7				<1 - <5	0.08-0.5	2.3
	Azuero 2	<1 - <5	0.02-0.6	1.2	<1-<5	0.03-1.2	1.3	<1 - <5	0.03-0.9	2.3

Table 26. Petrographic data: average inclusion percent and lithic and mineral percent in pottery compared by source types grouped by three analytical methods.
Comparisons of inclusions by source types of pottery, with abundance (Ab), size (Sz), and weathering degrees (Wth). 'Avr' is average, 'Incl' is inclusions, 'Lith' is lithics, and 'Minr' is minerals. Azuero 1 is the Azuero petrographic type with granitic inclusions and Azuero 2 is the mixed igneous inclusion type. 'Plg' is plagioclase, 'K-fld' is K-feldspar, 'Amph' is amphibole, 'Px' is pyroxene, and 'Bt' is biotite.

	Inclusion %			Plg			K-fld			Zn-fd		
	Incl% (Avr)	Lith % (Avr)	Minr% (Avr)	Ab	Sz	Wth	Ab	Sz	Wth	Ab	Sz	Wth
Cl1	25-50 (38.2)	2-26 (9.8)	4-48 (27.3)	≥1 - <50	0.03-1.5	1.08				≥1 - <20	0.05-1.6	1.1
Lp134	30-50 (38.1)	3-25 (7.5)	13-45 (30.4)	<1 - <20	0.1-1.5	1.1				≥1 - <50	0.08-1.9	1
Lp8	30-50 (44.5)	5-15 (8.1)	20-45 (35.5)	≥1 - <50	0.03-1.6	1.5				≥1 - <20	0.1-2.2	1.3
Sf9	40 (40)	15 (15)	10-25 (17.5)	≥1 - <20	0.15-0.9					≥1 - <5	0.15-1	1
Ag13	20-50 (34.7)	2-40 (12.5)	10-45 (22.3)	≥5 - ≥50	0.07-1.2	1.1	<1 - <5	0.25-0.8	1.25	<1 - <50	0.1-1.7	1
Pr32	20-55 (36)	2-45 (20.6)	5-25 (15.4)	<1 - <50	0.05-1.5	1.2				<1 - <50	0.2-1.2	1.1
He5	15-50 (37.5)	1-25 (16.3)	10-34 (22.7)	<1 - <50	0.05-1	1.5				<1 - <50	0.07-0.9	1.5
Pr14	35-50 (42.5)	15-40 (25)	10-20 (15)	≥1 - <5	0.1-0.4	1.17				≥1 - <5	0.2-1	1

	Amph			Px			Bt		
	Ab	Sz	Wth	Ab	Sz	Wth	Ab	Sz	Wth
Cl1	<1 - <20	0.05-1	1	<1	0.1-0.5	1	<1	0.15-0.9	3
Lp134	<1 - <20	0.05-1.2	1	<1 - <5	0.1-0.5	1	<1 - <5	0.05-0.5	2.1
Lp8	<1 - <20	0.05-1.8	1.4	<1	0.1-0.6	1	<1	0.05-0.3	2.5
Sf9	<1	0.1-0.3	1				<1	0.2-0.3	3
Ag13	<1 - <5	0.1-0.6	1	<1	0.15-0.3	1	<1	0.06-0.9	0.6
Pr32	<1 - <5	0.05-0.5	1.1	<1	0.1-0.7	1	<1 - <5	0.03-0.9	2.1
He5	<1 - <5	0.05-0.8	1.5	<1	0.03-0.8	1	<1 - <5	0.05-0.8	2.3
Pr14	<1 - <5	0.05-0.3	1.5				<1 - <5	0.15	2.3

Table 27. Petrographic data: average inclusion percent and lithic and mineral percent in pottery grouped by site where sherds were excavated.
Comparisons of inclusions by sites, with abundance (Ab), size (Sz), and weathering degrees (Wth). ‘Avr’ is average, ‘Incl’ is inclusions, ‘Lith’ is lithics, and ‘Minr’ is minerals. ‘Plg’ is plagioclase, ‘K-fld’ is K-feldspar, ‘Amph’ is amphibole, ‘Px’ is pyroxene, and ‘Bt’ is biotite.

	Visual				Thin section				Xeroradiograph			
	slabs/lumps	others	UnID	Total	slabs/lumps/squeezed	othrs	UnID	Total	slabs/lumps	othrs	UnID	Total
Cl1	523		110	737	22	1		23	14			14
Lp134	228		13	241	20	1	1	22	8			8
Lp8	15		5	20	16		4	16	2	N/A	1	3
Sf9	8		5	13	2			2	N/A	N/A	N/A	N/A
Ag13	224		101	325	20			20	11		1	12
Pr32	755	1	254	1010	21			21	11		4	15
He5	147	1	37	184	19	2		21	14			14
Pr14	2		1	3	3			3	N/A	N/A	N/A	N/A
TOTAL	1902	2	526	2533	123	4	5	128	60		6	66

Table 28. Results from studies of manufacturing techniques.
Results from visual, thin section, and xeroradiographic methods are presented. Slbs indicates slabs, lmps indicates lumps. Squeezed is where joint was beveled, elongated, and plastically deformed), others indicates other techniques besides slab and lumps, and UnID indicates unidentifiable sherds. Note that among the sherds that showed manufacturing lines of porosity and that were identifiable, nearly all sherds had layered slab constructions.

	Rim (mm)		Body (mm)		Near Base and Base		Rim %	Diam (cm)				Vessel Form (%)	
	Thinnest Range (Avr)	Thickest Range (Avr)	Thinnest Range (Avr)	Thickest Range (Avr)	Thinnest Range (Avr)	Thickest Range (Avr)	(N[rim]/N [total])	Diam Range (cm)	Diam (Avr, cm)	Bowl (Avr, cm)	Jar (Avr, cm)	Bowl	Jar
Cl1	3.5 to 7.14 (5.45)	3.29 to 10.03 (6.84)	2.7 to 12.65 (5.94)	3.06-12.66 (6.45)	4.85-7.12 (6.1)	7.26-9.37 (8.21)	11.2	7 to 54	28.3	26.7 (9 to 54)	27.6 (7 to 50)	65.2 (n=30)	34.8 (n=16)
Ag13	3.49 to 11.21 (6)	4.12 to 12.41 (7.19)	3.02 to 11.9 (6.58)	4.04 to 12.73 (7.36)	5.5 to 10.06 (8.04)	8.93 to 13.7 (10.72)	33.7	7 to 46	27.8	26.2 (7 to 38)	28.9 (18 to 46)	52.2 (n=35)	47.8 (n=32)
Pr32	4.94 to 8.95 (6.76)	5.9 to 11.01 (7.94)	1.04 to 12.99 (7.37)	1.05 to 14.18 (7.86)	6.34 to 12.9 (8.89)	7.93 to 14.97 (10.84)	3.4	12 to 42	21.2	26.25 (15 to 42)	16.2 (12 to 25)	30.8 (n =4)	69.2 (n=9)
He5	4.14 to 6.82 (5.47)	5.35 to 9.9 (6.88)	0.77 to 12.59 (7.79)	3.37 to 13.06 (8.59)	3.93 to 10..27 (6.6)	6.87 to 11.94 (9.1)	7.2	19 to 29	24.4	24.67 (24 to 26)	24 (19 to 29)	60 (n=3)	40 (n=2)
Lp8	4.68 to 7.57 (5.77)	5.43 to 9.16 (7.3)	3.71 to 9.26 (6.65)	5.13 to 9.27 (7.65)	N/A	N/A	45	9 to 30	22.8	18.5 (9 to 28)	25.7 (21 to 30)	40 (n=2)	60 (n=3)
Lp134	3.71 to 7.75 (5.47)	4.6 to 9.65 (6.64)	3.01 to 9.93 (5.64)	3.23 to 9.81 (6.29)	4.6 to 7.54 (6.15)	5.71 to 9.05 (7.6)	10.16	9 to 33	26.63	27.75 (22 to 31)	25.5 (20 to 31)	50 (n=4)	50 (n=4)

Rims of Pr32 were taken by Gisserand; rims of Ag13 from the 1974 excavation was saved for vessel form analyses by Cooke. Thus they are not representative of original rim%.

Table 29. Vessel thickness, diameter, and form comparisons by site.
Wall thickness measurement of rim, body, and base or near base (mm) by site, with range and average, percentage of rim sherds among all the sherds found at each site; diameter measured on

	Rim (mm)		Body (mm)		Base and near base (mm)	
	Thinnest Range (Avr)	Thickest Range (Avr)	Thinnest Range (Avr)	Thickest Range (Avr)	Thinnest Range (Avr)	Thickest Range (Avr)
Cordillera	3.7 to 7.6 (5.7)	4.6 to 9.7 (7.5)	3.7 to 9.2 (6.5)	4.6 to 9.5 (7.5)	4.9 to 6.5 (5.9)	7.8 to 9.4 (8.4)
Mixed	4.5 to 6.3 (5.6)	4.6 to 11.3 (7.4)	5.1 to 8.3 (6.5)	6.7 to 8.9 (7.3)		
Azuero	5.2 to 6.8 (6.4)	5.3 to 10 (8.2)	5.5 to 12.6 (7.8)	5.9 to 12.8 (8.4)	3.9 to 10.3 (7.6)	8.8 to 13.2 (11)

Table 30. Wall thickness measured by source types.
Rim, body, and base measurements are presented with range and average (Avr).

	Decoration (Visual)			Total sherds
	Slip	Incision/punc-tation	Total	
Cl1	23	3	26 (3.5%)	752
Lp134	9	1	10 (4.1%)	241
Lp8	1	0	1 (5%)	20
Ag13	24	7	31 (10.78%)	309
Pr32	24 (+1 that also has incision)	3	27 (2.7%)	1009
He5	5 (+1 that also has incision)	1	6 (3.2%)	185

Table 31. Comparisons of decorative sherds by site.
The table is the decorative sherd percent from Monagrillo red slipped and incised or punctation compared to all the sherds counted from the selected units at each major site. The total number of Ag13 sherds includes only the ones with proper coding (some rim sherds have lost the original catalogue number and were excluded).

	SEM-EDS (total n=20)					Thin section	Xeroradiograph porosity (n = 196)			
	650°C	~700°C	850°C	950°C	<1050°C	<700-850C (shell)	High	Medium	Low	Total
Cl1	1			5			8 (14 %)	22 (38.6 %)	26 (45.6 %)	57
Lp134			1		1		3 (15.8 %)	7 (36.8%)	9 (47.4 %)	19
Lp8				2				4 (66.7 %)	2 (33.3%)	6
Ag13	3	1	1				8 (22.8 %)	16 (45.7 %)	11 (31.4 %)	35
Pr32	1			1	1		27 (84%)	4 (12.5 %)	1 (3.1 %)	32
He5			2			1	9 (19.1 %)	25 (53.2 %)	13 (27.7%)	47

Table 32. Firing temperature estimates by site.
Temperature estmates were made with microstructural examination with SEM-EDS, mineral identification in thin sections, and porosity observation from xeroradiography. Porosity measurements from Azuero (Az) are presented from both Azuero petrographic type 1 (Az 1) and 2 (Az 2)with sherd counts.

	SEM-EDS (n = 20)					Thin sec.	Xeroradiograph porosity (total = 54)			
	650 °C	~700 °C	850 °C	950 °C	<1050 °C	<700-850 °C (shell)	High	Medium	Low	Total
Cordillera	1		2	4	1			**12 (44.4 %)**	**15 (55.6 %)**	27
Mixed			1	1			**1 (3.3 %)**	**1 (33.3%)**	**1 (33.3 %)**	3
Azuero	3	1			1	1	**14 (58.3 %)** [14 (Az 2)]	**7 (29.2 %)** [6 (Az 1), 1 (Az 2)]	**3 (12.5 %)** [3 (Az 1)]	24

Table 33. Firing temperature estimates by source.
Temperature estmates were made with microstructural examination with SEM-EDS, mineral identification in thin sections, and porosity observation from xeroradiography. Porosity measurements from Azuero (Az) are presented from both Azuero petrographic type 1 (Az 1) and 2 (Az 2)with sherd counts.

Appendix B.1. Results of analyses of vessel thickness, surface treatments, forms, temper, manufacturing techniques, and firing temperatures

Abbreviations: (1) ext is exterior, (2) int is interior, (3) vrtc is vertical, (4) mth is mouth, (5) surf is surface, (6) RC is Richard Cooke, (7) STRI is Smithsonian Tropical Research Institute, (8) nat is natural, (9) strtm is stratum, (10) sw is southwest, (11) clmn is column, (12) S is south, (13) FI is Fumie Iizuka, (14) E is east, (15) brwn is brown, (16) ppl is plane polarized light, (17) opq is opaque, (18) xpl is cross polarized light, (19) sqz is squeezed, (20) slb is slab, (21) lmp is lump, (22) unkn is unknown, (23) dble is double, and (24) Y is yes, and (25) glbs is globs.

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
Area#1, layer 1 surface to 15 cm	CL1-2-F1			rim	54	bowl (vrtic wall)
Area#1, layer 1 surface to 15 cm	CL1-2-F2			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F3			rim		jar?
Area#1, layer 1 surface to 15 cm	CL1-2-F4			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F5			rim	?	?
Area#1, layer 1 surface to 15 cm	CL1-2-F6			rim	22	Jar
Area#1, layer 1 surface to 15 cm	CL1-2-F7			rim	?	?
Area#1, layer 1 surface to 15 cm	CL1-2-F8			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F9			rim	39	bowl (vertical)
Area#1, layer 1 surface to 15 cm	CL1-2-F10			rim	12?	Bowl
Area#1, layer 1 surface to 15 cm	CL1-2-F11			body/partial rim		
Area#1, layer 1 surface to 15 cm	CL1-2-F12			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F13			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F14			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F15			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F16			rim? (eroded)		
Area#1, layer 1 surface to 15 cm	CL1-2-F17			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F18			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F19			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F20 (orig)			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F21			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F22 (orig)			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area#1, layer 1 surface to 15 cm						
Area#1, layer 1 surface to 15 cm	CL1-2-F23 (orig)			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F24 (orig)			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F25	marks of brush (int)		body		
Area#1, layer 1 surface to 15 cm	CL1-2-F26 (orig)			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F27			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F28			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F29			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F30			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F31			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F32			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F33			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F34			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F35			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F36			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F37 (overlap)			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F38 (overlap)			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F24 (overlap)			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F40 (overlap)			body		
Area#1, layer 1 surface to 15 cm	CL1-2-F41			rim	29	Jar
Area #1, layer 2, 15 to 30 cm	CL1-3-F1			rim		Bowl

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
Area #1, layer 2, 15 to 30 cm	CL1-3-F2 (F2, F3 and F4 are the same sherds)	red slip (ext)		rim		
Area #1, layer 2, 15 to 30 cm	CL1-3-F3	red slip (ext)		rim		
Area #1, layer 2, 15 to 30 cm	CL1-3-F4	red slip (ext)		rim		
Area #1, layer 2, 15 to 30 cm	CL1-3-F5			rim	48	Jar
Area #1, layer 2, 15 to 30 cm	CL1-3-F6			rim	25	Jar
Area #1, layer 2, 15 to 30 cm	CL1-3-F7			rim		
Area #1, layer 2, 15 to 30 cm	CL1-3-F8 (F8, F9, F10 are the same sherd)			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F9			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F10			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F11			rim	?	?
Area #1, layer 2, 15 to 30 cm	CL1-3-F12			rim		
Area #1, layer 2, 15 to 30 cm	CL1-3-F13			rim		
Area #1, layer 2, 15 to 30 cm	CL1-3-F14			rim	29	Bowl
Area #1, layer 2, 15 to 30 cm	CL1-3-F15			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F16			rim? (could be body)	26	Bowl
Area #1, layer 2, 15 to 30 cm	CL1-3-F17			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F18			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F19			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F20			rim		
Area #1, layer 2, 15 to 30 cm	CL1-3-F21			rim	21	Jar

Excavation context	Ceramic code	Surface Treatment: Visual	Surface Treatment: Thin section	Sherd Body Area	Dia. (cm)	Vessel form
Area #1, layer 2, 15 to 30 cm	CL1-3-F22	four punteados (int)		base?/rim? (flat bottom?)		
Area #1, layer 2, 15 to 30 cm	CL1-3-F23			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F24	red paint/slip (below lip) (ext), 5YR 4/4		rim	30?	bowl (slightly closed mth, nearly vrtc wall)
Area #1, layer 2, 15 to 30 cm	CL1-3-F25			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F26			rim	10	bowl (small with thin wall)
Area #1, layer 2, 15 to 30 cm	CL1-3-F27	red paint (half of the sherd) (ext), 10YR 4/4		body (but close to rim?)		
Area #1, layer 2, 15 to 30 cm	CL1-3-F127			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F28			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F29			rim	21	Bowl
Area #1, layer 2, 15 to 30 cm	CL1-3-F30	red paint (ext), 10YR 4/4		body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F31			rim	14	Bowl
Area #1, layer 2, 15 to 30 cm	CL1-3-F32			rim	31	bowl?
Area #1, layer 2, 15 to 30 cm	CL1-3-F33			rim	50	Jar
Area #1, layer 2, 15 to 30 cm	CL1-3-F34			rim	33	bowl (vertical wall)
Area #1, layer 2, 15 to 30 cm	CL1-3-F35			rim	41	Jar
Area #1, layer 2, 15 to 30 cm	CL1-3-F36			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F37			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F38	red paint (half ext), 5YR 4/4		body		

Excavation context	Ceramic code	Surface Treatment: Visual	Surface Treatment: Thin section	Sherd Body Area	Dia. (cm)	Vessel form
Area #1, layer 2, 15 to 30 cm	CL1-3-F39	incision (ext)		body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F40			rim	46	bowl (slightly closed, nearly vertical wall)
Area #1, layer 2, 15 to 30 cm	CL1-3-F41			rim	36	bowl (near vertical wall)
Area #1, layer 2, 15 to 30 cm	CL1-3-F42			rim? (eroded)	?	?
Area #1, layer 2, 15 to 30 cm	CL1-3-F43			rim	23	bowl (shallow?)
Area #1, layer 2, 15 to 30 cm	CL1-3-F44			rim	27	Jar
Area #1, layer 2, 15 to 30 cm	CL1-3-F45			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F45			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F46			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F47			rim	9	bowl
Area #1, layer 2, 15 to 30 cm	CL1-3-F48			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F49			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F50			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F51			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F5 2			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F53			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F54			rim	19	bowl (shallow?)
Area #1, layer 2, 15 to 30 cm	CL1-3-F55			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F56			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area #1, layer 2, 15 to 30 cm	CL1-3-F57			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F58			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F59			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F60			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F61			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F62			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F63			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F64			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F65			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F66			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F67			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F68			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F69			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F70			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F71			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F72			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F73			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F75			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F76			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F77			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F78			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F79			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area #1, layer 2, 15 to 30 cm	CL1-3-F80			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F81			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F82			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F83			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F84			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F86			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F87			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F88	some red slip (int)		body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F89			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F90			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F91			rim	30	jar
Area #1, layer 2, 15 to 30 cm	CL1-3-F92			rim	?	?
Area #1, layer 2, 15 to 30 cm	CL1-3-F93			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F94			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F95			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F96			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F97			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F98			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F99			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F100			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F101			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F102			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
Area #1, layer 2, 15 to 30 cm	CL1-3-F103			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F104			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F105			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F106			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F107			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F108			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F109			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F110			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F111			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F112			rim?body?	?	budares/ plate? (nearly flat) (int surf reduced)
Area #1, layer 2, 15 to 30 cm	CL1-3-F114			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F115			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F116			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F117			body	16	jar
Area #1, layer 2, 15 to 30 cm	CL1-3-F119			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F120			body (near round bottom)		
Area #1, layer 2, 15 to 30 cm	CL1-3-F121			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F122			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F124			body (toward round bottom)		
Area #1, layer 2, 15 to 30 cm	CL1-3-F125			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
Area #1, layer 2, 15 to 30 cm	CL1-3-F126			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F127			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F128			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F129			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F130			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F132			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F133			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F134			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F135			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F136			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F137			body (near round bottom)		
Area #1, layer 2, 15 to 30 cm	CL1-3-F138			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F139			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F140			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F141			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F142			rim	37?	shallow bowl?
Area #1, layer 2, 15 to 30 cm	CL1-3-F143			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F144			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F145			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F146			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F147			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F148			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
Area #1, layer 2, 15 to 30 cm	CL1-3-F149			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F150			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F151			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F152			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F153			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F154			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F155			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F156			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F157			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F158			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F159			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F160			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F161			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F162			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F163			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F164			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F165			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F166			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F167			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F168			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F169			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F170			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area #1, layer 2, 15 to 30 cm	CL1-3-F171			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F173			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F174			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F175			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F176			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F177			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F178			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F179			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F180			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F181			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F182			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F183			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F184			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F185			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F186			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F187			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F188			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F189			?		
Area #1, layer 2, 15 to 30 cm	CL1-3-F190			?		
Area #1, layer 2, 15 to 30 cm	CL1-3-F191			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F192			twisted snake/coil		
Area #1, layer 2, 15 to 30 cm	CL1-3-F193			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area #1, layer 2, 15 to 30 cm	CL1-3-F194			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F195			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F196			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F197			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F198			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F199			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F200	an incision (int)		body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F201			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F202			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F203			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F204			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F205			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F206			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F207			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F208			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F209			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F210			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F211			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F212			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F213			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F214			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area #1, layer 2, 15 to 30 cm	CL1-3-F215			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F216			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F217			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F218			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F219			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F220			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F221			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F222			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F223			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F224			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F225			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F226			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F227			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F228			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F229			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F230			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F231			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F232			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F233			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F234			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F235			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F236			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area #1, layer 2, 15 to 30 cm	CL1-3-F237			rim	23	bowl
Area #1, layer 2, 15 to 30 cm	CL1-3-F238			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F239			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F240			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F241			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F242			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F243			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F244			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F245			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F246			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F247			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F248			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F249			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F250			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F251			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F252			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F253			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F254			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F255			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F256			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F257			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F258			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
Area #1, layer 2, 15 to 30 cm	CL1-3-F259			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F260			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F261			body		
Area #1, layer 2, 15 to 30 cm	CL1-3-F262	red paint/slip (band ext, 7.24 mm from the lip), 2.5YR 4/4		rim	18	jar (relatively closed mouth)
Area #1, layer 3, 30 to 45 cm	CL1-4-F1			rim		bowl
Area #1, layer 3, 30 to 45 cm	CL1-4-F2	red paint/slip (ext), 10R 4/4		body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F3	red paint/slip (ext)		body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F4			rim	55	bowl (vertical wall, large)
Area #1, layer 3, 30 to 45 cm	CL1-4-F5	brushed surface (int)		rim?	?	?
Area #1, layer 3, 30 to 45 cm	CL1-4-F6			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F7			rim	14	bowl
Area #1, layer 3, 30 to 45 cm	CL1-4-F8			rim	33	bowl
Area #1, layer 3, 30 to 45 cm	CL1-4-F9			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F10			rim	?	?
Area #1, layer 3, 30 to 45 cm	CL1-4-F11	red slip (partial ext)		body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F12			rim		
Area #1, layer 3, 30 to 45 cm	CL1-4-F14	red paint/slip (upper part of the ext and int, close to rim), 2.5YR 4/4		body close to rim		
Area #1, layer 3, 30 to 45 cm	CL1-4-F15			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F16			rim	20	bowl

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area #1, layer 3, 30 to 45 cm	CL1-4-F17			rim	28	vertical walled bowl
Area #1, layer 3, 30 to 45 cm	CL1-4-F18			rim	?	?
Area #1, layer 3, 30 to 45 cm	CL1-4-F19			rim	12	bowl
Area #1, layer 3, 30 to 45 cm	CL1-4-F20			rim	46	bowl
Area #1, layer 3, 30 to 45 cm	CL1-4-F21			rim (eroded)	12	jar
Area #1, layer 3, 30 to 45 cm	CL1-4-F22			rim	26	jar?
Area #1, layer 3, 30 to 45 cm	CL1-4-F23			rim	40	bowl
Area #1, layer 3, 30 to 45 cm	CL1-4-F24			rim	17	bowl
Area #1, layer 3, 30 to 45 cm	CL1-4-F25	red paint/slip (ext), 10R 4/4		body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F26			rim	23	bowl
Area #1, layer 3, 30 to 45 cm	CL1-4-F27			rim	23	bowl
Area #1, layer 3, 30 to 45 cm	CL1-4-F28			rim	30	bowl
Area #1, layer 3, 30 to 45 cm	CL1-4-F29			rim		
Area #1, layer 3, 30 to 45 cm	CL1-4-F30	red paint (ext), 10YR 4/4		body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F31			rim		bowl
Area #1, layer 3, 30 to 45 cm	CL1-4-F32			rim	24?	jar?
Area #1, layer 3, 30 to 45 cm	CL1-4-F33	red paint/slip (ext), 2.5YR 4/4		rim	?	?
Area #1, layer 3, 30 to 45 cm	CL1-4-F34	red paint/slip (ext), 10YR 4/6 (red slip)		body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F35	red slip (partial)		body (or part of a broken rim)		
Area #1, layer 3, 30 to 45 cm	CL1-4-F36			rim		jar

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
Area #1, layer 3, 30 to 45 cm	CL1-4-F37			rim	30	bowl
Area #1, layer 3, 30 to 45 cm	CL1-4-F38	red paint/slip (ext, stripe?)		body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F39			rim?		
Area #1, layer 3, 30 to 45 cm	CL1-4-F40			rim	23	bowl
Area #1, layer 3, 30 to 45 cm	CL1-4-F41 (same vessel as CL1-4-F42)			rim	45	jar
Area #1, layer 3, 30 to 45 cm	CL1-4-F42			rim	45	jar
Area #1, layer 3, 30 to 45 cm	CL1-4-F43			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F44			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F46			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F47			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F48			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F49			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F50	NO SLIP	slip (ext)	body (near round bottom)		
Area #1, layer 3, 30 to 45 cm	CL1-4-F51			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F52			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F53			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F54			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F55			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F56			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F57			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F58			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
Area #1, layer 3, 30 to 45 cm	CL1-4-F59			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F60			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F61			rim?		
Area #1, layer 3, 30 to 45 cm	CL1-4-F62			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F63			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F64			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F65			?		
Area #1, layer 3, 30 to 45 cm	CL1-4-F66			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F67			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F68			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F69			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F70			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F71			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F72			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F72			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F73			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F74			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F75			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F76			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F77			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F78			rim	7	jar (closed mouth)
Area #1, layer 3, 30 to 45 cm	CL1-4-F79			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
Area #1, layer 3, 30 to 45 cm	CL1-4-F80			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F81			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F82			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F83			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F84			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F85			rim? (eroded)		
Area #1, layer 3, 30 to 45 cm	CL1-4-F86			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F87			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F88			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F89			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F90			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F91			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F92			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F93			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F94			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F95			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F96			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F97			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F98			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F99			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F100			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F101			rim? (eroded)		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area #1, layer 3, 30 to 45 cm	CL1-4-F102			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F103			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F104			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F105			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F106			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F107			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F108			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F109			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F110			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F111			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F112			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F113			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F114			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F115			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F116			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F117			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F118			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F119			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F120			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F121			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F122			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F123			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area #1, layer 3, 30 to 45 cm	CL1-4-F124			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F125			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F126			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F127			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F128			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F129			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F129			body*		
Area #1, layer 3, 30 to 45 cm	CL1-4-F130			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F131			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F132			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F133			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F134			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F135			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F136			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F137			body?		
Area #1, layer 3, 30 to 45 cm	CL1-4-F138	some brushed surface remains (int)		body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F139			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F140			body (near bottom?)		
Area #1, layer 3, 30 to 45 cm	CL1-4-F141			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F142	red slip (int)		body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F143			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area #1, layer 3, 30 to 45 cm	CL1-4-F144			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F145			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F146			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F147			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F148			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F149			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F150			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F151			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F152			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F153			rim (eroded)	?	?
Area #1, layer 3, 30 to 45 cm	CL1-4-F154			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F155			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F156			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F157			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F158			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F159			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F160			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F161			rim	?	bowl (vertical wall)
Area #1, layer 3, 30 to 45 cm	CL1-4-F162			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F163			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F164			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
Area #1, layer 3, 30 to 45 cm	CL1-4-F165			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F166			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F167			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F168			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F169			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F170			body (int carbonized residue)		
Area #1, layer 3, 30 to 45 cm	CL1-4-F171			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F172			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F173			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F174			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F175			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F176			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F177			rim	?	?
Area #1, layer 3, 30 to 45 cm	CL1-4-F178	red paint/slip (ext)		body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F179			body?		
Area #1, layer 3, 30 to 45 cm	CL1-4-F180			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F181			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F182			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F183			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F184			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F185			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area #1, layer 3, 30 to 45 cm	CL1-4-F186			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F137			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F362			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F373			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F140			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F141			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F365			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F368			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F356			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F380			rim	?	?
Area #1, layer 3, 30 to 45 cm	CL1-4-F344			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F147			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F381			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F376			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F361			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F364			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F369			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F388			?		
Area #1, layer 3, 30 to 45 cm	CL1-4-F347			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F358			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F359			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F355			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area #1, layer 3, 30 to 45 cm	CL1-4-F357			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F352			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F363			rim (eroded)	18	bowl (vertical wall)
Area #1, layer 3, 30 to 45 cm	CL1-4-F360			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F367			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F372			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F366			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F346			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F348			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F345			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F354			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F391			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F377			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F374			rim	24?	bowl?
Area #1, layer 3, 30 to 45 cm	CL1-4-F389			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F378			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F375			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F349			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F379			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F371			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area #1, layer 3, 30 to 45 cm	CL1-4-F353			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F383			rim	?	?
Area #1, layer 3, 30 to 45 cm	CL1-4-F390			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F382			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F350			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F384			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F385			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F351			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F386			body (int carbonized residue?)		
Area #1, layer 3, 30 to 45 cm	CL1-4-F370			rim? (eroded)	?	bowl?
Area #1, layer 3, 30 to 45 cm	CL1-4-F187			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F188			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F189			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F190			rim	?	?
Area #1, layer 3, 30 to 45 cm	CL1-4-F191			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F192			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F193			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F194			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F195			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F196			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F197			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area #1, layer 3, 30 to 45 cm	CL1-4-F198			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F199			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F200			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F201			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F202			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F203			rim		
Area #1, layer 3, 30 to 45 cm	CL1-4-F204			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F205			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F206			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F207			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F208			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F209			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F210			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F211			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F212			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F213			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F214			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F215			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F216			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F217			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F218			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F219			body?		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area #1, layer 3, 30 to 45 cm	CL1-4-F220			body?		
Area #1, layer 3, 30 to 45 cm	CL1-4-F221			body?		
Area #1, layer 3, 30 to 45 cm	CL1-4-F222			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F223			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F224			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F225			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F226			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F227			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F228			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F229			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F230			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F231			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F232			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F233			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F234			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F235			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F236			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F237			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F238			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F239			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F240			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F241			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area #1, layer 3, 30 to 45 cm	CL1-4-F242			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F243			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F244			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F245			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F246			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F247			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F248			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F249			rim?	?	?
Area #1, layer 3, 30 to 45 cm	CL1-4-F250			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F251			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F252			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F253			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F254			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F255			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F256			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F257			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F258			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F259			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F260			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F261			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F262			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F263			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area #1, layer 3, 30 to 45 cm	CL1-4-F264			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F265			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F266			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F267			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F268			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F269			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F270			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F271			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F272			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F273			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F274			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F275			rim? (could be a flat rock?)		
Area #1, layer 3, 30 to 45 cm	CL1-4-F276			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F277			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F278			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F279			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F280			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F281			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F282			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F283			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F284			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F285			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area #1, layer 3, 30 to 45 cm	CL1-4-F286			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F287			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F288			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F289			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F290			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F291			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F292			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F293			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F294			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F295			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F296			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F297			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F298			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F299			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F300			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F301			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F302			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F303			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F304			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F305			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F306			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F307			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area #1, layer 3, 30 to 45 cm	CL1-4-F308			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F309			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F310			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F311			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F312			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F313			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F314			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F315			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F316			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F317			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F318			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F319			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F320			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F321			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F322			?		
Area #1, layer 3, 30 to 45 cm	CL1-4-F323			?		
Area #1, layer 3, 30 to 45 cm	CL1-4-F324			?		
Area #1, layer 3, 30 to 45 cm	CL1-4-F325			?		
Area #1, layer 3, 30 to 45 cm	CL1-4-F326			?		
Area #1, layer 3, 30 to 45 cm	CL1-4-F327			?		
Area #1, layer 3, 30 to 45 cm	CL1-4-F328			?		
Area #1, layer 3, 30 to 45 cm	CL1-4-F329			?		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area #1, layer 3, 30 to 45 cm	CL1-4-F330			?		
Area #1, layer 3, 30 to 45 cm	CL1-4-F331			?		
Area #1, layer 3, 30 to 45 cm	CL1-4-F332			?		
Area #1, layer 3, 30 to 45 cm	CL1-4-F333			?		
Area #1, layer 3, 30 to 45 cm	CL1-4-F334			?		
Area #1, layer 3, 30 to 45 cm	CL1-4-F335			?		
Area #1, layer 3, 30 to 45 cm	CL1-4-F336			?		
Area #1, layer 3, 30 to 45 cm	CL1-4-F337			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F338			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F339			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F340			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F341			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F342 (Cl1-4-F342 ad F343 are the same)			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F343			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F387			body		
Area #1, layer 3, 30 to 45 cm	CL1-4-F388			body		
Area #2A, layer 2	CL1-44-F1			rim	?	?
Area #2A, layer 2	CL1-44-F2			body		
Area #2A, layer 2	Cl1-44-F3 (orig)			body		
Area #2A, layer 2	CL1-44-F4 (orig)			body		
Area #2A, layer 2	CL1-44-F5 (orig)			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
Area #2A, layer 2	CL1-44-F6 (orig)			body		
Area #2A, layer 2	CL1-44-F7			body		
Area #2A, layer 2	CL1-44-F8			body		
Area #2A, layer 2	CL1-44-F9 (orig)			body		
Area #2A, layer 2	CL1-44-F10			body		
Area #2A, layer 2	CL1-44-F11			?		
Area #2A, layer 2	CL1-44-F12			?		
Area #2A, layer 2	CL1-44-F13			body		
Area #2A, layer 2	CL1-44-F14			body		
Area #2A, layer 2	CL1-44-F15			body		
Area #2A, layer 2	CL1-44-F16			body		
Area #2A, layer 2	CL1-44-F17			body		
Area #2A, layer 3	CL1-45-F1			body		
Area #2A, layer 3	CL1-45-F2	No Slip	red slip (ext)	body		
Area #2A, layer 3	CL1-45-F3			body		
Area #2A, layer 3	CL1-45-F4			body		
Area #2A, layer 3	CL1-45-F5 to F8			rim		
Area #2A, layer 3	CL1-45-F10			body		
Area #2A, layer 3	CL1-45-F11			body		
Area #2A, layer 3	CL1-45-F12			body		
Area #2A, layer 3	CL1-45-F13			body		
Area #2A, layer 3	Cl1-45-F14			body		
Area #2A, layer 3	CL1-45-F15			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area #2A, layer 3	CL1-45-F16			body		
Area #2A, layer 3	CL1-45-F17			body		
Area #2A, layer 3	CL1-45-F18			body		
Area #2A, layer 3	CL1-45-F19			body		
Area #2A, layer 3	CL1-45-F20			body		
Area #2A, layer 3	CL1-45-F21	red paint/slip (ext), 2.5YR 4/4		body		
Area #2A, layer 3	CL1-45-F22			body		
Area #2A, layer 3	CL1-45-F23			body		
Area #2A, layer 3	CL1-45-F24			body		
Area #2A, layer 3	CL1-45-F25			body		
Area #2A, layer 3	CL1-45-F26			body (near round bottom)		
Area #2A, layer 3	CL1-45-F27			body		
Area #2A, layer 3	CL1-45-F28			body?		
Area #2A, layer 3	CL1-45-F29			body		
Area #2A, layer 3	CL1-45-F30			body		
Area #2A, layer 3	CL1-45-F31			body		
Area #2A, layer 3	CL1-45-F32			body		
Area #2A, layer 3	CL1-45-F33			body		
Area #2A, layer 3	CL1-45-F34			body		
Area #2A, layer 3	CL1-45-F35			body		
Area #2A, layer 3	CL1-45-F36			body		
Area #2A, layer 3	CL1-45-F8			body		
Area #2A, layer 3	CL1-45-F37			body		

Excavation context	Ceramic code	Surface Treatment: Visual	Surface Treatment: Thin section	Sherd Body Area	Dia. (cm)	Vessel form
Area #2A, layer 3	CL1-45-F38			body		
Area #2A, layer 5	CL1-47-F1			rim?	15	bowl
Area #2A, layer 5	CL1-47-F2			rim	44	jar/bowl (vertical)
B1ock 1 Surf	AG13-1-U1-F1	red slip (ext, lip, int, 31.5 mm from the top)		rim	?	jar
Block 1 0-5	AG13-2-U1-F1			rim		jar
Block 1 0-5	AG13-2-U1-F2			rim	19	bowl (shallow)
Block 1 0-5	AG13-2-U1-F3			rim	18	bowl
Block 1 10-15	AG13-4-U1-F1			rim	46	jar
Block 1 10-15	AG13-4-U1-F2	red paint/slip (lip top)		rim (lip red slip)	?	?
Block 1 10-15	AG13-4-U1-F3			rim		jar
Block 1 15-20	AG13-5-U1-F1			body		
Block 1 15-20	AG13-5-U1-F2	incised		body		
Block 1 20-25	AG13-6-U1-F1			body		
Block 1 20-25	AG13-6-U1-F2			body		
Block 1 20-25	AG13-6-U1-F3			body		
Block 1 30-35	AG13-8-U1-F1			body		
Block 1 30-35	AG13-8-U1-F2			body		
Block 1 30-35	AG13-8-U1-F3			body		
	AG13-8-U1-F4			rim	40	jar
Block 1 35-40	AG13-9-U1-F1			body		
Block 1 35-40	AG13-9-U1-F2	paint (ext & lip), 7.5R 4/6 (red paint)		rim	28	bowl

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
Block 1 40-45	AG13-10-U1-F1	paint (ext & int), 7.5R 4/6 (red paint)		rim?body? with red slip	32	jar/bowl (vertical wall)
Block 2s sounding	AG13-14-U2S-F1			rim	21	bowl
Block 2s sounding	AG13-14-U2S-F2			rim	19	jar
Block 2s 0-10	AG13-15-U2S-F1			rim	?	?
Block 2s 10-20	AG13-16-U2S-F1			rim		
Block 2s 10-20	AG13-16-U2S-F2			rim	26	bowl
Block 2s 10-20	AG13-16-U2S-F3	incised		ext incised body		
Block 2 10-15	AG13-22-U2-F1	red slip (ext)	hematite-rich slip in the int	rim		jar
Block 2 10-15	AG13-22-U2-F2			body close to bottom		
Block 2 10-15	AG13-22-U2-F3			body		
Block 2 10-15	AG13-22-U2-F4			body (int combed)		
Block 2 10-15	AG13-22-U2-F5			body		
Block 2 10-15	AG13-22-U2-F6			body		
Block 2 10-15	AG13-22-U2-F7			body		
Block 2 10-15	AG13-22-U2-F8			body		
Block 2 10-15	AG13-22-U2-F9			body		
Block 2 10-15	AG13-22-U2-F10			body		
Block 2 10-15	AG13-22-U2-F11			body		
Block 2 10-15	AG13-22-U2-F12			body		
Block 2 10-15	AG13-22-U2-F13			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Block 2 10-15	AG13-22-U2-F14			body		
Block 2 10-15	AG13-22-U2-F15			body		
Block 2 10-15	AG13-22-U2-F16			body		
Block 2 10-15	AG13-22-U2-F17			toward round bottom?		
Block 2 10-15	AG13-22-U2-F18			body		
Block 2 10-15	AG13-22-U2-F19			body		
Block 2 10-15	AG13-22-U2-F21			body		
Block 2 10-15	AG13-22-U2-F22			body		
Block 2 10-15	AG13-22-U2-F23			body		
Block 2 10-15	AG13-22-U2-F24			body		
Block 2 10-15	AG13-22-U2-F25			body		
Block 2 10-15	AG13-22-U2-F27			body		
Block 2 10-15	AG13-22-U2-F28			body		
Block 2 10-15	AG13-22-U2-F29			body		
Block 2 10-15	AG13-22-U2-F30			body		
Block 2 10-15	AG13-22-U2-F31			body		
Block 2 10-15	AG13-22-U2-F32			body		
Block 2 10-15	AG13-22-U2-F34			body		
Block 2 10-15	AG13-22-U2-F35			body		
Block 2 10-15	AG13-22-U2-F36			body		
Block 2 10-15	AG13-22-U2-F37	red slip (exterior)			23	bowl/jar (vertical wall)

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Block 2 10-15	AG13-22-U2-F38			body or round bottom		
Block 2 10-15	AG13-22-U2-F39			body		
Block 2 10-15	AG13-22-U2-F40			rim	24	jar
Block 2 10-15	AG13-22-U2-F41	red slip (ext and int rim band)		rim	30	jar
Block 2 10-15	AG13-22-U2-F42	red slip (ext, lip, to 10.5 mm int)		rim	28	jar
Block 2 10-15	AG13-22-U2-F43			rim	29	bowl
Block 2 10-15	AG13-22-U2-F44			body		
Block 2 15-20	AG13-23-U2-F1 and F2			body(AG13-23-U2-F1 and F2 are the same sherds)		
Block 2 15-20	AG13-23-U2-F2			body(AG13-23-U2-F1 and F2 are the same sherds)		
Block 2 15-20	AG13-23-U2-F3			body(AG13-23-U2-F4)		
Block 2 15-20	AG13-23-U2-F4			body(same as AG13-23-U2-F3)		
Block 2 15-20	AG13-23-U2-F5			body		
Block 2 15-20	AG13-23-U2-F6 (non-Monagrillo, RC)			body		
Block 2 15-20	AG13-23-U2-F7 (non-Monagrillo, RC)			body		
Block 2 15-20	AG13-23-U2-F8 (non-Monagrillo, RC)			body		
Block 2 15-20	AG13-23-U2-F9			rim		
Block 3 0-5, A, W1/2	AG13-29-U3-F1			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Block 3 0-5, A, W1/2	AG13-29-U3-F2			body		
Block 3 0-5, A, W1/2	AG13-29-U3-F3			body		
Block 3 0-5, A, W1/2	AG13-29-U3-F4			rim	25	jar
Block 3 0-5, A, W1/2	AG13-29-U3-F5			body		
Block 3 0-5, A, W1/2	AG13-29-U3-F6	brushed/roughly polished (int)		body		
Block 3 0-5, A, W1/2	AG13-29-U3-F7			body		
Block 3 0-5, A, W1/2	AG13-29-U3-F8			body		
Block 3 0-5, A, W1/2	AG13-29-U3-F9			body		
Block 3 0-5, A, W1/2	AG13-29-U3-F10			body		
Block 3 0-5, A, W1/2	AG13-29-U3-F11			body		
Block 3 0-5, A, W1/2	AG13-29-U3-F12			body		
Block 3 0-5, A, W1/2	AG13-29-U3-F13			body		
Block 3 0-5, A, W1/2	AG13-29-U3-F14			rim	37	jar
Block 3 0-5, A, W1/2	AG13-29-U3-F15			rim	25	jar
Block 3 0-5, A, W1/2	AG13-29-U3-F16			body		
Block 3, 5-10, B1, E1/2	AG13-30-U3-F1			body		
Block 3, 5-10, B1, E1/2	AG13-30-U3-F2			body		
Block 3, 5-10, B1, E1/2	AG13-30-U3-F3			body		
Block 3, 5-10, B1, E1/2	AG13-30-U3-F4			body		
Block 3, 5-10, B1, E1/2	AG13-30-U3-F5			body		
Block 3, 5-10, B1, E1/2	AG13-30-U3-F6			body		
Block 3, 5-10, B1, E1/2	AG13-30-U3-F7			body		

Excavation context	Ceramic code	Surface Treatment Visual	Thin section	Sherd Body Area	Dia. (cm)	Vessel form
Block 3, 5-10, B1, E1/2	AG13-30-U3-F8			body		
Block 3, 5-10, B1, E1/2	AG13-30-U3-F9			body		
Block 3, 5-10, B1, E1/2	AG13-30-U3-F10			rim	18	jar/bowl (vertical wall)
Block 3, 5-10, B1, E1/2	AG13-30-U3-F11			body		
Block 3, 5-10, B1, E1/2	AG13-30-U3-F12			body		
Block 3, 5-10, B1, E1/2	AG13-30-U3-F13			body		
Block 3, 5-10, B1, E1/2	AG13-30-U3-F14			body		
Block 3, 5-10, B1, E1/2	AG13-30-U3-F15			body		
Block 3, 5-10, B1, E1/2	AG13-30-U3-F16			rim	27	bowl
Block 3, 5-10, B1, E1/2	AG13-30-U3-F17			rim	7	bowl
Block 3, 5-10, B1, E1/2	AG13-30-U3-F18			rim	?	?
Block 3, 5-10, B1, E1/2	AG13-30-U3-F19			body		
Block 3, 5-15, A2	AG13-31-U3-F1			body		
Block 3, 5-15, A2	AG13-31-U3-F2			rim	?	?
Block 3, 5-15, A2	AG13-31-U3-F3			body		
Block 3, 5-15, A2	AG13-31-U3-F4			body		
Block 3, 5-15, A2	AG13-31-U3-F5			body		
Block 3, 5-15, A2	AG13-31-U3-F6			body		
Block 3, 5-15, A2	AG13-31-U3-F7			body		
Block 3, 5-15, A2	AG13-31-U3-F8			rim	24	bowl
Block 3, 5-15, A2	AG13-31-U3-F9	red slip (ext) and partial band (int)		body near rim		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
Block 3, 5-15, A2	AG13-31-U3-F10			rim	?	jar
Block 3 10-15, B, 85	AG13-32-U3-F1			rim		jar
Block 3 10-15, B, 85	AG13-32-U3-F2			rim		jar
Block 3 10-15, B, 85	AG13-32-U3-F3			rim		jar
Block 3 10-15, B, 85	AG13-32-U3-F4			body		
Block 3 10-15, B, 85	AG13-32-U3-F5			body		
Block 3 10-15, B, 85	AG13-32-U3-F6			body and part of round bottom		
Block 3 10-15, B, 85	AG13-32-U3-F7			body		
Block 3 10-15, B, 85	AG13-32-U3-F8			body		
Block 3 10-15, B, 85	AG13-32-U3-F9			body		
Block 3 10-15, B, 85	AG13-32-U3-F10			body		
Block 3 10-15, B, 85	AG13-32-U3-F11			body		
Block 3 10-15, B, 85	AG13-32-U3-F12			body		
Block 3 10-15, B, 85	AG13-32_U3-F13			body		
Block 3 10-15, B, 85	AG13-32-U3-F14			body		
Block 3 10-15, B, 85	AG13-32-U3-F15	combed or brushed (int)		body		
Block 3 10-15, B, 85	AG13-32-U3-F16			body		
Block 3 10-15, B, 85	AG13-32-U3-F17			body		
Block 3 10-15, B, 85	AG13-32-U3_F18			body		
Block 3 10-15, B, 85	AG13-32-U3-F19			body		
Block 3 10-15, B, 85	AG13-32-U3-F20			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
Block 3 10-15, B, 85	AG13-32-U3-F21			body		
Block 3 10-15, B, 85	AG13-32-U3-F22			body		
Block 3 10-15, B, 85	AG13-32-U3-F23			body		
Block 3 10-15, B, 85	AG13-32-U3-F24			body		
Block 3 10-15, B, 85	AG13-32-U3-F25			body		
Block 3 10-15, B, 85	AG13-32-U3-F26			body		
Block 3 10-15, B, 85	AG13-32-U3-F27			body		
Block 3 10-15, B, 85	AG13-32-U3-F28			body		
Block 3 10-15, B, 85	AG13-32-U3-F29			body		
Block 3 10-15, B, 85	AG13-32-U3-F30			body		
Block 3 10-15, B, 85	AG13-32-U3-F31			body		
Block 3 10-15, B, 85	AG13-32-U3-F32			body		
Block 3 10-15, B, 85	AG13-32-U3-F33			body		
Block 3 10-15, B, 85	AG13-32-U3-F34			body		
Block 3 10-15, B, 85	AG13-32-U3-F36			body		
Block 3 10-15, B, 85	AG13-32-U3-F37			body		
Block 3 10-15, B, 85	AG13-32-U3-F38			body		
Block 3 10-15, B, 85	AG13-32-U3-F39			body		
Block 3 10-15, B, 85	AG13-32-U3-F40			body		
Block 3 10-15, B, 85	AG13-32-U3-F41			body		
Block 3 10-15, B, 85	AG13-32-U3-F43			body		
Block 3 10-15, B, 85	AG13-32-U3-F50			rim	?	?

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Block 3 10-15, B, 85	AG13-32-U3-F51			rim	22	bowl
Block 3 10-15, B, 85	AG13-32-U3-F52			rim	18	jar (tecomate)
Block 3 10-15, B, 85	AG13-32-U3-F53	rough burnishing (int)		rim (int)	27	jar
Block 3 10-15, B, 85	AG13-32-U3-F54			rim	28	bowl
Block 3 10-15, B, 85	AG13-32-U3-F55			rim	29	jar
Block 3 10-15, B, 85	AG13-32-U3-F56			rim	38	bowl (vertical wall)
Block 3 10-15, B, 85	AG13-32-U3-F57			rim	41	jar/bowl (vertical wall)
Block 3 10-15, B, 85	AG13-32-U3-F58			rim	17	jar/bowl (vertical wall)
Block 3 10-15, B, 85	AG13-32-U3-F59			rim	21	jar
Block 3 10-15, B, 85	AG13-32-U3-F60	red paint/slip (int and ext rim, as a band)		rim	37	jar
Block 3 10-15, B, 85	AG13-32-U3-F61	red paint/slip (ext), 10R 4/4		body		
Block 3 10-15, B, 85	AG13-32-U3-F62	red paint/slip (ext)		body		
Block 3 10-15, B, 85	AG13-32-U3-F63			rim	?	? (jar/bowl vertical wall)
Block 3 10-15, B, 85	AG13-32-U3-F64			rim	?	?
Block 3 10-15, B, 85	AG13-32-U3-F65			body		
Block 3, 15-20, B3	AG13-33-U3-F1			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
Block 3, 15-20, B3	AG13-33-U3-F2			body (AG13-33-U3-, same sherd as AG13-33-U3-3)		
Block 3, 15-20, B3	AG13-33-U3-F3			Body (AG13-33-U3-, same sherd as AG13-33-U3-F2)		
Block 3, 15-20, B3	AG13-33-U3-F4			Body (near round base)		
Block 3, 15-20, B3	AG13-33-U3-F5			body or round base		
Block 3, 15-20, B3	AG13-33-U3-F6			body		
Block 3, 15-20, B3	AG13-33-U3-F8			rim	23	jar
Block 3, 15-20, B3	AG13-33-U3-F9			rim	25	bowl
Block 3, 15-20, B3	AG13-33-U3-F10			rim	32	jar
Block 3, 15-20, B3	AG13-33-U3-F11			rim	28	jar
Block 3, 15-20, B3	AG13-33-U3-F12			rim	24	jar/bowl (nearly vertical wall)
Block 3, 15-20, B3	AG13-33-U3-F13			rim	27	jar/bowl (nearly vertical wall)
Block 3, 15-20, B3	AG13-33-U3-F14	paint (lip, ext)		rim	?	?
Block 3, 15-20, B3	AG13-33-U3-F15			rim	33	
Block 3, 15-20, B3	AG13-33-U3-F16			rim	?	?jar/bowl (nearly vertical wall)
Block 3, 15-20, B3	AG13-33?-U3-F17	red slip (int, ext, lip)		rim		bowl (somewhat closed)
Block 3, 20-25, C1	AG13-34-U3-F1			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
Block 3, 20-25, C1	AG13-34-U3-F2			body		
Block 3, 20-25, C1	AG13-34-U3-F3			body		
Block 3, 20-25, C1	AG13-34-U3-F4			body (base)		
Block 3, 20-25, C1	AG13-34-U3-F5			body		
Block 3, 20-25, C1	AG13-34-U3-F6			body		
Block 3, 20-25, C1	AG13-34-U3-F7			Body (same as AG13-34-U3-F8)		
Block 3, 20-25, C1	AG13-34-U3-F8			Body (same as AG13-34-U3-F7)		
Block 3, 20-25, C1	AG13-34-U3-F9			body		
Block 3, 20-25, C1	AG13-34-U3-F10			body		
Block 3, 20-25, C1	AG13-34-U3-F11			body		
Block 3, 20-25, C1	AG13-34-U3-F12			body		
Block 3, 20-25, C1	AG13-34-U3-F13			body		
Block 3, 20-25, C1	AG13-34-U3-F14			body		
Block 3, 20-25, C1	AG13-34-U3-F15			body		
Block 3, 20-25, C1	AG13-34-U3-F16			body		
Block 3, 20-25, C1	AG13-34-U3-F17			body		
Block 3, 20-25, C1	AG13-34-U3-F18			body		
Block 3, 20-25, C1	AG13-34-U3-F19			body		
Block 3, 20-25, C1	AG13-34-U3-F20			body		
Block 3, 20-25, C1	AG13-34-U3-F21			Body (F21, F22, and F23 are the same sherd)		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
Block 3, 20-25, C1	AG13-34-U3-F22			Body (F21, F22, and F23 are the same sherd)		
Block 3, 20-25, C1	AG13-34-U3-F23			Body (F21, F22, and F23 are the same sherd)		
Block 3, 20-25, C1	AG13-34-U3-F24	red slip (ext and 22.2 mm from the top int)		rim	22	jar
Block 3, 20-25, C1	AG13-34-U3-F25			rim		jar
Block 3 20-25C	AG13-35-U3-F1			body		
Block 3 20-25, C,	AG13-35-U3-F2			body		
Block 3 20-25, C,	AG13-35-U3-F3			body		
Block 3 20-25, C,	AG13-35-U3-F4			body		
Block 4, 0-5	AG13-108-U4-F1			rim	?	?
Block 4, 0-5	AG13-108-U4-F2	red paint/slip (ext, lip), (as a band (int) , 2.5YR 4/4		rim	40	jar
Block 4, 0-5	AG13-108-U4-F3			rim	35	jar
Block 5, 0-5	AG13-109-U5-F 1	red slip (int and lip)		rim	30	bowl (shallow)
Block 5, 0-5	AG13-109-U5-F2			rim	29	bowl (shallow)
Block 5, 0-5	AG13-109-U5-F3			rim	26	jar
Block 5, 0-5	AG13-109-U5-F4			rim	20	jar
Block 4, 5-10	AG13-110-U4-F1	red slip (ext)		rim	30	bowl
Block 4, 5-10	AG13-110-U4-F2			rim	37	jar
Block 4, 5-10	AG13-110-U4-F3	incision (ext)		body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
Block 5, 5-10	AG13-111-U5-F1			rim	37?	bowl
Block 5, 5-10	AG13-111-U5-F2	red paint (ext, lip, int)		rim	40	jar
Block 5, 5-10	AG13-111-U5-F3			rim	31	bowl (shallow?)
Block 5, 5-10	AG13-111-U5-F4	red paint (2.5YR 5/4)		rim	50	bowl/jar (nearly vertical)
Block 5, 5-10	AG13-111-U5-F5	incision		rim	23	bowl
Block 5, 5-10	AG13-111-U5-F6			rim	46	bowl/jar (vertical wall)
Block 5, 5-10	AG13-111-U5-F7			rim	18	bowl (shallow)
Block 5, 5-10	AG13-111-U5-F8 (same piece as the equivalent G13-111-U5-F9)	incision		body		
Block 5, 5-10	AG13-111-U5-F9			body		
Block 4, 10-15	AG13-112-U4-F1			rim	25	jar/bowl (slightly closed mouth, vertical wall)
Block 4, 10-15	AG13-112-U4-F2			rim (open mouth)	21	jar
Block 4, 10-15	AG13-112-U4-F3			rim	37	bowl
Block 4, 10-15	AG13-112-U4-F4	incision (ext)		body		
Block 5, 10-15	AG13-113-U4-F1			rim		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
Block 5, 10-15	AG13-113-U4-F2			rim	29	jar
Block 5, 10-15	AG13-113-U4-F3			rim	13	bowl
Block 4, 15-20	AG13-114-U4-F1			body		
Block 4, 15-20	AG13-114-U4-F2	red slip (ext)		body		
Block 4, 15-20	AG13-114-U4-F3			rim	15	jar (closed mouth)
Block 4, 20-25	AG13-116-U4-F1			body		
Block 4, 20-25	AG13-116-U4-F2			body		
1S1E, 10-20 cm bs	AG13-481b-F1			body		
1S1E, 10-20 cm bs	AG13-481b-F2	red slip (int), 5YR 3/4		rim	32	jar (somewhat closed)
1S1E, 10-20 cm bs	AG13-481b-F3			body?		
1S1E, 10-20 cm bs	AG13-481b-F4			body?		
1S1E, 10-20 cm bs	AG13-478-F1			body		
1S1E, 10-20 cm bs	AG13-481-F1			rim	32	jar (somewhat closed)
1S1E, 10-20 cm bs	AG13-481-F2			body		
1S1E, 10-20 cm bs	AG13-481-F3			body		
1S1E, 10-20 cm bs	AG13-481-F4			body		
1S1E, 5-10 cm bs	AG13-472-F1			rim	28	bowl (vertica wall)
1S1E, 5-10 cm bs	AG13-472-F2			body		
1S1E, 5-10 cm bs	AG13-472b-F1			rim	35	bowl (open)
1S1E, 0-5 cm	AG13-468b-F1			body		
1S1E, 0-5 cm	AG13-468b-F2			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
1S1E, 0-5 cm	AG13-468b-F3			body		
1S1E, 0-5 cm	AG13-468b-F4			body		
1S1E, 0-5 cm	AG13-468b-F5			body		
1S1E, 0-5 cm	AG13-468b-F6			body		
1S1E, 0-5 cm	AG13-468b-F7			body		
1S1E, 0-5 cm	AG13-468b-F8			body		
1S1E, 0-5 cm	AG13-468b-F9			body		
1S1E, 0-5 cm	AG13-468b-F10			rim (non-Monagrillo?)	?	?
1S1E, 0-5 cm	AG13-468b-F11			body		
1S1E, 0-5 cm	AG13-468b-F12			body		
1S1E, 10-15 cm bs	AG13-478b-F1			body		
1S1E, 10-15 cm bs	AG13-478b-F2			body?		
1S1E, 10-15 cm bs	AG13-478b-F3			body?		
1S1E, 10-15 cm bs	AG13-478b-F4			body?		
1S1E, 10-15 cm bs	AG13-478b-F5			body		
1S1E, 10-15 cm bs	AG13-478b-F6			body		
1S1E, 10-15 cm bs	AG13-478b-F7			body		
1S1E, 10-15 cm bs	AG13-478b-F8			body		
1S1E, 10-15 cm bs	AG13-472b-F2			body		
1S1E, 10-15 cm bs	AG13-472b-F3			body?		
1S1E, 10-15 cm bs	AG13-472b-F4			body		
1S1E, 10-15 cm bs	AG13-472b-F5			body		
1S1E, 10-15 cm bs	AG13-472b-F6			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
1S1E, 10-15 cm bs	AG13-482b-F1			body		
1S1E, 10-15 cm bs	AG13-482b-F2			body		
Block 2, 10-15	AG13-22-24-UP#3-F1			rim	26	jar
Block 2, 10-15	AG13-22-26-F2			rim	22	jar (tecomate)
Block 2, 10-15	AG13-22-UP#4-F3	red paint/slip (ext and lip top, 2 thick bands)		rim		bowl
Block 3, 20-25, C1	AG13-34-16-F4			rim	34	bowl (verticaly deep?)
Block 3, 10-15, B2	AG13-32-25-F5			rim	35	bowl
Block 3, 15-20, B3	AG13-33-UP#2-8-F6			rim		bowl (shallow)
Block 2, 10-15	AG13-22-23-F7			rim	23	jar (tecomate)
Block 3, 15-20, B3	AG13-33-11-F8			rim		
Block 3, 15-20, B3	AG13-33-15-F9			rim	29	bowl
Block 3, 0-10, 2s	AG13-15-28-F10			rim	19	jar (tecomate)
Block 2, 10-15	AG13-22-18-F11			rim	20	bowl
Block 3, 10-15, B2	AG13-32-9-F12			rim	35	bowl (shallow)
Block 3, 15-20, B3	AG13-33-33-F13	red paint/slip (ext, lip, int rim, thick band)		rim		bowl
Block 3, 15-20, B3	AG13-33-UP#2-2			rim	21	bowl (slighty open)
	AG13-?			rim		
	AG13-?-1			rim	32	bowl (shallow)?
	AG13-?			rim		
	AG13-?-3			rim	38	bowl/jar (vertical)
	AG13-?-4			rim	18	bowl/jar (vertical)

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
	AG13-?-5			rim	10	bowl (shallow)
	AG13-?-6			body		
	AG13-00-F76			rim	33	jar/bowl (vertical wall)
	Pr32-C35-N9-1	NO SLIP	vitreous (?) layer of possible slip, ext	body (near bottom)		
	Pr32-C35-N9-2			body		
	Pr32-C35-N9-3			body		
	Pr32-C35-N9-4			body		
	Pr32-C35-N12-1			body		
	Pr32-C35-N12-2			body		
	Pr32-C35-N12-3			body (near bottom)		
	PR32-C35-N12-4			body		
	Pr32-C35-N14-1			body		
	Pr32-C35-N14-2			body		
	Pr32-C35-N14-3	NO SLIP	brwnish slip (int & ext))	body		
	Pr32-C35-N14-4			body		
	Pr32-C35-N17-1			body		
	Pr32-C35-N17-2			body		
	Pr32-C35-N20-1	NO SLIP	vitreous clayey layer of slip, ext	body		
	Pr32-C35-N20-2			body near round bottom		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
	Pr32-C35-N20-3			body		
	Pr32-C35-N20-4			body		
	Pr32-C35-N20-5	NO SLIP	red slip (int & ext)	body		
	Pr-32-C35-N22-1	NO SLIP	nearly opaque clay slip in XPL	body		
0-10 cm	Pr32-1-1-F1			rim		
0-10 cm	Pr32-1-1-F2			body		
0-10 cm	Pr32-1-1-F3			body		
0-10 cm	Pr32-1-1-F4			body		
0-10 cm	Pr32-1-1-F5			body		
0-10 cm	Pr32-1-1-F6			body		
0-10 cm	Pr32-1-1-F7*			body		
0-10 cm	Pr32-1-1-F8			body		
0-10 cm	Pr32-1-1-F9			body		
0-10 cm	Pr32-1-1-F10			body		
0-10 cm	Pr32-1-1-F11			body		
0-10 cm	Pr32-1-1-F12			body		
0-10 cm	Pr32-1-1-F13			body		
0-10 cm	Pr32-1-1-F14			body		
0-10 cm	Pr32-1-1-F15			body		
0-10 cm	Pr32-1-1-F16			body		
0-10 cm	Pr32-1-1-F 1 7			body		
0-10 cm	Pr32-1-1-F18			body		
0-10 cm	Pr32-1-1-F19			body		
0-10 cm	Pr32-1-1-F20			body		
0-10 cm	Pr32-1-1-F21			body		
0-10 cm	Pr32-1-1-F22	red slip (int), 2.5YR 5/6		body		
0-10 cm	Pr32-1-1-F23			body		
0-10 cm	Pr32-1-1-F24			body		
0-10 cm	Pr32-1-1-F25			body		
0-10 cm	Pr32-1-1-F26			body		
0-10 cm	Pr32-1-1-F27			body		
0-10 cm	Pr32-1-1-F28	red slip (ext), 2.5YR 5/4		body		
0-10 cm	Pr32-1-1-F29			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
0-10 cm	Pr32-1-1-F30			body		
0-10 cm	Pr32-1-1-F31			body		
0-10 cm	Pr32-1-1-F32			body		
0-10 cm	Pr32-1-1-F33			body		
0-10 cm	Pr32-1-1-F34			body		
0-10 cm	Pr32-1-1-F35			body		
0-10 cm	Pr32-1-1-F36			body		
0-10 cm	Pr32-1-1-F37			body		
0-10 cm	Pr32-1-1-F38			body		
0-10 cm	Pr32-1-1-F39			body		
0-10 cm	Pr32-1-1-F40			rim	38	bowl
0-10 cm	Pr32-1-1-F41			body		
0-10 cm	Pr32-1-1-F42			body		
0-10 cm	Pr32-1-1-F43			body		
0-10 cm	Pr32-1-1-F44			body		
0-10 cm	Pr32-1-1-F45			body		
0-10 cm	Pr32-1-1-F46			body		
0-10 cm	Pr32-1-1-F47			body		
0-10 cm	Pr32-1-1-F48	red slip (originally a possible band, int), 2.5YR 4/6		body		
0-10 cm	Pr32-1-1-F49			body		
0-10 cm	Pr32-1-1-F50			body		
0-10 cm	Pr32-1-1-F51			body		
0-10 cm	Pr32-1-1-F52			body		
0-10 cm	Pr32-1-1-F53			body		
0-10 cm	Pr32-1-1-F54			body		
0-10 cm	Pr32-1-1-F55			body		
0-10 cm	Pr32-1-1-F56			body		
0-10 cm	Pr32-1-1-F57			body		
0-10 cm	Pr32-1-1-F58			body		
0-10 cm	Pr32-1-1-F59			body		
0-10 cm	Pr32-1-1-F60			body		
0-10 cm	Pr32-1-1-F61			body		
0-10 cm	Pr32-1-1-F62			body		
0-10 cm	Pr32-1-1-F63			body		
0-10 cm	Pr32-1-1-F64			body		
0-10 cm	Pr32-1-1-F65			body		
0-10 cm	Pr32-1-1-F66			body		
0-10 cm	Pr32-1-1-F67			body		
0-10 cm	Pr32-1-1-F68			body		
0-10 cm	Pr32-1-1-F69			body		

Excavation context	Ceramic code	Surface Treatment Visual	Surface Treatment Thin section	Sherd Body Area	Dia. (cm)	Vessel form
0-10 cm	Pr32-1-1-F70			body		
0-10 cm	Pr32-1-1-F71			body		
0-10 cm	Pr32-1-1-F72			body		
0-10 cm	Pr32-1-1-F73			body		
0-10 cm	Pr32-1-1-F74			body		
0-10 cm	Pr32-1-1-F75			body		
0-10 cm	Pr32-1-1-F76			body		
0-10 cm	Pr32-1-1-F77			body		
0-10 cm	Pr32-1-1-F78			body		
0-10 cm	Pr32-1-1-F79			body		
0-10 cm	Pr32-1-1-F80			body		
0-10 cm	Pr32-1-1-F81			body		
0-10 cm	Pr32-1-1-F82			body		
0-10 cm	Pr32-1-1-F83			body		
0-10 cm	Pr32-1-1-F84			body		
0-10 cm	Pr32-1-1-F85			body		
0-10 cm	Pr32-1-1-F86			body		
0-10 cm	Pr32-1-1-F87			body		
0-10 cm	Pr32-1-1-F88			body		
0-10 cm	Pr32-1-1-F89			body		
0-10 cm	Pr32-1-1-F90			body		
0-10 cm	Pr32-1-1-F91			body		
0-10 cm	Pr32-1-1-F92			body		
0-10 cm	Pr32-1-1-F93*			body		
0-10 cm	Pr32-1-1-F94*			body		
0-10 cm	Pr32-1-1-F95			body		
0-10 cm	Pr32-1-1-F96			body		
0-10 cm	Pr32-1-1-F97			body		
0-10 cm	Pr32-1-1-F98*			body		
0-10 cm	Pr32-1-1-F99			body		
0-10 cm	pr32-1-1-F100			body		
0-10 cm	Pr32-1-1-F101			body		
0-10 cm	Pr32-1-1-F102	Reduced/slip (ext)		rim		
0-10 cm	Pr32-1-1-F103 (former F102, STRI)			body		
0-10 cm	Pr32-1-2-F1			body		
0-10 cm	Pr32-1-2-F2			body		
0-10 cm	Pr32-1-2-F3			body		
0-10 cm	Pr32-1-2-F4			body		
0-10 cm	Pr32-1-2-F5			body		
0-10 cm	Pr32-1-2-F6			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
0-10 cm	Pr32-1-2-F7			body		
0-10 cm	Pr32-1-2-F8			body		
0-10 cm	Pr32-1-2-F9			body		
0-10 cm	Pr32-1-2-F10			body		
0-10 cm	Pr32-1-2-F11			body		
0-10 cm	Pr32-1-2-F12			body		
0-10 cm	Pr32-1-2-F13			body		
0-10 cm	Pr32-1-2-F14			body		
0-10 cm	Pr32-1-2-F15			body		
0-10 cm	Pr32-1-2-F16			body		
0-10 cm	Pr32-1-2-F17			body		
0-10 cm	Pr32-1-2-F18			body		
0-10 cm	Pr32-1-2-F19			body		
0-10 cm	Pr32-1-2-F20			body		
0-10 cm	Pr32-1-2-F21			body		
0-10 cm	Pr32-1-2-F22			body		
0-10 cm	Pr32-1-2-F23			body		
0-10 cm	Pr32-1-2-F24			body		
0-10 cm	Pr32-1-2-F25			body		
0-10 cm	Pr32-1-2-F26			body		
0-10 cm	Pr32-1-2-F27			body		
0-10 cm	Pr32-1-2-F28			body		
0-10 cm	Pr32-1-2-F29			body		
0-10 cm	Pr32-1-2-F30			body		
0-10 cm	Pr32-1-2-F31			body		
0-10 cm	Pr32-1-2-F32			body		
0-10 cm	Pr32-1-2-F33			body		
0-10 cm	Pr32-1-2-F34			body		
0-10 cm	Pr32-1-2-F35			body		
0-10 cm	Pr32-1-2-F36			body		
0-10 cm	Pr32-1-2-F37			body		
0-10 cm	Pr32-1-2-F38			body		
0-10 cm	Pr32-1-2-F39			body		
0-10 cm	Pr32-1-2-F40			body		
0-10 cm	Pr32-1-2-F41			body		
0-10 cm	Pr32-1-2-F42			body		
0-10 cm	Pr32-1-2-F43			body		
0-10 cm	Pr32-1-2-F44			body		
0-10 cm	Pr32-1-2-F45			body		
0-10 cm	Pr32-1-2-F46			body		
0-10 cm	Pr32-1-2-F47			body		
0-10 cm	Pr32-1-2-F48			body		
0-10 cm	Pr32-1-2-F49			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
0-10 cm	Pr32-1-2-F50			body		
0-10 cm	Pr32-1-2-F51			body		
0-10 cm	Pr32-1-2-F52			body		
0-10 cm	Pr32-1-2-F53 (originally F21, STRI)			body		
10-20 cm	Pr32-1-3-F1			body		
10-20 cm	Pr32-1-3-F2	red paint/slip (line, ext)		body		
10-20 cm	Pr32-1-3-F3			body near bottom		
10-20 cm	Pr32-1-3-F4			body		
10-20 cm	Pr32-1-3-F5			body		
10-20 cm	Pr32-1-3-F6			body		
10-20 cm	Pr32-1-3-F7			body		
10-20 cm	Pr32-1-3-F8			body		
10-20 cm	Pr32-1-3-F9			body		
10-20 cm	Pr32-1-3-F10			body		
10-20 cm	Pr32-1-3-F11			body		
10-20 cm	Pr32-1-3-F12			body		
10-20 cm	Pr32-1-3-F13			body		
10-20 cm	Pr32-1-3-F14			body (near round bottom)		
10-20 cm	Pr32-1-3-F15			body		
10-20 cm	Pr32-1-3-F16			body		
10-20 cm	Pr32-1-3-F17			body (or thick bottom)		
10-20 cm	Pr32-1-3-F18			body		
10-20 cm	Pr32-1-3-F19			body		
10-20 cm	Pr32-1-3-F20	red slip, 2.5YR 4/4		body		
10-20 cm	Pr32-1-3-F21			body		
10-20 cm	Pr32-1-3-F22			body		
10-20 cm	Pr32-1-3-F23			body		
10-20 cm	Pr32-1-3-F24			body		
10-20 cm	Pr32-1-3-F25			body		
10-20 cm	Pr32-1-3-F26			body		
10-20 cm	Pr32-1-3-F27			body		
10-20 cm	Pr32-1-3-F28			body		
10-20 cm	Pr32-1-3-F29			body		
10-20 cm	Pr32-1-3-F30			body		
10-20 cm	Pr32-1-3-F31			body		
10-20 cm	Pr32-1-3-F32			body		
10-20 cm	Pr32-1-3-F33			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
10-20 cm	Pr32-1-3-F34			body		
10-20 cm	Pr32-1-3-F35			body		
10-20 cm	Pr32-1-3-F36			body		
10-20 cm	Pr32-1-3-F37			body		
10-20 cm	Pr32-1-3-F38			body		
10-20 cm	Pr32-1-3-F39			body		
10-20 cm	Pr32-1-3-F40			body		
10-20 cm	Pr32-1-3-F40			body		
10-20 cm	Pr32-1-3-F41			body		
10-20 cm	Pr32-1-3-F42			body		
10-20 cm	Pr32-1-3-F43			body		
10-20 cm	Pr32-1-3-F44			body		
10-20 cm	Pr32-1-3-F45			body		
10-20 cm	Pr32-1-3-F46			body		
10-20 cm	Pr32-1-3-F47			body		
10-20 cm	Pr32-1-3-F48			body		
10-20 cm	Pr32-1-3-F49			body		
10-20 cm	Pr32-1-3-F50			body		
10-20 cm	Pr32-1-3-F51			body		
10-20 cm	Pr32-1-3-F52			body		
10-20 cm	Pr32-1-3-F53			body		
10-20 cm	Pr32-1-3-F54			body		
10-20 cm	Pr32-1-3-F55			body		
10-20 cm	Pr32-1-3-F56			body		
10-20 cm	Pr32-1-3-F57			body		
10-20 cm	Pr32-1-3-F58			body		
10-20 cm	Pr32-1-3-F59			body		
10-20 cm	Pr32-1-3-F60			body		
10-20 cm	Pr32-1-3-F61			body		
10-20 cm	Pr32-1-3-F62			body		
10-20 cm	Pr32-1-3-F63			body		
10-20 cm	Pr32-1-3-F64			body		
10-20 cm	Pr32-1-3-F65			body		
10-20 cm	Pr32-1-3-F66			body		
10-20 cm	Pr32-1-3-F67			body		
10-20 cm	Pr32-1-3-F68			body		
10-20 cm	Pr32-1-3-F69			body		
10-20 cm	Pr32-1-3-F70			body		
10-20 cm	Pr32-1-3-F71			body		
10-20 cm	Pr32-1-3-F72			body		
10-20 cm	Pr32-1-3-F73			body		
10-20 cm	Pr32-1-3-F74			body		
10-20 cm	Pr32-1-3-F75			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
10-20 cm	Pr32-1-3-F76			body		
10-20 cm	Pr32-1-3-F77			body		
10-20 cm	Pr32-1-3-F78			body		
10-20 cm	Pr32-1-3-F79			body		
10-20 cm	Pr32-1-3-F80			body		
10-20 cm	Pr32-1-3-F81			body		
10-20 cm	Pr32-1-3-F82			body		
10-20 cm	Pr32-1-3-F83			body		
10-20 cm	Pr32-1-3-F84			body		
10-20 cm	Pr32-1-3-F85			body		
10-20 cm	Pr32-1-3-F86			body		
10-20 cm	Pr32-1-3-F87			body		
10-20 cm	Pr32-1-3-F88			body		
10-20 cm	Pr32-1-3-F89			body		
10-20 cm	Pr32-1-3-F90			body		
10-20 cm	Pr32-1-3-F91			body		
10-20 cm	Pr32-1-3-F92			body		
10-20 cm	Pr32-1-3-F93			body		
10-20 cm	Pr32-1-3-F94			body		
10-20 cm	Pr32-1-3-F95			body		
10-20 cm	Pr32-1-3-F96			body		
10-20 cm	Pr32-1-3-F97			body		
10-20 cm	Pr32-1-3-F98			body		
10-20 cm	Pr32-1-3-F99			body		
10-20 cm	Pr32-1-3-F100			body		
10-20 cm	Pr32-1-3-F101			body		
10-20 cm	Pr32-1-3-F102			body		
10-20 cm	Pr32-1-3-F103			body		
10-20 cm	Pr32-1-3-F104			body		
10-20 cm	Pr32-1-3-F105			body		
10-20 cm	Pr32-1-3-F106			body		
10-20 cm	Pr32-1-3-F107			body		
10-20 cm	Pr32-1-3-F108			body		
10-20 cm	Pr32-1-3-F109			body		
10-20 cm	Pr32-1-3-F110			body		
10-20 cm	Pr32-1-3-F111			body		
10-20 cm	Pr32-1-3-F112			body		
10-20 cm	Pr32-1-3-F113			body		
10-20 cm	Pr32-1-3-F114			body		
10-20 cm	Pr32-1-3-F115			body		
10-20 cm	Pr32-1-3-F116			body		
10-20 cm	Pr32-1-3-F117			body		
10-20 cm	Pr32-1-3-F118			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
10-20 cm	Pr32-1-3-F119			body		
10-20 cm	Pr32-1-3-F120			body		
10-20 cm	Pr32-1-3-F121			body		
10-20 cm	Pr32-1-3-F122			body		
10-20 cm	Pr32-1-3-F123			body		
10-20 cm	Pr32-1-3-F124			body		
10-20 cm	Pr32-1-3-F125	red slip, 2.5YR 4/4		body		
10-20 cm	Pr32-1-3-F126	red slip, 10YR 5/6		body		
10-20 cm	Pr32-1-3-F127			body		
10-20 cm	Pr32-1-3-F128*			body		
10-20 cm	Pr32-1-3-F129			body		
10-20 cm	Pr32-1-3-F130			body		
10-20 cm	Pr32-1-3-F131			body		
10-20 cm	Pr32-1-3-F132			body		
10-20 cm	Pr32-1-3-F133			body		
10-20 cm	Pr32-1-3-F134			body		
10-20 cm	Pr32-1-3-F135			rim		
10-20 cm	Pr32-1-3-F136			rim		
10-20 cm	Pr32-1-3-F137			rim		
10-20 cm	Pr32-1-3-F138			rim		
20-30 cm	Pr32-1-4-F1			body at or near bottom		
20-30 cm	Pr32-1-4-F2			body		
20-30 cm	Pr32-1-4-F3			body		
20-30 cm	Pr32-1-4-F4			body		
20-30 cm	Pr32-1-4-F5			body		
20-30 cm	Pr32-1-4-F6			body		
20-30 cm	Pr32-1-4-F7			body		
20-30 cm	Pr32-1-4-F8			body		
20-30 cm	Pr32-1-4-F9			body		
20-30 cm	Pr32-1-4-F10			body		
20-30 cm	Pr32-1-4-F11			body		
20-30 cm	Pr32-1-4-F12			body		
20-30 cm	Pr32-1-4-F13			body		
20-30 cm	Pr32-1-4-F14			body		
20-30 cm	Pr32-1-4-F15			body		
20-30 cm	Pr32-1-4-F16			body		
20-30 cm	Pr32-1-4-F17			body		
20-30 cm	Pr32-1-4-F18			body		
20-30 cm	Pr32-1-4-F19			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
20-30 cm	Pr32-1-4-F20			body		
20-30 cm	Pr32-1-4-F21			body		
20-30 cm	Pr32-1-4-F22			body		
20-30 cm	Pr32-1-4-F23			body		
20-30 cm	Pr32-1-4-F24			body		
20-30 cm	Pr32-1-4-F25			body		
20-30 cm	Pr32-1-4-F26			body		
20-30 cm	Pr32-1-4-F27			body		
20-30 cm	Pr32-1-4-F28	some red paint/slip (ext)?		body		
20-30 cm	Pr32-1-4-F29			body		
20-30 cm	Pr32-1-4-F30			body		
20-30 cm	Pr32-1-4-F31			body		
20-30 cm	Pr32-1-4-F32			body		
20-30 cm	Pr32-1-4-F33			body		
20-30 cm	Pr32-1-4-F34			body		
20-30 cm	Pr32-1-4-F35			body		
20-30 cm	Pr32-1-4-F36			body		
20-30 cm	Pr32-1-4-F37			body		
20-30 cm	Pr32-1-4-F38			body		
20-30 cm	Pr32-1-4-F39			body		
20-30 cm	Pr32-1-4-F40			body		
20-30 cm	Pr32-1-4-F41			body		
20-30 cm	Pr32-1-4-F42			body		
20-30 cm	Pr32-1-4-F43			body		
20-30 cm	Pr32-1-4-F44			body		
20-30 cm	Pr32-1-4-F45			body		
20-30 cm	Pr32-1-4-F46			body		
20-30 cm	Pr32-1-4-F47			body		
20-30 cm	Pr32-1-4-F48			body		
20-30 cm	Pr32-1-4-F49			body		
20-30 cm	Pr32-1-4-F50			body		
20-30 cm	Pr32-1-4-F51			body		
20-30 cm	Pr32-1-4-F52			body		
20-30 cm	Pr32-1-4-F53			body		
20-30 cm	Pr32-1-4-F54			body		
20-30 cm	Pr32-1-4-F55			body		
20-30 cm	Pr32-1-4-F56			body		
20-30 cm	Pr32-1-4-F57			body		
20-30 cm	Pr32-1-4-F58			body		
20-30 cm	Pr32-1-4-F59			body		
20-30 cm	Pr32-1-4-F60			body		
20-30 cm	Pr32-1-4-F61			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
20-30 cm	Pr32-1-4-F62			body		
20-30 cm	Pr32-1-4-F63			body		
20-30 cm	Pr32-1-4-F64			body		
20-30 cm	Pr32-1-4-F65			body		
20-30 cm	Pr32-1-4-F66			body		
20-30 cm	Pr32-1-4-F67			body		
20-30 cm	Pr32-1-4-F68			body		
20-30 cm	Pr32-1-4-F69			body		
20-30 cm	Pr32-1-4-F70			?		
20-30 cm	Pr32-1-4-F71			?		
20-30 cm	Pr32-1-4-F72			?		
20-30 cm	Pr32-1-4-F73			?		
20-30 cm	Pr32-1-4-F74			?		
20-30 cm	Pr32-1-4-F75			?		
20-30 cm	Pr32-1-4-F76			?		
20-30 cm	Pr32-1-4-F77			body		
20-30 cm	Pr32-1-4-F78			rim	25	jar (nearly vertical wall)
20-30 cm	Pr32-1-4-F79			rim		
20-30 cm	Pr32-1-4-F80			rim	14	jar
20-30 cm	Pr32-1-4-F82			body		
20-30 cm	Pr32-1-4-F83			rim	23	bowl (vertical wall)
30-40 cm	Pr32-1-5-F1			body		
30-40 cm	Pr32-1-5-F2			body		
30-40 cm	Pr32-1-5-F3			body (near bottom)		
30-40 cm	Pr32-1-5-F4			body		
30-40 cm	Pr32-1-5-F5			body		
30-40 cm	Pr32-1-5-F6*			body		
30-40 cm	Pr32-1-5-F7			body (near round bottom)		
30-40 cm	Pr32-1-5-F8			body		
30-40 cm	Pr32-1-5-F9			body		
30-40 cm	Pr32-1-5-F10			body (near round bottom)		
30-40 cm	Pr32-1-5-F11			body		
30-40 cm	Pr32-1-5-F12			body		
30-40 cm	Pr32-1-5-F13			body		
30-40 cm	Pr32-1-5-F14			body		
30-40 cm	Pr32-1-5-F15			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
30-40 cm	Pr32-1-5-F16			body		
30-40 cm	Pr32-1-5-F17*			body		
30-40 cm	Pr32-1-5-F18			body		
30-40 cm	Pr32-1-5-F19			body		
30-40 cm	Pr32-1-5-F20			body		
30-40 cm	Pr32-1-5-F21			body		
30-40 cm	Pr32-1-5-F22			body		
30-40 cm	Pr32-1-5-F23			body		
30-40 cm	Pr32-1-5-F24			body		
30-40 cm	Pr32-1-5-F25			body		
30-40 cm	Pr32-1-5-F26			body		
30-40 cm	Pr32-1-5-F27			body		
30-40 cm	Pr32-1-5-F28			body		
30-40 cm	Pr32-1-5-F29			body		
30-40 cm	Pr32-1-5-F30			body		
30-40 cm	Pr32-1-5-F31			body		
30-40 cm	Pr32-1-5-F32			body		
30-40 cm	Pr32-1-5-F33			body		
30-40 cm	Pr32-1-5-F34			body		
30-40 cm	Pr32-1-5-F35			body		
30-40 cm	Pr32-1-5-F36			body		
30-40 cm	Pr32-1-5-F37			body		
30-40 cm	Pr32-1-5-F38			body		
30-40 cm	Pr32-1-5-F39			body		
30-40 cm	Pr32-1-5-F40			body		
30-40 cm	Pr32-1-5-F41			body		
30-40 cm	Pr32-1-5-F42			body		
30-40 cm	Pr32-1-5-F43			body		
30-40 cm	Pr32-1-5-F44			body		
30-40 cm	Pr32-1-5-F46			body		
30-40 cm	Pr32-1-5-F47			body		
30-40 cm	Pr32-1-5-F48			body		
30-40 cm	Pr32-1-5-F49			body		
30-40 cm	Pr32-1-5-F50			body		
30-40 cm	Pr32-1-5-F51			body		
30-40 cm	Pr32-1-5-F52			body		
30-40 cm	Pr32-1-5-F53			body		
30-40 cm	Pr32-1-5-F54			body		
30-40 cm	Pr32-1-5-F55			body		
30-40 cm	Pr32-1-5-F56			body		
30-40 cm	Pr32-1-5-F57*			body		
30-40 cm	Pr32-1-5-F58*			body		
30-40 cm	Pr32-1-5-F59			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
30-40 cm	Pr32-1-5-F60			body		
30-40 cm	Pr32-1-5-F61			body		
30-40 cm	Pr32-1-5-F62			body		
30-40 cm	Pr32-1-5-F63			body		
30-40 cm	Pr32-1-5-F64			body		
30-40 cm	Pr32-1-5-F65			body		
30-40 cm	Pr32-1-5-F66			body		
30-40 cm	Pr32-1-5-F67			body		
30-40 cm	Pr32-1-5-F68			body		
30-40 cm	Pr32-1-5-F69			body		
30-40 cm	Pr32-1-5-F70			body		
30-40 cm	Pr32-1-5-F71			body		
30-40 cm	Pr32-1-5-F72			body		
30-40 cm	Pr32-1-5-F73			body		
30-40 cm	Pr32-1-5-F74			body		
30-40 cm	Pr32-1-5-F75	red slip (ext, below rim)		rim (ext red slip)	19	jar
30-40 cm	Pr32-1-5-F76			rim	12?	jar?
30-40 cm	Pr32-1-5-F77?? (or Pr-32-1-15-F183)			rim		
40-45 cm	Pr32-1-6-F1			body		
40-45 cm	Pr32-1-6-F2			body (near round bottom)		
40-45 cm	Pr32-1-6-F3	red slip		body		
40-45 cm	Pr32-1-6-F4*			body		
40-45 cm	Pr32-1-6-F5			body		
40-45 cm	Pr32-1-6-F6			body		
40-45 cm	Pr32-1-6-F7			body		
40-45 cm	Pr32-1-6-F8			body		
40-45 cm	Pr32-1-6-F9			body		
40-45 cm	Pr32-1-6-F10			body		
40-45 cm	Pr32-1-6-F11			body		
40-45 cm	Pr32-1-6-F12			body		
40-45 cm	Pr32-1-6-F13			body		
40-45 cm	Pr32-1-6-F14			body		
40-45 cm	Pr32-1-6-F15			body		
40-45 cm	Pr32-1-6-F16			body		
40-45 cm	Pr32-1-6-F17			body		
40-45 cm	Pr32-1-6-F18			body		
40-45 cm	Pr32-1-6-F19			body		
40-45 cm	Pr32-1-6-F20			body		
40-45 cm	Pr32-1-6-F21			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
40-45 cm	Pr32-1-6-F22			body		
40-45 cm	Pr32-1-6-F23			body		
nat strtm 1, clmn 25cm2, sw corner	Pr32-1-8-F1			body		
nat strtm 1, clmn 25cm2, sw corner	Pr32-1-8-F2			body		
nat strtm 1, clmn 25cm2, sw corner	Pr32-1-8-F3			body		
nat strtm 1, clmn 25cm2, sw corner	Pr32-1-8-F4			body		
nat strtm 1, clmn 25cm2, sw corner	Pr32-1-8-F5			body		
nat strtm 1, clmn 25cm2, sw corner	Pr32-1-8-F6			body		
nat strtm 1, clmn 25cm2, sw corner	Pr32-1-8-F7			body		
nat strtm 1, clmn 25cm2, sw corner	Pr32-1-8-F8			body		
nat strtm 1, clmn 25cm2, sw corner	Pr32-1-8-F9			body		
nat strtm 1, clmn 25cm2, sw corner	Pr32-1-8-F10			rim	13	jar
nat strtm 1, clmn 25cm2, sw corner	Pr32-1-8-F11			body		
nat strtm 1, clmn 25cm2, sw corner	Pr32-1-8-F12			body		
nat strtm 1, clmn 25cm2, sw corner	Pr32-1-8-F13			body		
nat strtm 1, clmn 25cm2, sw corner	Pr32-1-8-F14			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
nat strtm 1, clmn 25cm2, sw corner	Pr32-1-8-F15			body		
nat strtm 1, clmn 25cm2, sw corner	Pr32-1-8-F16			body		
nat strtm 2, clmn 25cm2, sw corner	Pr32-1-9-F1			body		
nat strtm 2, clmn 25cm2, sw corner	Pr32-1-9-F2			body		
nat strtm 2, clmn 25cm2, sw corner	Pr32-1-9-F3			body		
nat strtm 2, clmn 25cm2, sw corner	Pr32-1-9-F4			body		
nat strtm 2, clmn 25cm2, sw corner	Pr32-1-9-F5			body		
nat strtm 2, clmn 25cm2, sw corner	Pr32-1-9-F6			body		
nat strtm 2, clmn 25cm2, sw corner	Pr32-1-9-F7			body		
nat strtm 2, clmn 25cm2, sw corner	Pr32-1-9-F8			body		
nat strtm 2, clmn 25cm2, sw corner	Pr32-1-9-F9			body		
nat strtm 2, clmn 25cm2, sw corner	Pr32-1-9-F10			body		
nat strtm 2, clmn 25cm2, sw corner	Pr32-1-9-F11			body		
nat strtm 2, clmn 25cm2, sw corner	Pr32-1-9-F12			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
nat strtm 2, clmn 25cm2, sw corner	Pr32-1-9-F13			body		
nat strtm 2, clmn 25cm2, sw corner	Pr32-1-9-F14			rim	42	bowl (nearly vertical wall)
nat strtm 3, clmn 25cm2, sw corner	Pr32-1-10-F1			body		
nat strtm 3, clmn 25cm2, sw corner	Pr32-1-10-F2			body		
nat strtm 3, clmn 25cm2, sw corner	Pr32-1-10-F3			body		
nat strtm 3, clmn 25cm2, sw corner	Pr32-1-10-F4			body		
nat strtm 3, clmn 25cm2, sw corner	Pr32-1-10-F5			body		
nat strtm 3, clmn 25cm2, sw corner	Pr32-1-10-F6			body		
nat strtm 3, clmn 25cm2, sw corner	Pr32-1-10-F7			body		
nat strtm 3, clmn 25cm2, sw corner	Pr32-1-10-F8			body		
nat strtm 3, clmn 25cm2, sw corner	Pr32-1-10-F9			body		
nat strtm 3, clmn 25cm2, sw corner	Pr32-1-10-F10			body		
nat strtm 3, clmn 25cm2, sw corner	Pr32-1-10-F11			body		
nat strtm 3, clmn 25cm2, sw corner	Pr32-1-10-F12			body		
nat strtm 3, clmn 25cm2, sw corner	Pr32-1-10-F13			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
nat strtm 3, clmn 25cm2, sw corner	Pr32-1-10-F14	red slip, 2.5YR 5/4		body		
nat strtm 3, clmn 25cm2, sw corner	Pr32-1-10-F15			body		
nat strtm 3, clmn 25cm2, sw corner	Pr32-1-10-F16			body		
nat strtm 3, clmn 25cm2, sw corner	Pr32-1-10-F17			rim	22	jar (slightly closed)
nat strtm 3, clmn 25cm2, sw corner	Pr32-1-10-F18			rim	18	jar
nat strtm 3, clmn 25cm2, sw corner	Pr32-1-10-F19			rim		
nat strtm 3, clmn 25cm2, sw corner	Pr32-1-10-F20			rim	23	jar (slightly closed)
nat strtm 1, ext, S	Pr32-1-13-F1			body		
nat strtm 1, ext, S	Pr32-1-13-F2			body		
nat strtm 1, ext, S	Pr32-1-13-F3			body (near round bottom)		
nat strtm 1, ext, S	Pr32-1-13-F4			body		
nat strtm 1, ext, S	Pr32-1-13-F5			body		
nat strtm 1, ext, S	Pr32-1-13-F6			body		
nat strtm 1, ext, S	Pr32-1-13-F7			body		
nat strtm 1, ext, S	Pr32-1-13-F8			body		
nat strtm 1, ext, S	Pr32-1-13-F9			body		
nat strtm 1, ext, S	Pr32-1-13-F10			body		
nat strtm 1, ext, S	Pr32-1-13-F11			body		
nat strtm 1, ext, S	Pr32-1-13-F12			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
nat strtm 1, ext, S	Pr32-1-13-F13			body		
nat strtm 1, ext, S	Pr32-1-13-F14			body (near round bottom)		
nat strtm 1, ext, S	Pr32-1-13-F15			body		
nat strtm 1, ext, S	Pr32-1-13-F16			body		
nat strtm 1, ext, S	Pr32-1-13-F17			body		
nat strtm 1, ext, S	Pr32-1-13-F18			body		
nat strtm 1, ext, S	Pr32-1-13-F19			body		
nat strtm 1, ext, S	Pr32-1-13-F20			body		
nat strtm 1, ext, S	Pr32-1-13-F21			body		
nat strtm 1, ext, S	Pr32-1-13-F22			body		
nat strtm 1, ext, S	Pr32-1-13-F23			body		
nat strtm 1, ext, S	Pr32-1-13-F24	red slip, 5YR 4/4		body		
nat strtm 1, ext, S	Pr32-1-13-F25			body		
nat strtm 1, ext, S	Pr32-1-13-F26			body		
nat strtm 1, ext, S	Pr32-1-13-F27			body		
nat strtm 1, ext, S	Pr32-1-13-F28			body		
nat strtm 1, ext, S	Pr32-1-13-F29			body		
nat strtm 1, ext, S	Pr32-1-13-F30			body		
nat strtm 1, ext, S	Pr32-1-13-F31			body		
nat strtm 1, ext, S	Pr32-1-13-F32			body		
nat strtm 1, ext, S	Pr32-1-13-F33			body		
nat strtm 1, ext, S	Pr32-1-13-F35			body		
nat strtm 1, ext, S	Pr32-1-13-F36			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
nat strtm 1, ext, S	Pr32-1-13-F37			body		
nat strtm 1, ext, S	Pr32-1-13-F38			body		
nat strtm 1, ext, S	Pr32-1-13-F39			body		
nat strtm 1, ext, S	Pr32-1-13-F40			body		
nat strtm 1, ext, S	Pr32-1-13-F41			lip?		
nat strtm 1, ext, S	Pr32-1-13-F42			body		
nat strtm 1, ext, S	Pr32-1-13-F43			body		
nat strtm 1, ext, S	Pr32-1-13-F44			body		
nat strtm 1, ext, S	Pr32-1-13-F45			body		
nat strtm 1, ext, S	Pr32-1-13-F46			body		
nat strtm 1, ext, S	Pr32-1-13-F47			body		
nat strtm 1, ext, S	Pr32-1-13-F48			rim	12	jar
nat strtm 1, ext, S (small lense of shell)	Pr32-1-14-F1			body		
nat strtm 1, ext, S (small lense of shell)	Pr32-1-14-F2			body		
nat strtm 1, ext, S (small lense of shell)	Pr32-1-14-F3			body		
nat strtm 1, ext, S (small lense of shell)	Pr32-1-14-F4			body		
nat strtm 1, ext, S (small lense of shell)	Pr32-1-14-F5			body		
nat strtm 1, ext, S (small lense of shell)	Pr32-1-14-F6			body		
nat strtm 1, ext, S (small lense of shell)	Pr32-1-14-F7			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
nat strtm 1, ext, S (small lense of shell)	Pr32-1-14-F8			body		
nat strtm 1, ext, S (small lense of shell)	Pr32-1-14-F9			body		
nat strtm 1, ext, S (small lense of shell)	Pr32-1-14-F10			body		
nat strtm 2, ext, S	Pr32-1-15-F1			body		
nat strtm 2, ext, S	Pr32-1-15-F2			body		
nat strtm 2, ext, S	Pr32-1-15-F3			body		
nat strtm 2, ext, S	Pr32-1-15-F4			body		
nat strtm 2, ext, S	Pr32-1-15-F5			body		
nat strtm 2, ext, S	Pr32-1-15-F6			body		
nat strtm 2, ext, S	Pr32-1-15-F7			body		
nat strtm 2, ext, S	Pr32-1-15-F8			body		
nat strtm 2, ext, S	Pr32-1-15-F9			body		
nat strtm 2, ext, S	Pr32-1-15-F10			body		
nat strtm 2, ext, S	Pr32-1-15-F11			body		
nat strtm 2, ext, S	Pr32-1-15-F12			body		
nat strtm 2, ext, S	Pr32-1-15-F13	red/brown paint/slip (int), 2.5YR 4/4		body		
nat strtm 2, ext, S	Pr32-1-15-F14			body		
nat strtm 2, ext, S	Pr32-1-15-F15			body		
nat strtm 2, ext, S	Pr32-1-15-F16			body		
nat strtm 2, ext, S	Pr32-1-15-F17			body		
nat strtm 2, ext, S	Pr32-1-15-F18			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
nat strtm 2, ext, S	Pr32-1-15-F19			body		
nat strtm 2, ext, S	Pr32-1-15-F20			body		
nat strtm 2, ext, S	Pr32-1-15-F21			body		
nat strtm 2, ext, S	Pr32-1-15-F22			body		
nat strtm 2, ext, S	Pr32-1-15-F23			body		
nat strtm 2, ext, S	Pr32-1-15-F24			body		
nat strtm 2, ext, S	Pr32-1-15-F25			body		
nat strtm 2, ext, S	Pr32-1-15-F26			body		
nat strtm 2, ext, S	Pr32-1-15-F27			body		
nat strtm 2, ext, S	Pr32-1-15-F28			body		
nat strtm 2, ext, S	Pr32-1-15-F29			body		
nat strtm 2, ext, S	Pr32-1-15-F30			body		
nat strtm 2, ext, S	Pr32-1-15-F31			body		
nat strtm 2, ext, S	Pr32-1-15-F32			body		
nat strtm 2, ext, S	Pr32-1-15-F33			body		
nat strtm 2, ext, S	Pr32-1-15-F34			body		
nat strtm 2, ext, S	Pr32-1-15-F35			body		
nat strtm 2, ext, S	Pr32-1-15-F36			body		
nat strtm 2, ext, S	Pr32-1-15-F37			body		
nat strtm 2, ext, S	Pr32-1-15-F38			body		
nat strtm 2, ext, S	Pr32-1-15-F39			body		
nat strtm 2, ext, S	Pr32-1-15-F40			body		
nat strtm 2, ext, S	Pr32-1-15-F41			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
nat strtm 2, ext, S	Pr32-1-15-F42			body		
nat strtm 2, ext, S	Pr32-1-15-F43			body		
nat strtm 2, ext, S	Pr32-1-15-F44			body		
nat strtm 2, ext, S	Pr32-1-15-F45			body		
nat strtm 2, ext, S	Pr32-1-15-F46			body		
nat strtm 2, ext, S	Pr32-1-15-F47			body (near round bottom)		
nat strtm 2, ext, S	Pr32-1-15-F48			body		
nat strtm 2, ext, S	Pr32-1-15-F49			body		
nat strtm 2, ext, S	Pr32-1-15-F50			body		
nat strtm 2, ext, S	Pr32-1-15-F51			body		
nat strtm 2, ext, S	Pr32-1-15-F52			body		
nat strtm 2, ext, S	Pr32-1-15-F53			body		
nat strtm 2, ext, S	Pr32-1-15-F54			body		
nat strtm 2, ext, S	Pr32-1-15-F55			body		
nat strtm 2, ext, S	Pr32-1-15-F56			body		
nat strtm 2, ext, S	Pr32-1-15-F57			body		
nat strtm 2, ext, S	Pr32-1-15-F58			body		
nat strtm 2, ext, S	Pr32-1-15-F59			body		
nat strtm 2, ext, S	Pr32-1-15-F60			body		
nat strtm 2, ext, S	Pr32-1-15-F61			body		
nat strtm 2, ext, S	Pr32-1-15-F62	red slip, 2.5YR 4/4, (int and ext: rough slip, without a clear border)		body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
nat strtm 2, ext, S	Pr32-1-15-F63			body		
nat strtm 2, ext, S	Pr32-1-15-F64			body		
nat strtm 2, ext, S	Pr32-1-15-F65			body		
nat strtm 2, ext, S	Pr32-1-15-F66			body		
nat strtm 2, ext, S	Pr32-1-15-F67			body		
nat strtm 2, ext, S	Pr32-1-15-F68			body		
nat strtm 2, ext, S	Pr32-1-15-F69			body		
nat strtm 2, ext, S	Pr32-1-15-F70			body		
nat strtm 2, ext, S	Pr32-1-15-F71			body		
nat strtm 2, ext, S	Pr32-1-15-F72			body		
nat strtm 2, ext, S	Pr32-1-15-F73			body		
nat strtm 2, ext, S	Pr32-1-15-F74			body		
nat strtm 2, ext, S	Pr32-1-15-F75			body		
nat strtm 2, ext, S	Pr32-1-15-F76			body		
nat strtm 2, ext, S	Pr32-1-15-F77			body		
nat strtm 2, ext, S	Pr32-1-15-F78			body		
nat strtm 2, ext, S	Pr32-1-15-F79			body		
nat strtm 2, ext, S	Pr32-1-15-F80			body		
nat strtm 2, ext, S	Pr32-1-15-F81			body		
nat strtm 2, ext, S	Pr32-1-15-F82			body		
nat strtm 2, ext, S	Pr32-1-15-F83			body		
nat strtm 2, ext, S	Pr32-1-15-F84			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
nat strtm 2, ext, S	Pr32-1-15-F85			body		
nat strtm 2, ext, S	Pr32-1-15-F86			body		
nat strtm 2, ext, S	Pr32-1-15-F87			body		
nat strtm 2, ext, S	Pr32-1-15-F88			body		
nat strtm 2, ext, S	Pr32-1-15-F89			body		
nat strtm 2, ext, S	Pr32-1-15-F90			body		
nat strtm 2, ext, S	Pr32-1-15-F91			body		
nat strtm 2, ext, S	Pr32-1-15-F92			body		
nat strtm 2, ext, S	Pr32-1-15-F93			body		
nat strtm 2, ext, S	Pr32-1-15-F94			body		
nat strtm 2, ext, S	Pr32-1-15-F95			body		
nat strtm 2, ext, S	Pr32-1-15-F96			body		
nat strtm 2, ext, S	Pr32-1-15-F97			body		
nat strtm 2, ext, S	Pr32-1-15-F98			body		
nat strtm 2, ext, S	Pr32-1-15-F99			body		
nat strtm 2, ext, S	Pr32-1-15-F100			body		
nat strtm 2, ext, S	Pr32-1-15-F101			body		
nat strtm 2, ext, S	Pr32-1-15-F102			body		
nat strtm 2, ext, S	Pr32-1-15-F103			body		
nat strtm 2, ext, S	Pr32-1-15-F104			body		
nat strtm 2, ext, S	Pr32-1-15-F105			rim		bowl?
nat strtm 2, ext, S	Pr32-1-15-F106			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
nat strtm 2, ext, S	Pr32-1-15-F107			body		
nat strtm 2, ext, S	Pr32-1-15-F108			body		
nat strtm 2, ext, S	Pr32-1-15-F109			body		
nat strtm 2, ext, S	Pr32-1-15-F110	red paint/slip (int)		body		
nat strtm 2, ext, S	Pr32-1-15-F111			body		
nat strtm 2, ext, S	Pr32-1-15-F112			body		
nat strtm 2, ext, S	Pr32-1-15-F113			body		
nat strtm 2, ext, S	Pr32-1-15-F114			body		
nat strtm 2, ext, S	Pr32-1-15-F115			body		
nat strtm 2, ext, S	Pr32-1-15-F116			body		
nat strtm 2, ext, S	Pr32-1-15-F117			body		
nat strtm 2, ext, S	Pr32-1-15-F118			body		
nat strtm 2, ext, S	Pr32-1-15-F119			body		
nat strtm 2, ext, S	Pr32-1-15-F120			body		
nat strtm 2, ext, S	Pr32-1-15-F121			body		
nat strtm 2, ext, S	Pr32-1-15-F122			body		
nat strtm 2, ext, S	Pr32-1-15-F123			body		
nat strtm 2, ext, S	Pr32-1-15-F124			body		
nat strtm 2, ext, S	Pr32-1-15-F125			body		
nat strtm 2, ext, S	Pr32-1-15-F126			body		
nat strtm 2, ext, S	Pr32-1-15-F127			body		
nat strtm 2, ext, S	Pr32-1-15-F128			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
nat strtm 2, ext, S	Pr32-1-15-F129			body		
nat strtm 2, ext, S	Pr32-1-15-F130			body		
nat strtm 2, ext, S	Pr32-1-15-F131			body		
nat strtm 2, ext, S	Pr32-1-15-F132			body		
nat strtm 2, ext, S	Pr32-1-15-F133			body		
nat strtm 2, ext, S	Pr32-1-15-F134			body		
nat strtm 2, ext, S	Pr32-1-15-F135			body		
nat strtm 2, ext, S	Pr32-1-15-F136			body		
nat strtm 2, ext, S	Pr32-1-15-F137			body		
nat strtm 2, ext, S	Pr32-1-15-F138			body		
nat strtm 2, ext, S	Pr32-1-15-F139			body		
nat strtm 2, ext, S	Pr32-1-15-F140			body		
nat strtm 2, ext, S	Pr32-1-15-F141			body		
nat strtm 2, ext, S	Pr32-1-15-F142			body		
nat strtm 2, ext, S	Pr32-1-15-F143			body		
nat strtm 2, ext, S	Pr32-1-15-F144			body		
nat strtm 2, ext, S	Pr32-1-15-F145			body		
nat strtm 2, ext, S	Pr32-1-15-F146			body		
nat strtm 2, ext, S	Pr32-1-15-F147			body		
nat strtm 2, ext, S	Pr32-1-15-F148			body		
nat strtm 2, ext, S	Pr32-1-15-F149			body		
nat strtm 2, ext, S	Pr32-1-15-F150			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
nat strtm 2, ext, S	Pr32-1-15-F151			body		
nat strtm 2, ext, S	Pr32-1-15-F152			body		
nat strtm 2, ext, S	Pr32-1-15-F153			body		
nat strtm 2, ext, S	Pr32-1-15-F154			body		
nat strtm 2, ext, S	Pr32-1-15-F155			body		
nat strtm 2, ext, S	Pr32-1-15-F156			body		
nat strtm 2, ext, S	Pr32-1-15-F157			body		
nat strtm 2, ext, S	Pr32-1-15-F158			body		
nat strtm 2, ext, S	Pr32-1-15-F159			body		
nat strtm 2, ext, S	Pr32-1-15-F160			body		
nat strtm 2, ext, S	Pr32-1-15-F161			body		
nat strtm 2, ext, S	Pr32-1-15-F162			body		
nat strtm 2, ext, S	Pr32-1-15-F163			body		
nat strtm 2, ext, S	Pr32-1-15-F164			body		
nat strtm 2, ext, S	Pr32-1-15-F165			body		
nat strtm 2, ext, S	Pr32-1-15-F166			body		
nat strtm 2, ext, S	Pr32-1-15-F167			body		
nat strtm 2, ext, S	Pr32-1-15-F168			body		
nat strtm 2, ext, S	Pr32-1-15-F169			body		
nat strtm 2, ext, S	Pr32-1-15-F170	red slip (ext), 5YR 4/4		body		
nat strtm 2, ext, S	Pr32-1-15-F171			body		
nat strtm 2, ext, S	Pr32-1-15-F172			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
nat strtm 2, ext, S	Pr32-1-15-F173			body		
nat strtm 2, ext, S	Pr32-1-15-F174			body		
nat strtm 2, ext, S	Pr32-1-15-F175			body		
nat strtm 2, ext, S	Pr32-1-15-F176			body		
nat strtm 2, ext, S	Pr32-1-15-F177			body		
nat strtm 2, ext, S	Pr32-1-15-F178			body		
nat strtm 2, ext, S	Pr32-1-15-F179			body		
nat strtm 2, ext, S	Pr32-1-15-F180			body		
nat strtm 2, ext, S	Pr32-1-15-F181			body		
nat strtm 2, ext, S	Pr32-1-15-F182			body		
nat strtm 2, ext, S	Pr32-1-15-F183			rim		
nat strtm 2, ext, S	Pr32-1-15-F184			rim		
nat strtm 2, ext, S	Pr32-1-15-F185			rim		
nat strtm 2, ext, S	Pr32-1-15-F186	deep parallel incisions and possible red slip		body		
nat strtm 2, ext, S	Pr32-1-15-F187			rim	?	jar?
nat strtm 2, ext, S	Pr32-1-15-F188			body		
nat strtm 2, ext, S	Pr32-1-15-F189			body		
	Pr32-1-16-1	red slip (ext)	slip (ext & int)	rim		?
nat strtm 3, ext, S	Pr32-1-16-F1-b			body & bottom		
nat strtm 3, ext, S	Pr32-1-16-F2			body		
nat strtm 3, ext, S	Pr32-1-16-F3			body (at or toward bottom)		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
nat strtm 3, ext, S	Pr32-1-16-F4			body		
nat strtm 3, ext, S	Pr32-1-16-F5			body		
nat strtm 3, ext, S	Pr32-1-16-F6			body		
nat strtm 3, ext, S	Pr32-1-16-F7			body		
nat strtm 3, ext, S	Pr32-1-16-F8			body		
nat strtm 3, ext, S	Pr32-1-16-F9			body		
nat strtm 3, ext, S	Pr32-1-16-F10			body		
nat strtm 3, ext, S	Pr32-1-16-F11			body		
nat strtm 3, ext, S	Pr32-1-16-F12			body		
nat strtm 3, ext, S	Pr32-1-16-F13			body		
nat strtm 3, ext, S	Pr32-1-16-F14			body		
nat strtm 3, ext, S	Pr32-1-16-F15			body		
nat strtm 3, ext, S	Pr32-1-16-F16			body		
nat strtm 3, ext, S	Pr32-1-16-F17			body		
nat strtm 3, ext, S	Pr32-1-16-F18			body		
nat strtm 3, ext, S	Pr32-1-16-F19			body		
nat strtm 3, ext, S	Pr32-1-16-F20			body		
nat strtm 3, ext, S	Pr32-1-16-F21			body		
nat strtm 3, ext, S	Pr32-1-16-F22			body		
nat strtm 3, ext, S	Pr32-1-16-F23			body (near round bottom)		
nat strtm 3, ext, S	Pr32-1-16-F24			body		
nat strtm 3, ext, S	Pr32-1-16-F25			body		
nat strtm 3, ext, S	Pr32-1-16-F26			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
nat strtm 3, ext, S	Pr32-1-16-F27			body		
nat strtm 3, ext, S	Pr32-1-16-F28			body		
nat strtm 3, ext, S	Pr32-1-16-F29	red slip, 10R 5/4		body		
nat strtm 3, ext, S	Pr32-1-16-F30			body		
nat strtm 3, ext, S	Pr32-1-16-F31			body (near round bottom)		
nat strtm 3, ext, S	Pr32-1-16-F32			body		
nat strtm 3, ext, S	Pr32-1-16-F33			body		
nat strtm 3, ext, S	Pr32-1-16-F34			body		
nat strtm 3, ext, S	Pr32-1-16-F35			body		
nat strtm 3, ext, S	Pr32-1-16-F36			body		
nat strtm 3, ext, S	Pr32-1-16-F37			body		
nat strtm 3, ext, S	Pr32-1-16-F38			body		
nat strtm 3, ext, S	Pr32-1-16-F39			body		
nat strtm 3, ext, S	Pr32-1-16-F40			body		
nat strtm 3, ext, S	Pr32-1-16-F41			body		
nat strtm 3, ext, S	Pr32-1-16-F42			body		
nat strtm 3, ext, S	Pr32-1-16-F43			body		
nat strtm 3, ext, S	Pr32-1-16-F44			body		
nat strtm 3, ext, S	Pr32-1-16-F45			body		
nat strtm 3, ext, S	Pr32-1-16-F46			body		
nat strtm 3, ext, S	Pr32-1-16-F47			body		
nat strtm 3, ext, S	Pr32-1-16-F48			body		
nat strtm 3, ext, S	Pr32-1-16-F49			body		

Excavation context	Ceramic code	Surface Treatment: Visual	Surface Treatment: Thin section	Sherd Body Area	Dia. (cm)	Vessel form
nat strtm 3, ext, S	Pr32-1-16-F50			body		
nat strtm 3, ext, S	Pr32-1-16-F51			body		
nat strtm 3, ext, S	Pr32-1-16-F52			body		
nat strtm 3, ext, S	Pr32-1-16-F53			body		
nat strtm 3, ext, S	Pr32-1-16-F54			body		
nat strtm 3, ext, S	Pr32-1-16-F55			body		
nat strtm 3, ext, S	Pr32-1-16-F56			body		
nat strtm 3, ext, S	Pr32-1-16-F57			body		
nat strtm 3, ext, S	Pr32-1-16-F58			body		
nat strtm 3, ext, S	Pr32-1-16-F59			?		
nat strtm 3, ext, S	Pr32-1-16-F60			body		
nat strtm 3, ext, S	Pr32-1-16-F61			body		
nat strtm 3, ext, S	Pr32-1-16-F62			body		
nat strtm 3, ext, S	Pr32-1-16-F63			body		
nat strtm 3, ext, S	Pr32-1-16-F64			body		
nat strtm 3, ext, S	Pr32-1-16-F65			body		
nat strtm 3, ext, S	Pr32-1-16-F66			body		
nat strtm 3, ext, S	Pr32-1-16-F67			body		
nat strtm 3, ext, S	Pr32-1-16-F68			body		
nat strtm 3, ext, S	Pr32-1-16-F69			body		
nat strtm 3, ext, S	Pr32-1-16-F70			body		
nat strtm 3, ext, S	Pr32-1-16-F71			?		
nat strtm 3, ext, S	Pr32-1-16-F72			?		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
nat strtm 3, ext, S	Pr32-1-16-F73			?		
nat strtm 3, ext, S	Pr32-1-16-F74			?		
nat strtm 3, ext, S	Pr32-1-16-F75			?		
nat strtm 3, ext, S	Pr32-1-16-F76			?		
nat strtm 3, ext, S	Pr32-1-16-F77			?		
nat strtm 3, ext, S	Pr32-1-16-F78			?		
nat strtm 3, ext, S	Pr32-1-16-F79			?		
nat strtm 3, ext, S	Pr32-1-16-F80			body		
nat strtm 3, ext, S	Pr32-1-16-F81			body		
nat strtm 3, ext, S	Pr32-1-16-F82			body		
nat strtm 3, ext, S	Pr32-1-16-F83	red slip (ext), 2.5YR 5/8		body		
nat strtm 3, ext, S	Pr32-1-16-F84			body		
nat strtm 3, ext, S	Pr32-1-16-F85			?		
nat strtm 3, ext, S	Pr32-1-16-F86			?		
nat strtm 3, ext, S	Pr32-1-16-F87			?		
nat strtm 3, ext, S	Pr32-1-16-F88			?		
nat strtm 3, ext, S	Pr32-1-16-F89			?		
nat strtm 3, ext, S	Pr32-1-16-F90			?		
nat strtm 3, ext, S	Pr32-1-16-F91			?		
nat strtm 3, ext, S	Pr32-1-16-F92			?		
nat strtm 3, ext, S	Pr32-1-16-F93			?		
nat strtm 3, ext, S	Pr32-1-16-F94			?		
nat strtm 3, ext, S	Pr32-1-16-F95			?		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
nat strtm 3, ext, S	Pr32-1-16-F96			?		
nat strtm 3, ext, S	Pr32-1-16-F97			?		
nat strtm 3, ext, S	Pr32-1-16-F98			?		
nat strtm 3, ext, S	Pr32-1-16-F99			?		
nat strtm 3, ext, S	Pr32-1-16-F100			?		
nat strtm 3, ext, S	Pr32-1-16-F101			?		
nat strtm 3, ext, S	Pr32-1-16-F102			?		
nat strtm 3, ext, S	Pr32-1-16-F103			?		
nat strtm 3, ext, S	Pr32-1-16-F104			?		
nat strtm 3, ext, S	Pr32-1-16-F105			?		
nat strtm 3, ext, S	Pr32-1-16-F106			?		
nat strtm 3, ext, S	Pr32-1-16-F107			?		
nat strtm 3, ext, S	Pr32-1-16-F108			?		
nat strtm 3, ext, S	Pr32-1-16-F109			?		
nat strtm 3, ext, S	Pr32-1-16-F110			?		
nat strtm 3, ext, S	Pr32-1-16-F111			rim	15	bowl (small shallow)
nat strtm 3, ext, S	Pr32-1-16-F112			rim		
nat strtm 3, ext, S	Pr32-1-16-F113			rim	16	jar (closed mouth)
nat strtm 3, ext, S	Pr32-1-16-F114			rim		
nat strtm 3, ext, S	Pr32-1-16-F115			rim	?	jar
nat strtm 3, ext, S	Pr32-1-16-F116	2 incisions and punctations		body		
nat strtm 3, ext, S	Pr32-1-16-F117			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
nat strtm 3, ext, S	Pr32-1-16-F118			body		
nat strtm 3, ext, S	Pr32-1-16-F119			body		
nat strtm 3, ext, S	Pr32-1-16-F120			?		
nat strtm 3, ext, S	Pr32-1-16-F121			?		
nat strtm 3, ext, S	Pr32-1-16-F122			?		
nat strtm 3, ext, S	Pr32-1-16-F123			?		
nat strtm 3, ext, S	Pr32-1-16-F124			body		
nat strtm 3, ext, S	Pr32-1-16-F125			body		
nat strtm 3, ext, S	Pr32-1-16-F126			?		
nat strtm 3, ext, S	Pr32-1-16-F127			?		
nat strtm 3, ext, S	Pr32-1-16-F128			body		
nat strtm 3, ext, S	Pr32-1-17-ext-F1			body		
nat strtm 3, ext, S	Pr32-1-17-ext-F2			body		
nat strtm 3, ext, S	Pr32-1-17-ext-F3			body		
nat strtm 3, ext, S	Pr32-1-17-ext-F4			body		
nat strtm 3, ext, S	Pr32-1-17-ext-F5			body		
nat strtm 3, ext, S	Pr32-1-17-ext-F6			body		
nat strtm 3, ext, S	Pr32-1-17-ext-F7			body		
nat strtm 3, ext, S	Pr32-1-17-ext-F8			body		
nat strtm 3, ext, S	Pr32-1-17-ext-F9			body		
nat strtm 3, ext, S	Pr32-1-17-ext-F10			body		
nat strtm 3, ext, S	Pr32-1-17-ext-F11			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
nat strtm 3, ext, S	Pr32-1-17-ext-F12			body		
nat strtm 3, ext, S	Pr32-1-17-ext-F13			body		
nat strtm 3, ext, S	Pr32-1-17-ext-F14			body		
nat strtm 3, ext, S	Pr32-1-17-ext-F15			body		
nat strtm 3, ext, S	Pr32-1-17-ext-F16			body		
nat strtm 3, ext, S	Pr32-1-17-ext-F17			body		
nat strtm 3, ext, S	Pr32-1-17-ext-F18			body		
nat strtm 3, ext, S	Pr32-1-17-ext-F19			body		
nat strtm 3, ext, S	Pr32-1-17-ext-F20			body		
nat strtm 3, ext, S	Pr32-1-17-ext-F21			body		
nat strtm 3, ext, S	Pr32-1-17-F1			body		
nat strtm 3, ext, S	Pr32-1-17-F2			body		
nat strtm 3, ext, S	Pr32-1-17-F3			body		
nat strtm 3, ext, S	Pr32-1-17-F4			body		
nat strtm 3, ext, S	Pr32-1-17-F5			body		
nat strtm 3, ext, S	Pr32-1-17-F6			body		
nat strtm 3, ext, S	Pr32-1-17-F7			body		
nat strtm 3, ext, S	Pr32-1-17-F8			body		
nat strtm 3, ext, S	Pr32-1-17-F9			body		
nat strtm 3, ext, S	Pr32-1-17-F10			body		
nat strtm 3, ext, S	Pr32-1-17-F11			body		
nat strtm 3, ext, S	Pr32-1-17-F12			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
nat strtm 3, ext, S	Pr32-1-17-F13	incised radiated pattern (ext)		body (thick)		
nat strtm 3, ext, S	Pr32-1-17-F14			rim	13	jar
nat strtm 1, clmn 3, ext, S	Pr32-1-18-F1			body		
nat strtm 1, clmn 3, ext, S	Pr32-1-18-F2			?		
nat strtm 1, clmn 3, ext, S	Pr32-1-18-F3			?		
nat strtm 1, clmn 3, ext, S	Pr32-1-18-F4			?		
nat strtm 1, clmn 3, ext, S	Pr32-1-18-F5			?		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F1			body		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F2			body		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F3			body		
nat strtm 2, ext, S, clmn2	Pr32-1-19-F4			body		
nat strtm 2, ext, S, clmn2	Pr32-1-19-F5			body		
nat strtm 2, ext, S, clmn2	Pr32-1-19-F6			body		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F7			body		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F8			body		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F9			body		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F10			body		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F11			body		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F12			body		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F13			body		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F14			body		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F15			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F16			body		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F17			body		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F18			body		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F19			body		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F20			?		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F21			?		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F22			?		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F23			?		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F24			?		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F25			?		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F26			?		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F27			?		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F28			?		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F29			?		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F30			?		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F31			?		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F32			?		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F33			?		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F34	red slip (int)		rim (4 pieces)		
nat strtm 2, ext, S, clmn 2	Pr32-1-19-F35			?		
nat strtm 3, ext, S, clmn 3	Pr32-1-20-F1			body		
nat strtm 3, ext, S, clmn 3	Pr32-1-20-F2			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
nat strtm 3, ext, S, clmn 3	Pr32-1-20-F3			body		
nat strtm 3, ext, S, clmn 3	Pr32-1-20-F4	red slip, 7.5YR 5/1		body		
nat strtm 3, ext, S, clmn 3	Pr32-1-20-F5			body		
nat strtm 3, ext, S, clmn 3	Pr32-1-20-F6			body		
nat strtm 3, ext, S, clmn 3	Pr32-1-20-F7			body		
nat strtm 3, ext, S, clmn 3	Pr32-1-20-F8			body		
nat strtm 3, ext, S, clmn 3	Pr32-1-20-F9			body		
nat strtm 3, ext, S, clmn 3	Pr32-1-20-F10			body		
nat strtm 3, ext, S, clmn 3	Pr32-1-20-F11			body		
nat strtm 3, ext, S, clmn 3	Pr32-1-20-F12	red slip (exterior and lip)		body	25	bowl (vertical wall)
2E, 0-10 cm	He5-60-F1 [non-Monagrillo?, thick, FI]			body		
2E, 0-10 cm	He5-60-F2			body		
2E, 0-10 cm	He5-60-F3			body		
2E, 0-10 cm	He5-60-F4			body		
2E, 0-10 cm	He5-60-F7			body		
2E, 0-10 cm	He5-60-F8			body		
2E, 0-10 cm	HE5-60-F9			body		
2E, 0-10 cm	He5-60-F10			body (near round bottom)		
2E, 0-10 cm	He5-60-F11			body		
2E, 0-10 cm	He5-60-F12			body		
2E, 0-10 cm	He5-60-F13			body		
2E, 0-10 cm	He5-60-F14			body		
2E, 0-10 cm	He5-60-F15			body		
2E, 0-10 cm	He5-60-F16			body		
2E, 0-10 cm	He5-60-F17			body		
2E, 0-10 cm	HE5-60-F18			body		
2E, 0-10 cm	He5-60-F19			body		
2E, 0-10 cm	He5-60-F20			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
2E, 0-10 cm	He5-60-F21			body		
2E, 0-10 cm	He5-60-F22			body		
2E, 0-10 cm	He5-60-F23			body		
2E, 0-10 cm	He5-60-F24			body		
2E, 0-10 cm	He5-60-F25			body		
2E, 0-10 cm	He5-60-F26			body		
2E, 0-10 cm	He5-60-F27			body		
2E, 0-10 cm	He5-60-F28			body		
2E, 0-10 cm	He5-60-F29			body		
2E, 0-10 cm	He5-60-F30			body		
2E, 0-10 cm	He5-60-F31	red paint, slip (ext as a band, 15 mm from the top), 10R 4/6		rim	?	?
2E, 0-10 cm	He5-60-F32			body		
2E, 0-10 cm	He5-60-F33			body		
2E, 0-10 cm	He5-60-F34			body		
2E, 0-10 cm	He5-60-F35			body		
2E, 0-10 cm	He5-60-F36			body		
2E, 0-10 cm	He5-60-F37			body		
2E, 0-10 cm	He5-60-F38			body		
2E, 0-10 cm	He5-60-F39			body		
2E, 0-10 cm	He5-60-F40			body		
2E, 0-10 cm	He5-60-F41			body		
2E, 0-10 cm	He5-60-F42			body		
2E, 0-10 cm	He5-60-F43			body		
2E, 0-10 cm	He5-60-F44			?		
2E, 0-10 cm	He5-60-F45			body		
2E, 0-10 cm	He5-60-F46			rim	29	jar
2E, 0-10 cm	He5-60-F47			body		
2E, 0-10 cm	He5-60-F48			body		
2E, 0-10 cm	He5-60-F49			body		
2E, 0-10 cm	He5-60-F50			body		
2E, 0-10 cm	He5-60-F51			?		
2E, 0-10 cm	He5-60-F52			body		
2E, 0-10 cm	He5-60-F53			body		
2E, 0-10 cm	He5-60-F54			body		
2E, 0-10 cm	He5-60-F55			body		
2E, 0-10 cm	He5-60-F56			body		
2E, 0-10 cm	He5-60-F57			body		
2E, 0-10 cm	He5-60-F58			body		
2E, 0-10 cm	He5-60-F59			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
2E, 0-10 cm	He5-60-F60			body		
2E, 0-10 cm	He5-60-F61			body		
2E, 0-10 cm	He5-60-F62			body		
2E, 0-10 cm	He5-60-F63	red slip (ext)		body		
2E, 0-10 cm	He5-60-F64			body		
2E, 0-10 cm	He5-60-F65			rim	?	bowl/jar (possible vertical wall)
2E, 0-10 cm	He5-60-F66			body		
2E, 0-10 cm	He5-60-F67			body		
2E, 0-10 cm	He5-60-F68			body		
2E, 0-10 cm	He5-60-F69			rim		?
2E, 0-10 cm	He5-60-F70			body		
2E, 0-10 cm	He5-60-F71			body		
2E, 0-10 cm	He5-60-F72			body		
2E, 0-10 cm	He5-60-F73			body		
2E, 0-10 cm	He5-60-F74			body		
2E, 0-10 cm	He5-60-F75	red slip (int, lip, ext), 10R 4/6		rim	19	jar
2E, 0-10 cm	He5-60-F76			body		
2E, 0-10 cm	He5-60-F77			?		
2E, 0-10 cm	He5-60-F78			body		
2E, 0-10 cm	He5-60-F79			body		
2E, 0-10 cm	He5-60-F80			body		
2E, 0-10 cm	He5-60-F81			body		
2E, 0-10 cm	He5-60-F82			body		
2E, 0-10 cm	He5-60-F83			body		
2E, 0-10 cm	He5-60-F84			?		
2E, 0-10 cm	He5-60-F85			body		
2E, 0-10 cm	He5-60-F86			body (same piece as He5-60-F89)		
2E, 0-10 cm	He5-60-F87			body		
2E, 0-10 cm	He5-60-F88			body		
2E, 0-10 cm	He5-60-F89			body (same piece as He5-60-F86)		
2E, 10-20 cm	He5-61-F1			body		
2E, 10-20 cm	He5-61-F2			body		
2E, 10-20 cm	He5-61-F3			body		
2E, 10-20 cm	He5-61-F4			body		
2E, 10-20 cm	He5-61-F5			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
2E, 10-20 cm	He5-61-F6			body		
2E, 10-20 cm	He5-61-F7			body		
2E, 10-20 cm	He5-61-F8			body		
2E, 10-20 cm	He5-61-F9			?		
2E, 10-20 cm	HE5-61-F10			body		
2E, 10-20 cm	He5-61-F11	NO SLIP	clay slip (ext)	body		
2E, 10-20 cm	He5-61-F12			body		
2E, 10-20 cm	He5-61-F13			body		
2E, 10-20 cm	He5-61-F14			rim		
2E, 10-20 cm	He5-61-F15			body		
2E, 10-20 cm	He5-61-F16	red paint (ext), 10R 4/6		body		
2E, 10-20 cm	He5-61-F17			body		
2E, 10-20 cm	He5-61-F18			body		
2E, 10-20 cm	He5-61-F19			body		
2E, 10-20 cm	He5-61-F20			body		
2E, 10-20 cm	He5-61-F21			body		
2E, 10-20 cm	He5-61-F22	some red paint (int and ext without rim)		body		
2E, 10-20 cm	HE5-61-F23			body		
2E, 10-20 cm	He5-61-F24			body		
2E, 10-20 cm	He5-61-F25			body		
2E, 10-20 cm	He5-61-F26			body		
2E, 10-20 cm	He5-61-F27			body		
2E, 10-20 cm	He5-61-F28			rim	24	bowl (close to vertical wall)
2E, 10-20 cm	He5-61-F29			rim	24	bowl (close to vertical wall)
2E, 20-30 cm	HE5-62-F1 to F2			bottom/base		flat bottomed vessel
2E, 20-30 cm	He5-62-F3			body		
2E, 20-30 cm	He5-62-F4			body		
2E, 20-30 cm	He5-62-F5			body		
2E, 20-30 cm	He5-62-F6			body		
2E, 20-30 cm	He5-62-F7			body		
2E, 20-30 cm	He5-62-F8			body		
2E, 20-30 cm	He5-62-F9			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
2E, 20-30 cm	He5-62-F10			body		
2E, 20-30 cm	He5-62-F11			body		
2E, 20-30 cm	HE5-62-F12	NO SLIP	Birefrin -gent slip (int)	body		
2E, 20-30 cm	He5-62-F13			body		
2E, 20-30 cm	He5-62-F14			rim		jar
2E, 20-30 cm	He5-62-F14			rim		
2E, 20-30 cm	He5-62-F16			body		
2E, 20-30 cm	he5-62-F17			body		
2E, 20-30 cm	He5-62-F18			body		
2E, 20-30 cm	He5-62-F19			body		
2E, 20-30 cm	He5-62-F20			body		
2E, 20-30 cm	He5-62-F21					
2E, 20-30 cm	He5-62-F22			body		
2E, 20-30 cm	He5-62-F23			body		
2E, 20-30 cm	He5-62-F24			body?		
2E, 20-30 cm	He5-62-F25			?		
2E, 20-30 cm	He5-62-F26			body?		
2E, 20-30 cm	He5-62-F27			body		
2E, 30-40 cm	HE5-63-F1	NO SLIP	slip (ext)	body		
2E, 30-40 cm	HE5-63-F2 to F4	NO SLIP	red slip (ext & int)	body		
2E, 30-40 cm	He5-63-F5			body		
2E, 30-40 cm	He5-63-F6			body		
2E, 30-40 cm	He5-63-F7			body		
2E, 30-40 cm	He5-63-F8			body (near round bottom)		
2E, 30-40 cm	He5-63-F9			rim		
2E, 30-40 cm	He5-63-F10			rim	26	bowl
2E, 30-40 cm	He5-63-F11			body		
2E, 30-40 cm	He5-63-F12			body		
2E, 30-40 cm	He5-63-F13			body		
2E, 40-50 cm	He5-64-F1			body		
2E, 40-50 cm	He5-64-F2			body		
2E, 40-50 cm	HE5-64-F3			body		
2E, 40-50 cm	HE5-64-F4			body		
2E, 40-50 cm	He5-64-F5			body		
2E, 40-50 cm	he5-64-F6			body		
2E, 40-50 cm	He5-64-F7			body		

Excavation context	Ceramic code	Surface Treatment: Visual	Surface Treatment: Thin section	Sherd Body Area	Dia. (cm)	Vessel form
2E, 40-50 cm	He5-64-F8			body		
2E, 60-70 cm	HE5-66-F1	NO SLIP	Birefrin -gent clay slip (ext & int)	body		
2E, 80-90 cm	HE5-68-F1			body		
2E, 80-90 cm	He5-68-F2			body		
2E, 80-90 cm	He5-68-F3			body		
2E, 80-90 cm	HE5-68-F4			body		
2E, 80-90 cm	HE5-68-F5			body		
2E, 80-90 cm	He5-68-F5-b			body		
2E, 80-90 cm	HE5-68-F6	NO SLIP	dark brwn slip (int)	body close to the round bottom		
2E, 80-90 cm	He5-68-F7			body		
2E, 90-95 cm	He5-69-F2			body		
2E, 90-95 cm	HE5-69-F3			body		
2E, 90-95 cm	He5-69-F4			rim		?
2E, 90-95 cm	He5-69-f5			body		
2E, 90-95 cm	He5-69-F6 to F7			body		
2E, 90-95 cm	HE5-69-F8	NO SLIP	Birefrin -gent clay slip (int)	body		
2E, 90-95 cm, Floor	He5-69A-F1			body		
2E, 90-95 cm, Floor	He5-69A-F2	incision and red paint/slip (ext)		body		
2E, 90-95 cm, Floor	HE5-69A-F3			body		
2E, 100-110 cm	He5-70-F1			body		
2E, 100-110 cm	HE5-70-F2			body		
2E, 100-110 cm	He5-70-F3			body		
2E, 100-110 cm	He5-70-F4			rim		?
2E, 160-170 cm	HE5-76-F1			body		
2E, bottom layer, 170-180 cm	He5-78-F1			body		
	Pr14-22-1			body		
	Pr14-24-1			rim/lip		?
	Pr14-25-1			body		
lot 34, unit 2.01, 20-30 cm	Lp8-34-2.01-1			rim	21	jar

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
lot 37, unit 2.01, 50-60 cm	Lp8-37-2.01-1			Rim	9	bowl
lot 38, unit 2.01, 60-70 cm	Lp8-38-2.01-1			Rim	?	?
lot 38, unit 2.01, 60-70 cm	Lp8-38-2.01-2			Rim	?	?
lot 94, unit 1.45, feature1, level13, 60-65 cm	Lp8-94-1.45-1.1	NO SLIP	slp (ext, micro-mgntite inclsn)	Body		
Lot 114, unit1.57, feature1, level 16, 75-80 cm	Lp8-114-1.57-1-1		birfringnt red slip (int)	Body		
lot 114, unit1.57, feature 1, level16, 75-80 cm	Lp8-114-1.57-1-2	red slip (int)	red slip (int)	Body		
lot1 20, unit1.35, level 4, 15-20 cm	Lp8-120-1.35-1			Rim	?	?
lot 122, unit1.35, level 6, 25-30 cm	Lp8-122-1.35-1			Body		
lot 126, unit 1.35, feature3, 25-40 cm	Lp8-126-1.35-3-1		slip (int)	Body		
lot 135, unit1.47, feature 4, level14,25-30 cm	Lp8-135-1.47-1			Rim	28	bowl
lot 144, unit1.47, level 11, 50-55 cm	Lp8-144-1.47-1			Rim	30	jar
lot 150, unit1.47, feature 4, level14, 65-70 cm	Lp8-150-1.47-4-1			Rim	26	jar
lot 154, unit1.47, feature 4, level 16, 75-80 cm	Lp8-154-1.47-4-1		red slp (int)	Body		
lot 164, unit1.59, feature 2, level 8, 35-40 cm	Lp8-164-1.59-2-1			Body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
lot 167, unit 1.59, feature 2, level 9, 40-45 cm	Lp8-167-1.59-2-1		red slp (ext)	Body		
lot 170, unit 1.59, feature 2, level 10, 45-50 cm	Lp8-170-1.59-2-1			Body		
lot 174, unit 1.59, levl 11a, 50-55 cm	Lp8-174-1.59-2-1		red slp (ext & int)	Body		
lot 176, unit 1.59, feature 2, level 14, 65-70 cm	Lp8-176-1.59-2-1	NO SLIP	dark brwn ppl, opq xpl	Rim	?	?
lot 182, unit 1.59, feature 2, level 14, 76-70 cm	Lp8-182-1.59-2-1			Body		
Surface	LP134-36-F12			Body		
Area 3, C4, strtm 1, level 2	LP134-56-F153			body		
Area 3, C4, strtm 1, level 2	LP134-56-F179	brushed (int)		Body		
Area 3, C4, strtm 1, level 2	LP134-56-F212			Body		
Area 3, C4, strtm 1, level 2	LP134-56-F291			Body		
Area 3, C2, strtm 1, level 2	LP134-57-F141			Body		
Area 3, C4, strtm 1, level 2	LP134-59-F60			Body		
Area3, A3, strtm 1, level 2	LP134-71-F98			Rim	?	bowl?
Area 3, A2, strtm 1, level 2	LP134-74?-F154			body		
	LP134-75-F198			Body		
Area 3, C2, strtm 1, level 2	LP134-83-F168	NO SLIP	slp (ext, & int)	Body		
Area 3, B3, strtm 1, level 2	LP134-84-F21			Body		
Area 3, B3, strtm 1, level 2	LP134-84-F178			Body		
Area 1, Escombrera	LP134-90-F2			Body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area 1, Escombrera	LP134-90-F31			Body		
Area 1, Escombrera	LP134-90-F59			Body		
Area 1, Escombrera	LP134-90-F66			Body		
Area 1, Escombrera	LP134-90-F69			Body		
Area 1, Escombrera	LP134-90-F76			Body		
Area 3, surf	LP134-93-F176			Body		
Area 3, surf	LP134-93-F213			Body		
Area 3, B4, strtm 1, level 2	LP134-94-F72			Body		
Area3, B4, strtm 1, level 2	LP134-94-F122			Body		
Area3, B4, strtm 1, level 2	LP134-94-F125			Body		
Area3, B4, strtm 1, level 2	LP134-94-F132			Body		
Area3, B4, strtm 1, level 2	LP134-94-F195			Body		
Area3, B4, strtm 1, level 2	LP134-94-F293	red slip (int), 2.5YR 4/4		Body		
Area 2, sect 1,	LP134-96-F56			body		
Area 1, surf	LP134-100-F27			Body		
Area 3, A1, strtm 1, level 1	LP134-101-F67			Body		
	LP134-138?-F233			Body		
	LP134-142?-F171			body		
	LP134-145?-F143			Body		
	LP134-147?-F232			Body		
Area 3, B3, strtm 1, level 1	LP134-148-F17			Body		
Area 3, B3, strtm 1, level 1	LP134-148-F20			Body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area 3, B3, strtm 1, level 1	LP134-148-F121			Body		
Area 3, A2, strtm 1, level 2	LP134-149-F225			Body		
Area3, B3, strtm 1, level 2	LP134-150-F22			Body		
Area 3, B3, strtm 1, level 2	LP134-150-F34			Body		
Area 3, B3, strtm 1, level 2	LP134-150-F63			Body		
Area 3, B3, strtm 1, level 2	LP134-150-F74			Body		
Area 3, B3, strtm 1, level 2	LP134-150-F134			Body		
Area 3, B3, strtm 1, level 2	LP134-150-F138			Body		
Area 3, B3, strtm 1, level 2	LP134-150-F167			body		
Area 3, B3, strtm 1, level 2	LP134-150-F177			Body		
Area 3, B3, strtm 1, level 2	LP134-150-F183			Body		
Area 3, B3, strtm 1, level 2	LP134-150-F187			Body		
Area 3, B3, strtm1, level 2	LP134-150-F188			Body		
Area 3, B3, strtm 1, level 2	LP134-150-F190			Body		
Area 3, B3, strtm 1, level 2	LP134-150-F207			Body		
Area 3, B3, strtm 1, level 2	LP134-150-F210			Body		
Area 3, B3, strtm 1, level 2	LP134-150-F217			Body		
Area 3, B3, strtm 1, level 2	LP134-150-F222			Body		
Area 3, B3, strtm 1, level 2	LP134-150-F294	red slip (int), 2.5YR 5/4		Body		
Area3, B3, strtm 1, level 2	LP134-150-F295	red slip (int), 2.5YR 4/4		Body		
Area 3, C3, strtm 1, level 2	LP134-151-F214			Body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
Area 3, C3, strtm 1, level 2	LP134-151-F57			Body		
Area 3, C3, strtm 1, level 2	LP134-151-F58			body		
Area 3, C3, strata 1, level 2	LP134-151-F64			Body		
Area 3, C3, strtm 1, level 2	LP134-151-F165			body		
Area 3, C3, strtm 1, level 2	LP134-151-F181			body		
Area 3, C3, strtm 1, level 2	LP134-151-F204			Body		
Area 3, C3, strtm 1, level 2	LP134-151-F220			Body		
Area 3, C3, strtm 1, level 2	LP134-151-F237			Body		
	LP134-152?-F139			Body		
Area 3, C2, strtm 1, level 1	LP134-152-F193			Body		
Area 3, C1, strtm 1, level 1	LP134-155-F42			Body		
Area 3, C1, strtm 1, level 2	LP134-156-F128			body (near round bottom)		
Area 3, C1, strtm 1, level 2	LP134-156-F120			Body		
	LP134-157-F32			Body		
	LP134-157-F227			Body		
	LP134-158-F182			Body		
	LP134-159-F48			Body		
	LP134-160-F54			body		
Area 3, strtm 1, level 1	LP134-161-F1			Body		
Area 3, C3, strtm 1, level 1	LP134-161-F5			Body		
Area 3, C3, strtm 1, level 1	LP134-161-F13			Body		
Area 3, C3, strtm 1, level 1	LP134-161-F18			Body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area 3, C3, strtm 1, level 1	LP134-161-F43			Body		
Area 3, C3, strata1, level 1	LP134-161-F49			Body		
Area 3, C3, strtm 1, level 1	LP134-161-F91			Rim	?	?
Area 3, C3, strtm 1, level 1	LP134-161-F191			Body		
Area 3, C3, strtm 1, level 1	LP134-161-F202			Body		
Area 3, C1, strtm 1, level 1	LP134-164-F189			Body		
	LP134-165?-F224			Body		
	LP134-167?-F16			Body		
Area 3, B4, strtm 1, level 1	LP134-170-F169			Body		
Area 3, B4, strtm 1, level 1	LP134-170-F209			Body		
Area 3, C2, strtm 1, level 3	LP134-183-F126			Rim		
Area 3, C2, strtm 1, level 3	LP134-183-F186			Body		
Area 3, C1, T, strtm 1, level 3	LP134-186?-F149			body		
	LP134-186-F235			Body		
Area 3, B2, strtm1, level 3	LP134-189-F116			body (near bottom)		
	LP134-195-F55			Body		
Area 3, B3, strtm 1, level 2	LP134-195-F289	red slip (int)		Body		
	LP134-198-F162			Body		
	LP134-199-F25			Body		
Area 3, A3, strtm 1, level 3	LP134-199-F166			body		
Area 3, A3, strtm 1, level 3	LP134-199-F196			Body		
Area 3, B3, strtm 1, level 3	LP134-202-F127			Body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area 3, B3, strtm 1, level 3	LP134-202-F292			Body		
	LP134-205?-F205			Body		
	LP134-205?-F215			Body		
Area 3, A1, strtm 1, level 3	LP134-209-F208			Body		
	LP134-211?-F124			Body		
Area 3, B1, strtm 1, level 3	LP134-214-F231			Body		
Area 3, C2, strtm 1, level 3	LP134-216-F192			Body		
	LP134-217?-F81			Body		
Area 3, B2, strata1, level 3	LP134-218-F140			body		
Area 3, B2, strata1, level 3	LP134-218-F300			Body		
	LP134-223?-F226			Body		
Area3, C4, strat1, level 3	LP134-224-F4			Body		
Area 3, A1, strtm 1, level 4	LP134-225-F123			body		
Area 3, B2, strtm 1, level 4	LP134-228-F161			body		
	LP134-228-F172			body		
Area 3, B1, strtm 1, level 4	LP134-236-F38			body		
Area 3, B1, strtm 1, level 4	LP134-236-F97	red slip (int and ex)		rim and red slip		
	LP134-240?-F147			body		
Area 3, B2, strtm 1, level 5	LP134-241-F24			body		
Area 3, B2, strtm 1, level 5	LP134-241-F29			body		
Area 3, A3, strtm 1, level 5	LP134-245-F131			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
Area 3, A1, strtm 1, level 5	LP134-255-F175			body*		
Area 3, B1, strtm 1, level 5	LP134-260-F75			body		
Area 3, B3, level 1	LP134-267-F15			body		
Area 3, B3, level 1	LP134-267-F62			body		
Area 3, B4, level 1	LP134-269-F10			body		
Area 3, B4, level 1	LP134-269-F11			body		
Area 3, B4, level 1	LP134-269-F33			body		
Area 3, B4, level 1	LP134-269-F65			body		
Area 3, B4, level 1	LP134-269-F68			body		
Area 3, B4, level 1	LP134-269-F70			body		
Area 3, B4, level 1	LP134-269-F71			body		
Area 3, B4, level 1	LP134-269-F73			body		
Area 3, B4, level 1	LP134-269-F80			body		
Area 3, B4, level 1	LP134-269-F184			body		
Area 3, B4, level 1	LP134-269-F206			body		
Area 3, B4, level 1	LP134-269-F223			body		
Area 3, strtm 2, level 1	LP134-271-F3			body		
Area 3, strtm 2, level 1	LP134-271-F6			body		
Area 3, strtm 2, level 1	LP134-271-F7	red slip (ext), 5YR 3/4		body		
Area 3, strtm 2, level 1	LP134-271-F8			body		
Area 3, strtm 2, level 1	LP134-271-F14			body		
Area 3, strtm 2, level 1	LP134-271-F36			body		
Area 3, strtm 2, level 1	LP134-271-F37			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
Area 3, strtm 2, level 1	LP134-271-F44			body		
Area 3, strtm 2, level 1	LP134-271-F47			body		
Area 3, strtm 2, level 1	LP134-271-F78			body		
Area 3, strtm 2, level 1	LP134-271-F82			body		
Area 3, strtm 2, level 1	LP134-271-F83			body		
Area 3, strtm 2, level 1	LP134-271-F84			body		
Area 3, strtm 2, level 1	LP134-271-F130			body		
Area 3, strtm 2, level 1	LP134-271-F145			body		
Area 3, strtm 2, level 1	LP134-271-F156			body		
Area 3, strtm 2, level 1	LP134-271-F158			body		
Area 3, strtm 2, level 1	LP134-271-F164			body		
Area 3, strtm 2, level 1	LP134-271-F200			body		
Area 3, strtm 2, level 1	LP134-271-F228			body		
Area 3, A2, level 1	LP134-273-F9			body		
Area 3, A2, level 1	LP134-273-F152			body		
Area3, A2, level1	LP134-276-F40			body		
Area 3, A2, level 1	LP134-276-F45			body		
	LP134-277?-F50			body		
Area 3, A3, level 1	LP134-278-F144			body		
Area 3, A3, level 1	LP134-278-F216			body		
Area 3, A3, level 1	LP134-278-F221			body		
Area 3, B1, strtm 1, level 8	LP134-282-F129			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
Area 3, B1, strtm 1, level 8	LP134-283-F118			body		
	LP134-285-F174			body		
Area3, B2, strtm 1, level 8	LP134-289-F185			body		
Area3, B3, strtm 1, level 6	LP134-293-F51			body		
Area 3, B3, strtm 1, level 6	LP134-293-F52			body		
Area 3, B3, strtm 1, level 6	LP134-293-F79			body		
Area 3, B3, strtm 1, level 6	LP134-293-F101			rim	?	?
Area 3, B3, strtm 1, level 6	LP134-293-F194			body		
Area 3, B3, strtm 1, level 6	LP134-293-F201			body		
Area 3, C3, strtm 1, level 8	LP134-297-F39			body		
Area 3, C3, strtm 1, level 8	LP134-297-F133			body		
Area 3, C3, strtm 1, level 8	LP134-297-F159			body		
	LP134-297?-F163			body		
Area 3, A3, level 2	LP134-301-F229			body		
	LP134-307?-F218			body		
	LP134-309?-F146			body		
	LP134-310?-F199			body		
	LP134-312?-F61			body		
Area 3, B2, strtm 1, level 8	LP134-313-F53			body		
Area 3, B2, strtm 1, level 8	LP134-313-F117			body		
Area 3, B2, strtm 1, level 8	LP134-313-F137			body		
Area 3, B2, strtm 1, level 8	LP134-313-F150			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
Area 3, B2, strtm 1, level 8	LP134-313-F234			body		
	LP134-314?-F151			body		
Area 3, C3, T, strtm 1, level 7	LP134-317-F119			body (round bottom?)		
Area 3, A3, strtm 1, level 3	LP134-317-F197			body		
Area 3, C2, strtm level 1&2	LP134-319-F19			body		
Area 3, C2, strtm level 1&2	LP134-319-F30			body		
Area 3, C2, strtm level 1&2	LP134-319-F23			body		
Area 3, C2, strtm level 1&2	LP134-319-F41			body		
Area 3, C2, strtm level 1&2	LP134-319-F120			body with round bottom		
Area 3, rasgo T, strtm 1, level 6	LP134-319-F142			body		
	LP134-319-F155			body		
Area 3, B4, strtm 1, level 1	LP134-322-F148			body		
	LP134-357?-F157	brushed (int)		body		
?	LP134-385-F46			body		
	LP134-385?-F203			body		
	LP134-385-F211			body		
?	LP134-389-F35			body		
	LP134-651-F28			body		
	LP134-651-F77			body		
	LP134-699?-F85			body		
	LP134-722?-F160			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	Ceramic code	Visual	Thin section		(cm)	Vessel form
	LP134-322-127-F86	appliqué (ext)		body		
	LP134-319-128-F87	intentionally reduced ext surface		body w/ applique and reduced ext		
	LP134-A35P-36-F88	vertical incision (ext)		body (chalice?)		
	LP134-182-35-F89	intentionally reduced ext surface		body w/ vertical incision (chalice? But large) and reduced ext		
	LP134-150-17-F90	red slip		rim w/ a ribbon of red slip near the lip ext and int		
Area 3, A2, strtm 1, level 3	LP134-199-19-F92			Rim	31	bowl (vertical wall)
	LP134-269-29-F93			Rim		
Area 3, C4, strtm 1, level 6	LP134-305-15-F94			Rim		
Area 3, B1, strtm 1, level 8	LP134-282-27-F95			Rim	?	?
Area 3, B3, strtm 1, level 2	LP134-150-16-F96			Rim	25	bowl (vertical wall)
Area 3, B3, rasgo 2, level 1	LP134-271-18-F100/Lp134-208-18-F99			body	31	jar
	LP134-83-31-F102			Rim	20	jar
	LP134-150-150-F103	red slip (ext and int)	red slip (ext & int)	rim with int and ext red slip	33	bowl
	LP134-289-13-F104			rim with int and ext red slip		
Area 3, B3, strtm 1, level 2	LP134-148-30-F105			rim	?	?
	LP134-170-25-F106			rim? Body?		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
Area 3, B3, strtm 1, level 3	LP134-202-218-F107			rim with a drilled hole		
Area 3, B3, strtm 1, level 2	LP134-150-14-F108			rim	22?	bowl (vertical wall)
Area 3, C4, strtm 1, level 2	LP134-56-6-F109			rim	25	jar (somewhat flared)
Area 3, C3, strtm 1, level 2	LP134-151-21-F110			rim (flared rim)	?	?
	LP134-75-23-F111			rim		
Area 3, B3, strtm 1, level 2	LP134-313-32-F112	incised (int)		rim		bowl
Area 3, B2, strtm 1, level 5	LP134-150-32-F113			body		
Area 3, B2, strtm 1, level 5	LP134-241-241-F114			rim	?	?
	LP134-160-169-F115			rim (right after Monagrillo? RC)		
Area 3, C3, strtm 1, level 1	LP134-161-155-F135			body (near round bottom)		
Area 3, C2, strtm 1, level 2	LP134-57-155-F136			body		
	LP134-xx?-F170			body (close to bottom)		
	LP134-xx?-F173			body		
	LP134-A35P-F180			body		
	LP134-2602-F219	red slip (ext), 7.5YR 4/6		body		
	LP134-2??-F230			body		
Area 3, A3, strtm 1, level 3	LP134-195-26-F236			rim (typical Monagrillo)	26	jar (tecomate)
	LP134-148-156-F238			body		

		Surface Treatment		Sherd Body Area	Dia.	Vessel form
Excavation context	**Ceramic code**	**Visual**	**Thin section**		**(cm)**	**Vessel form**
Area 3, C4, strtm 1, level 2	LP134-84-234-F290	red slip (ext)		body possibly close to rim		
	SF9-B-61-1		reddish-brwn slip around the lip and body	rim		?
	SF9-B-60-1			body?		
	SF9-E20-5-7			rim		jar
	SF9-H20-6			rim		jar
	SF9-H20-3	red slip		rim		jar
	SF9-K20-2-3			rim		bowl
	SF9-E20-1	red slip		rim		jar
	SF9-I20-3			rim		bowl (shallow)
	SF9-O20-3-11			rim		jar
	SF9-O20-4-3			rim		bowl
	SF9-K20-4			rim		bowl
	SF9-O20-2-b-1			rim		bowl
	SF9-M20-2			rim		?

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 1 surface to 15 cm	CL1-2-F1	7.5YR 5/4				layered lumps	lumps		
Area #1, layer 1 surface to 15 cm	CL1-2-F2	7.5YR 6/4	7.5YR 4/1			layered lumps	lumps		L
Area #1, layer 1 surface to 15 cm	CL1-2-F3	5YR 5/6		Unkn	2 slbs and the end folded over	slabs	slabs		M
Area #1, layer 1 surface to 15 cm	CL1-2-F4					layered slabs			
Area #1, layer 1 surface to 15 cm	CL1-2-F5	7.5YR 5/4	N3/			layered small slabs			
Area #1, layer 1 surface to 15 cm	CL1-2-F6	7.5YR 6/6				layered small lumps			
Area #1, layer 1 surface to 15 cm	CL1-2-F7	7.5YR 3/4	7.5YR 2.5/1			Double layered slabs			
Area #1, layer 1 surface to 15 cm	CL1-2-F8	7.5YR 5/4				double layered lumps			
Area #1, layer 1 surface to 15 cm	CL1-2-F9			Unkn	sqz, pressed on a wall	slabs	lumps		M
Area #1, layer 1 surface to 15 cm	CL1-2-F10	7.5YR 6/4				double layered slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 1 surface to 15 cm	CL1-2-F11	2.5YR 5/6	10YR 4/1	Y	slbs/sqz (preferred orientation)	Double to triple layered slabs construction	slabs		L
Area #1, layer 1 surface to 15 cm	CL1-2-F12	7.5YR 6/6	10YR 2/1			layered slabs			
Area #1, layer 1 surface to 15 cm	CL1-2-F13	7.5YR 4/3	7.5YR 4/1	Y	a slab on the exterior and a couple of slabs added to the interior	slabs	small slabs		M
Area #1, layer 1 surface to 15 cm	CL1-2-F14	7.5YR 4/6	N3/			layered lumps	slabs?		L
Area #1, layer 1 surface to 15 cm	CL1-2-F15	7.5YR 5/4				double layered lumps			
Area #1, layer 1 surface to 15 cm	CL1-2-F16	7.5YR 4/4	7.5YR 2.5/1			double layered lumps			
Area #1, layer 1 surface to 15 cm	CL1-2-F17	7.5YR 5/4	N4/		a single slab in the interior and 2 slabs on the exterior	slabs	slabs		L
Area #1, layer 1 surface to 15 cm	CL1-2-F18	7.5YR 5/4	7.5YR 2.5/1			double layered slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 1 surface to 15 cm	CL1-2-F19		N3/			small slabs			
Area #1, layer 1 surface to 15 cm	CL1-2-F20 (orig)	5YR 4/4	7.5YR 2.5/1			double layered lumps			
Area #1, layer 1 surface to 15 cm	CL1-2-F21	10YR 6/2	7.5YR 4/1			?	lumps		L
Area #1, layer 1 surface to 15 cm	CL1-2-F22 (orig)	5YR 5/6	N3/			small slabs			
Area #1, layer 1 surface to 15 cm									
Area #1, layer 1 surface to 15 cm	CL1-2-F23 (orig)	5YR 6/6				double layered lumps			
Area #1, layer 1 surface to 15 cm	CL1-2-F24 (orig)	5YR 4/4	2.5YR 2.5/2			small slabs			
Area #1, layer 1 surface to 15 cm	CL1-2-F25	7.5YR 7/4	N2.5/			?			
Area #1, layer 1 surface to 15 cm	CL1-2-F26 (orig)	7.5YR 5/4				double layered small slabs			
Area #1, layer 1 surface to 15 cm	CL1-2-F27	7.5YR 4/4	N2.5/	Unkn	lmps/sqz	lumps			
Area #1, layer 1 surface to 15 cm	CL1-2-F28	5YR 4/4				?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 1 surface to 15 cm	CL1-2-F29	7.5YR 6/6				layered small slabs	small slabs		
Area #1, layer 1 surface to 15 cm	CL1-2-F30	7.5YR 6/4	10YR 4/1			?			
Area #1, layer 1 surface to 15 cm	CL1-2-F31	7.5YR 4/4	7.5YR 4/1			lumps			
Area #1, layer 1 surface to 15 cm	CL1-2-F32	2.5YR 4/6				lumps			
Area #1, layer 1 surface to 15 cm	CL1-2-F33	7.5YR 6/4	10YR 2/1			lumps			
Area #1, layer 1 surface to 15 cm	CL1-2-F34	10YR 5/4	10YR 4/2			?			
Area #1, layer 1 surface to 15 cm	CL1-2-F35	7.5YR 6/4				?			
Area #1, layer 1 surface to 15 cm	CL1-2-F36	10YR 6/4	10YR 6/2			?			
Area #1, layer 1 surface to 15 cm	CL1-2-F37 (overlap)	5YR 5/6				lumps			
Area #1, layer 1 surface to 15 cm	CL1-2-F38 (overlap)	2.5YR 4/8				small slabs			
Area #1, layer 1 surface to 15 cm	CL1-2-F24 (overlap)	7.5YR 4/4	7.5YR 2.5/3			lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 1 surface to 15 cm	CL1-2-F40 (overlap)	7.5YR 4/6	10YR 4/2			lumps			
Area #1, layer 1 surface to 15 cm	CL1-2-F41	7.5YR 6/3				double layered slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F1	2.5YR 4/4	10YR 4/1			layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F2 (F2, F3 and F4 are the same shreds)					layered small slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F3					layered small slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F4					layered small slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F5	5YR 5/6	10YR 2/1			slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F6	5YR 5/6	10YR 4/1			lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F7					layered lumps	lumps		
Area #1, layer 2, 15 to 30 cm	CL1-3-F8 (F8, F9, F10 are the same sherd)					layered small slabs	lumps		

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 2, 15 to 30 cm	CL1-3-F9					layered small slabs	lumps		
Area #1, layer 2, 15 to 30 cm	CL1-3-F10					layered small slabs	lumps		
Area #1, layer 2, 15 to 30 cm	CL1-3-F11	5YR 5/4	N4/	N	slbs/sqz	double to triple layered small slabs			M
Area #1, layer 2, 15 to 30 cm	CL1-3-F12					layered slabs	lumps		L
Area #1, layer 2, 15 to 30 cm	CL1-3-F13	10YR 6/4	N3/			lumps?	lumps		
Area #1, layer 2, 15 to 30 cm	CL1-3-F14	10YR 7/4	N4/	Y	slbs/ pressed	slabs	slab	950	L
Area #1, layer 2, 15 to 30 cm	CL1-3-F15					layered slabs	small slabs		L
Area #1, layer 2, 15 to 30 cm	CL1-3-F16	10YR 5/4	10YR 2/2			layered slabs and lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F17	5YR 4/6				layered slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F18	7.5YR 5/4				layered thick lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F19	5YR 7/4				layered slabs			

Excavation context	Ceramic code	Firing Atmosphere (Munsell) Oxidized	Reduced	Temper Thin Section	Manufacturing Technique Thin Section	Visual	Xeroradiograph	Firing Temperatures SEM-EDS (°C)	Prosity
Area #1, layer 2, 15 to 30 cm	CL1-3-F20					layered lumps	lumps		L
Area #1, layer 2, 15 to 30 cm	CL1-3-F21	7.5YR 5/4	7.5YR 4/2			double layered small slabs			L
Area #1, layer 2, 15 to 30 cm	CL1-3-F22	7.5YR 6/6				layered slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F23	7.5YR 4/6	7.5YR 2.5/3			layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F24	10YR 6/4	N3/			double layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F25	2.5YR 5/6	7.5YR 4/1			double slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F26		7.5YR 4/2			single layered small slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F27		7.5YR 5/3			double layered small slabs	lumps		
Area #1, layer 2, 15 to 30 cm	CL1-3-F127					double to triple layered small slabs			L
Area #1, layer 2, 15 to 30 cm	CL1-3-F28	2.5YR 5/6	7.5YR 4/1			lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 2, 15 to 30 cm	CL1-3-F29	7.5YR 4/4	N3/			lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F30		7.5YR 2.5/1			double layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F31		7.5YR 4/2			layered slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F32	7.5YR 4/6				small slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F33	5YR 6/4	N3/			layered slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F34		7.5YR 2.5/1			layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F35	7.5YR 5/3	N3/			lumps and slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F36	7.5YR 6/4	7.5YR 4/1			layered small slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F37	7.5YR 6/4				lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F38	7.5YR 6/4	7.5YR 4/1			double layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F39	7.5YR 4/6				small double layered slabs			

		Firing Atmosphere (Munsell)		**Temper**	**Manufacturing Technique**			**Firing Temperatures**	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 2, 15 to 30 cm	CL1-3-F40	7.5YR 5/3	7.5YR 2.5/1			single layered			
Area #1, layer 2, 15 to 30 cm	CL1-3-F41	7.5YR 5/4	7.5YR 4/2			double layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F42		7.5YR 4/1			slabs and lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F43	7.5YR 5/6				lumps	unknown		
Area #1, layer 2, 15 to 30 cm	CL1-3-F44	7.5YR 6/4	7.5YR 2.5/1			layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F45	5YR 4/6	N3/			layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F45	5YR 4/4	7.5YR 4/1			double layered lumps			H
Area #1, layer 2, 15 to 30 cm	CL1-3-F46	2.5YR 4/6	N3/			layered small slabs	lumps and slabs		H
Area #1, layer 2, 15 to 30 cm	CL1-3-F47	7.5YR 4/4				single layed slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F48	7.5YR 7/4	7.5YR 4/1			layered small slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F49	7.5YR 4/4	N3/			layered small strips of slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 2, 15 to 30 cm	CL1-3-F50	7.5YR 4/4	N3/			?	lumps		
Area #1, layer 2, 15 to 30 cm	CL1-3-F51		7.5YR 2.5/1			double layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F52	2.5YR 4/6	7.5YR 2.5/1			layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F53	7.5YR 6/4				layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F54	7.5YR 4/4				layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F55					layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F56	5YR 4/4	7.5YR 2.5/1			single layered strips of small slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F57	7.5YR 5/3	7.5YR 2.5/1			layered lumps	lumps		
Area #1, layer 2, 15 to 30 cm	CL1-3-F58	7.5YR 5/3	7.5YR 2.5/1			layered strips of slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F59	7.5YR 4/4	7.5YR 2.5/1			single layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Area #1, layer 2, 15 to 30 cm	CL1-3-F60	2.5YR 4/8	7.5YR 4/1			layered small strips of slabs and lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F61	5YR 4/4	7.5YR 2.5/1			double layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F62	7.5YR 5/4				double layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F63	7.5YR 4/4	7.5YR 4/2			layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F64	7.5YR 4/3	N3/			layered lumps and slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F65	7.5YR 5/4	7.5YR 2.5/1			double layered small slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F66	5YR 4/4	N3/			layered lumps	lumps		
Area #1, layer 2, 15 to 30 cm	CL1-3-F67	7.5YR 5/4	7.5YR 2.5/1			lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F68	7.5YR 5/3	7.5YR 2.5/1			small slabs and lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F69	7.5YR 6/4	N3/			layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 2, 15 to 30 cm	CL1-3-F70					layered small slabs	slabs		M
Area #1, layer 2, 15 to 30 cm	CL1-3-F71	7.5YR 5/3	7.5YR 2.5/1			double layered slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F72	5YR 3/4				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F73		7.5YR 2.5/1			small slabs (double and single layered)			
Area #1, layer 2, 15 to 30 cm	CL1-3-F75	7.5YR 6/4				single layered small slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F76	7.5YR 4/3				layered small slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F77	7.5YR 2.5/1	7.5YR 3/4			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F78	10R 5/6	N3/			double layered strips of slabs and lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F79	10YR 5/1	10YR 4/1			layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F80	5YR 5/4	7.5YR 2.5/1			layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F81					layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 2, 15 to 30 cm	CL1-3-F82	7.5YR 6/4				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F83	5YR 5/4	N3/			double layered slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F84	2.5YR 4/4	N3/			double slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F86					layered lumps	lumps		L
Area #1, layer 2, 15 to 30 cm	CL1-3-F87	7.5yR 4/3	7.5YR 4/1			double layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F88					layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F89	7.5YR 4/4	7.5YR 2.5/1			double layered slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F90	10YR 6/3	10YR 4/1			double layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F91	7.5YR 5/4	7.5YR 5/1			double layered slabs and lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F92	7.5YR 5/4				double layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F93	7.5YR 4/4	7.5YR 2.5/1			double layered small slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 2, 15 to 30 cm	CL1-3-F94	7.5YR 5/2	7.5YR 2.5/1			layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F95					layered small slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F96	5YR 4/4	7.5YR 4/1			layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F97					layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F98	7.5YR 5/6	7.5YR 2.5/3			lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F99	7.5YR 4/2	7.5YR 2.5/1			double layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F100					?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F101	5YR 4/6	N3/			double layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F102					layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F103	7.5YR 4/6				lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F104					small slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 2, 15 to 30 cm	CL1-3-F105	7.5YR 4/6	7.5YR 4/1			layered slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F106		7.5YR 2.5/1			double layered lumps and slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F107	2.5YR 4/8				double layered small slabs and lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F108	7.5YR 5/4	7.5YR 4/1			layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F109					layered small slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F110	7.5YR 5/4	7.5YR 2.5/1			lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F111	5YR 4/6	N3/			layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F112	7.YR 4/4	N3/			double layered small slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F114	2.5YR 4/8	7.5YR 2.5/1			double layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F115		N2.5/			double layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 2, 15 to 30 cm	CL1-3-F116	7.5YR 5/3	7.5YR 2.5/1			double layered strip of slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F117	10YR 4/3	10YR 2/1			double layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F119	10YR 5/3	7.5YR 4/1			double layered strips of slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F120	2.5YR 5/6	7.5YR 4/1	Unkn	slbs/sqz	Double to triple layered slabs			M
Area #1, layer 2, 15 to 30 cm	CL1-3-F121	7.5YR 4/4	10YR 4/1			layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F122	7.5YR 4/4		Unkn	slab & lmps	Double to triple layered slabs	slabs		M
Area #1, layer 2, 15 to 30 cm	CL1-3-F124	7.5YR 5/4	N3/	Unkn	slbs/sqz	Double layered slabs	slabs		M
Area #1, layer 2, 15 to 30 cm	CL1-3-F125					layered lumps	slabs		L
Area #1, layer 2, 15 to 30 cm	CL1-3-F126					layered small slabs	small slabs		M
Area #1, layer 2, 15 to 30 cm	CL1-3-F127	7.5YR 6/4	N3/			layered slabs			M
Area #1, layer 2, 15 to 30 cm	CL1-3-F128	7.5YR 5/3	7.5YR 2.5/1			layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 2, 15 to 30 cm	CL1-3-F129	N4	5YR 4/4			layered slabs	slabs		H
Area #1, layer 2, 15 to 30 cm	CL1-3-F130	2.5YR 5/6				layered small slabs	small slabs		L
Area #1, layer 2, 15 to 30 cm	CL1-3-F132	2.5YR 4/8	N3/			single layered small slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F133	7.5YR 5/4	7.5YR 4/1			layered small slabs	small slabs		M
Area #1, layer 2, 15 to 30 cm	CL1-3-F134					layered small slabs	lumps		L
Area #1, layer 2, 15 to 30 cm	CL1-3-F135	2.5YR 4/6	10YR 4/1			layered small slabs	small slabs		M
Area #1, layer 2, 15 to 30 cm	CL1-3-F136		7.5YR 2.5/1			layered slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F137	5YR 5/6	N4/			double layered small slabs		950	M
Area #1, layer 2, 15 to 30 cm	CL1-3-F138	10Y 6/4	N2.5/			large strips of layered slabs	slabs		L
Area #1, layer 2, 15 to 30 cm	CL1-3-F139	7.5YR 6/6				layered lumps	strips of small slab		L
Area #1, layer 2, 15 to 30 cm	CL1-3-F140					layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 2, 15 to 30 cm	CL1-3-F141					layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F142	7.5YR 4/6				layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F143	2.5YR 5/6				layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F144					layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F145	5YR 5/6	7.5YR 2.5/1			layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F146					layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F147		7.5YR 4/1			layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F148	5YR 5/6				lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F149	7.5YR 6/6	N2.5/			lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F150	7.5YR 4/6	7.5YR 2.5/1			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F151	7.5YR 4/4	N3/			lumps			

Excavation context	Ceramic code	Firing Atmosphere (Munsell) Oxidized	Reduced	Temper Thin Section	Manufacturing Technique Thin Section	Visual	Xeroradiograph	Firing Temperatures SEM-EDS (°C)	Prosity
Area #1, layer 2, 15 to 30 cm	CL1-3-F152		N3/			lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F153	7.5YR 6/4				lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F154	7.5YR 4/6	7.5YR 2.5/1			lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F155	7.5YR 6/6				lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F156	7.5YR 5/4				lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F157	7.5YR 6/4				lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F158	10YR 6/4				lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F159	7.5YR 6/4				lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F160		10YR 4/2			lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F161		10YR 4/1			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F162	10YR 5/4				lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 2, 15 to 30 cm	CL1-3-F163	5YR 4/4	7.5YR 2.5/1			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F164	10YR 4/2				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F165	7.5YR 5/4	N3/			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F166	7.5YR 5/4				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F167	7.5YR 5/4				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F168	7.5YR 6/4	10YR 4/2			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F169	10YR 4/6				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F170	7.5YR 4/3				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F171		7.5YR 2.5/2			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F173	7.5YR 6/4				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F174	10YR 4/3				?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 2, 15 to 30 cm	CL1-3-F175	5YR 4/4				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F176	7.5YR 4/4	7.5YR 2.5/1			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F177	10YR 6/4	10YR 4/1			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F178	10YR 7/4				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F179	10YR 6/3	N2.5/			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F180					?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F181	10YR 4/4				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F182	2.5YR 5/6				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F183		10YR 4/3			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F184	10YR 5/4	N3/			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F185	7.5YR 4/4	10YR 4/1			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 2, 15 to 30 cm	CL1-3-F186	7.5YR 6/3				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F187	7.5YR 4/3				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F188	7.5YR 4/6	7.5YR 2.5/1			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F189	7.5YR 4/6				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F190	7.5YR 6/4				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F191	5YR 5/6				layered small slabs and lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F192	7.5YR 5/4				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F193	7.5YR 4/4	7.5YR 4/2			layered small slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F194					layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F195					layered small slabs and lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 2, 15 to 30 cm	CL1-3-F196					layered small slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F197					layered small slabs and lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F198					layered small slabs and lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F199	7.5YR 4/4	7.5YR 4/4			layered small slabs and lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F200	5YR 5/4				layered small slabs			
Area #1, layer 2, 15 to 30 cm	CL1-3-F201	7.5YR 6/6	N4/			layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F202	2.5YR 5/6	7.5YR 4/1			lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F203	5YR 4/4	7.5YR 4/1			lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F204	7.5YR 4/4	7.5YR 2.5/1			lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F205	2.5YR 4/6	N4/			lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 2, 15 to 30 cm	CL1-3-F206	10YR 7/3				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F207		7.5YR 2.5/1			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F208		10YR 4/1			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F209	7.5YR 5/4	10YR 4/1			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F210					layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F211					lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F212	7.5YR 4/6				lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F213	7.5YR 5/4	7.5YR 4/1			layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F214	7.5YR 4/6	7.5YR 4/1			lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F215					lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F216	5YR 5/6				layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 2, 15 to 30 cm	CL1-3-F217	7.5YR 5/4				layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F218	7.5YR 5/4	N3/			layered lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F219	7.5YR 4/6	N3/			lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F220	7.5YR 6/6				lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F221		7.5YR 2.5/1			lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F222	7.5YR 6/4				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F223	10YR 7/3	7.5YR 4/1			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F224		7.5YR 4/1			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F225	7.5Y 4/4				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F226	7.5YR 6/4	N4/			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F227	10YR 5/6	7.5YR 4/2			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Area #1, layer 2, 15 to 30 cm	CL1-3-F228	2.5YR 5/6	N4/			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F229	2.5YR 5/6				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F230	5YR 4/6				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F231	10YR 7/4	N3/			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F232	7.5YR 6/4	N3/			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F233		7.5YR 4/1			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F234	5YR 5/4				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F235	7.5YR 4/3	10YR 2/1			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F236	10YR 7/4				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F237	7.5YR 2.5/3	10YR 2/1			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F238	5YR 5/4				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F239		7.5YR 2.5/1			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Area #1, layer 2, 15 to 30 cm	CL1-3-F240	7.5YR 6/4	7.5YR 2.5/1			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F241	5YR 5/6				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F242	5YR 4/4	N3/			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F243	7.5YR 5/3	7.5YR 2.5/1			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F244	7.5YR 6/4				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F245	5YR 4/4				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F246	5YR 6/6	N3/			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F247	2.5YR 5/6				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F248	7.5YR 5/3				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F249	7.5YR 5/4	N3/			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F250	5YR 4/6				?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 2, 15 to 30 cm	CL1-3-F251	10YR 5/2	10YR 4/2			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F252	7.54/ 4YR				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F253	7.5YR 5/4	10YR 4/1			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F254	5YR 5/6				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F255	5YR 5/6				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F256	7.5YR 5/4				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F257		7.5YR 4/3			?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F258	7.5YR 5/4				?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F259	7.5YR 4/6	7.5YR 4/1			lumps			
Area #1, layer 2, 15 to 30 cm	CL1-3-F260					?			
Area #1, layer 2, 15 to 30 cm	CL1-3-F261					?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 2, 15 to 30 cm	CL1-3-F262	5YR 5/6	7.5YR 2.53						
Area #1, layer 3, 30 to 45 cm	CL1-4-F1	7.5YR 6/6				layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F2	7.5YR 5/4	7.5YR 2.5/1			layered slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F3	10R 4/4	7.5YR 2.5/1			layered slabs	unknown		
Area #1, layer 3, 30 to 45 cm	CL1-4-F4	10YR 5/4				layered slabs	slabs		H
Area #1, layer 3, 30 to 45 cm	CL1-4-F5	5YR 4/2	7.5YR 2.5/1			layered slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F6	5YR 4/4	N3/			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F7	10YR 5/4	10YR 4/1			slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F8	10YR 4/6	5YR 2.5/1			double layered small slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F9	7.5YR 4/4	7.5YR 4/1			layered slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F10	7.5YR 5/2	N3/			layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F11	5YR 5/4	7.5YR 2.5/1			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F12					layered lumps	unknown		L
Area #1, layer 3, 30 to 45 cm	CL1-4-F14	7.5YR 5/3	7.5YR 4/1			double layered slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F15		7.5YR 2.5/1			slabs and lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F16	7.5YR 6/4				double layered small slab strips			
Area #1, layer 3, 30 to 45 cm	CL1-4-F17	7.5YR 5/4	10YR 4/1	Unkn	bending a slab and sandwiching another slab at the lower part of the rim	slabs	small slabs		L
Area #1, layer 3, 30 to 45 cm	CL1-4-F18	5YR 5/5	7.5YR 2.5/1			layered slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F19	7.5YR 5/4	7.5YR 4/1			small layered slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F20	5YR 4/4	N3/			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F21	7.5YR 5/6				?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F22	7.5YR 4/3	7.5YR 4/1			lumps			L
Area #1, layer 3, 30 to 45 cm	CL1-4-F23		7.5YR 4/1			layered slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F24	5YR 4/6	7.5YR 4/1			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F25	7.5YR 4/6	7.5YR 2.5/1			one layered slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F26		7.5YR 4/1			layered slabs	unknown		
Area #1, layer 3, 30 to 45 cm	CL1-4-F27		7.5YR 4/1			layered slabs	small slabs		
Area #1, layer 3, 30 to 45 cm	CL1-4-F28	7.5YR 4/4	N3/			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F29		7.5YR 4/1			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F30		7.5YR 4/1			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F31	10YR 6/4	7.5YR 4/1			layered lumps and slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F32	7.5YR 5/4	7.5YR 2.5/2			layered slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F33		7.5YR 2.5/1			double layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F34	7.5YR 5/6				layered slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F35	7.5YR 4/1	N4/	Unkn	slb & lmp	slabs	slabs		M
Area #1, layer 3, 30 to 45 cm	CL1-4-F36	7.5YR 5/4	N2.5/			layered slabs and lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F37	7.5YR 4/3	7.5YR 4/1			double layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F38	7.5YR 6/3	N3/			double layered slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F39	5YR 4/4	7.5YR 2.5/1	N	slbs/sqz	2 layers	unknown		
Area #1, layer 3, 30 to 45 cm	CL1-4-F40		7.5YR 4/1			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F41 (same vessel as CL1-4-F42)	7.5YR 5/4	7.5YR 2.5/1			layered slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F42	7.5YR 5/4	7.5YR 2.5/1			layered slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F43	5YR 4/6	7.5YR 2.5/1			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F44	7.5YR 5/4	7.5YR 2.5/1	Unkn	slbs pressed against a wall	layered lumps or small slabs	lumps		L
Area #1, layer 3, 30 to 45 cm	CL1-4-F46	5YR 4/4	5YR 4/2			double layered small slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F47	10R 4/6	10YR 4/1			layered small slabs	slabs		M
Area #1, layer 3, 30 to 45 cm	CL1-4-F48	7.5YR 4/1		Unkn	slbs/sqz	double to triple layered slabs	lumps		M
Area #1, layer 3, 30 to 45 cm	CL1-4-F49	7.5YR 4/4	7.5YR 2.5/1			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F50	2.5YR 5/6	N3/	Unkn	slab/ squeezed	slabs	slabs		L
Area #1, layer 3, 30 to 45 cm	CL1-4-F51	5YR 4/6	7.5YR 2.5/1			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F52	7.5YR 4/4	N3/			layered slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F53	5YR 4/6	7.5YR 4/3			double layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F54								

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F55	7.5YR 5/4	7.5YR 2.5/1			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F56	5YR 5/6	7.5YR 4/1			layered lumps	small slabs		M
Area #1, layer 3, 30 to 45 cm	CL1-4-F57	5YR 5/6	7.5YR 2.5/1			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F58	7.5YR 5/3	7.5YR 4/1			double layered small slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F59	7.5YR 4/6	7.5YR 4/1			layered small slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F60	5YR 5/4	10YR 4/1			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F61	5YR 4/4	10YR 4/1			layered small slabs	lumps		H
Area #1, layer 3, 30 to 45 cm	CL1-4-F62	5YR 4/4	7.5YR 2.5/1			layered small slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F63	7.5YR 5/4	N4/			layered small slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F64	7.5YR 4/3	N2.5/			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F65	?	N3/			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F66	7.5YR 5/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F67		10YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F68	2.5YR 4/6				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F69	7.5YR 4/4	N3/			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F70					?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F71	7.5YR 2.5/3				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F72	7.5YR 4/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F72		10YR 4/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F73					layered small slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F74					layered small slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F75					layered slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F76					layered slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F77	7.5YR 5/8				layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F78		7.5YR 4/1			layered slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F79	7.5YR 5/3	10YR 4/3			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F80	7.5YR 5/4	10YR 3/3			double layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F81	7.5YR 5/3				double layered slabs or coil			
Area #1, layer 3, 30 to 45 cm	CL1-4-F82	7.5YR 4/4	7.5YR 2.5/1			layered small slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F83	7.5YR 5/4	7.5YR 4/1			double layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F84	7.5YR 5/4	7.5YR 2.5/1			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F85					layered small slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F86	7.5YR 4/4	7.5YR 2.5/1			layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Area #1, layer 3, 30 to 45 cm	CL1-4-F87	5YR 5/6				lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F88	7.5YR 4/6	10YR 2/1			layered slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F89	7.5YR 6/6	7.5YR 2.5/1			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F90	7.5YR 5/4	10YR 2/1			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F91	5YR 5/4	10YR 4/2			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F92	5YR 4/6	10YR 4/1			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F93	7.5YR 5/4	7.5YR 5/2			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F94	7.5YR 5/4	7.5YR 4/1			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F95	7.5YR 6/4				layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F96	7.5YR 5/6				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F97	7.5YR 6/4	7.5YR 4/2			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F98	5YR 4/4	10YR 2/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F99	7.5YR 4/4	10YR 2/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F100	7.5YR 4/6				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F101		7.5YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F102	10YR6/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F103	7.5YR 4/4	7.5YR 2.5/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F104	7.5YR 4/6	10YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F105	2.5YR 4/8	5YR 4/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F106	7.5YR 6/4	10YR 4/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F107	10YR 6/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F108	5YR 5/6				double layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F109	7.5YR 4/1	7.5YR 6/4			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F110	7.5YR 4/6				lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F111					lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F112	5YR 5/6				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F113	7.5YR 4/4	7.5YR 2.5/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F114	7.5YR 4/6	7.5YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F115	7.5YR 4/4	10YR 2/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F116	7.5YR 6/4	7.5YR 2.5/3			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F117	7.5YR 4/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F118	7.5YR 5/4	7.5YR 4/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F119	7.5YR 4/4	10YR 4/1			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F120	10YR 5/3	10YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F121	7.5YR 4/6				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F122	5YR 5/6	7.5YR 4/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F123	10YR 5/4	7.5YR 2.5/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F124	5YR 5/6	7.5YR 2.5/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F125	10YR 6/3				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F126	10YR 5/4	10YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F127	10YR 5/3	10YR 4/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F128	7.5YR 4/4	10YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F129	10YR 6/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F129					double to triple layered small slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxi-dized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradio-graph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F130	7.5YR 4/6				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F131					lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F132	7.5YR 5/4				layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F133					slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F134					layered slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F135	5YR 6/8	10YR 4/1			layered small slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F136	5YR 5/6	N4/			layered small slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F137		7.5YR 4/3			layered small slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F138	7.5YR 4/4	7.5YR 4/1			layered small slabs and lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F139	7.5YR 5/6	10YR 4/1			layered small slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F140	5YR 46	7.5YR 4/1			double layered small slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F141	7.5YR 4/3	7.5YR 4/1			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F142	2.5YR 5/4	N3/			layered small slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F143	7.5YR 5/4	N2.5/			double layered small slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F144	7.5YR 5/4	7.5YR 4/1			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F145	7.5YR 4/4	7.5YR 2.5/1			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F146	5YR 4/4	2.5Y 3/2			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F147					layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F148	7.5YR 4/4				layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F149	7.5YR 5/4	7.5YR 4/2			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F150	10YR 6/4	10YR 4/1			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F151	7.5YR 4/4	7.5YR 2.5/1			layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Area #1, layer 3, 30 to 45 cm	CL1-4-F152	7.5YR 6/4	7.5YR 2.5/1			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F153	5YR 5/6				layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F154	7.5YR 4/4	7.5YR 2.5/1			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F155	7.5YR 4/3	7.5YR 2.5/1			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F156	7.5YR 5/4	10YR 2/1			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F157	5YR 5/6				lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F158	7.5YR 4/2	7.5YR 5/4			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F159		7.5YR 2.5/2			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F160	7.5YR 4/4	N3/			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F161	10YR 6/4	10YR 5/2			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F162	7.5YR 2.5/1	7.5YR 5/3			layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Area #1, layer 3, 30 to 45 cm	CL1-4-F163	5YR 4/6	10YR 4/2			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F164	10YR 6/4	10YR 4/1			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F165	7.5YR 4/4				lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F166	7.5YR 4/4				lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F167	10YR 6/4	10YR 2/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F168	5YR 5/6	N3/			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F169		7.5YR 2.5/1			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F170	7.5YR 4/3	7.5YR 2.5/1			lumps on a slab			
Area #1, layer 3, 30 to 45 cm	CL1-4-F171	7.5YR 4/4	10YR 4/2			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F172	7.5YR 4/6	10YR 4/1			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F173	7.5YR 5/4				layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Area #1, layer 3, 30 to 45 cm	CL1-4-F174	7.5YR 4/2	N3/			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F175	5YR 5/6	10YR 4/2			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F176	7.5YR 6/6	7.5YR 4/2			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F177	7.5YR 6/6	5YR 4/2			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F178	7.5YR 4/6				layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F179	7.5YR 5/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F180	7.5YR 5/4	7.5YR 4/2			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F181	7.5YR 5/4	7.5YR 4/1			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F182	7.5YR 5/4	10YR 4/3			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F183		7.5YR 2.5/1			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F184	7.5YR 5/4	7.5YR 4/1			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F185		7.5YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F186	10YR 6/3	10YR 4/2			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F137					?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F362	7.5YR 5/6	7.5YR 4/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F373	5YR 5/6				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F140	7.5YR 5/4	7.5YR 4/3			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F141					?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F365	10YR 6/4	10YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F368		7.5YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F356	7.5YR 5/4	7.5YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F380	7.5YR 5/6				?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Area #1, layer 3, 30 to 45 cm	CL1-4-F344	7.5YR 4/4	N3/			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F147	7.5YR 5/4	7.5YR 2.5/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F381		7.5YR 2.5/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F376	7.5YR 5/4	7.5YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F361	7.5YR 4/3	10YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F364		10YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F369	10YR 7/4	10YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F388	7.5YR 4/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F347	7.5YR 5/4	7.5YR 4/2			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F358		10YR 2/2			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F359		7.5YR 4/2			layered small slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F355	7.5YR 4/4	7.5YR 2.5/1			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F357	7.5YR 4/4	7.5YR 4/1			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F352	7.5YR 4/6	7.5YR 2.5/1			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F363	7.5 YR 4/3	7.5YR 2.5/1			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F360	7.5YR 4/2	N3/			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F367	7.5YR 5/4	7.5YR 4/2			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F372	5YR 5/4	5YR 2.5/2			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F366	2.5YR 5/6				lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F346	7.5YR 5/4	7.5YR 4/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F348	5.46	6.61			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F345	7.5YR 6/4	10YR 4/1			lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Area #1, layer 3, 30 to 45 cm	CL1-4-F354		7.5YR 4/1			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F391	7.5YR 5/4	10YR 4/1			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F377	7.5YR 5/4	7.5YR 2.5/1			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F374	5YR 4/4	10YR 4/1			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F389	7.5YR 5/4	7.5YR 2.5/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F378	7.5YR 6/6				lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F375	10YR 6/4	10YR 2/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F349	10YR 7/4	2.5Y 4/2			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F379	7.5YR 5/4	7.5YR 5/8			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F371	7.5YR 5/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F353	7.5YR 4/4	7.5YR 2.5/1			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F383		7.5YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F390	7.5YR 5/8	7.5YR 4/3			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F382	7.5YR 5/3	7.5YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F350	2.5YR 5/6	7.5YR 5/3			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F384	5YR 5/6	10YR 4/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F385	5YR 4/4				lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F351	5YR 5/6	N2.5/			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F386		10YR 4/3			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F370		10YR 4/2			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F187		7.5YR 2.5/3			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F188	5YR 5/6	7.5YR 2.5/1			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F189	5YR 5/6	7.5YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F190	2.5YR 4/6				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F191	7.5YR 4/6	N3/			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F192	7.5YR 5/4	N3/			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F193		7.5YR 4/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F194	7.5YR 5/4	7.5YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F195	10YR 5/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F196	7.5YR 4/3				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F197	10YR 6/4	10YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F198	7.5YR 5/4	7.5YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F199	7.5YR 4/4	10YR 2/1			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F200		10YR 4/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F201	7.5YR 6/4	7.5YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F202	10YR 7/4	N4/			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F203	7.5YR 5/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F204		7.5YR 4/4			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F205	7.5YR 5/4	7.5YR 2.5/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F206	5YR 5/6	7.5YR 4/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F207	10YR 7/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F208	7.5YR 5/6				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F209	7.5YR 5/4	7.5YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F210	7.5YR 4/4	7.5YR 2.5/1			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F211	7.5YR 5/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F212	7.5YR 5/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F213		10YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F214	7.5YR 5/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F215		7.5YR 4/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F216		7.5YR 4/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F217		10YR 4/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F218	10YR 6/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F219					?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F220	?	10YR 4/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F221	7.5YR 4/4	10YR 4/1			?			

		Firing Atmos-phere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxi-dized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradio-graph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F222	7.5YR 6/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F223	7.5YR 5/4	10YR 2/1			layered small slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F224	7.5YR 4/6				layered small slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F225					slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F226	7.5YR 5/8				layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F227	10YR 4/1	10YR 5/3			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F228	7.5YR 5/4	7.5YR 4/1			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F229					?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F230	7.5YR 5/8				lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F231	7.5YR 6/4				layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F232	7.5YR 5/4	10YR 4/1			lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Area #1, layer 3, 30 to 45 cm	CL1-4-F233	10YR 4/3	10YR 2/2			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F234	7.5YR 6/4	N2.5/			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F235	5YR 5/4	7.5YR 2.5/1			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F236	7.5YR 5/4	7.5YR 4/1			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F237	5YR 4/6	10YR 4/2			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F238	7.5YR 5/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F239	7.5YR 4/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F240	5YR 4/6				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F241	10YR 4/3	10YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F242	10YR 6/3				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F243		7.5YR 4/1			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F244	7.5YR 4/1	5YR 4/6			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F245	7.5YR 5/3				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F246	7.5YR 6/3	N3/			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F247		7.5YR 2.5/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F248		10YR 2/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F249	5YR 4/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F250	7.5YR 4/4	7.5YR 2.5/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F251	7.5YR 5/4	7.5YR 4/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F252		10YR 2/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F253	10YR 3/3				lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F254		10YR 4/3			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F255	7.5YR 5/4	7.5YR 2.5/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F256	7.5YR 5/4	7.5YR 2.5/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F257	10YR 3/6	10YR 4/1			lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F258	7.5YR 4/4				lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F259	10YR 5/4	10YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F260	10YR 5/3				lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F261	10YR 5/3	10YR 4/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F262		10YR 2/1			layered lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F263	7.5YR 5/4	10YR 3/3			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F264	7.5YR 5/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F265	7.5YR 4/4	7.5YR 2.5/1			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F266	10YR 4/1				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F267	10YR 5/4				lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F268	7.5YR 4/6	7.5YR 2.5/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F269	7.5YR 6/4	N2.5/			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F270	10YR 4/3				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F271		10YR 2/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F272	7.5YR 6/4	7.5YR 2.5/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F273	7.5YR 4/3				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F274		7.5YR 2.5/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F275	10YR 5/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F276		10YR 2/1			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F277	7.5YR 5/4	7.5YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F278	7.5YR 6/6				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F279	7.5YR 4/4	10YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F280	7.5YR 5/6				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F281	10YR 5/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F282	10YR 6/4	10YR 4/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F283	7.5YR 4/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F284	7.5YR 4/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F285	7.5YR 4/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F286	10YR 6/4	10YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F287		10YR 3/4			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F288		10YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F289	7.5YR 5/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F290	7.5YR 5/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F291		10YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F292		7.5YR 4/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F293	10YR 6/4	10YR 3/3			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F294		7.5YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F295		7.5YR 4/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F296	7.5YR 4/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F297	7.5YR 5/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F298	2.5YR 4/6				?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F299	7.5YR 4/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F300	7.5YR 4/6	7.5YR 4/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F301	10YR 5/3				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F302		7.5YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F303	2.5YR 4/6				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F304		10YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F305		7.5YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F306		10YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F307	10YR 6/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F308					?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F309	10YR 7/4				?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F310	5YR 4/6				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F311	7.5YR 5/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F312	7.5YR 5/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F313	7.5YR 5/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F314		10YR 4/3			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F315		7.5YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F316	10YR 6/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F317	7.5YR 4/6				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F318	7.5YR 4/4	7.5YR 4/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F319		7.5YR 4/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F320	10YR 3/3	10YR 2/1			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F321	5YR 5/6				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F322	7.5YR 5/4	7.5YR 2.5/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F323		10YR 2/2			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F324	10YR 4/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F325	7.5YR 6/4	7.5YR 2.5/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F326	10YR 6/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F327	10YR 4/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F328	10YR 6/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F329	7.5YR 4/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F330	10YR 4/1				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F331	10YR 4/3				?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #1, layer 3, 30 to 45 cm	CL1-4-F332	10YR 5/3				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F333	10YR 4/3				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F334	10YR6/3				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F335	10YR6/3				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F336	10YR 4/4				?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F337	7.5YR 5/6	7.5YR 4/1			small slabs and lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F338					thick small slabs			
Area #1, layer 3, 30 to 45 cm	CL1-4-F339	7.5YR 4/6				thick lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F340	7.5YR 6/4	7.5YR 2.5/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F341	5YR 4/6	7.5YR 2.5/1			?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F342 (Cl1-4-F342 ad F343 are the same)	7.5YR 5/6	7.5YR 4/1			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Area #1, layer 3, 30 to 45 cm	CL1-4-F343					?			
Area #1, layer 3, 30 to 45 cm	CL1-4-F387	7.5Y R 6/4				lumps			
Area #1, layer 3, 30 to 45 cm	CL1-4-F388	5YR 5/6	7.5Y R 2.5/1			lumps			
Area #2A, layer 2	CL1-44-F1	5YR 5/6	7.5Y R 4/1			layered lumps	lumps		
Area #2A, layer 2	CL1-44-F2	7.5Y R 6/3	N2.5/			layered lumps			
Area #2A, layer 2	Cl1-44-F3 (orig)	7.5Y R 4/4	7.5Y R 2.5/1			double layered slabs			
Area #2A, layer 2	CL1-44-F4 (orig)	10Y R 6/4	N3/						
Area #2A, layer 2	CL1-44-F5 (orig)	7.5Y R 5/4				lumps			
Area #2A, layer 2	CL1-44-F6 (orig)	7.5Y R 5/3	7.5Y R 2.5/1						
Area #2A, layer 2	CL1-44-F7	10Y R 6/4	10YR 5/1			layered lumps			
Area #2A, layer 2	CL1-44-F8	10Y R 2/2	7.5Y R 5/3	Unkn	slbs/sqz (preferred orientation)	slabs	slabs	950	L

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #2A, layer 2	CL1-44-F9 (orig)		7.5YR 2.5/1			?			
Area #2A, layer 2	CL1-44-F10	5YR 5/4	5YR 4/2	Unkn	a long slab in the interior and 2 to 3 slabs on the exterior half	slabs	slabs	950	
Area #2A, layer 2	CL1-44-F11	5YR 5/6	7.5YR 4/1			?			
Area #2A, layer 2	CL1-44-F12	7.5YR 5/6				?			
Area #2A, layer 2	CL1-44-F13	7.5YR 6/3	7.5YR 2.5/2			?			
Area #2A, layer 2	CL1-44-F14	10YR 6/4	10YR 4/1			?			
Area #2A, layer 2	CL1-44-F15	10YR 6/3	N4/			?			
Area #2A, layer 2	CL1-44-F16	10YR 7/4	10YR 4/1			?			
Area #2A, layer 2	CL1-44-F17	10YR 6/4	N4/			lumps			
Area #2A, layer 3	CL1-45-F1	7.5YR 5/4				layered small slabs	lumps		M
Area #2A, layer 3	CL1-45-F2	7.5YR 6/4	N3/	Unkn	dble layered slbs	slabs	slabs		L
Area #2A, layer 3	CL1-45-F3	7.5YR 5/4				layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #2A, layer 3	CL1-45-F4	7.5YR 5/3	N2.5/		slab/ squeezed (preferred orientation)	slabs	slabs	650	L
Area #2A, layer 3	CL1-45-F5 to F8			Unkn	slbs/sqz	double layered slabs and a slb folded over making the lip	double layered small slabs		H
Area #2A, layer 3	CL1-45-F10	7.5YR 6/6	10YR 4/1			layered lumps	lumps		
Area #2A, layer 3	CL1-45-F11					lumps			
Area #2A, layer 3	CL1-45-F12	10YR 5/2	10YR 4/1			double layered lumps			
Area #2A, layer 3	CL1-45-F13	7.5YR 4/4		Unkn	slbs/sqz	Double layered slabs	slabs		M
Area #2A, layer 3	Cl1-45-F14	7.5YR 6/4	7.5YR 4/1			double layered small slabs			
Area #2A, layer 3	CL1-45-F15	7.5YR 4/4	7.5YR 4/1			small layered slabs			
Area #2A, layer 3	CL1-45-F16	7.5YR 6/4	7.5YR 4/1	Unkn	slbs/sqz	slabs	slabs		M
Area #2A, layer 3	CL1-45-F17	2.5YR 4/8	N3/			layered lumps			
Area #2A, layer 3	CL1-45-F18	7.5YR 5/6	7.5YR 4/1			double layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Area #2A, layer 3	CL1-45-F19	7.5YR 5/3	N3/			double layered lumps			
Area #2A, layer 3	CL1-45-F20	5YR 4/4	7.5YR 2.5/1			lumps			
Area #2A, layer 3	CL1-45-F21	7.5YR 6/2	7.5YR 4/1			lumps			
Area #2A, layer 3	CL1-45-F22	5YR 6/6	10YR 4/1			layered small strips of slabs			
Area #2A, layer 3	CL1-45-F23		7.5YR 4/1			lumps			
Area #2A, layer 3	CL1-45-F24	7.5YR 5/4	7.5YR 4/1			lumps			
Area #2A, layer 3	CL1-45-F25	10YR 4/2	7.5YR 2.5/1			lumps			
Area #2A, layer 3	CL1-45-F26	7.5YR 4/4	7.5YR 2.5/1			double to triple layered slabs	slabs	950	L
Area #2A, layer 3	CL1-45-F27	7.5YR 4/4	7.5YR 4/1			lumps			
Area #2A, layer 3	CL1-45-F28		7.5YR 4/1			lumps?			
Area #2A, layer 3	CL1-45-F29	7.5YR 5/2	7.5YR 2.5/1			lumps			
Area #2A, layer 3	CL1-45-F30	10YR 7/4	N3/			?			
Area #2A, layer 3	CL1-45-F31	7.5YR 5/4	7.5YR 4/1			lumps			
Area #2A, layer 3	CL1-45-F32	7.5YR 5/4				layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area #2A, layer 3	CL1-45-F33	10YR 7/4				layered lumps	lumps		
Area #2A, layer 3	CL1-45-F34	7.5YR 5/4				layered lumps	lumps		
Area #2A, layer 3	CL1-45-F35	2.5YR 4/4				lumps	lumps		
Area #2A, layer 3	CL1-45-F36	5YR 5/4				lumps	lumps		
Area #2A, layer 3	CL1-45-F8	7.5YR 6/4				lumps	lumps		
Area #2A, layer 3	CL1-45-F37	7.5YR 5/4				double layered slabs			
Area #2A, layer 3	CL1-45-F38	7.5YR 4/3				lumps			
Area #2A, layer 5	CL1-47-F1	7.5YR 4/6				layered lumps	small slabs		H
Area #2A, layer 5	CL1-47-F2	7.5YR 5/4	7.5YR 4/2			layered small slabs	slabs		H
B1ock 1 Surf	AG13-1-U1-F1					layered lumps	slabs		L
Block 1 0-5	AG13-2-U1-F1	10YR 6/4	10YR 3/4	Unkn	one or two slab/ squeezed slab to make a body and then horizontal clay placed to make a lip	slab and additional clay to make a lip			L
Block 1 0-5	AG13-2-U1-F2	7.5YR 4/2				layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Block 1 0-5	AG13-2-U1-F3	7.5YR 6/4				layered lumps			
Block 1 10-15	AG13-4-U1-F1	5YR 5/4	7.5YR 4/1			small layered lumps			
Block 1 10-15	AG13-4-U1-F2	10YR 4/1	10R 4/4 (red paint)			small unknown			
Block 1 10-15	AG13-4-U1-F3	7.5YR 8/4	N4/			layered lumps			
Block 1 15-20	AG13-5-U1-F1	10R 5/8	7.5YR 4/1	Unkn	a slab/ squeezed and flattened	slab			H
Block 1 15-20	AG13-5-U1-F2	7.5YR 6/4				double layered slabs			
Block 1 20-25	AG13-6-U1-F1	10R 4/4	7.5YR 4/1	Y	slabs/ squeezed	slabs			
Block 1 20-25	AG13-6-U1-F2	7.5YR 6/4	N3/	Y	slab/ squeezed with long parallel pores	slab			M
Block 1 20-25	AG13-6-U1-F3	7.5YR 5/2	7.5YR 4/1	Y	slab/ squeezed with long parallel pores	slabs			
Block 1 30-35	AG13-8-U1-F1	7.5YR 5/3	7.5YR 4/1	Y	slab/ squeezed	slabs			
Block 1 30-35	AG13-8-U1-F2	10R 5/8	5YR 5/4	Unkn	Slab	slabs?		850	
Block 1 30-35	AG13-8-U1-F3	2.5YR 5/6	10YR 4/1	Y	slabs/ squeezed	slabs		~700	
	AG13-8-U1-F4	10YR 7/4	N3/			layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Block 1 35-40	AG13-9-U1-F1	10YR 6/4	7.5YR 4/1	Y	slabs/ squeezed	slabs			
Block 1 35-40	AG13-9-U1-F2	10YR 6/3	N4/			layered lumps			
Block 1 40-45	AG13-10-U1-F1	10YR 7/4				layered lumps			
Block 2s sounding	AG13-14-U2S-F1	2.5YR 4/6	N3/			layered lumps			H
Block 2s sounding	AG13-14-U2S-F2	7.5YR 2.5/2				layered lumps			
Block 2s 0-10	AG13-15-U2S-F1	2.5YR 5/6	10YR 5/2			layered lumps			
Block 2s 10-20	AG13-16-U2S-F1	7.5YR 6/4	10YR 2/1			layered small slabs			
Block 2s 10-20	AG13-16-U2S-F2		10YR 4/2			layered slabs			
Block 2s 10-20	AG13-16-U2S-F3	10YR 6/3	10YR 4/1			layered lumps			
Block 2 10-15	AG13-22-U2-F1	10YR 7/4	N3/	Unkn	lip is added on layered slabs/ squeezed clay wall; furthest form the lip, clay ball sandwiched in the center	slab			L

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxi-dized	Reduced	Thin Section	Thin Section	Visual	Xeroradio-graph	SEM-EDS (°C)	Prosity
Block 2 10-15	AG13-22-U2-F2	7.5YR 5/3	N3/			layered slabs and lumps			
Block 2 10-15	AG13-22-U2-F3	2.5YR 4/4	N3/			layered slabs and lumps (mainly double)			L
Block 2 10-15	AG13-22-U2-F4	2.5YR 4/8				layered slabs and lumps			M
Block 2 10-15	AG13-22-U2-F5	2.5YR 6/6	N4/			layered slabs			M
Block 2 10-15	AG13-22-U2-F6	10YR 6/4	N3/			layered small slabs			
Block 2 10-15	AG13-22-U2-F7	7.5YR 6/4	N5/			layered small slabs			
Block 2 10-15	AG13-22-U2-F8		N2.5/			layered lumps			
Block 2 10-15	AG13-22-U2-F9	2.5YR 5/8	N4/			layered lumps			
Block 2 10-15	AG13-22-U2-F10	2.5YR 6/8	N5/			layered lumps			
Block 2 10-15	AG13-22-U2-F11	10R 5/8	N2.5/			layered lumps			
Block 2 10-15	AG13-22-U2-F12	2.5YR 6/4	7.5YR 4/1			double layered lumps			
Block 2 10-15	AG13-22-U2-F13	10YR 8/1	10YR 4/1			layered lumps			
Block 2 10-15	AG13-22-U2-F14	5YR 5/4	7.5YR 2.5/1			layered small slabs and lumps			M

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Block 2 10-15	AG13-22-U2-F15	5YR 5/4	10YR 2/1			layered small slabs and lumps	slabs		H
Block 2 10-15	AG13-22-U2-F16	7.5YR 6/6	N3/			layered small slabs			
Block 2 10-15	AG13-22-U2-F17					layered small slabs (looks coiled)			
Block 2 10-15	AG13-22-U2-F18	7.5YR 6/4	7.5YR 2.5/1			layered small slabs			
Block 2 10-15	AG13-22-U2-F19	5YR 5/4	N4/			layered slabs			L
Block 2 10-15	AG13-22-U2-F21	2.5YR 5/6	N2.5/			layered slabs	slabs		
Block 2 10-15	AG13-22-U2-F22	10YR 2/2	5YR 4/6			layered slabs			L
Block 2 10-15	AG13-22-U2-F23	5YR 6/6	N2.5/			layered lumps			
Block 2 10-15	AG13-22-U2-F24	10YR 8/2	10YR 4/1			layered lumps			
Block 2 10-15	AG13-22-U2-F25	10YR 4/1	7.5YR 6/4			layered lumps			
Block 2 10-15	AG13-22-U2-F27		10YR 5/1			layered lumps			
Block 2 10-15	AG13-22-U2-F28		7.5YR 5/1			layered lumps			
Block 2 10-15	AG13-22-U2-F29					layered slabs			
Block 2 10-15	AG13-22-U2-F30	7.5YR 5/4	10YR 4/1			layered slabs			
Block 2 10-15	AG13-22-U2-F31	7.5YR 5/2	N4/			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Block 2 10-15	AG13-22-U2-F32	7.5YR 6/4				lumps?			
Block 2 10-15	AG13-22-U2-F34	5YR 6/4	7.5 4/1			?			
Block 2 10-15	AG13-22-U2-F35	10YR 6/3	N2.5/			layered lumps			
Block 2 10-15	AG13-22-U2-F36	5YR 5/4	10YR 5/1			layered lumps			
Block 2 10-15	AG13-22-U2-F37	7.5YR 6/4	N4/			lumps (FI: possible non-Monagrillo b/s int surface finish rough)			
Block 2 10-15	AG13-22-U2-F38	7.5YR 7/4	N5/			layered lumps			
Block 2 10-15	AG13-22-U2-F39	2.5YR 5/4	N3/			?			
Block 2 10-15	AG13-22-U2-F40	7.5YR 5/4	N2.5/			layered small slabs	small slabs		H
Block 2 10-15	AG13-22-U2-F41	7.5YR 7/4				layered small slabs			
Block 2 10-15	AG13-22-U2-F42	10YR 7/4				layered lumps			M
Block 2 10-15	AG13-22-U2-F43	10YR 2/1				layered lumps			
Block 2 10-15	AG13-22-U2-F44	7.5YR 5/4	N4/			slabs			
Block 2 15-20	AG13-23-U2-F1 and F2	7.5YR 6/1	7.5YR 2.5/1			layered lumps			
Block 2 15-20	AG13-23-U2-F2	7.5YR 6/1	7.5YR 2.5/1			layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Block 2 15-20	AG13-23-U2-F3	7.5YR 6/3	7.5YR 4/1			layered lumps			
Block 2 15-20	AG13-23-U2-F4	7.5YR 6/3	7.5YR 4/1			layered lumps			
Block 2 15-20	AG13-23-U2-F5					layered slabs			M
Block 2 15-20	AG13-23-U2-F6 (non-Mon-agrillo, RC)	7.5YR 5/3	N4/			layered lumps			
Block 2 15-20	AG13-23-U2-F7 (non-Mon-agrillo, RC)	2.5YR 6/4	N3/			layered slabs			
Block 2 15-20	AG13-23-U2-F8 (non-Mon-agrillo, RC)	10YR 6/3	N4/			layered lumps			
Block 2 15-20	AG13-23-U2-F9					layered small lumps			
Block 3 0-5, A, W1/2	AG13-29-U3-F1	7.5YR 5/3				layered lumps			
Block 3 0-5, A, W1/2	AG13-29-U3-F2	2.5YR 4/4				layered slabs and lumps			
Block 3 0-5, A, W1/2	AG13-29-U3-F3	7.5YR 4/3	N3/			layered lumps			
Block 3 0-5, A, W1/2	AG13-29-U3-F4	7.5YR 6/3	7.5YR 4/1			layered lumps			
Block 3 0-5, A, W1/2	AG13-29-U3-F5	10YR 6/4	10YR 4/1			layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Block 3 0-5, A, W1/2	AG13-29-U3-F6	7.5YR 5/4	7.5YR 4/1			layered lumps			
Block 3 0-5, A, W1/2	AG13-29-U3-F7	10YR 8/4	N3/			layered lumps			
Block 3 0-5, A, W1/2	AG13-29-U3-F8	7.5YR 5/4	N3/			?			
Block 3 0-5, A, W1/2	AG13-29-U3-F9	7.5YR 6/4				?			
Block 3 0-5, A, W1/2	AG13-29-U3-F10	7.5YR 7/4	7.5YR 5/2			layered small slabs?			
Block 3 0-5, A, W1/2	AG13-29-U3-F11	7.5YR 6/4				layered lumps			
Block 3 0-5, A, W1/2	AG13-29-U3-F12		10YR 6/1			?			
Block 3 0-5, A, W1/2	AG13-29-U3-F13	2.5YR 5/6				?			
Block 3 0-5, A, W1/2	AG13-29-U3-F14	10YR 6/2	7.5YR 4/1			layered lumps			
Block 3 0-5, A, W1/2	AG13-29-U3-F15	10YR 6/4	N3/			layered lumps			
Block 3 0-5, A, W1/2	AG13-29-U3-F16	10YR 6/3	7.5YR 4/1			double layered lumps			
Block 3, 5-10, B1, E1/2	AG13-30-U3-F1					layered lumps on slabs			
Block 3, 5-10, B1, E1/2	AG13-30-U3-F2					?			
Block 3, 5-10, B1, E1/2	AG13-30-U3-F3	7.5YR 5/4	7.5YR 4/1			layered slabs			
Block 3, 5-10, B1, E1/2	AG13-30-U3-F4	10YR 6/4	N3/			layered slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Block 3, 5-10, B1, E1/2	AG13-30-U3-F5	7.5YR 6/4				layered lumps			
Block 3, 5-10, B1, E1/2	AG13-30-U3-F6	7.5 6/4	10YR 2/1			layered lumps			
Block 3, 5-10, B1, E1/2	AG13-30-U3-F7		N3/			layered lumps			
Block 3, 5-10, B1, E1/2	AG13-30-U3-F8	2.5YR 4/6				lumps			
Block 3, 5-10, B1, E1/2	AG13-30-U3-F9	10YR 6/2	10YR 4/1			lumps			
Block 3, 5-10, B1, E1/2	AG13-30-U3-F10		5YR 4/2			lumps			
Block 3, 5-10, B1, E1/2	AG13-30-U3-F11	7.5YR 7/4	7.5YR 5/2			lumps			
Block 3, 5-10, B1, E1/2	AG13-30-U3-F12	2.5YR 5/6	N4/			lumps			
Block 3, 5-10, B1, E1/2	AG13-30-U3-F13	2.5YR 5/6				lumps			
Block 3, 5-10, B1, E1/2	AG13-30-U3-F14	7.5YR 5/4				small slabs			
Block 3, 5-10, B1, E1/2	AG13-30-U3-F15	7.5YR 5/4				?			
Block 3, 5-10, B1, E1/2	AG13-30-U3-F16	10YR 7/4				layered small slabs			M
Block 3, 5-10, B1, E1/2	AG13-30-U3-F17	10YR 5/3				layered lumps			
Block 3, 5-10, B1, E1/2	AG13-30-U3-F18	7.5YR 6/3				layered lumps			
Block 3, 5-10, B1, E1/2	AG13-30-U3-F19		N3/			layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Block 3, 5-15, A2	AG13-31-U3-F1					layered lumps			
Block 3, 5-15, A2	AG13-31-U3-F2		N4/			layered lumps			
Block 3, 5-15, A2	AG13-31-U3-F3	7.5YR 6/4	10YR 4/1			layered lumps			
Block 3, 5-15, A2	AG13-31-U3-F4	5YR 4/4	N2.5/			layered lumps			
Block 3, 5-15, A2	AG13-31-U3-F5	10R 4/4	N3/			layered lumps			
Block 3, 5-15, A2	AG13-31-U3-F6	5YR 6/4	N4/			?			
Block 3, 5-15, A2	AG13-31-U3-F7	7.5YR 6/4				?			
Block 3, 5-15, A2	AG13-31-U3-F8		7.5YR 2.5/1			layered lumps			
Block 3, 5-15, A2	AG13-31-U3-F9	10YR 6/3	N3/			layered small slabs			L
Block 3, 5-15, A2	AG13-31-U3-F10	10YR 6/3				?			
Block 3 10-15, B, 85	AG13-32-U3-F1	7.5YR 7/6		Y	slabs/ squeezed, one slab folded over making the lip	layered slabs	small slabs	~650	M
Block 3 10-15, B, 85	AG13-32-U3-F2	7.5YR 7/4	N3/	N	1 slab on tope of 2 slabs	slabs			H
Block 3 10-15, B, 85	AG13-32-U3-F3	10YR 6/4	7.5YR 2.5/1	Unkn	slabs/ squeezed with preferred orientation	slab and additional clay to make a rim			L

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Block 3 10-15, B, 85	AG13-32-U3-F4	2.5YR 6/6	10YR 2/1			layered lumps (but looks like coiled)			
Block 3 10-15, B, 85	AG13-32-U3-F5	10YR 6/3	7.5YR 2.5/1			layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F6	10YR 6/3	7.5YR 2.5/1			layered slabs			H
Block 3 10-15, B, 85	AG13-32-U3-F7	2.5YR 2.5/2				layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F8					layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F9	7.5YR 6/3	N3/			layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F10		5YR 2.5/2			layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F11	7.5R 5/8	7.5YR 4/2			layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F12	5YR 6/6	5YR 2.5/2			layered lumps			L
Block 3 10-15, B, 85	AG13-32_U3-F13	7.5YR 5/3	10YR 5/1			layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F14	2.5YR 5/6	7.5YR 4/1			layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F15	7.5YR 6/4				layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F16	10YR 7/4	7.5YR 4/2			layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F17	7.5YR 7/4	7.5YR 2.5/2			layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Block 3 10-15, B, 85	AG13-32-U3_F18					layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F19					?			
Block 3 10-15, B, 85	AG13-32-U3-F20	2.5YR 5/6				?			
Block 3 10-15, B, 85	AG13-32-U3-F21					?			
Block 3 10-15, B, 85	AG13-32-U3-F22	2.5YR 4/4	2.5YR 4/2			layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F23	7.5YR 6/4				layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F24	10R 4/6	5YR 4/2			layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F25					layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F26	7.5YR 2.5/1	7.5YR 4/2			layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F27	7.5YR 7/4				layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F28	10YR 6/3	7.5YR 2.5/1			layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F29	10R 6/8	7.5YR 5/1			layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F30		7.5YR 4/1			?			
Block 3 10-15, B, 85	AG13-32-U3-F31	10R 5/4				layered lumps			M
Block 3 10-15, B, 85	AG13-32-U3-F32	2.5YR 5/6	5YR 4/2			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Block 3 10-15, B, 85	AG13-32-U3-F33					?			
Block 3 10-15, B, 85	AG13-32-U3-F34		10YR 2/2			?			
Block 3 10-15, B, 85	AG13-32-U3-F36					?			
Block 3 10-15, B, 85	AG13-32-U3-F37					layered slabs			
Block 3 10-15, B, 85	AG13-32-U3-F38	10R 6/6				layered small slabs			
Block 3 10-15, B, 85	AG13-32-U3-F39	10R 5/6				layered small slabs			
Block 3 10-15, B, 85	AG13-32-U3-F40	7.5Y R 4/2				layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F41	7.5Y R 6/4				layered small slabs			
Block 3 10-15, B, 85	AG13-32-U3-F43		10YR 5/1			?			
Block 3 10-15, B, 85	AG13-32-U3-F50	7.5Y R 6/3				layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F51	7.5Y R 6/4	10YR 4/1			layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F52	10Y R 7/4	N3/			layered small slabs			
Block 3 10-15, B, 85	AG13-32-U3-F53	10Y R 7/2	N3/			layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F54	7.5Y R 6/4	N2.5/			layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F55	10Y R 7/2	N3/			layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Block 3 10-15, B, 85	AG13-32-U3-F56	7.5YR 6/3				layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F57	10YR 5/2	N3/			layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F58	10YR 5/2	10YR 2/2			layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F59	10YR 6/3				layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F60		10YR 2/1			layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F61	10YR 7/3	N3/			layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F62	10YR 4/1	10YR 2/1			?			
Block 3 10-15, B, 85	AG13-32-U3-F63	10YR 5/3				small lumps			
Block 3 10-15, B, 85	AG13-32-U3-F64	10YR 6/3	10YR 2/1			layered lumps			
Block 3 10-15, B, 85	AG13-32-U3-F65		N3/			?			
Block 3, 15-20, B3	AG13-33-U3-F1	7.5YR 6/3				layered small slabs			
Block 3, 15-20, B3	AG13-33-U3-F2	2.5YR 5/6				layered lumps			
Block 3, 15-20, B3	AG13-33-U3-F3	2.5YR 5/6				layered lumps			
Block 3, 15-20, B3	AG13-33-U3-F4	2.5YR 4/8	10YR 2/1			layered slabs			
Block 3, 15-20, B3	AG13-33-U3-F5	2.5YR 5/8	N3/			layered small slabs	small slabs		M

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Block 3, 15-20, B3	AG13-33-U3-F6	10R 4/6	N2.5/			?			
Block 3, 15-20, B3	AG13-33-U3-F8	10YR 6/3	10YR 4/2			layered small slabs			
Block 3, 15-20, B3	AG13-33-U3-F9	10YR 6/3	7.5YR 2.5/1			layered lumps			
Block 3, 15-20, B3	AG13-33-U3-F10	10YR 4/1	10YR 7/4			layered lumps			
Block 3, 15-20, B3	AG13-33-U3-F11	10YR 5/6	7.5YR 4/2			layered lumps			
Block 3, 15-20, B3	AG13-33-U3-F12	7.5YR 6/4				layered lumps			
Block 3, 15-20, B3	AG13-33-U3-F13	7.5YR 5/3	N4/			layered lumps			
Block 3, 15-20, B3	AG13-33-U3-F14	10YR 6/3				?			
Block 3, 15-20, B3	AG13-33-U3-F15					layered lumps			
Block 3, 15-20, B3	AG13-33-U3-F16	10YR 5/2	10YR 4/1			small lumps			
Block 3, 15-20, B3	AG13-33?-U3-F17	7.5YR 7/4	N4/			layered lumps			
Block 3, 20-25, C1	AG13-34-U3-F1	7.5YR 6/4		Unkn	slabs/ squeezed with preferred orientation	slab		650	
Block 3, 20-25, C1	AG13-34-U3-F2	7.5YR 4/4	N3/	Y	dense inclusion, undulating pores (difficult manufac ID)	layered lumps		650	

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Block 3, 20-25, C1	AG13-34-U3-F3	5YR 4/4	10YR 2/1			layered slabs			M
Block 3, 20-25, C1	AG13-34-U3-F4	10YR 6/3	10YR 2/1			layered slabs	slabs		H
Block 3, 20-25, C1	AG13-34-U3-F5	7.5YR 5/3	7.5YR 2.5/1			layered slabs			
Block 3, 20-25, C1	AG13-34-U3-F6	10YR 5/2	7.5YR 2.5/1			layered lumps			
Block 3, 20-25, C1	AG13-34-U3-F7		7.5YR 2.5/1			layered lumps			
Block 3, 20-25, C1	AG13-34-U3-F8					layered lumps			
Block 3, 20-25, C1	AG13-34-U3-F9					layered lumps			
Block 3, 20-25, C1	AG13-34-U3-F10		N2.5/			layered small slabs			
Block 3, 20-25, C1	AG13-34-U3-F11	2.5YR 4/6				layered small slabs			
Block 3, 20-25, C1	AG13-34-U3-F12	2.5YR 4/4	N4/			layered lumps			
Block 3, 20-25, C1	AG13-34-U3-F13	7.5YR 4/6	N3/			?			
Block 3, 20-25, C1	AG13-34-U3-F14		7.5YR 2.5/1			?			
Block 3, 20-25, C1	AG13-34-U3-F15	5YR 5/4	7.5YR 4/1			?			
Block 3, 20-25, C1	AG13-34-U3-F16					?			
Block 3, 20-25, C1	AG13-34-U3-F17					layered lumps			
Block 3, 20-25, C1	AG13-34-U3-F18		N4/			?			
Block 3, 20-25, C1	AG13-34-U3-F19	5YR 6/4	N3/			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Block 3, 20-25, C1	AG13-34-U3-F20	7.5YR 6/3	7.5YR 4/1			layered slabs			
Block 3, 20-25, C1	AG13-34-U3-F21					layered slabs			
Block 3, 20-25, C1	AG13-34-U3-F22					layered slabs			
Block 3, 20-25, C1	AG13-34-U3-F23	2.5YR 4/6	N4/			layered slabs			
Block 3, 20-25, C1	AG13-34-U3-F24		N3/			layered lumps			
Block 3, 20-25, C1	AG13-34-U3-F25	10YR 6/4	N3/			layered lumps			
Block 3 20-25C	AG13-35-U3-F1	7.5YR 6/4	7.5YR 4/2	Y	squeezed or slabs	slab			
Block 3 20-25, C,	AG13-35-U3-F2	10R 5/8	N3/	Y	double slabs put continued by double slabs	slabs			
Block 3 20-25, C,	AG13-35-U3-F3	10YR 7/1				layered lumps over slabs			
Block 3 20-25, C,	AG13-35-U3-F4	7.5YR 6/4				layered lumps			
Block 4, 0-5	AG13-108-U4-F1	7.5YR 2.5/2				layered lumps			
Block 4, 0-5	AG13-108-U4-F2	10YR 6/3	N3/			layered lumps			
Block 4, 0-5	AG13-108-U4-F3	10YR 7/3				layered lumps			
Block 5, 0-5	AG13-109-U5-F1	10YR 7/4				layered lumps			
Block 5, 0-5	AG13-109-U5-F2	7.5YR 7/4				small layered slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Block 5, 0-5	AG13-109-U5-F3	7.5YR 5/4				layered lumps			
Block 5, 0-5	AG13-109-U5-F4	7.5YR 6/4	N3/			layered lumps and strips of small slabs			L
Block 4, 5-10	AG13-110-U4-F1	10YR 7/4				layered lumps			
Block 4, 5-10	AG13-110-U4-F2	10R 6/8				layered strips of thin slabs			
Block 4, 5-10	AG13-110-U4-F3		N4/			layered lumps			
Block 5, 5-10	AG13-111-U5-F1	7.5YR 4/1	7.5YR 4/1			layered lumps			
Block 5, 5-10	AG13-111-U5-F2	7.5YR 5/4	10YR 4/1			layered lumps			
Block 5, 5-10	AG13-111-U5-F3	10YR 6/3				layered lumps			
Block 5, 5-10	AG13-111-U5-F4		7.5YR 4/1			layered lumps			
Block 5, 5-10	AG13-111-U5-F5	7.5YR 6/6				layered lumps			
Block 5, 5-10	AG13-111-U5-F6	10YR 6/3	7.5YR 4/3			layered lumps			
Block 5, 5-10	AG13-111-U5-F7	7.5YR 5/4				layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Block 5, 5-10	AG13-111-U5-F8 (same piece as the equivalent G13-111-U5-F9)	10YR 7/4				layered small slabs			
Block 5, 5-10	AG13-111-U5-F9	7.5YR 5/4				layered small slabs			
Block 4, 10-15	AG13-112-U4-F1	10YR 4/6				layered lumps			M
Block 4, 10-15	AG13-112-U4-F2	10YR 6/4	10YR 4/1			layered lumps			
Block 4, 10-15	AG13-112-U4-F3	10YR 7/4				layered lumps			
Block 4, 10-15	AG13-112-U4-F4	10YR 5/3	N2.5/			layered lumps			
Block 5, 10-15	AG13-113-U4-F1	5YR 4/4	7.5YR 4/2			layered lumps			
Block 5, 10-15	AG13-113-U4-F2		7.5YR 4/1			layered lumps			
Block 5, 10-15	AG13-113-U4-F3		7.5YR 4/1			layered lumps			
Block 4, 15-20	AG13-114-U4-F1	7.5YR 5/4	10YR 2/1	Unkn	slabs/ squeezed (preferred orientation)	slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Block 4, 15-20	AG13-114-U4-F2	10YR 6/3	N3/			layered lumps			
Block 4, 15-20	AG13-114-U4-F3	7.5YR 4/1				lumps			
Block 4, 20-25	AG13-116-U4-F1			Unkn	interior has a single slab and the exterior has some clay lumps added	slab			
Block 4, 20-25	AG13-116-U4-F2	7.5YR 6/4	N2.5/	Y	interior slab has a preferred orientation and there are some small rounded lumps sandwiched by thin exterior layer; lips finished without being folded	slabs			
1S1E, 10-20 cm bus	AG13-481b-F1		10YR 2/2			small-sized slabs			
1S1E, 10-20 cm bs	AG13-481b-F2	7.5YR 4/3	10YR 2/1			layered small slabs			
1S1E, 10-20 cm bs	AG13-481b-F3		10YR 2/1			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
1S1E, 10-20 cm bs	AG13-481b-F4		10YR 4/4			?			
1S1E, 10-20 cm bs	AG13-478-F1		7.5YR 4/1			layered small slabs			
1S1E, 10-20 cm bs	AG13-481-F1		7.5YR 2.5/1			layered lumps (small slabs)			
1S1E, 10-20 cm bs	AG13-481-F2		7.5YR 2.5/1			layered lumps			
1S1E, 10-20 cm bs	AG13-481-F3		N3/			unknown (possibly the same sherd as AG13-481-F2)			
1S1E, 10-20 cm bs	AG13-481-F4		7.5YR 4/2			?			
1S1E, 5-10 cm bs	AG13-472-F1	7.5YR 5/4				layered small slabs and lumps combined			
1S1E, 5-10 cm bs	AG13-472-F2	10YR 3/3	10YR 2/1			layered lumps			
1S1E, 5-10 cm bs	AG13-472b-F1		7.5YR 2.5/1			small slabs			
1S1E, 0-5 cm	AG13-468b-F1		N3/			layered slabs			
1S1E, 0-5 cm	AG13-468b-F2		N3/			layered small slabs			
1S1E, 0-5 cm	AG13-468b-F3		7.5YR 4/2			layered lumps			
1S1E, 0-5 cm	AG13-468b-F4		10YR 2/1			layered small slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
1S1E, 0-5 cm	AG13-468b-F5	5YR 5/6				lumps			
1S1E, 0-5 cm	AG13-468b-F6	10Y R 6/4				layered lumps and small sabs			
1S1E, 0-5 cm	AG13-468b-F7	10Y R 6/3	10YR 4/1			layered lumps			
1S1E, 0-5 cm	AG13-468b-F8	7.5Y R 5/4	7.5Y R 2.5/1			Lumps			
1S1E, 0-5 cm	AG13-468b-F9	7.5Y R 6/3	7.5Y R 2.5/1			?			
1S1E, 0-5 cm	AG13-468b-F10	10Y R 6/4				layered lumps			
1S1E, 0-5 cm	AG13-468b-F11		10YR 3/3			layered lumps			
1S1E, 0-5 cm	AG13-468b-F12	7.5Y R 3/4	10YR 4/1			layered lumps			
1S1E, 10-15 cm bs	AG13-478b-F1	7.5Y R 4/4				layered lumps			
1S1E, 10-15 cm bs	AG13-478b-F2	7.5Y R 4/4	7.5Y R 2.5/1			?			
1S1E, 10-15 cm bs	AG13-478b-F3	5YR 4/4	7.5Y R 2.5/1			?			
1S1E, 10-15 cm bs	AG13-478b-F4	7.5Y R 4/4				?			
1S1E, 10-15 cm bs	AG13-478b-F5	7.5Y R 4/3	7.5Y R 2.5/1			layered lumps			
1S1E, 10-15 cm bs	AG13-478b-F6	7.5Y R 4/6	7.5Y R 2.5/1			?			
1S1E, 10-15 cm bs	AG13-478b-F7		10YR 2/1			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
1S1E, 10-15 cm bs	AG13-478b-F8		7.5YR 2.5/1			?			
1S1E, 10-15 cm bs	AG13-472b-F2		7.5YR 2.5/1			layered lumps			
1S1E, 10-15 cm bs	AG13-472b-F3	7.5YR 4/3	7.5YR 2.5/1			?			
1S1E, 10-15 cm bs	AG13-472b-F4	7.5YR 4/4				layered lumps			
1S1E, 10-15 cm bs	AG13-472b-F5	2.5YR 4/8				double layered lumps			
1S1E, 10-15 cm bs	AG13-472b-F6	7.5YR 4/4				double layered lumps			
1S1E, 10-15 cm bs	AG13-482b-F1	7.5YR 4/2	7.5YR 2.5/1			?			
1S1E, 10-15 cm bs	AG13-482b-F2		7.5YR 2.5/2			?			
Block 2, 10-15	AG13-22-24-UP#3-F1	10YR 7/3	N3/			layered lumps and small slabs	slabs		M
Block 2, 10-15	AG13-22-26-F2	10YR 6/3	10YR 4/1			layered small slabs and thin strip of clay finishing the rim			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Block 2, 10-15	AG13-22-UP#4-F3	7.5YR 6.3	N3/			layered lumps sandwiched by slabs of the profile and horizontal strips of clays on the wall	slabs		L
Block 3, 20-25, C1	AG13-34-16-F4	10YR 5/3	N3/			layered lumps and small slabs			L
Block 3, 10-15, B2	AG13-32-25-F5	7.5YR 7/4	7.5YR 4/1			layered lumps and small slabs (horizontal strips of clays on the int surface)			
Block 3, 15-20, B3	AG13-33-UP#2-8-F6	5YR 5/2	N3/			layered lumps and small slabs			
Block 2, 10-15	AG13-22-23-F7	10YR 6/3	N4/			layered lumps			
Block 3, 15-20, B3	AG13-33-11-F8					layered lumps			
Block 3, 15-20, B3	AG13-33-15-F9	5YR 6/4	10YR 4/1			layered lumps			
Block 3, 0-10, 2s	AG13-15-28-F10	10YR 5/3	N4/			layered slabs and lumps	small slabs		M
Block 2, 10-15	AG13-22-18-F11	5YR 5/6	7.5YR 5/1			layered slabs			H
Block 3, 10-15, B2	AG13-32-9-F12	7.5YR 6/6	N5/			layered slabs and lumps making the lip			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Block 3, 15-20, B3	AG13-33-33-F13	10YR 6/3				layered slabs			M
Block 3, 15-20, B3	AG13-33-UP#2-2		N3/			double layered slabs			
	AG13-?					layered lumps			
	AG13-?-1	7.5YR 5/3	7.5YR 4/2			layered small sized slabs			
	AG13-?					layered lumps			
	AG13-?-3	10YR 7/3				layered lumps			
	AG13-?-4	7.5YR 7/4				small lumps			
	AG13-?-5	7.5YR 4/1				Lumps			
	AG13-?-6	7.5YR 6/4				Lumps			
	AG13-00-F76	7.5YR 2.5/3				Lumps			
	Pr32-C35-N9-1	10R 5/8	7.5YR 4/1	Y	squeezed or double layered slabs (globs)	Slab			H
	Pr32-C35-N9-2	2.5YR 5/6	10YR 4/1	Y	lumps/slabs	Slabs			
	Pr32-C35-N9-3	7.5YR 6/4	7.5YR 2.5/1	Unkn	sqz	Slabs			H

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
	Pr32-C35-N9-4	2.5YR 4/2	7.5YR 2.5/1	Y	slbs/sqz	Slabs			H
	Pr32-C35-N12-1	2.5YR 5/4	N3/	Unkn	slabs/ squeezed (partly preferred orientation)	Slabs			
	Pr32-C35-N12-2	7.5YR 4/3	7.5YR 2.5/3	Y	slabs/ squeezed clays (partly preferred orientation)	Slabs			
	Pr32-C35-N12-3	5YR 6/6	7.5YR 2.5/1	Y	slabs/ squeezed (partly preferred orientation)	Slab	slab		H
	PR32-C35-N12-4	2.5YR 6/4	7.5YR 4/1	Y	2 slabs put together in which one end sandwiches small round lumps	Slab	slab		H
	Pr32-C35-N14-1	7.5YR 4/3	10YR 6/4	Y	slbs/sqz (partly preferred orientation)	Slabs			H
	Pr32-C35-N14-2	10YR 5/4	10YR 4/1	Y	slbs/sqz (partly preferred orientation)	slab	unkn		H

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
	Pr32-C35-N14-3	7.5YR 4/3	7.5YR 4/2	Y	slbs/sqz (preferred orientation)	slabs		<1050	
	Pr32-C35-N14-4	5YR 6/6	10YR 4/1	Unkn	slabs/ squeezed	slab			
	Pr32-C35-N17-1	10R 6/6	10YR 5/1	Y	slbs/squeezed	slab			
	Pr32-C35-N17-2	2.5YR 4/8	7.5YR 4/3	Y	2 slabs on the interior and 2-3 rounded slab/lump on the exterior	slab		650	
	Pr32-C35-N20-1	10R 4/6	7.5YR 2.5/1	Y	slbs/sqz, undulating long pores	slabs			
	Pr32-C35-N20-2	10R 5/8	N2.5/	Y	slab/ squeezed	slabs	no mnfc line		H
	Pr32-C35-N20-3	10R 5/8	10YR 4/2	Y	slab/ squeezed	slab			
	Pr32-C35-N20-4	2.5YR 5/4	N3/	Y	slabs/ squeezed (partly preferred orientation)	slabs			
	Pr32-C35-N20-5	7.5YR 5/4	7.5YR 5/2	Unkn	2 slbs/sqz, long pores paralleling wall	slab		950	
	Pr-32-C35-N22-1	7.5YR 5/4	10 YR 4/1	Y	slabs/ squeezed	slab			
0-10 cm	Pr32-1-1-F1					layered slabs			
0-10 cm	Pr32-1-1-F2	5YR 6/6				layered slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
0-10 cm	Pr32-1-1-F3	7.5YR 5/4	10YR 2/1			layered slabs			
0-10 cm	Pr32-1-1-F4	10YR 6/4				layered slabs			
0-10 cm	Pr32-1-1-F5	10YR 6/4				layered slabs			
0-10 cm	Pr32-1-1-F6	10YR 6/4				layered slabs			
0-10 cm	Pr32-1-1-F7*	10YR 7/4				layered slabs			
0-10 cm	Pr32-1-1-F8	2.5YR 5/6				layered slabs			
0-10 cm	Pr32-1-1-F9	10YR 6/4				layered slabs			
0-10 cm	Pr32-1-1-F10	2.5YR 3/6				layered slabs			
0-10 cm	Pr32-1-1-F11	10YR 6/4				layered slabs			
0-10 cm	Pr32-1-1-F12	10YR 6/4				layered slabs			
0-10 cm	Pr32-1-1-F13	5YR 5/6				? (possible layered slab)			
0-10 cm	Pr32-1-1-F14					? (possible layered slab)			
0-10 cm	Pr32-1-1-F15	7.5YR 6/4				layered slabs			
0-10 cm	Pr32-1-1-F16					layered slabs			
0-10 cm	Pr32-1-1-F17					layered slabs			
0-10 cm	Pr32-1-1-F18	2.5YR 5/6				layered slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
0-10 cm	Pr32-1-1-F19					layered slabs			
0-10 cm	Pr32-1-1-F20	7.5YR 6/4	7.5YR 2.5/1			layered slabs			
0-10 cm	Pr32-1-1-F21	7.5YR 6/4				layered slabs			
0-10 cm	Pr32-1-1-F22	7.5YR 6/4				thin lumps of clays over a slab			
0-10 cm	Pr32-1-1-F23	7.5YR 6/4				layered slabs			
0-10 cm	Pr32-1-1-F24	2.5YR 6/6	7.5YR 4/1			layered slabs			
0-10 cm	Pr32-1-1-F25	2.5YR 5/6				layered slabs			
0-10 cm	Pr32-1-1-F26	7.5YR 6/4				layered lumps			
0-10 cm	Pr32-1-1-F27	7.5YR 6/4	N3/			layered lumps			
0-10 cm	Pr32-1-1-F28	7.5YR 6/4	N3/			layered slabs			
0-10 cm	Pr32-1-1-F29	5YR 6/4				layered slabs			
0-10 cm	Pr32-1-1-F30	2.5YR 5/6				layered slabs			
0-10 cm	Pr32-1-1-F31					layered lumps			
0-10 cm	Pr32-1-1-F32	5YR 6/4				layered lumps			
0-10 cm	Pr32-1-1-F33	5YR 6/6				layered slabs (lumps sandwiched by slabs)			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
0-10 cm	Pr32-1-1-F34	5YR 5/4	7.5YR 4/2			layered slabs			
0-10 cm	Pr32-1-1-F35	10YR 6/4				layered slabs			
0-10 cm	Pr32-1-1-F36	7.5YR 6/4	10YR 5/1			layered slabs			
0-10 cm	Pr32-1-1-F37	7.5YR 6/4	7.5YR 4/2			layered lumps			
0-10 cm	Pr32-1-1-F38	5YR 5/6	N3/			layered slabs			
0-10 cm	Pr32-1-1-F39	2.5YR 5/6	N2.5/			layered slabs			
0-10 cm	Pr32-1-1-F40	7.5YR 6/4				layered slabs			
0-10 cm	Pr32-1-1-F41	10YR 6/4				layered slabs			
0-10 cm	Pr32-1-1-F42	5YR 5/6				layered lumps			
0-10 cm	Pr32-1-1-F43	7.5YR 6/4				layered lumps			
0-10 cm	Pr32-1-1-F44	7.5YR 6/3	7.5YR 4/1			layered slabs			
0-10 cm	Pr32-1-1-F45	7.5YR 4/3				layered slabs			
0-10 cm	Pr32-1-1-F46	7.5YR 6/4				layered lumps			
0-10 cm	Pr32-1-1-F47	7.5YR 7/4				layered lumps			
0-10 cm	Pr32-1-1-F48	7.5YR 7/4				layered lumps			
0-10 cm	Pr32-1-1-F49	7.5YR 6/4	N3/			layered slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
0-10 cm	Pr32-1-1-F50	7.5YR 6/4				layered slabs			
0-10 cm	Pr32-1-1-F51	5YR 5/4	5YR 4/2			layered slabs			
0-10 cm	Pr32-1-1-F52	10YR 6/3				layered slabs			
0-10 cm	Pr32-1-1-F53		10YR 4/1			layered lumps			
0-10 cm	Pr32-1-1-F54	10YR 6/3	7.5YR 2.5/1			layered slabs			
0-10 cm	Pr32-1-1-F55	10YR 5/4				layered slabs			
0-10 cm	Pr32-1-1-F56		7.5YR 4/1			layered slabs			
0-10 cm	Pr32-1-1-F57	5YR 4/4				layered slabs			
0-10 cm	Pr32-1-1-F58	5YR 5/6				?			
0-10 cm	Pr32-1-1-F59	5YR 5/6				layered slabs			
0-10 cm	Pr32-1-1-F60	10YR 7/2	7.5YR 4/2			layered slabs			
0-10 cm	Pr32-1-1-F61	10YR 6/3				layered slabs			
0-10 cm	Pr32-1-1-F62	2.5YR 5/6				layered slabs			
0-10 cm	Pr32-1-1-F63	7.5Yr 5/3				layered slabs			
0-10 cm	Pr32-1-1-F64	7.5YR 6/4				layered slabs			
0-10 cm	Pr32-1-1-F65	7.5YR 5/4				layered slabs			

Excavation context	Ceramic code	Firing Atmosphere (Munsell) Oxidized	Reduced	Temper Thin Section	Manufacturing Technique Thin Section	Visual	Xeroradiograph	Firing Temperatures SEM-EDS (°C)	Prosity
0-10 cm	Pr32-1-1-F66	2.5YR 4/6	7.5YR 5/2			layered slabs			
0-10 cm	Pr32-1-1-F67	7.5YR 5/4				layered lumps (inter-locked lumps)			
0-10 cm	Pr32-1-1-F68	7.5YR 6/4				layered slabs			
0-10 cm	Pr32-1-1-F69	10R 5/4				layered slabs			
0-10 cm	Pr32-1-1-F70	2.5YR 6/4	7.5YR 5/1			layered slabs			
0-10 cm	Pr32-1-1-F71	5YR 5/4				layered slabs			
0-10 cm	Pr32-1-1-F72	10YR 7/4				layered slabs			
0-10 cm	Pr32-1-1-F73	7.5YR 5/4				layered slabs			
0-10 cm	Pr32-1-1-F74	7.5YR 5/4				layered slabs			
0-10 cm	Pr32-1-1-F75	7.5YR 5/4				layered slabs			
0-10 cm	Pr32-1-1-F76	7.5YR 6/4	N2.5/			layered slabs			
0-10 cm	Pr32-1-1-F77	5YR 5/4	7.5YR 5/1			layered slabs			
0-10 cm	Pr32-1-1-F78	7.5YR 6/4	7.5YR 4/2			layered slabs			
0-10 cm	Pr32-1-1-F79	2.5YR 5/6				layered slabs			
0-10 cm	Pr32-1-1-F80	7.5YR 6/4				layered slabs			
0-10 cm	Pr32-1-1-F81	5YR 5/6				layered slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
0-10 cm	Pr32-1-1-F82		7.5YR 4/1			layered slabs			
0-10 cm	Pr32-1-1-F83	2.5YR 5/6				layered slabs			
0-10 cm	Pr32-1-1-F84	2.5YR 6/6	5YR 4/2			?			
0-10 cm	Pr32-1-1-F85	2.5YR 5/6	7.5YR 4/1			layered slabs			
0-10 cm	Pr32-1-1-F86	2.5YR 5/6	7.5YR 4/1			layered slabs			
0-10 cm	Pr32-1-1-F87	7.5YR 5/3				layered slabs			
0-10 cm	Pr32-1-1-F88	2.5YR 4/4	N3/			?			
0-10 cm	Pr32-1-1-F89	7.5YR 6/6	10YR 4/1			?			
0-10 cm	Pr32-1-1-F90		N3/			layered slabs			
0-10 cm	Pr32-1-1-F91		5YR 4/2			?			
0-10 cm	Pr32-1-1-F92	10YR 6/4				?			
0-10 cm	Pr32-1-1-F93		N2.5/			?			
0-10 cm	Pr32-1-1-F94	7.5YR 5/4	7.5YR 4/1			?			
0-10 cm	Pr32-1-1-F95	5YR 5/6	7.5YR 4/2			layered slabs			
0-10 cm	Pr32-1-1-F96					?			
0-10 cm	Pr32-1-1-F97	7.5YR 3/4	7.5YR 2.5/1			?			
0-10 cm	Pr32-1-1-F98		N2.5/			?			
0-10 cm	Pr32-1-1-F99	5YR 5/4				?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
0-10 cm	Pr32-1-1-F100	7.5YR 4/4	10YR 4/1			?			
0-10 cm	Pr32-1-1-F101	7.5YR 4/6				?			
0-10 cm	Pr32-1-1-F102	7.5YR 6/4	N2.5/			layered small slabs			
0-10 cm	Pr32-1-1-F103 (former F102, STRI)	10YR 6/4				?			
0-10 cm	Pr32-1-2-F1					layered slabs (small pieces)			
0-10 cm	Pr32-1-2-F2	7.5YR 5/4				layered slabs (small flat pieces)			
0-10 cm	Pr32-1-2-F3	7.5YR 6/4				two flat lumps over a slab			
0-10 cm	Pr32-1-2-F4	7.5YR 6/6				layered slabs			
0-10 cm	Pr32-1-2-F5					layered slabs			
0-10 cm	Pr32-1-2-F6	10YR 6/4				layered slabs			
0-10 cm	Pr32-1-2-F7					layered slabs			
0-10 cm	Pr32-1-2-F8	5YR 5/4				layered slabs			
0-10 cm	Pr32-1-2-F9					layered slabs			
0-10 cm	Pr32-1-2-F10					layered slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
0-10 cm	Pr32-1-2-F11	7.5YR 6/4	7.5YR 4/1			layered slabs			
0-10 cm	Pr32-1-2-F12	5YR 6/6	N3/			layered slabs			
0-10 cm	Pr32-1-2-F13					layered slabs			
0-10 cm	Pr32-1-2-F14	5YR 6/6	7.5YR 4/1			layered slabs			H
0-10 cm	Pr32-1-2-F15	2.5YR 4/4				layered slabs			
0-10 cm	Pr32-1-2-F16	7.25	7.68			layered slabs			
0-10 cm	Pr32-1-2-F17	10YR 6/4	10YR 4/1			layered slabs			
0-10 cm	Pr32-1-2-F18	7.5YR 6/4	N3/			layered slabs			
0-10 cm	Pr32-1-2-F19	7.5YR 6/4				layered slabs			
0-10 cm	Pr32-1-2-F20	2.5YR 5/6	7.5YR 5/1			layered lumps			
0-10 cm	Pr32-1-2-F21	10R 5/8				layered slabs			
0-10 cm	Pr32-1-2-F22	7.5YR 6/6				layered slabs			
0-10 cm	Pr32-1-2-F23	10YR 6/4				layered lumps			
0-10 cm	Pr32-1-2-F24	2.5YR 5/6	7.5YR 4/1			layered lumps			
0-10 cm	Pr32-1-2-F25	5YR 6/4	5YR 4/2			layered lumps			
0-10 cm	Pr32-1-2-F26	7.5YR 6/4	7.5YR 4/2			layered lumps			
0-10 cm	Pr32-1-2-F27	2.5YR 5/6	7.5YR 2.5/1			layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
0-10 cm	Pr32-1-2-F28	2.5YR 4/8				layered lumps			
0-10 cm	Pr32-1-2-F29	7.5YR 5/4				layered lumps			
0-10 cm	Pr32-1-2-F30		10YR 2/1			double layered slabs			
0-10 cm	Pr32-1-2-F31	2.5YR 5/6				layered slabs			
0-10 cm	Pr32-1-2-F32	5YR 5/6	N3/			layered lumps			
0-10 cm	Pr32-1-2-F33	7.5YR 7/6				layered lumps			
0-10 cm	Pr32-1-2-F34	5YR 5/6				layered lumps			
0-10 cm	Pr32-1-2-F35	7.5YR 6/6				layered lumps			
0-10 cm	Pr32-1-2-F36	10YR 6/4				layered lumps			
0-10 cm	Pr32-1-2-F37	7.5YR 6/4				layered lumps			
0-10 cm	Pr32-1-2-F38	10YR 6/4				layered lumps			
0-10 cm	Pr32-1-2-F39	7.5YR 5/4	?			layered lumps			
0-10 cm	Pr32-1-2-F40	7.5YR 5/4				layered lumps			
0-10 cm	Pr32-1-2-F41	7.5YR 6/4	N2.5/			layered lumps			
0-10 cm	Pr32-1-2-F42	7.5YR 5/4				layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
0-10 cm	Pr32-1-2-F43	7.5YR 5/4				layered lumps			
0-10 cm	Pr32-1-2-F44	7.5YR 4/4				double layered slabs			
0-10 cm	Pr32-1-2-F45	2.5YR 5/6				layered lumps			
0-10 cm	Pr32-1-2-F46	7.5YR 6/4				layered lumps			
0-10 cm	Pr32-1-2-F47	10YR 4/4				layered lumps			
0-10 cm	Pr32-1-2-F48	2.5YR 4/6				layered slabs			
0-10 cm	Pr32-1-2-F49	10YR 4/3				?			
0-10 cm	Pr32-1-2-F50	10YR 7/4				?			
0-10 cm	Pr32-1-2-F51	10YR 6/4				?			
0-10 cm	Pr32-1-2-F52	7.5YR 5/4				?			
0-10 cm	Pr32-1-2-F53 (originally F21, STRI)	10YR 6/3				slabs?			
10-20 cm	Pr32-1-3-F1	2.5YR 6/6	N2.5/			strips of clay over slabs			
10-20 cm	Pr32-1-3-F2	5YR 6/4	N4/			layered slabs			
10-20 cm	Pr32-1-3-F3	7.5YR 7/6				layered slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
10-20 cm	Pr32-1-3-F4	2.5YR 5/6				layered slabs			
10-20 cm	Pr32-1-3-F5	10R 5/6	10YR 4/1			layered slabs	slabs		M
10-20 cm	Pr32-1-3-F6	5YR 6/6				layered slabs			
10-20 cm	Pr32-1-3-F7	2.5YR 5/4				layered slabs			
10-20 cm	Pr32-1-3-F8	2.5YR 5/6	N3/			layered slabs			
10-20 cm	Pr32-1-3-F9	7.5YR 6/4				layered slabs			
10-20 cm	Pr32-1-3-F10	5YR 5/4				layered slabs			H
10-20 cm	Pr32-1-3-F11	7.5YR 7/4				layered slabs			
10-20 cm	Pr32-1-3-F12	7.5YR 6/4				layered slabs			
10-20 cm	Pr32-1-3-F13	10YR 5/3	N3/			layered slabs			
10-20 cm	Pr32-1-3-F14	2.5YR 5/6				layered slabs			
10-20 cm	Pr32-1-3-F15	5YR 5/6	7.5YR 4/1			layered slabs			
10-20 cm	Pr32-1-3-F16	5YR 4/4	7.5YR 4/1			layered slabs			
10-20 cm	Pr32-1-3-F17	10R 5/6	10YR 4/1			layered slabs			
10-20 cm	Pr32-1-3-F18	7.5YR 7/4				layered slabs			
10-20 cm	Pr32-1-3-F19	7.5YR 7/4				double layered lumps			
10-20 cm	Pr32-1-3-F20	7.5YR 4/6	7.5YR 4/1			layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
10-20 cm	Pr32-1-3-F21	10YR 6/4				layered slabs			
10-20 cm	Pr32-1-3-F22	5YR 4/4	10YR 4/1			layered slabs			
10-20 cm	Pr32-1-3-F23	5YR 5/4				layered slabs			
10-20 cm	Pr32-1-3-F24					layered lumps			
10-20 cm	Pr32-1-3-F25	10R 5/6				layered lumps			
10-20 cm	Pr32-1-3-F26	7.5YR 6/4				layered slabs			
10-20 cm	Pr32-1-3-F27					layered slabs			
10-20 cm	Pr32-1-3-F28	10YR 6/3	10YR 4/3			layered slabs			
10-20 cm	Pr32-1-3-F29	10YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F30	7.5YR 6/3	N3/			layered lumps			
10-20 cm	Pr32-1-3-F31	10YR 6/4				layered slabs			
10-20 cm	Pr32-1-3-F32	7.5YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F33	7.5YR 5/4				layered lumps			
10-20 cm	Pr32-1-3-F34	7.5YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F35	7.5YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F36	2.5YR 6/6				layered lumps			
10-20 cm	Pr32-1-3-F37	5YR 5/6				layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
10-20 cm	Pr32-1-3-F38	7.5YR 6/6				layered lumps			
10-20 cm	Pr32-1-3-F39	5YR 6/6	10YR 6/2			layered lumps			
10-20 cm	Pr32-1-3-F40	7.5YR 5/3				layered lumps			
10-20 cm	Pr32-1-3-F40					layered lumps			
10-20 cm	Pr32-1-3-F41	7.5YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F42	5YR 5/4				layered lumps			
10-20 cm	Pr32-1-3-F43	10YR 6/4	10YR 4/1			layered lumps			
10-20 cm	Pr32-1-3-F44	7.5YR 5/4				layered lumps			
10-20 cm	Pr32-1-3-F45	7.5YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F46	5YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F47	5YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F48	10YR 6/3				layered lumps			
10-20 cm	Pr32-1-3-F49	10YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F50	7.5YR 5/4				layered lumps			
10-20 cm	Pr32-1-3-F51	5YR 5/4				layered lumps			
10-20 cm	Pr32-1-3-F52	2.5YR 5/6				layered lumps			
10-20 cm	Pr32-1-3-F53	5YR 5/6				layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
10-20 cm	Pr32-1-3-F54	10YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F55	10YR 5/3				layered lumps			
10-20 cm	Pr32-1-3-F56	2.5YR 4/4	10YR 4/1			layered lumps			
10-20 cm	Pr32-1-3-F57	10YR 6/3				layered lumps			
10-20 cm	Pr32-1-3-F58	2.5YR 5/6	7.5YR 4/1			layered lumps			
10-20 cm	Pr32-1-3-F59	10YR 6/3	7.5YR 4/1			layered lumps			
10-20 cm	Pr32-1-3-F60	5YR 5/4	N2.5/			layered lumps			
10-20 cm	Pr32-1-3-F61	7.5YR 5/4				layered lumps			
10-20 cm	Pr32-1-3-F62	7.5YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F63	5YR 5/4				layered lumps			
10-20 cm	Pr32-1-3-F64	7.5YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F65	2.5YR 5/6				layered lumps			
10-20 cm	Pr32-1-3-F66	7.5YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F67	7.5YR 7/4				layered lumps			
10-20 cm	Pr32-1-3-F68	5YR 5/6	7.5YR 4/1			layered lumps			
10-20 cm	Pr32-1-3-F69	7.5YR 6/4				layered lumps			

Excavation context	Ceramic code	Firing Atmosphere (Munsell) Oxidized	Reduced	Temper Thin Section	Manufacturing Technique Thin Section	Visual	Xeroradiograph	Firing Temperatures SEM-EDS (°C)	Prosity
10-20 cm	Pr32-1-3-F70	5YR 4/4				layered lumps			
10-20 cm	Pr32-1-3-F71	5YR 5/4	7.5YR 4/1			layered lumps			
10-20 cm	Pr32-1-3-F72	7.5YR 6/4	10YR 4/1			layered lumps			
10-20 cm	Pr32-1-3-F73	10YR 6/3				layered lumps			
10-20 cm	Pr32-1-3-F74	10YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F75	2.5YR 5/6	10YR 4/2			layered lumps			
10-20 cm	Pr32-1-3-F76	10YR 7/3				layered lumps			
10-20 cm	Pr32-1-3-F77	7.5YR 6/6				layered lumps			
10-20 cm	Pr32-1-3-F78	7.5YR 4/4				layered slabs			
10-20 cm	Pr32-1-3-F79	10YR 5/3	7.5YR 2.5/1			layered lumps			
10-20 cm	Pr32-1-3-F80	7.5YR 5/4				layered lumps			
10-20 cm	Pr32-1-3-F81	10YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F82	7.5YR 6/4				double layered lumps			
10-20 cm	Pr32-1-3-F83	2.5YR 5/6	7.5YR 4/1			layered lumps			
10-20 cm	Pr32-1-3-F84	7.5YR 5/4				layered lumps			
10-20 cm	Pr32-1-3-F85	10YR 7/4				layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
10-20 cm	Pr32-1-3-F86	7.5YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F87	7.5YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F88	2.5YR 5/6				layered lumps			
10-20 cm	Pr32-1-3-F89	5YR 5/6				layered lumps			
10-20 cm	Pr32-1-3-F90	2.5YR 4/4				layered lumps			
10-20 cm	Pr32-1-3-F91	5YR 5/4	10YR 4/1			layered lumps			
10-20 cm	Pr32-1-3-F92	7.5YR 5/4				layered lumps			
10-20 cm	Pr32-1-3-F93	7.5YR 6/6				layered lumps			
10-20 cm	Pr32-1-3-F94	5YR 4/4				layered lumps			
10-20 cm	Pr32-1-3-F95	7.5YR 6/4	7.5YR 4/1			layered lumps			
10-20 cm	Pr32-1-3-F96	7.5YR 5/4	10YR 4/1			layered lumps			
10-20 cm	Pr32-1-3-F97	2.5YR 5/6	7.5YR 4/1			layered lumps			
10-20 cm	Pr32-1-3-F98	5YR 5/4				layered lumps			
10-20 cm	Pr32-1-3-F99	2.5YR 5/6				layered lumps			
10-20 cm	Pr32-1-3-F100	7.5YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F101	10YR 6/2				layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
10-20 cm	Pr32-1-3-F102	2.5YR 5/6				layered lumps			
10-20 cm	Pr32-1-3-F103	10YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F104	5YR 5/6				layered lumps			
10-20 cm	Pr32-1-3-F105	10YR 5/3				layered lumps			
10-20 cm	Pr32-1-3-F106	7.5YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F107	10YR 7/4				layered lumps			
10-20 cm	Pr32-1-3-F108	7.5YR 5/4	10YR 4/1			layered lumps			
10-20 cm	Pr32-1-3-F109	2.5YR 5/6				layered lumps			
10-20 cm	Pr32-1-3-F110	7.5YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F111	7.5YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F112	7.5YR 5/3	7.5YR 4/1			layered lumps			
10-20 cm	Pr32-1-3-F113	7.5YR 7/6				layered lumps			
10-20 cm	Pr32-1-3-F114	7.5YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F115	7.5YR 5/4				layered lumps			
10-20 cm	Pr32-1-3-F116	7.5YR 6/4				layered lumps			

Excavation context	Ceramic code	Firing Atmosphere (Munsell) Oxidized	Firing Atmosphere (Munsell) Reduced	Temper Thin Section	Manufacturing Technique Thin Section	Manufacturing Technique Visual	Manufacturing Technique Xeroradiograph	Firing Temperatures SEM-EDS (°C)	Firing Temperatures Prosity
10-20 cm	Pr32-1-3-F117	7.5YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F118	7.5YR 5/4				layered lumps			
10-20 cm	Pr32-1-3-F119	7.5YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F120	7.5YR 4/4				layered lumps			
10-20 cm	Pr32-1-3-F121	10YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F122	7.5YR 6/4	10YR 4/1			layered lumps			
10-20 cm	Pr32-1-3-F123	7.5YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F124	10YR 6/4				?			
10-20 cm	Pr32-1-3-F125	10YR 6/4	10YR 4/2			layered lumps			
10-20 cm	Pr32-1-3-F126	10YR 6/3	10YR 4/1			layered lumps			
10-20 cm	Pr32-1-3-F127	7.5YR 6/4	7.5YR 4/2			layered slabs			
10-20 cm	Pr32-1-3-F128*	7.5YR 5/4				layered slabs			
10-20 cm	Pr32-1-3-F129	10YR 6/4				layered lumps			
10-20 cm	Pr32-1-3-F130	7.5YR 5/4	10YR 4/1			layered lumps			
10-20 cm	Pr32-1-3-F131	7.5YR 6/4	10YR 4/1			layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
10-20 cm	Pr32-1-3-F132	7.5YR 5/4	7.5YR 4/2			layered lumps			
10-20 cm	Pr32-1-3-F133	5YR 4/4				?			
10-20 cm	Pr32-1-3-F134	5YR 5/4				?			
10-20 cm	Pr32-1-3-F135	7.5YR 7/6	7.5YR 4/1			layered small slabs			
10-20 cm	Pr32-1-3-F136	7.5YR 6/4				lumps			
10-20 cm	Pr32-1-3-F137	2.5YR 5/4				lumps			
10-20 cm	Pr32-1-3-F138	10YR 7/4				lumps			
20-30 cm	Pr32-1-4-F1	7.5YR 4/6	7.5YR 2.5/1			layered slabs	slabs		H
20-30 cm	Pr32-1-4-F2	10YR 7/6	N4/			layered lumps			
20-30 cm	Pr32-1-4-F3	10R 5/8	N4/			layered lumps			
20-30 cm	Pr32-1-4-F4	5YR 5/6	7.5YR 5/1			layered slabs			
20-30 cm	Pr32-1-4-F5	7.5YR 5/4	7.5YR 4/2			layered lumps			
20-30 cm	Pr32-1-4-F6	10R 5/6	7.5YR 2.5/1			layered lumps			
20-30 cm	Pr32-1-4-F7	10R 5/8	7.5YR 4/1			layered lumps			
20-30 cm	Pr32-1-4-F8	10R 4/6	7.5YR 2.5/1			layered lumps			
20-30 cm	Pr32-1-4-F9	7.5YR 7/4				layered lumps			
20-30 cm	Pr32-1-4-F10	10R 5/8	N2.5/			layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
20-30 cm	Pr32-1-4-F11	2.5YR 5/6				layered lumps			
20-30 cm	Pr32-1-4-F12	5YR 6/6	N2.5/			layered slabs			
20-30 cm	Pr32-1-4-F13	7.5YR 6/6				layered lumps			
20-30 cm	Pr32-1-4-F14	2.5YR 6/8				layered lumps			
20-30 cm	Pr32-1-4-F15					layered lumps			
20-30 cm	Pr32-1-4-F16		7.5YR 2.5/1			layered lumps			
20-30 cm	Pr32-1-4-F17					layered lumps			
20-30 cm	Pr32-1-4-F18					layered lumps			
20-30 cm	Pr32-1-4-F19	7.5YR 4/4	N3/			layered lumps			
20-30 cm	Pr32-1-4-F20					layered lumps			
20-30 cm	Pr32-1-4-F21	5YR 4/6	N4/			layered lumps			
20-30 cm	Pr32-1-4-F22					layered lumps			
20-30 cm	Pr32-1-4-F23	7.5YR 5/4				layered lumps			
20-30 cm	Pr32-1-4-F24	7.5YR 4/4				layered lumps			
20-30 cm	Pr32-1-4-F25	2.5YR 5/6				layered slabs			
20-30 cm	Pr32-1-4-F26	7.5YR 2.5/1	5YR 4/6			layered lumps			
20-30 cm	Pr32-1-4-F27	7.5YR 6/4				layered lumps			
20-30 cm	Pr32-1-4-F28	5YR 6/6				layered lumps			

Excavation context	Ceramic code	Firing Atmosphere (Munsell) Oxidized	Reduced	Temper Thin Section	Manufacturing Technique Thin Section	Visual	Xeroradiograph	Firing Temperatures SEM-EDS (°C)	Prosity
20-30 cm	Pr32-1-4-F29	7.5YR 5/4	7.5YR 4/1			layered lumps			
20-30 cm	Pr32-1-4-F30					layered lumps			
20-30 cm	Pr32-1-4-F31	7.5YR 5/4				layered lumps			
20-30 cm	Pr32-1-4-F32	5YR 5/4	7.5YR 4/1			layered lumps			
20-30 cm	Pr32-1-4-F33	7.5YR 6/4				layered lumps			
20-30 cm	Pr32-1-4-F34	7.5YR 6/4				layered slabs			
20-30 cm	Pr32-1-4-F35	2.5YR 6/6	5YR 2.5/2			layered lumps			
20-30 cm	Pr32-1-4-F36	5YR 6/4	7.5YR 4/3			layered lumps			
20-30 cm	Pr32-1-4-F37	5YR 5/6				layered lumps			
20-30 cm	Pr32-1-4-F38	7.5YR 6/4				layered lumps			
20-30 cm	Pr32-1-4-F39	7.5YR 6/4				layered lumps			
20-30 cm	Pr32-1-4-F40	7.5YR 6/6				layered lumps			
20-30 cm	Pr32-1-4-F41	7.5YR 6/4				layered lumps			
20-30 cm	Pr32-1-4-F42	7.5YR 6/6				layered lumps			
20-30 cm	Pr32-1-4-F43	5YR 6/4	7.5YR 4/1			layered lumps			
20-30 cm	Pr32-1-4-F44	7.5YR 6/4				layered lumps			
20-30 cm	Pr32-1-4-F45	10YR 7/4				layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
20-30 cm	Pr32-1-4-F46	7.5YR 6/3				layered lumps			
20-30 cm	Pr32-1-4-F47	10YR 6/3	10YR 4/1			layered lumps			
20-30 cm	Pr32-1-4-F48	2.5YR 4/8	7.5R 2.5/1			layered lumps			
20-30 cm	Pr32-1-4-F49	7.5YR 4/4				layered lumps			
20-30 cm	Pr32-1-4-F50	2.5YR 6/6	7.5YR 4/1			layered lumps			
20-30 cm	Pr32-1-4-F51	7.5YR 5/4				lumps on a slab			
20-30 cm	Pr32-1-4-F52	7.5YR 6/4				layered lumps			
20-30 cm	Pr32-1-4-F53	5YR 5/6	7.5YR 4/1			layered lumps			
20-30 cm	Pr32-1-4-F54	7.5YR 6/4				layered lumps			
20-30 cm	Pr32-1-4-F55	7.5YR 6/4				layered lumps			
20-30 cm	Pr32-1-4-F56	7.5YR 6/4				layered lumps			
20-30 cm	Pr32-1-4-F57	2.5YR 5/6				layered lumps			
20-30 cm	Pr32-1-4-F58	7.5YR 6/4				layered lumps			
20-30 cm	Pr32-1-4-F59	7.5YR 5/4	7.5YR 2.5/1			layered lumps			
20-30 cm	Pr32-1-4-F60	7.5YR 6/4				?			
20-30 cm	Pr32-1-4-F61	5YR 6/4				layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
20-30 cm	Pr32-1-4-F62	7.5YR 6/4	7.5YR 4/1			layered lumps			
20-30 cm	Pr32-1-4-F63	7.5YR 5/4	7.5YR 4/1			layered lumps			
20-30 cm	Pr32-1-4-F64	10YR 6/4				layered lumps			
20-30 cm	Pr32-1-4-F65	7.5YR 5/4				?			
20-30 cm	Pr32-1-4-F66					?			
20-30 cm	Pr32-1-4-F67	7.5YR 4/4				layered lumps			
20-30 cm	Pr32-1-4-F68	7.5YR 6/4				?			
20-30 cm	Pr32-1-4-F69	7.5YR 6/4				?			
20-30 cm	Pr32-1-4-F70	7.5YR 5/4				?			
20-30 cm	Pr32-1-4-F71	7.5YR 5/4				?			
20-30 cm	Pr32-1-4-F72	7.5YR 5/4				?			
20-30 cm	Pr32-1-4-F73	?	7.5YR 6/4			?			
20-30 cm	Pr32-1-4-F74		7.5YR 4/1			layered lumps			
20-30 cm	Pr32-1-4-F75	7.5YR 6/4				?			
20-30 cm	Pr32-1-4-F76	7.5YR 6/6				?			
20-30 cm	Pr32-1-4-F77	10YR 7/4				layered small slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
20-30 cm	Pr32-1-4-F78	10Y R 6/4	N4/			layered small slabs			H
20-30 cm	Pr32-1-4-F79					lumps			
20-30 cm	Pr32-1-4-F80	7.5Y R 6/4	7.5Y R 5/1			lumps			
20-30 cm	Pr32-1-4-F82	2.5Y R 6/6	N4/			small slabs			
20-30 cm	Pr32-1-4-F83	7.5Y R 6/4	N3/			layered slabs			
30-40 cm	Pr32-1-5-F1					layered slabs			
30-40 cm	Pr32-1-5-F2	5YR 6/8	10YR 4/1			layered slabs			H
30-40 cm	Pr32-1-5-F3	7.5Y R 6/6	N3/			layered lumps			
30-40 cm	Pr32-1-5-F4	7.5Y R 7/3	7.5Y R 4/2			layered lumps			
30-40 cm	Pr32-1-5-F5					layered lumps			
30-40 cm	Pr32-1-5-F6*	7.5Y R 6/3	N3/			layered lumps			
30-40 cm	Pr32-1-5-F7	2.5Y R 6/8				layered slabs			
30-40 cm	Pr32-1-5-F8	7.5Y R 6/4				layered slabs			
30-40 cm	Pr32-1-5-F9	7.5Y R 6/4				layered slabs			
30-40 cm	Pr32-1-5-F10	7.5Y R 6/3	10YR 2/1			layered slabs			
30-40 cm	Pr32-1-5-F11	2.5Y R 4/4	N4/			layered lumps			

Excavation context	Ceramic code	Firing Atmosphere (Munsell) Oxidized	Reduced	Temper Thin Section	Manufacturing Technique Thin Section	Visual	Xeroradiograph	Firing Temperatures SEM-EDS (°C)	Prosity
30-40 cm	Pr32-1-5-F12	2.5YR 4/4	7.5YR 4/1			layered slabs			
30-40 cm	Pr32-1-5-F13					layered slabs			
30-40 cm	Pr32-1-5-F14	5YR 5/6	7.5YR 2.5/1			slabs sand-wiched lumps			
30-40 cm	Pr32-1-5-F15	2.5YR 5/6				layered slabs			
30-40 cm	Pr32-1-5-F16	7.5YR 6/3	10YR 2/1			layered slabs			
30-40 cm	Pr32-1-5-F17*	10YR 6/4	N4/			layered lumps			
30-40 cm	Pr32-1-5-F18	7.5YR 6/4	7.5YR 4/1			layered lumps			
30-40 cm	Pr32-1-5-F19	2.5YR 5/6				layered slabs			
30-40 cm	Pr32-1-5-F20					layered slabs			
30-40 cm	Pr32-1-5-F21	10R 5/6	7.5YR 4/1			layered lumps			
30-40 cm	Pr32-1-5-F22	7.5YR 6/4				layered lumps			
30-40 cm	Pr32-1-5-F23	7.5YR 6/6	10YR 4/1			layered lumps			
30-40 cm	Pr32-1-5-F24		7.5YR 4/1			layered lumps			
30-40 cm	Pr32-1-5-F25	5YR 3/4	N3/			layered lumps			
30-40 cm	Pr32-1-5-F26	10YR 6/4				layered lumps			
30-40 cm	Pr32-1-5-F27	10YR 7/4	10YR 4/1			layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxi-dized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradio-graph**	**SEM-EDS (°C)**	**Prosity**
30-40 cm	Pr32-1-5-F28	7.5Y R 7/6				layered lumps			
30-40 cm	Pr32-1-5-F29					layered lumps			
30-40 cm	Pr32-1-5-F30	7.5Y R 6/4				layered slabs			
30-40 cm	Pr32-1-5-F31		7.5Y R 2.5/1			layered lumps			
30-40 cm	Pr32-1-5-F32	7.5Y R 5/4				layered lumps			
30-40 cm	Pr32-1-5-F33	7.5Y R 5/3				layered lumps			
30-40 cm	Pr32-1-5-F34	5YR 3/4	7.5Y R 4/1			layered slabs			
30-40 cm	Pr32-1-5-F35	7.5Y R 5/4	10YR 4/1			layered slabs			
30-40 cm	Pr32-1-5-F36	5YR 6/4	10YR 4/1			layered slabs			
30-40 cm	Pr32-1-5-F37	7.5Y R 6/4				layered slabs			
30-40 cm	Pr32-1-5-F38	2.5Y R 4/8	7.5Y R 4/1			layered lumps			M
30-40 cm	Pr32-1-5-F39	7.5Y R 4/3				layered lumps			
30-40 cm	Pr32-1-5-F40	10Y R 7/4				layered lumps			
30-40 cm	Pr32-1-5-F41	10R 5/8				layered slabs			
30-40 cm	Pr32-1-5-F42	5YR 4/4	7.5Y R 2.5/1			layered lumps			
30-40 cm	Pr32-1-5-F43	10Y R 5/4				layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
30-40 cm	Pr32-1-5-F44	10YR 5/6	10YR 4/1			layered lumps			
30-40 cm	Pr32-1-5-F46	10YR 6/3	7.5YR 4/1			?			
30-40 cm	Pr32-1-5-F47	10YR 6/4	10YR 4/3			layered lumps			
30-40 cm	Pr32-1-5-F48	7.5YR 6/6				layered lumps			
30-40 cm	Pr32-1-5-F49	7.5YR 6/4				layered lumps			
30-40 cm	Pr32-1-5-F50	5YR 4/4				layered lumps			
30-40 cm	Pr32-1-5-F51	7.5YR 6/6				layered lumps			
30-40 cm	Pr32-1-5-F52	7.5YR 5/4				layered lumps			
30-40 cm	Pr32-1-5-F53	7.5YR 4/4				?			
30-40 cm	Pr32-1-5-F54	10YR 6/4				?			
30-40 cm	Pr32-1-5-F55	7.5YR 5/4				?			
30-40 cm	Pr32-1-5-F56	7.5YR 5/4	7.5YR 4/2			?			
30-40 cm	Pr32-1-5-F57	7.5YR 5/4				?			
30-40 cm	Pr32-1-5-F58	7.5YR 6/3	N3/			?			
30-40 cm	Pr32-1-5-F59	10YR 5/3	N3/			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
30-40 cm	Pr32-1-5-F60	7.5YR 4/4	7.5YR 2.5/1			?			
30-40 cm	Pr32-1-5-F61	7.5YR 4/4				?			
30-40 cm	Pr32-1-5-F62	10YR 6/4				?			
30-40 cm	Pr32-1-5-F63	7.5YR 6/6				?			
30-40 cm	Pr32-1-5-F64	7.5YR 5/4				?			
30-40 cm	Pr32-1-5-F65	7.5YR 5/4				?			
30-40 cm	Pr32-1-5-F66	7.5YR 5/4				?			
30-40 cm	Pr32-1-5-F67	10YR 6/4				?			
30-40 cm	Pr32-1-5-F68	7.5YR 5/4				?			
30-40 cm	Pr32-1-5-F69	7.5YR 6/4				?			
30-40 cm	Pr32-1-5-F70	10YR 5/4				?			
30-40 cm	Pr32-1-5-F71	7.5YR 5/4				?			
30-40 cm	Pr32-1-5-F72	7.5YR 4/3				?			
30-40 cm	Pr32-1-5-F73	7.5YR 6/4				?			
30-40 cm	Pr32-1-5-F74	7.5YR 6/4				?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
30-40 cm	Pr32-1-5-F75	10YR 6/4				layered small slabs			
30-40 cm	Pr32-1-5-F76	7.5YR 6/4				layered lumps			
30-40 cm	Pr32-1-5-F77?? (or Pr-32-1-15-F183)					lumps			
40-45 cm	Pr32-1-6-F1	5YR 6/6				layered slabs			H
40-45 cm	Pr32-1-6-F2	5YR 6/6	10YR 4/2			coil near bottom, layered lumps and slabs near wall			
40-45 cm	Pr32-1-6-F3	5YR 5/6				layered slabs and lumps			
40-45 cm	Pr32-1-6-F4*	2.5YR 4/8	N3/			layered lumps			
40-45 cm	Pr32-1-6-F5	5YR 5/4	10YR 4/1			layered lumps			
40-45 cm	Pr32-1-6-F6	10YR 6/3				layered slabs			
40-45 cm	Pr32-1-6-F7	5YR 5/4	7.5YR 2.5/1			layered lumps			
40-45 cm	Pr32-1-6-F8	7.5YR 4/6	7.5YR 4/1			layered lumps			
40-45 cm	Pr32-1-6-F9	7.5YR 5/4	10YR 4/1			layered lumps			
40-45 cm	Pr32-1-6-F10	7.5YR 6/4	10YR 4/1			layered lumps			
40-45 cm	Pr32-1-6-F11	10YR 6/4				layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
40-45 cm	Pr32-1-6-F12	7.5YR 6/6				layered lumps			
40-45 cm	Pr32-1-6-F13	7.5YR 5/4				?			
40-45 cm	Pr32-1-6-F14	5YR 6/4				layered lumps			
40-45 cm	Pr32-1-6-F15	7.5YR 6/6				?			
40-45 cm	Pr32-1-6-F16	7.5YR 5/3				?			
40-45 cm	Pr32-1-6-F17	7.5YR 6/4				layered lumps			
40-45 cm	Pr32-1-6-F18	7.5YR 6/4				?			
40-45 cm	Pr32-1-6-F19	7.5YR 6/4				?			
40-45 cm	Pr32-1-6-F20	7.5YR 6/4				?			
40-45 cm	Pr32-1-6-F21	7.5YR 5/4				?			
40-45 cm	Pr32-1-6-F22	7.5YR 6/4				?			
40-45 cm	Pr32-1-6-F23					layered lumps			
nat strtm 1, clmn 25 cm2, sw corner	Pr32-1-8-F1	5YR 3/4	2.5YR 2.5/2			layered lumps			
nat strtm 1, clmn 25 cm2, sw corner	Pr32-1-8-F2	5YR 5/6				layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
nat strtm 1, clmn 25 cm2, sw corner	Pr32-1-8-F3	2.5YR 4/6				layered lumps			
nat strtm 1, clmn 25 cm2, sw corner	Pr32-1-8-F4	5YR 6/6	7.5YR 2.5/1			layered lumps			
nat strtm 1, clmn 25 cm2, sw corner	Pr32-1-8-F5	7.5YR 4/6				layered lumps			
nat strtm 1, clmn 25 cm2, sw corner	Pr32-1-8-F6	2.5YR 4/4				layered lumps			
nat strtm 1, clmn 25 cm2, sw corner	Pr32-1-8-F7	2.5YR 5/6	7.5YR 2.5/1			layered lumps			
nat strtm 1, clmn 25 cm2, sw corner	Pr32-1-8-F8	7.5YR 6/6				layered lumps			
nat strtm 1, clmn 25 cm2, sw corner	Pr32-1-8-F9	2.5YR 4/4				?			
nat strtm 1, clmn 25 cm2, sw corner	Pr32-1-8-F10	7.5YR 6/4	7.5YR 4/4			layered lumps			
nat strtm 1, clmn 25 cm2, sw corner	Pr32-1-8-F11	2.5YR 6/6				?			
nat strtm 1, clmn 25 cm2, sw corner	Pr32-1-8-F12	5YR 5/6				?			
nat strtm 1, clmn 25 cm2, sw corner	Pr32-1-8-F13		7.5YR 4/1			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
nat strtm 1, clmn 25 cm2, sw corner	Pr32-1-8-F14	5YR 5/6				?			
nat strtm 1, clmn 25 cm2, sw corner	Pr32-1-8-F15	2.5YR 4/8	7.5YR 2.5/1			?			
nat strtm 1, clmn 25 cm2, sw corner	Pr32-1-8-F16	2.5YR 4/6				?			
nat strtm 2, clmn 25 cm2, sw corner	Pr32-1-9-F1	5YR 4/4	7.5YR 4/1			layered slabs			
nat strtm 2, clmn 25 cm2, sw corner	Pr32-1-9-F2	5YR 5/6				layered slabs			
nat strtm 2, clmn 25 cm2, sw corner	Pr32-1-9-F3	2.5YR 5/6				layered lumps			
nat strtm 2, clmn 25 cm2, sw corner	Pr32-1-9-F4	7.5YR 6/6				layered slabs			
nat strtm 2, clmn 25 cm2, sw corner	Pr32-1-9-F5	10YR 5/3				layered lumps			
nat strtm 2, clmn 25 cm2, sw corner	Pr32-1-9-F6	10YR 5/4				layered lumps			
nat strtm 2, clmn 25 cm2, sw corner	Pr32-1-9-F7		10YR 4/1			layered lumps			
nat strtm 2, clmn 25 cm2, sw corner	Pr32-1-9-F8	7.5YR 5/6				layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
nat strtm 2, clmn 25 cm2, sw corner	Pr32-1-9-F9	7.5YR 6/4				layered lumps			
nat strtm 2, clmn 25 cm2, sw corner	Pr32-1-9-F10	5YR 4/4				layered lumps			
nat strtm 2, clmn 25 cm2, sw corner	Pr32-1-9-F11	10YR 5/4				?			
nat strtm 2, clmn 25 cm2, sw corner	Pr32-1-9-F12	10YR 5/4				?			
nat strtm 2, clmn 25 cm2, sw corner	Pr32-1-9-F13	7.5YR 5/4				?			
nat strtm 2, clmn 25 cm2, sw corner	Pr32-1-9-F14	10YR 6/3				layered lumps			
nat strtm 3, clmn 25 cm2, sw corner	Pr32-1-10-F1	7.5YR 7/6				layered slabs			
nat strtm 3, clmn 25 cm2, sw corner	Pr32-1-10-F2	7.5YR 6/4				layered slabs			
nat strtm 3, clmn 25 cm2, sw corner	Pr32-1-10-F3	10YR 7/3	7.5YR 4/1			layered slabs			
nat strtm 3, clmn 25 cm2, sw corner	Pr32-1-10-F4	7.5YR 6/4				layered lumps			
nat strtm 3, clmn 25 cm2, sw corner	Pr32-1-10-F5	7.5YR 6/4				layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
nat strtm 3, clmn 25 cm2, sw corner	Pr32-1-10-F6	7.5YR 6/4				layered lumps			
nat strtm 3, clmn 25 cm2, sw corner	Pr32-1-10-F7	10YR 6/4				layered lumps			
nat strtm 3, clmn 25 cm2, sw corner	Pr32-1-10-F8	10YR 6/4				layered lumps			
nat strtm 3, clmn 25 cm2, sw corner	Pr32-1-10-F9	10YR 6/3				?			
nat strtm 3, clmn 25 cm2, sw corner	Pr32-1-10-F10	5YR 6/6				layered lumps			
nat strtm 3, clmn 25 cm2, sw corner	Pr32-1-10-F11	5YR 5/6				?			
nat strtm 3, clmn 25 cm2, sw corner	Pr32-1-10-F12	10YR 6/4				?			
nat strtm 3, clmn 25cm2, sw corner	Pr32-1-10-F13	7.5YR 5/4	7.5YR 2.5/1			?			
nat strtm 3, clmn 25 cm2, sw corner	Pr32-1-10-F14	10YR 4/3				?			
nat strtm 3, clmn 25 cm2, sw corner	Pr32-1-10-F15	5YR 6/6				?			
nat strtm 3, clmn 25 cm2, sw corner	Pr32-1-10-F16	10YR 4/3				?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
nat strtm 3, clmn 25 cm2, sw corner	Pr32-1-10-F17	5YR 6/4	7.5YR 4/1			layered small slabs			
nat strtm 3, clmn 25 cm2, sw corner	Pr32-1-10-F18	7.5YR 6/6				layered lumps			
nat strtm 3, clmn 25 cm2, sw corner	Pr32-1-10-F19					layered small slabs (int top area a band of reddish ocre)			
nat strtm 3, clmn 25 cm2, sw corner	Pr32-1-10-F20	7.5YR 5/3	7.5YR 4/1			layered small slabs			H
nat strtm 1, ext, S	Pr32-1-13-F1					layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F2	5YR 4/4				layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F3	7.5YR 5/4	7.5Yr 2.5/1			layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F4					layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F5					layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F6					layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F7					layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F8	2.5YR 5/4	7.5YR 2.5/1			layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F9					layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F10	10YR 7/4				layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F11	7.5YR 6/4				layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
nat strtm 1, ext, S	Pr32-1-13-F12					layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F13	7.5YR 4/4				layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F14	2.5YR 4/6	N3/			layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F15					layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F16	10YR 6/3				layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F17	7.5YR 6/4				layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F18	10YR 5/3				layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F19	10YR 7/4				layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F20	2.5YR 5/6	7.5YR 2.5/1			layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F21	7.5YR 6/4				layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F22	7.5YR 5/4				layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F23	7.5YR 5/4				layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F24	10YR 7/3				layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F25	5YR 4/4				layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F26	2.5YR 4/4				?			
nat strtm 1, ext, S	Pr32-1-13-F27	10R 5/6	7.5YR 2.5/1			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
nat strtm 1, ext, S	Pr32-1-13-F28	7.5YR 6/4	10YR 2/2			layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F29	7.5YR 5/4				layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F30	5YR 4/6	5YR 4/2			layered slabs			
nat strtm 1, ext, S	Pr32-1-13-F31	7.5YR 6/4				layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F32	2.5YR 5/6				layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F33	10YR 5/4				layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F35	5YR 4/4				layered slabs			
nat strtm 1, ext, S	Pr32-1-13-F36	2.5YR 5/6				layered lumps			
nat strtm 1, ext, S	Pr32-1-13-F37	10YR 7/4				?			
nat strtm 1, ext, S	Pr32-1-13-F38	2.5YR 5/6				?			
nat strtm 1, ext, S	Pr32-1-13-F39	7.5YR 6/4				layered slabs			
nat strtm 1, ext, S	Pr32-1-13-F40	7.5YR 6/4				layered slabs			
nat strtm 1, ext, S	Pr32-1-13-F41	10YR 6/3				a layered of thin slab over the lip to finish the lip			
nat strtm 1, ext, S	Pr32-1-13-F42	2.5YR 5/6				?			
nat strtm 1, ext, S	Pr32-1-13-F43	7.5YR 5/4				?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
nat strtm 1, ext, S	Pr32-1-13-F44	7.5YR 5/6				?			
nat strtm 1, ext, S	Pr32-1-13-F45	7.5YR 4/3				?			
nat strtm 1, ext, S	Pr32-1-13-F46	5YR 5/6	7.5YR 2.5/1			?			
nat strtm 1, ext, S	Pr32-1-13-F47	2.5YR 5/6				?			
nat strtm 1, ext, S	Pr32-1-13-F48	10YR 6/3	10YR 2/1			layered lumps	small slabs		H
nat strtm 1, ext, S (small lense of shell)	Pr32-1-14-F1	7.5YR 4/4	10YR 4/1			layered slabs			
nat strtm 1, ext, S (small lense of shell)	Pr32-1-14-F2	10YR 6/3	10YR 2/2			slabs sandwiching lumps			
nat strtm 1, ext, S (small lense of shell)	Pr32-1-14-F3	10YR 6/4	7.5YR 2.5/1			lumps a slab		950	
nat strtm 1, ext, S (small lense of shell)	Pr32-1-14-F4	5YR 64	7.5YR 4/1			lumps			
nat strtm 1, ext, S (small lense of shell)	Pr32-1-14-F5					lumps			
nat strtm 1, ext, S (small lense of shell)	Pr32-1-14-F6	2.5YR 5/6				layered lumps			

		Firing Atmosphere (Munsell)		**Temper**	**Manufacturing Technique**			**Firing Temperatures**	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
nat strtm 1, ext, S (small lense of shell)	Pr32-1-14-F7	10YR 6/4				layered slabs			
nat strtm 1, ext, S (small lense of shell)	Pr32-1-14-F8	2.5YR 4/6	N3/			layered lumps			
nat strtm 1, ext, S (small lense of shell)	Pr32-1-14-F9	2.5YR 5/6	N3/			?			
nat strtm 1, ext, S (small lense of shell)	Pr32-1-14-F10	5YR 4/4	N3/			?			
nat strtm 2, ext, S	Pr32-1-15-F1	7.5YR 7/4				layered slabs and lumps			
nat strtm 2, ext, S	Pr32-1-15-F2	10YR 6/3	N3/			layered lumps and slabs			
nat strtm 2, ext, S	Pr32-1-15-F3	5YR 6/6				layered slabs	slabs		H
nat strtm 2, ext, S	Pr32-1-15-F4					layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F5	5YR 4/4	10YR 2/1			double layered slabs			
nat strtm 2, ext, S	Pr32-1-15-F6	10YR 6/3	7.5YR 2.5/3			lumps			
nat strtm 2, ext, S	Pr32-1-15-F7					layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F8					layered small lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
nat strtm 2, ext, S	Pr32-1-15-F9	2.5YR 5/6	N3/			double layered small lumps			
nat strtm 2, ext, S	Pr32-1-15-F10					non-layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F11					layered thick lumps			
nat strtm 2, ext, S	Pr32-1-15-F12	2.5YR 4/6	7.5YR 2.5/1			layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F13	7.5YR 5/3	N3/			layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F14					layered thick lumps and a slab			
nat strtm 2, ext, S	Pr32-1-15-F15	7.5YR 6/4				layered lumps			H
nat strtm 2, ext, S	Pr32-1-15-F16	5YR 4/4	7.5YR 2.5/1			layered small slabs			
nat strtm 2, ext, S	Pr32-1-15-F17	10YR 6/4				double layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F18		10YR 5/2			layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F19	2.5YR 6/6				layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F20	7.5YR 2.5/1	7.5YR 6/4			layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F21					layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F22					layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F23					layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
nat strtm 2, ext, S	Pr32-1-15-F24					layered thick lumps			
nat strtm 2, ext, S	Pr32-1-15-F25	2.5YR 5/6	2.5YR 4/2			layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F26	2.5YR 5/6				layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F27					non-layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F28		7.5YR 4/3			lumps			
nat strtm 2, ext, S	Pr32-1-15-F29	5YR 5/4				single layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F30	5YR 6/6				layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F31	2.5YR 5/6				lumps			
nat strtm 2, ext, S	Pr32-1-15-F32	10YR 6/3	7.5YR 4/1			double layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F33	10YR 7/4	N3/			lumps			
nat strtm 2, ext, S	Pr32-1-15-F34	7.5YR 7/6				lumps			
nat strtm 2, ext, S	Pr32-1-15-F35					layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F36					layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F37					layered small slabs			
nat strtm 2, ext, S	Pr32-1-15-F38					layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F39					layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
nat strtm 2, ext, S	Pr32-1-15-F40	10YR 6/3				double layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F41	7.5YR 6/4				double layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F42	7.5YR 4/4	10YR 4/1			layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F43					layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F44	10YR 7/4				double layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F45					layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F46					layered lumps and slabs			
nat strtm 2, ext, S	Pr32-1-15-F47	5YR 4/4	10YR 2/1			lumps and slabs			
nat strtm 2, ext, S	Pr32-1-15-F48					lumps			
nat strtm 2, ext, S	Pr32-1-15-F49					lumps			
nat strtm 2, ext, S	Pr32-1-15-F50					lick single layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F51	5YR 6/4				?			
nat strtm 2, ext, S	Pr32-1-15-F52	10YR 6/3	10YR 2/1			double layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F53	2.5YR 5/6	7.5YR 2.5/1			layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F54					double layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F55					double layered slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
nat strtm 2, ext, S	Pr32-1-15-F56	2.5YR 5/6				lumps			
nat strtm 2, ext, S	Pr32-1-15-F57	7.5YR 4/6				lumps			
nat strtm 2, ext, S	Pr32-1-15-F58					layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F59	5YR 5/4				lumps			
nat strtm 2, ext, S	Pr32-1-15-F60	2.5YR 4/6	N3/			?			
nat strtm 2, ext, S	Pr32-1-15-F61	7.5YR 6/4	N4/			lumps			
nat strtm 2, ext, S	Pr32-1-15-F62	7.5YR 6/4				lumps			
nat strtm 2, ext, S	Pr32-1-15-F63					thick single layer lumps			
nat strtm 2, ext, S	Pr32-1-15-F64	10YR 6/3				thick single layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F65					layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F66	2.5YR 5/6	10YR 4/1			double layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F67	2.5YR 5/6	7.5YR 4/1			lumps			
nat strtm 2, ext, S	Pr32-1-15-F68	10Yr 5/3	N3/			layered lumps (interior has undulating clay pieces)			
nat strtm 2, ext, S	Pr32-1-15-F69	2.5YR 5/6				lumps			
nat strtm 2, ext, S	Pr32-1-15-F70	5YR 5/4	N3/			lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
nat strtm 2, ext, S	Pr32-1-15-F71	10YR 6/4				lumps			
nat strtm 2, ext, S	Pr32-1-15-F72	7.5YR 6/4	7.5YR 4/1			lumps			
nat strtm 2, ext, S	Pr32-1-15-F73	2.5YR 5/6				lumps			
nat strtm 2, ext, S	Pr32-1-15-F74	2.5YR 4/4				lumps			
nat strtm 2, ext, S	Pr32-1-15-F75					lumps			
nat strtm 2, ext, S	Pr32-1-15-F76	5YR 5/6				lumps			
nat strtm 2, ext, S	Pr32-1-15-F77	2.5YR 5/6				lumps			
nat strtm 2, ext, S	Pr32-1-15-F78	7.5YR 6/4				lumps			
nat strtm 2, ext, S	Pr32-1-15-F79	7.5YR 5/4	7.5YR 2.5/3			lumps			
nat strtm 2, ext, S	Pr32-1-15-F80	7.5YR 6/4	7.5YR 3/4			?			
nat strtm 2, ext, S	Pr32-1-15-F81	10R 5/8	7.5YR 4/1			lumps			
nat strtm 2, ext, S	Pr32-1-15-F82					layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F83					lumps			
nat strtm 2, ext, S	Pr32-1-15-F84	10YR 7/3				lumps			
nat strtm 2, ext, S	Pr32-1-15-F85	7.5YR 6/4				layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F86	7.5YR 6/4				lumps			
nat strtm 2, ext, S	Pr32-1-15-F87	5YR 5/4	N3/			lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
nat strtm 2, ext, S	Pr32-1-15-F88	10YR 6/3	5YR 4/4			lumps			
nat strtm 2, ext, S	Pr32-1-15-F89	10YR 6/4				lumps			
nat strtm 2, ext, S	Pr32-1-15-F90	10YR 6/4				lumps			
nat strtm 2, ext, S	Pr32-1-15-F91	7.5YR 6/4	N2.5/			lumps			
nat strtm 2, ext, S	Pr32-1-15-F92	7.5YR 5/6				lumps			
nat strtm 2, ext, S	Pr32-1-15-F93	10YR 6/4				?			
nat strtm 2, ext, S	Pr32-1-15-F94	7.5YR 6/4				lumps			
nat strtm 2, ext, S	Pr32-1-15-F95	10YR 5/3				lumps			
nat strtm 2, ext, S	Pr32-1-15-F96	7.5YR 5/4	7.5YR 4/1			lumps			
nat strtm 2, ext, S	Pr32-1-15-F97	10YR 6/4				lumps			
nat strtm 2, ext, S	Pr32-1-15-F98	5YR 5/4				lumps			
nat strtm 2, ext, S	Pr32-1-15-F99	5YR 5/4	N4/			lumps			
nat strtm 2, ext, S	Pr32-1-15-F100	2.5YR 5/6	7.5YR 4/1			lumps			
nat strtm 2, ext, S	Pr32-1-15-F101					?			
nat strtm 2, ext, S	Pr32-1-15-F102	7.5R 6/6				lumps			
nat strtm 2, ext, S	Pr32-1-15-F103		7.5YR 2.5/1			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
nat strtm 2, ext, S	Pr32-1-15-F104	10YR 6/4				lumps			
nat strtm 2, ext, S	Pr32-1-15-F105	7.5YR 6/4				?			
nat strtm 2, ext, S	Pr32-1-15-F106	7.5YR 6/4				lumps			
nat strtm 2, ext, S	Pr32-1-15-F107	2.5YR 5/6				lumps			
nat strtm 2, ext, S	Pr32-1-15-F108	7.5YR 7/4				?			
nat strtm 2, ext, S	Pr32-1-15-F109	5YR 5/4				?			
nat strtm 2, ext, S	Pr32-1-15-F110	7.5YR 6/4	2.5YR 4/4			?			
nat strtm 2, ext, S	Pr32-1-15-F111	10YR 6/4				lumps			
nat strtm 2, ext, S	Pr32-1-15-F112	7.5YR 6/4				lumps			
nat strtm 2, ext, S	Pr32-1-15-F113	7.5YR 5/4				lumps			
nat strtm 2, ext, S	Pr32-1-15-F114	2.5YR 5/6				lumps			
nat strtm 2, ext, S	Pr32-1-15-F115	2.5YR 4/4				lumps			
nat strtm 2, ext, S	Pr32-1-15-F116	7.5YR 6/4				lumps			
nat strtm 2, ext, S	Pr32-1-15-F117	7.5YR 2.5/1				lumps			
nat strtm 2, ext, S	Pr32-1-15-F118					lumps			
nat strtm 2, ext, S	Pr32-1-15-F119	7.5YR 5/2				lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
nat strtm 2, ext, S	Pr32-1-15-F120	7.5YR 6/4				lumps			
nat strtm 2, ext, S	Pr32-1-15-F121	5YR 5/6	7.5YR 4/1			lumps			
nat strtm 2, ext, S	Pr32-1-15-F122	7.5YR 5/4				lumps			
nat strtm 2, ext, S	Pr32-1-15-F123	7.5YR 6/6				lumps			
nat strtm 2, ext, S	Pr32-1-15-F124	7.5YR 6/3				lumps			
nat strtm 2, ext, S	Pr32-1-15-F125	7.5YR 6/4	10YR 6/3			lumps			
nat strtm 2, ext, S	Pr32-1-15-F126	7.5YR 6/4				?			
nat strtm 2, ext, S	Pr32-1-15-F127		10YR 4/2			lumps			
nat strtm 2, ext, S	Pr32-1-15-F128	5YR 6/6				lumps			
nat strtm 2, ext, S	Pr32-1-15-F129	2.5YR 5/6				?			
nat strtm 2, ext, S	Pr32-1-15-F130					?			
nat strtm 2, ext, S	Pr32-1-15-F131	2.5YR 5/6				?			
nat strtm 2, ext, S	Pr32-1-15-F132	5YR 4/4	N3/			?			
nat strtm 2, ext, S	Pr32-1-15-F133	5YR 5/6				lumps			
nat strtm 2, ext, S	Pr32-1-15-F134	10YR 4/8				lumps			
nat strtm 2, ext, S	Pr32-1-15-F135	5YR 4/4				lumps			
nat strtm 2, ext, S	Pr32-1-15-F136	7.5YR 4/4				lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
nat strtm 2, ext, S	Pr32-1-15-F137	7.5YR 7/4	7.5YR 2.5/1			lumps			
nat strtm 2, ext, S	Pr32-1-15-F138					lumps			
nat strtm 2, ext, S	Pr32-1-15-F139	5YR 5/4				double layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F140	2.5YR 6/6				lumps			
nat strtm 2, ext, S	Pr32-1-15-F141	7.5YR 4/4				lumps			
nat strtm 2, ext, S	Pr32-1-15-F142	5YR 5/6				lumps			
nat strtm 2, ext, S	Pr32-1-15-F143	7.5YR 5/4				?			
nat strtm 2, ext, S	Pr32-1-15-F144	5YR 5/4				lumps			
nat strtm 2, ext, S	Pr32-1-15-F145	2.5YR 5/6				lumps			
nat strtm 2, ext, S	Pr32-1-15-F146	7.5YR 6/4				lumps			
nat strtm 2, ext, S	Pr32-1-15-F147		7.5YR 4/1			lumps			
nat strtm 2, ext, S	Pr32-1-15-F148	7.5YR 6/4				?			
nat strtm 2, ext, S	Pr32-1-15-F149	2.5YR 5/6	N2.5/			?			
nat strtm 2, ext, S	Pr32-1-15-F150	7.5YR 5/3				?			
nat strtm 2, ext, S	Pr32-1-15-F151	7.5YR 6/4	7.5YR 4/1			?			
nat strtm 2, ext, S	Pr32-1-15-F152	7.5R 6/4				?			
nat strtm 2, ext, S	Pr32-1-15-F153	5YR 4/6	N3/			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
nat strtm 2, ext, S	Pr32-1-15-F154	7.5YR 6/4				?			
nat strtm 2, ext, S	Pr32-1-15-F155	7.5YR 5/4				?			
nat strtm 2, ext, S	Pr32-1-15-F156	5YR 4/4	N3/			?			
nat strtm 2, ext, S	Pr32-1-15-F157	10YR 7/3				?			
nat strtm 2, ext, S	Pr32-1-15-F158	10YR 7/4				?			
nat strtm 2, ext, S	Pr32-1-15-F159	10YR 6/4				?			
nat strtm 2, ext, S	Pr32-1-15-F160	5YR 4/6	7.5YR 2.5/1			?			
nat strtm 2, ext, S	Pr32-1-15-F161	2.5YR 5/6				?			
nat strtm 2, ext, S	Pr32-1-15-F162	7.5YR 7/4				?			
nat strtm 2, ext, S	Pr32-1-15-F163					?			
nat strtm 2, ext, S	Pr32-1-15-F164	5YR 5/4	N2.5/			?			
nat strtm 2, ext, S	Pr32-1-15-F165	7.5YR 6/4				?			
nat strtm 2, ext, S	Pr32-1-15-F166	2.5YR 4/6	7.5YR 2.5/1			?			
nat strtm 2, ext, S	Pr32-1-15-F167	5YR 5/6				?			
nat strtm 2, ext, S	Pr32-1-15-F168	7.5YR 6/4				?			
nat strtm 2, ext, S	Pr32-1-15-F169	7.5YR 6/4				?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
nat strtm 2, ext, S	Pr32-1-15-F170	7.5YR 5/4				?			
nat strtm 2, ext, S	Pr32-1-15-F171	7.5YR 6/6				?			
nat strtm 2, ext, S	Pr32-1-15-F172	7.5YR 4/4				?			
nat strtm 2, ext, S	Pr32-1-15-F173	10YR 6/4				?			
nat strtm 2, ext, S	Pr32-1-15-F174	10YR 6/4				?			
nat strtm 2, ext, S	Pr32-1-15-F175	2.5YR 5/6				?			
nat strtm 2, ext, S	Pr32-1-15-F176	10YR 6/4				?			
nat strtm 2, ext, S	Pr32-1-15-F177	10YR 6/4				?			
nat strtm 2, ext, S	Pr32-1-15-F178	5YR 4/4				?			
nat strtm 2, ext, S	Pr32-1-15-F179	7.5YR 7/4				?			
nat strtm 2, ext, S	Pr32-1-15-F180	10YR 7/4				?			
nat strtm 2, ext, S	Pr32-1-15-F181	10YR 7/4				?			
nat strtm 2, ext, S	Pr32-1-15-F182	10YR 7/4	10YR 5/1			?			
nat strtm 2, ext, S	Pr32-1-15-F183	10YR 6/4				layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F184					layered lumps			
nat strtm 2, ext, S	Pr32-1-15-F185					layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
nat strtm 2, ext, S	Pr32-1-15-F186	10YR 7/6				layered small slabs	no mnfc line		L
nat strtm 2, ext, S	Pr32-1-15-F187	7.5YR 6/4				lumps			
nat strtm 2, ext, S	Pr32-1-15-F188	10YR 6/4				thin layered slabs			
nat strtm 2, ext, S	Pr32-1-15-F189	5YR 4/4				?			
	Pr32-1-16-1	7.5YR 7/6		Y	slab/pressed body with an added lip	slabs			H
nat strtm 3, ext, S	Pr32-1-16-F1-b	2.5YR 5/6	7.5YR 2.5/1			layered slabs	? Porosity too high		
nat strtm 3, ext, S	Pr32-1-16-F2					layered slabs			M
nat strtm 3, ext, S	Pr32-1-16-F3	2.5YR 4/6				layered mid-sized slabs	slabs		H
nat strtm 3, ext, S	Pr32-1-16-F4					layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F5	2.5YR 5/6				layered mid-sized slabs	small slabs		H
nat strtm 3, ext, S	Pr32-1-16-F6					layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F7	7.5YR 4/3	7.5YR 2.5/1			layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F8					layered slabs			
nat strtm 3, ext, S	Pr32-1-16-F9					layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F10					layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F11					layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
nat strtm 3, ext, S	Pr32-1-16-F12	2.5YR 4/6	7.5YR 4/1			layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F13					layered slabs			
nat strtm 3, ext, S	Pr32-1-16-F14					layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F15					layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F16	7.5YR 7/6				layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F17	5YR 6/6				layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F18					layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F19					layered slabs			
nat strtm 3, ext, S	Pr32-1-16-F20					layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F21					layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F22					layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F23	7.5YR 4/4	7.5YR 2.5/1			layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F24	7.5YR 5/3	7.5YR 2.5/1			layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F25					layered slabs			
nat strtm 3, ext, S	Pr32-1-16-F26	5YR 4/6	N/3			layered lumps (small slabs---thumb sized)			
nat strtm 3, ext, S	Pr32-1-16-F27	7.5YR 5/4				layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F28					layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
nat strtm 3, ext, S	Pr32-1-16-F29	10YR 6/4				layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F30	10YR 6/3				layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F31	2.5YR 4/8				layered lumps (thums sized)	small slabs		H
nat strtm 3, ext, S	Pr32-1-16-F32	2.5YR 5/6	7.5YR 4/1			layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F33	7.5YR 6/6	N3/			double layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F34	7.5YR 6/6				layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F35	10YR 5/4	10YR 2/1			layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F36	7.5YR 6/4				layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F37	7.5YR 5/6				layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F38	10YR 6/4				layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F39	7.5YR 7/4				layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F40	7.5YR 6/6	7.5YR 4/3			layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F41	5YR 6/6				layered slabs			
nat strtm 3, ext, S	Pr32-1-16-F42	7.5YR 4/4				?			
nat strtm 3, ext, S	Pr32-1-16-F43	5YR 5/6				layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
nat strtm 3, ext, S	Pr32-1-16-F44	7.5YR 6/4				layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F45	5YR 4/6	5YR 2.5/2			layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F46	5YR 4/6				layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F47	10YR 8/3	10YR 4/1			layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F48	2.5YR 5/6	N3			layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F49	2.5YR 4/4	2.5YR 4/2			?			
nat strtm 3, ext, S	Pr32-1-16-F50	7.5YR 4/4	10YR 2/1			?			
nat strtm 3, ext, S	Pr32-1-16-F51	10YR 5/4				?			
nat strtm 3, ext, S	Pr32-1-16-F52	7.5YR 5/6				?			
nat strtm 3, ext, S	Pr32-1-16-F53	10YR 6/4				?			
nat strtm 3, ext, S	Pr32-1-16-F54	7.5YR 6/4				?			
nat strtm 3, ext, S	Pr32-1-16-F55	7.5YR 6/6				?			
nat strtm 3, ext, S	Pr32-1-16-F56	7.5YR 6/4	7.5YR 4/1			?			
nat strtm 3, ext, S	Pr32-1-16-F57	7.5YR 2.5/2	7.5YR 5/4			?			
nat strtm 3, ext, S	Pr32-1-16-F58	5YR 5/6				layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F59	5YR 4/4				?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
nat strtm 3, ext, S	Pr32-1-16-F60	7.5YR 6/3	7.5YR 2.5/1			lumps			
nat strtm 3, ext, S	Pr32-1-16-F61	5YR 4/4	7.5YR 4/3			?			
nat strtm 3, ext, S	Pr32-1-16-F62	10YR 6/4				layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F63	5YR 6/4				layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F64	7.5YR 4/4	7.5YR 2.5/2			layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F65	10YR 7/4				layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F66	2.5YR 4/8				layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F67	10YR 8/4				?			
nat strtm 3, ext, S	Pr32-1-16-F68	10YR 5/4				?			
nat strtm 3, ext, S	Pr32-1-16-F69	7.5YR 6/4				?			
nat strtm 3, ext, S	Pr32-1-16-F70	10YR 6/4				?			
nat strtm 3, ext, S	Pr32-1-16-F71	7.5YR 6/6	7.5YR 4/1			?			
nat strtm 3, ext, S	Pr32-1-16-F72	7.5YR 3/4	7.5YR 2.5/1			?			
nat strtm 3, ext, S	Pr32-1-16-F73	10YR 6/3				?			
nat strtm 3, ext, S	Pr32-1-16-F74	10YR 6/3				?			
nat strtm 3, ext, S	Pr32-1-16-F75	5YR 6/6				?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
nat strtm 3, ext, S	Pr32-1-16-F76	10YR 7/4	10YR 5/3			?			
nat strtm 3, ext, S	Pr32-1-16-F77	7.5YR 6/3	N3/			?			
nat strtm 3, ext, S	Pr32-1-16-F78	5YR 6/6				?			
nat strtm 3, ext, S	Pr32-1-16-F79	5YR 5/6				?			
nat strtm 3, ext, S	Pr32-1-16-F80	5YR 5/4				layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F81	2.5YR 5/6				layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F82	7.5YR 6/4	10YR 4/1			layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F83	10YR 5/4				?			
nat strtm 3, ext, S	Pr32-1-16-F84	7.5YR 6/4				layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F85	10YR 7/4	7.5YR 4/1			?			
nat strtm 3, ext, S	Pr32-1-16-F86	7.5YR 5/4				?			
nat strtm 3, ext, S	Pr32-1-16-F87	10R 7/6	N3/			?			
nat strtm 3, ext, S	Pr32-1-16-F88	2.5YR 4/6	N3/			?			
nat strtm 3, ext, S	Pr32-1-16-F89	7.5YR 5/4				?			
nat strtm 3, ext, S	Pr32-1-16-F90	7.5YR 6/4				?			
nat strtm 3, ext, S	Pr32-1-16-F91	7.5YR 6/6				?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxi-dized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradio-graph**	**SEM-EDS (°C)**	**Prosity**
nat strtm 3, ext, S	Pr32-1-16-F92	10YR 6/4				?			
nat strtm 3, ext, S	Pr32-1-16-F93	7.5YR 4/4				?			
nat strtm 3, ext, S	Pr32-1-16-F94	10YR 6/4				?			
nat strtm 3, ext, S	Pr32-1-16-F95	2.5YR 4/8				?			
nat strtm 3, ext, S	Pr32-1-16-F96	7.5YR 4/6				?			
nat strtm 3, ext, S	Pr32-1-16-F97	7.5YR 6/4				?			
nat strtm 3, ext, S	Pr32-1-16-F98	7.5YR 5/4	7.5YR 2.5/1			?			
nat strtm 3, ext, S	Pr32-1-16-F99	2.5YR 5/4				?			
nat strtm 3, ext, S	Pr32-1-16-F100	7.5YR 6/4				?			
nat strtm 3, ext, S	Pr32-1-16-F101	5YR 6/6				?			
nat strtm 3, ext, S	Pr32-1-16-F102		7.5YR 4/1			?			
nat strtm 3, ext, S	Pr32-1-16-F103	5YR 5/4				?			
nat strtm 3, ext, S	Pr32-1-16-F104	10YR 7/4				?			
nat strtm 3, ext, S	Pr32-1-16-F105	10YR 6/4				?			
nat strtm 3, ext, S	Pr32-1-16-F106	7.5YR 6/4				?			
nat strtm 3, ext, S	Pr32-1-16-F107	10YR 5/3				?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
nat strtm 3, ext, S	Pr32-1-16-F108	7.5YR 6/4				?			
nat strtm 3, ext, S	Pr32-1-16-F109	7.5YR 5/4				?			
nat strtm 3, ext, S	Pr32-1-16-F110	7.5YR 6/4				?			
nat strtm 3, ext, S	Pr32-1-16-F111	7.5YR 5/6	N3/			layered small slabs	slabs		H
nat strtm 3, ext, S	Pr32-1-16-F112	10R 6/8				layered slabs (ext red slip)			
nat strtm 3, ext, S	Pr32-1-16-F113	7.5YR 6/4	7.5YR 2.5/1			layered small slabs			H
nat strtm 3, ext, S	Pr32-1-16-F114					double layered lumps			
nat strtm 3, ext, S	Pr32-1-16-F115	10YR 6/3				single layered small slabs			
nat strtm 3, ext, S	Pr32-1-16-F116					lumps			
nat strtm 3, ext, S	Pr32-1-16-F117		10YR 4/1			?			
nat strtm 3, ext, S	Pr32-1-16-F118	7.5YR 6/6				?			
nat strtm 3, ext, S	Pr32-1-16-F119	10YR 5/4				?			
nat strtm 3, ext, S	Pr32-1-16-F120	10YR 7/4				?			
nat strtm 3, ext, S	Pr32-1-16-F121	7.5YR 6/6				?			
nat strtm 3, ext, S	Pr32-1-16-F122	?	7.5YR 4/1			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
nat strtm 3, ext, S	Pr32-1-16-F123	10YR 6/4				?			
nat strtm 3, ext, S	Pr32-1-16-F124	10YR 5/4				?			
nat strtm 3, ext, S	Pr32-1-16-F125	10YR 5/4				?			
nat strtm 3, ext, S	Pr32-1-16-F126	5YR 4/4	7.5YR 2.5/3			?			
nat strtm 3, ext, S	Pr32-1-16-F127	7.5YR 6/4				?			
nat strtm 3, ext, S	Pr32-1-16-F128	10YR 7/4				?			
nat strtm 3, ext, S	Pr32-1-17-ext-F1					over-lapping small slabs			
nat strtm 3, ext, S	Pr32-1-17-ext-F2	5YR 6/6				over-lapping slabs			
nat strtm 3, ext, S	Pr32-1-17-ext-F3					double layered slabs			
nat strtm 3, ext, S	Pr32-1-17-ext-F4					layered slabs			
nat strtm 3, ext, S	Pr32-1-17-ext-F5					layered slabs			
nat strtm 3, ext, S	Pr32-1-17-ext-F6					slabs			
nat strtm 3, ext, S	Pr32-1-17-ext-F7					layered slabs			
nat strtm 3, ext, S	Pr32-1-17-ext-F8					layered small slabs			
nat strtm 3, ext, S	Pr32-1-17-ext-F9					layered small slabs			
nat strtm 3, ext, S	Pr32-1-17-ext-F10	10YR 7/4				lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
nat strtm 3, ext, S	Pr32-1-17-ext-F11	7.5YR 5/4				lumps			
nat strtm 3, ext, S	Pr32-1-17-ext-F12	10R 5/6				layered lumps			
nat strtm 3, ext, S	Pr32-1-17-ext-F13	2.5YR 5/4				lumps			
nat strtm 3, ext, S	Pr32-1-17-ext-F14	2.5YR 5/4	7.5YR 2.5/1			?			
nat strtm 3, ext, S	Pr32-1-17-ext-F15	2.5YR 4/8	N2.5/			lumps			
nat strtm 3, ext, S	Pr32-1-17-ext-F16	7.5YR 6/4				lumps			
nat strtm 3, ext, S	Pr32-1-17-ext-F17	7.5YR 5/4	N3/			single layered lumps			
nat strtm 3, ext, S	Pr32-1-17-ext-F18					lumps			
nat strtm 3, ext, S	Pr32-1-17-ext-F19	10YR 6/3	N3/			lumps			
nat strtm 3, ext, S	Pr32-1-17-ext-F20	2.5YR 5/6				?			
nat strtm 3, ext, S	Pr32-1-17-ext-F21	5YR 5/6				?			
nat strtm 3, ext, S	Pr32-1-17-F1	10R 4/8				?			
nat strtm 3, ext, S	Pr32-1-17-F2	7.5YR 3/4	7.5YR 2.5/1			?			H
nat strtm 3, ext, S	Pr32-1-17-F3	10R 4/6				?			
nat strtm 3, ext, S	Pr32-1-17-F4	7.5YR 7/6				?			
nat strtm 3, ext, S	Pr32-1-17-F5	2.5YR 4/6				?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
nat strtm 3, ext, S	Pr32-1-17-F6	2.5YR 4/6				?			
nat strtm 3, ext, S	Pr32-1-17-F7	7.5YR 6/4				?			
nat strtm 3, ext, S	Pr32-1-17-F8					?			
nat strtm 3, ext, S	Pr32-1-17-F9	7.5YR 5/4				?			
nat strtm 3, ext, S	Pr32-1-17-F10	7.5YR 5/4				?			
nat strtm 3, ext, S	Pr32-1-17-F11		7.5YR 4/1			?			
nat strtm 3, ext, S	Pr32-1-17-F12		7.5YR 4/2			?			
nat strtm 3, ext, S	Pr32-1-17-F13	2.5YR 4/8				triple layered slabs			
nat strtm 3, ext, S	Pr32-1-17-F14	10YR 6/4	10YR 2/1			layered small slabs			M
nat strtm1, clmn3, ext, S	Pr32-1-18-F1	7.5YR 5/4				?			
nat strtm1, clmn3, ext, S	Pr32-1-18-F2	10YR 6/4				?			
nat strtm1, clmn3, ext, S	Pr32-1-18-F3	7.5YR 5/4				?			
nat strtm1, clmn3, ext, S	Pr32-1-18-F4	7.5YR 5/4				?			
nat strtm1, clmn3, ext, S	Pr32-1-18-F5	7.5YR 6/4				?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
nat strtm2, ext, S, clmn2	Pr32-1-19-F1					layered lumps and slabs			
nat strtm2, ext, S, clmn2	Pr32-1-19-F2					layered lumps			M
nat strtm2, ext, S, clmn2	Pr32-1-19-F3					lumps			
nat strtm2, ext, S, clmn2	Pr32-1-19-F4	7.5YR 5/3				layered slabs			
nat strtm2, ext, S, clmn2	Pr32-1-19-F5	7.5YR 6/4				layered lumps			
nat strtm2, ext, S, clmn2	Pr32-1-19-F6					lumps			
nat strtm2, ext, S, clmn2	Pr32-1-19-F7	7.5YR 6/4				lumps			
nat strtm2, ext, S, clmn2	Pr32-1-19-F8	7.5YR 6/4				lumps			
nat strtm2, ext, S, clmn2	Pr32-1-19-F9	7.5YR 6/4				lumps			
nat strtm2, ext, S, clmn2	Pr32-1-19-F10	7.5YR 6/4				lumps			
nat strtm2, ext, S, clmn2	Pr32-1-19-F11	7.5YR 4/4	N2.5/			lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
nat strtm2, ext, S, clmn2	Pr32-1-19-F12	5YR 4/4				layered slabs?			
nat strtm2, ext, S, clmn2	Pr32-1-19-F13	7.5YR 6/4				layered slabs			
nat strtm2, ext, S, clmn2	Pr32-1-19-F14	2.5YR 6/6				?			
nat strtm2, ext, S, clmn2	Pr32-1-19-F15		10YR 4/1			?			
nat strtm2, ext, S, clmn2	Pr32-1-19-F16	7.5YR 6/4	10YR 4/1			?			
nat strtm2, ext, S, clmn2	Pr32-1-19-F17	7.5YR 6/4	7.5YR 4/1			lumps			
nat strtm2, ext, S, clmn2	Pr32-1-19-F18	10YR 6/4	10YR 4/1			?			
nat strtm2, ext, S, clmn2	Pr32-1-19-F19	2.5YR 5/4				?			
nat strtm2, ext, S, clmn2	Pr32-1-19-F20	5YR 6/6				?			
nat strtm2, ext, S, clmn2	Pr32-1-19-F21	7.5YR 4/4				?			
nat strtm2, ext, S, clmn2	Pr32-1-19-F22	10YR 6/4				?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
nat strtm2, ext, S, clmn2	Pr32-1- 19-F23	5YR 5/4				?			
nat strtm2, ext, S, clmn2	Pr32-1- 19-F24	7.5Y R 6/3	7.5Y R 4/1			?			
nat strtm2, ext, S, clmn2	Pr32-1- 19-F25	7.5Y R 6/4				?			
nat strtm2, ext, S, clmn2	Pr32-1- 19-F26	7.5Y R 6/4				?			
nat strtm2, ext, S, clmn2	Pr32-1- 19-F27	7.5Y R 4/4				?			
nat strtm2, ext, S, clmn2	Pr32-1- 19-F28	7.5Y R 6/4	7.5Y R 4/1			?			
nat strtm2, ext, S, clmn2	Pr32-1- 19-F29		7.5Y R 4/1			?			
nat strtm2, ext, S, clmn2	Pr32-1- 19-F30		7.5Y R 2.5/1			?			
nat strtm2, ext, S, clmn2	Pr32-1- 19-F31	10Y R 6/4				?			
nat strtm2, ext, S, clmn2	Pr32-1- 19-F32	10Y R 5/3				?			
nat strtm2, ext, S, clmn2	Pr32-1- 19-F33	10Y R 6/3				?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
nat strtm2, ext, S, clmn2	Pr32-1-19-F34					layered lumps			
nat strtm2, ext, S, clmn2	Pr32-1-19-F35	7.5YR 7/4				?			
nat strtm 3, ext, S, clmn3	Pr32-1-20-F1	5YR 5/6				lumps			
nat strtm 3, ext, S, clmn3	Pr32-1-20-F2	7.5YR 6/6	N3/			layered slabs			
nat strtm 3, ext, S, clmn3	Pr32-1-20-F3	2.5YR 4/8	N2.5/			layered slabs			
nat strtm 3, ext, S, clmn3	Pr32-1-20-F4	7.5YR 6/4	7.5YR 6/4			lumps			
nat strtm 3, ext, S, clmn3	Pr32-1-20-F5	5YR 7/6				?			
nat strtm 3, ext, S, clmn3	Pr32-1-20-F6					?			
nat strtm 3, ext, S, clmn3	Pr32-1-20-F7	7.5YR 6/6				?			
nat strtm 3, ext, S, clmn3	Pr32-1-20-F8	5YR 6/4				?			
nat strtm 3, ext, S, clmn3	Pr32-1-20-F9	7.5YR 6/4				?			
nat strtm 3, ext, S, clmn3	Pr32-1-20-F10	10R 5/8				?			
nat strtm 3, ext, S, clmn3	Pr32-1-20-F11		7.5YR 2.5/1			?			
nat strtm 3, ext, S, clmn3	Pr32-1-20-F12	7.5YR 6/4				layered small slabs	small slabs		H

		Firing Atmos-phere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxi-dized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradio-graph**	**SEM-EDS (°C)**	**Prosity**
2E, 0-10 cm	He5-60-F1 [non-Mon-agrillo?, thick, FI]	7.5YR 6/6	10YR 2/2			layered small slabs			
2E, 0-10 cm	He5-60-F2	5YR 6/6	N4/			layered small slabs	slabs		M
2E, 0-10 cm	He5-60-F3	5YR 5/6				layered small slabs			
2E, 0-10 cm	He5-60-F4	2.5YR 5/6	10yR 4/1			layered small slabs	slabs		
2E, 0-10 cm	He5-60-F7	7.5YR 7/6	N4/			layered slabs			
2E, 0-10 cm	He5-60-F8	2.5YR 5/6	10YR 4/2			layered slabs	un-known		H
2E, 0-10 cm	HE5-60-F9			N	double layered slbs/glbs	double layered slabs	slabs		M
2E, 0-10 cm	He5-60-F10	5YR 5/6	7.5YR 4/1			layered slabs			
2E, 0-10 cm	He5-60-F11	7.5YR 5/4				small lumps	slabs		L
2E, 0-10 cm	He5-60-F12	2.5YR 5/6				layered small slabs			M
2E, 0-10 cm	He5-60-F13	5YR 5/8	N3/			layered small slabs	slabs		
2E, 0-10 cm	He5-60-F14	10R 5/6	2.5YR 2.5/2			layered slabs and lumps			
2E, 0-10 cm	He5-60-F15	10R 5/6	2.5YR 2.5/2			layered slabs and lumps			
2E, 0-10 cm	He5-60-F16	10YR 4/3	N3/			layered small slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
2E, 0-10 cm	He5-60-F17	10R 5/6	N/3			layered slabs	slabs		M
2E, 0-10 cm	HE5-60-F18	10R 5/8	10YR 4/1	N	sqz	layered slabs	slabs		M
2E, 0-10 cm	He5-60-F19	5YR 4/6	N3/			double layered lumps			
2E, 0-10 cm	He5-60-F20	7.5YR 5/4	10YR 2/1			small lumps	lumps		L
2E, 0-10 cm	He5-60-F21	10R 5/6	N3/			layered slabs and lumps			
2E, 0-10 cm	He5-60-F22	2.5YR 4/6	N3/			layered lumps			
2E, 0-10 cm	He5-60-F23	5YR 4/6				double layered lumps			
2E, 0-10 cm	He5-60-F24	5YR 4/6	N4/			lumps			
2E, 0-10 cm	He5-60-F25	7.5YR 6/4				layered small slabs and lumps			
2E, 0-10 cm	He5-60-F26	2.5YR 4/6	N2.5/			layered lumps			
2E, 0-10 cm	He5-60-F27	2.5YR 5/6				layered slabs			
2E, 0-10 cm	He5-60-F28	7.5YR 4/6	10YR 4/1			layered lumps			
2E, 0-10 cm	He5-60-F29	7.5YR 4/4	N3/			layered small slabs			
2E, 0-10 cm	He5-60-F30	7.5YR 4/6	7.5YR 4/2			layered small slabs			
2E, 0-10 cm	He5-60-F31	10YR 2/1	5YR 5/6			double layered lumps	lumps		M

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
2E, 0-10 cm	He5-60-F32	2.5YR 4/4	N3/			layered lumps			
2E, 0-10 cm	He5-60-F33	7.5YR 5/6	7.5YR 4/1			layered lumps	lumps		M
2E, 0-10 cm	He5-60-F34	2.5YR 5/6				layered lumps			
2E, 0-10 cm	He5-60-F35	10R 4/6	7.5YR 2.5/1			layered lumps			
2E, 0-10 cm	He5-60-F36	2.5YR 4/8	N4/			small slabs	slabs		H
2E, 0-10 cm	He5-60-F37	5YR 4/4	10YR 2/1			layered small slabs and lumps	lumps		M
2E, 0-10 cm	He5-60-F38	5YR 4/4	N3/			layered lumps			
2E, 0-10 cm	He5-60-F39	5YR 5/6				layered lumps			
2E, 0-10 cm	He5-60-F40	7.5YR 5/8				?			
2E, 0-10 cm	He5-60-F41	5YR 5/6				layered lumps			
2E, 0-10 cm	He5-60-F42	2.5YR 4/8				?			
2E, 0-10 cm	He5-60-F43	7.5YR 5/6				lumps			
2E, 0-10 cm	He5-60-F44	2.5YR 4/8				?			
2E, 0-10 cm	He5-60-F45	7.5YR 4/4	7.5YR 4/1			layered lumps			
2E, 0-10 cm	He5-60-F46		7.5YR 4/3			layered lumps? (too small)			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
2E, 0-10 cm	He5-60-F47	2.5YR 4/8				?			
2E, 0-10 cm	He5-60-F48	7.5YR 5/6				layered lumps			
2E, 0-10 cm	He5-60-F49					?			
2E, 0-10 cm	He5-60-F50	2.5YR 5/6	7.5YR 4/2			?			
2E, 0-10 cm	He5-60-F51					?			
2E, 0-10 cm	He5-60-F52	2.5YR 4/8				?			
2E, 0-10 cm	He5-60-F53	5YR 6/6	2.5Y 6/2			layered lumps			
2E, 0-10 cm	He5-60-F54	5YR 6/6	2.5Y 5/2			layered lumps			
2E, 0-10 cm	He5-60-F55	7.5YR 5/6				layered lumps			
2E, 0-10 cm	He5-60-F56	2.5YR 4/8	N2.5/			layered lumps			
2E, 0-10 cm	He5-60-F57	2.5YR 5/6				layered lumps			
2E, 0-10 cm	He5-60-F58	5YR 6/6	10YR 4/1			small slabs			
2E, 0-10 cm	He5-60-F59	10YR 7/4	10YR 4/1			lumps	lumps		
2E, 0-10 cm	He5-60-F60	2.5YR 4/8	N3/			?			
2E, 0-10 cm	He5-60-F61	5YR 4/4	N2.5/			lumps			
2E, 0-10 cm	He5-60-F62	2.5YR 4/8				layered lumps			
2E, 0-10 cm	He5-60-F63	7.5YR 6/6				layered small slabs	lumps		M

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
2E, 0-10 cm	He5-60-F64	2.5YR 4/8	7.5YR 2.5/1			?			
2E, 0-10 cm	He5-60-F65	5YR 5/6				small lumps	lumps		
2E, 0-10 cm	He5-60-F66	2.5YR 4/4	N2.5/			?	un-known		
2E, 0-10 cm	He5-60-F67	5YR 4/4				layered lumps			
2E, 0-10 cm	He5-60-F68	10YR 7/4	10YR 5/2			layered lumps	lumps		M
2E, 0-10 cm	He5-60-F69	10R 5/8				layered small slabs			
2E, 0-10 cm	He5-60-F70	10yr 7/4				?			
2E, 0-10 cm	He5-60-F71	5YR 6/6	7.5YR 4/2			?	un-known		
2E, 0-10 cm	He5-60-F72	5YR 5/6	N3/			lumps			
2E, 0-10 cm	He5-60-F73	7.5YR 6/6	10YR 5/2			small slabs	slabs		M
2E, 0-10 cm	He5-60-F74					small slabs			
2E, 0-10 cm	He5-60-F75	10YR 8/4				layered small slabs	lumps		L
2E, 0-10 cm	He5-60-F76	2.5YR 4/8				?			
2E, 0-10 cm	He5-60-F77	5YR 3/4				?			
2E, 0-10 cm	He5-60-F78	10YR 6/4				layered slabs			
2E, 0-10 cm	He5-60-F79	10YR 5/3	N3/			?	none		
2E, 0-10 cm	He5-60-F80	2.5YR 4/6	N3/			lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
2E, 0-10 cm	He5-60-F81	7.5YR 5/3	10YR 2/1			lumps	unknown		
2E, 0-10 cm	He5-60-F82	2.5YR 5/6	N2.5/			layered lumps			
2E, 0-10 cm	He5-60-F83	2.5YR 4/8				?			
2E, 0-10 cm	He5-60-F84	7.5YR 6/4				?			
2E, 0-10 cm	He5-60-F85	2.5YR 4/8				?			
2E, 0-10 cm	He5-60-F86	2.5YR 5/8				?			
2E, 0-10 cm	He5-60-F87	2.5YR 5/6				lumps			
2E, 0-10 cm	He5-60-F88	2.5YR 5/8				lumps			
2E, 0-10 cm	He5-60-F89	2.5YR 5/8				?			
2E, 10-20 cm	He5-61-F1	7.5YR 6/4	10YR 4/1			layered lumps			
2E, 10-20 cm	He5-61-F2	2.5YR 4/6	7.5YR 2.5/1			layered small slabs			
2E, 10-20 cm	He5-61-F3	5YR 6/6	7.5YR 4/1			?			
2E, 10-20 cm	He5-61-F4	7.5YR 4/4				layered lumps			
2E, 10-20 cm	He5-61-F5	10YR 6/4	7.5YR 4/1			layered small slabs	small slabs		M

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
2E, 10-20 cm	He5-61-F6	2.5YR 4/6	7.5YR 2.5/1			coil? (Non-Monagrillo?)			
2E, 10-20 cm	He5-61-F7	10R 5/8				double layered slabs	slabs		
2E, 10-20 cm	He5-61-F8	5YR 4/4	N2.5/			layered small slabs			
2E, 10-20 cm	He5-61-F9		10YR 4/3			?			
2E, 10-20 cm	HE5-61-F10	7.5YR 7/6	7.5YR 2.5/1	N	slbs/sqz	slabs	slabs		M
2E, 10-20 cm	He5-61-F11	7.5YR 2.5/1	5YR 4/6	Y	slbs/sqz (preferred orientation)	slabs	slabs		H
2E, 10-20 cm	He5-61-F12	7.5YR 5/6	10YR 2/1			layered slabs			
2E, 10-20 cm	He5-61-F13	10YR 6/3	10YR 4/1			layered slabs			
2E, 10-20 cm	He5-61-F14	2.5YR 6/4				?			
2E, 10-20 cm	He5-61-F15	7.5YR 5/6	10YR 4/2			layered slabs			
2E, 10-20 cm	He5-61-F16	7.5YR 6/4	7.5YR 5/6			layered lumps			
2E, 10-20 cm	He5-61-F17	10R 4/8	N2.5/			layered lumps			
2E, 10-20 cm	He5-61-F18	10R 4/8	N2.5/			layered lumps			
2E, 10-20 cm	He5-61-F19	5YR 4/6	N2.5/			layered lumps			
2E, 10-20 cm	He5-61-F20	5YR 5/4	N3/			?			

Excavation context	Ceramic code	Firing Atmosphere (Munsell) Oxidized	Reduced	Temper Thin Section	Manufacturing Technique Thin Section	Visual	Xeroradiograph	Firing Temperatures SEM-EDS (°C)	Prosity
2E, 10-20 cm	He5-61-F21	7.5YR 5/4	7.5YR 4/2			layered small slabs			
2E, 10-20 cm	He5-61-F22	7.5YR 7/6				layered lumps			
2E, 10-20 cm	HE5-61-F23	10YR 5/4	7.5YR 2.5/1			layered slabs	slabs		M
2E, 10-20 cm	He5-61-F24	2.5YR 4/6	N3/			layered lumps			
2E, 10-20 cm	He5-61-F25	10YR 4/1				layered slabs			
2E, 10-20 cm	He5-61-F26	7.5YR 4/3	7.5 YR 2.5/1			layered lumps and slabs	small slabs		H
2E, 10-20 cm	He5-61-F27	7.5YR 5/8	7.5YR 4/2			layered small slabs			
2E, 10-20 cm	He5-61-F28	2.5YR 4/8				layered small slabs			
2E, 10-20 cm	He5-61-F29	2.5YR 4/8				layered small slabs			
2E, 20-30 cm	HE5-62-F1 to F2	5YR 5/8	N2.5/	N	single sqzed slbs	bottom is single layered small slabs and wall is double layered	lumps		M
2E, 20-30 cm	He5-62-F3	5YR 6/8	7.5YR 4/1			slabs	lumps		M
2E, 20-30 cm	He5-62-F4	5YR 6/8	7.5YR 4/1			slabs			
2E, 20-30 cm	He5-62-F5	5YR 6/8	7.5YR 4/1			slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
2E, 20-30 cm	He5-62-F6	10YR 3/6				layered small slabs			
2E, 20-30 cm	He5-62-F7	10R 5/8	N3/			layered slabs and lumps			
2E, 20-30 cm	He5-62-F8	7.5YR 7/5	7.5YR 2.5/1			layered lumps			
2E, 20-30 cm	He5-62-F9	5YR 4/4	N3/			layered lumps			M
2E, 20-30 cm	He5-62-F10					layered lumps	double layered slabs		L
2E, 20-30 cm	He5-62-F11	2.5YR 4/6	N2.5/			lumps			
2E, 20-30 cm	HE5-62-F12	2.5YR 5/6	5YR 4/2	Y	slbs/sqz	double to triple layered slabs			
2E, 20-30 cm	He5-62-F13	7.5YR 6/6	10YR 4/1			layered small slabs			
2E, 20-30 cm	He5-62-F14	10YR 6/4	10YR 3/4			layered slabs (clay slab to make the lip)			
2E, 20-30 cm	He5-62-F14					layered slabs			
2E, 20-30 cm	He5-62-F16	7.5YR 4/1	N3/			layered slabs			
2E, 20-30 cm	he5-62-F17	10YR 6/4	N3/			layered lumps			
2E, 20-30 cm	He5-62-F18	10R 4/6				small lumps			
2E, 20-30 cm	He5-62-F19	2.5YR 5/8	7.5YR 4/1			double to triple layered slabs	double-triple layered slabs		
2E, 20-30 cm	He5-62-F20	5YR 5/4	7.5YR 4/2	Y	slbs/sqz	slabs	possible slabs		H

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
2E, 20-30 cm	He5-62-F21	7.5YR 5/6	10YR 5/1			?			
2E, 20-30 cm	He5-62-F22	7.5YR 4/4	N4/			?			
2E, 20-30 cm	He5-62-F23	10R 5/8	N3/			layered lumps			
2E, 20-30 cm	He5-62-F24	2.5YR 4/4				?			
2E, 20-30 cm	He5-62-F25	2.5YR 5/6	N4/			?			
2E, 20-30 cm	He5-62-F26	2.5YR 4/8				?			
2E, 20-30 cm	He5-62-F27	2.5YR 4/6	N3/			?			
2E, 30-40 cm	HE5-63-F1	2.5YR 4/8	7.5YR 2.5/1	N	sqz?	slabs	slabs		L
2E, 30-40 cm	HE5-63-F2 to F4	5YR 5/6		Y	slbs pressed against something	slabs	slabs		H
2E, 30-40 cm	He5-63-F5	10YR 7/3				lumps	lumps		L
2E, 30-40 cm	He5-63-F6	2.5YR 3/6	10YR 2/1			layered lumps	lumps		M
2E, 30-40 cm	He5-63-F7	5YR 6/6	7.5YR 4/1			?			
2E, 30-40 cm	He5-63-F8	2.5YR 4/8	N3/			layered slabs and lumps	small slabs		M
2E, 30-40 cm	He5-63-F9					layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
2E, 30-40 cm	He5-63-F10	5YR 4/6	7.5YR 2.5/2			layered lumps			
2E, 30-40 cm	He5-63-F11	7.5YR 7/4	7.5YR 2.5/1			layered lumps and small slabs			
2E, 30-40 cm	He5-63-F12	10YR 6/4	10YR 4/2			layered lumps		850	H
2E, 30-40 cm	He5-63-F13	10R 5/8	N4/			layered small slabs	small slabs		H
2E, 40-50 cm	He5-64-F1	10R 5/8				layered slabs			
2E, 40-50 cm	He5-64-F2	10R 4/6				lumps			
2E, 40-50 cm	HE5-64-F3	2.5YR 4/8	7.5YR 2.5/1	N	slabs/ squeezed (preferred orientation)	slabs	slabs		L
2E, 40-50 cm	HE5-64-F4	2.5YR 4/8	N3/	N	lmps sandwiching a slab	slabs	lumps		L
2E, 40-50 cm	He5-64-F5	7.5YR 3/4	N3/			lumps			
2E, 40-50 cm	He5-64-F6	5YR 5/6	10YR 4/2			?			
2E, 40-50 cm	He5-64-F7	10R 5/8	N3/			layered lumps			
2E, 40-50 cm	He5-64-F8					?			
2E, 60-70 cm	HE5-66-F1	2.5YR 5/6	N3/	Y	2 slbs in the interior put together with 3 slabs in the exterior	slabs	slabs		H

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
2E, 80-90 cm	HE5-68-F1	10YR 6/4	10YR 5/2	N	glbs/ small slbs/sqz	layered slabs	small slabs		L
2E, 80-90 cm	He5-68-F2	5YR 4/4	7.5YR 2.5/1			layered small slabs			
2E, 80-90 cm	He5-68-F3	2.5YR 5/6				layered slabs and lumps			
2E, 80-90 cm	HE5-68-F4	2.5YR 5/6	N2.5/	Unkn	layered slbs/sqz (partial preferred orientation)	slabs	slabs		L
2E, 80-90 cm	HE5-68-F5			N	1 slab in the interior 2 lmps in the exterior added	double layered slabs	small slabs		M
2E, 80-90 cm	He5-68-F5-b	5YR 4/6	N3/			layered slabs			
2E, 80-90 cm	HE5-68-F6	10R 5/6	N3/			slabs	slab		M
2E, 80-90 cm	He5-68-F7	2.5YR 5/6				layered lumps			
2E, 90-95 cm	He5-69-F2	2.5YR 5/6	10YR 5/2			layered lumps	lumps		L
2E, 90-95 cm	HE5-69-F3	2.5YR 4.8	7.5YR 2.5/1	N	dble layered slbs	double layered slabs	lumps		L
2E, 90-95 cm	He5-69-F4	10YR 6/4	10YR 4/2			layered lumps			
2E, 90-95 cm	He5-69-f5	7.5YR 4/4	7.5YR 2.5/1			layered small slabs	lumps		L
2E, 90-95 cm	He5-69-F6 to F7	5YR 5/6	N3/			layered slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
2E, 90-95 cm	HE5-69-F8	2.5YR 5/8		N	sqz/slab	slabs	slabs		L
2E, 90-95 cm, Floor	He5-69A-F1	10R 4/8				?			
2E, 90-95 cm, Floor	He5-69A-F2	7.5YR 6/3				lumps	lumps		M
2E, 90-95 cm, Floor	HE5-69A-F3	5YR 4/6	5YR 5/2	N	sqzd globs	slabs	unknown		M
2E, 100-110 cm	He5-70-F1	2.5YR 5/6	7.5YR 4/4	N	sqz	slabs	lumps		M
2E, 100-110 cm	HE5-70-F2	2.5YR 4/6	N3/	N	slbs/sqz	layered slabs	slabs		
2E, 100-110 cm	He5-70-F3	2.5YR 4/6				layered lumps			
2E, 100-110 cm	He5-70-F4	7.5YR 5/8	N3/			layered lumps			
2E, 160-170 cm	HE5-76-F1	2.5YR 4/6	7.5YR 2.5/1	Unkn	globs of clys squeezed	double layered slabs	slabs	850	M
2E, Bottom layer, 170-180 cm	He5-78-F1	10R 4/8				layered lumps			
	Pr14-22-1	5YR 5/6		Y	slab/ squeezed (preferred orientation of pores and elongated minerals)	unknown			
	Pr14-24-1	2.5YR 4/4	7.5YR 2.5/1	Y	squeezed technique with the addition of a possible lip	slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
	Pr14-25-1	2.5Y R 5/6	N3/	Unkn	slabs/ squeezed	slabs			
lot 34, unit 2.01, 20-30 cm	Lp8-34-2.01-1	7.5Y R 5/8	7.5Y R 2.5/1	Unkn	slbs/sqz	double layered slabs	small slabs?	~950	L
lot 37, unit 2.01, 50-60cm	Lp8-37-2.01-1	7.5Y R 5/6		Unkn	sqz?	layered lumps			
lot 38, unit 2.01, 60-70 cm	Lp8-38-2.01-1	5YR 7/8				lumps			
lot 38, unit 2.01, 60-70 cm	Lp8-38-2.01-2	7.5Y R 5/8	7.5Y R 4/2			lumps			
lot 94, unit 1.45, feature 1, level 13, 60-65 cm	Lp8-94-1.45-1.1			Unkn	slbs/sqz	unknown	small slabs		L
lot 114, unit 1.57, feature 1, level 16, 75-80 cm	Lp8-114-1.57-1-1	7.5Y R 5/6	10YR 4/1	Unkn	slbs/sqz	layered slabs			
lot 114, unit 1.57, feature 1, level 16, 75-80 cm	Lp8-114-1.57-1-2	7.5Y R 4/4	N2.5/	Unkn	slbs/sqz	double layered slabs			
lot1 20, unit 1.35, level 4, 15-20 cm	Lp8-120-1.35-1	7.5Y R 4/4	N4/	Unkn	slbs/sqz	double layered slabs			
lot 122, unit1.35, level 6, 25-30 cm	Lp8-122-1.35-1	7.5Y R 4/6		Unkn	slbs w/ lmps	lumps and slabs			
lot 126, unit 1.35, feature 3, 25-40 cm	Lp8-126-1.35-3-1	7.5Y R 5/6		Unkn	slbs/sqz	double layered elongated small slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
lot 135, unit 1.47, feature 4, level 14, 25-30 cm	Lp8-135-1.47-1	7.5YR 4/6	7.5YR 2.5/1	Unkn	slbs/sqz (pores parallel to the wall)	layered lumps			M
lot 144, unit 1.47, level 11, 50-55 cm	Lp8-144-1.47-1	7.5YR 4/6	10YR 3/3	Unkn	2 lmps on a slab	double layered slabs			L
lot 150, unit1.47, feature 4, level 14, 65-70 cm	Lp8-150-1.47-4-1	5YR 4/6		Unkn	folded over rim	double layered slabs	slabs	950	M
lot 154, unit 1.47, feature 4, level 16, 75-80 cm	Lp8-154-1.47-4-1	7.5YR 5/8	10YR 4/1	Unkn	slbs/sqz	?			M
lot 164, unit 1.59, feature 2, level 8, 35-40 cm	Lp8-164-1.59-2-1	2.5YR 5/8		Unkn	slbs/sqz	double layered lumps			
lot 167, unit 1.59, feature 2, level 9, 40-45 cm	Lp8-167-1.59-2-1	5YR 4/6		Unkn	slbs/sqz	?			L
lot 170, unit 1.59, feature 2, level 10, 45-50 cm	Lp8-170-1.59-2-1	5YR 5/8		Unkn	slbs/sqz	?			
lot 174, unit 1.59, level 11a, 50-55cm	Lp8-174-1.59-2-1	5YR 5/8		Unkn	sqz?	?			
lot 176, unit 1.59, feature2, level 14, 65-70 cm	Lp8-176-1.59-2-1	7.5YR 2.5/3		Unkn	double slbs bttm and a slb added to make the lip	double layered slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
lot 182, unit 1.59, feature 2, level 14, 76-70 cm	Lp8-182-1.59-2-1	7.5YR 4/4	7.5YR 2.5/1	Unkn	slbs/sqz	double layered slabs	slabs		M
Surface	LP134-36-F12	7.5YR 5/6				layered lumps			
Area 3, C4, strtm 1, level 2	LP134-56-F153	7.5YR 6/6				layered slabs			
Area 3, C4, strtm 1, level 2	LP134-56-F179	10YR 6/4				slab and lumps			
Area 3, C4, strtm 1, level 2	LP134-56-F212	7.5YR 6/6				layered lumps			
Area 3, C4, strtm 1, level 2	LP134-56-F291	7.5YR 7/4				double layered lumps			
Area 3, C2, strtm 1, level 2	LP134-57-F141	10YR 6/4	10YR 4/1			layered slabs			
Area 3, C4, strtm 1, level 2	LP134-59-F60	7.5YR 7/6				layered slabs and lumps			
Area 3, A3, strtm 1, level 2	LP134-71-F98	7.5YR 6/4	10YR 2/1			layered slabs and lumps added to make the lip			
Area 3, A2, strtm 1, level 2	LP134-74?-F154		7.5YR 4/1			layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
	LP134-75-F198	10YR 5/3	10YR 4/1			layered slabs			
Area 3, C2, strtm 1, level 2	LP134-83-F168	10YR 5/3	7.5YR 2.5/1	Unkn	coil or layered small slbs	layered slabs			
Area 3, B3, strtm 1, level 2	LP134-84-F21					layered slabs			
Area 3, B3, strtm 1, level 2	LP134-84-F178	7.5YR 6/4	7.5YR 4/1			double layered small slabs			
Area 1, Escombrera	LP134-90-F2	7.5YR 6/4				layered slabs			
Area 1, Escombrera	LP134-90-F31	5YR 5/6	7.5YR 4/1			layered lumps			
Area 1, Escombrera	LP134-90-F59	7.5YR 6/6				layered lumps			
Area 1, Escombrera	LP134-90-F66	7.5YR 5/8	10YR 4/2			layered lumps			
Area 1, Escombrera	LP134-90-F69	7.5YR 6/4				layered slabs			
Area 1, Escombrera	LP134-90-F76	7.5YR 5/4				layered lumps			
Area 3, surf	LP134-93-F176	10YR 7/3	10YR 5/1			layered slabs			
Area 3, surf	LP134-93-F213	7.5YR 5/4				layered slabs			
Area 3, B4, strtm 1, level 2	LP134-94-F72	7.5YR 5/6	N2.5/			layered lumps			M

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area 3, B4, strtm 1, level 2	LP134-94-F122	7.5YR 5/6	N3/			layered slabs			
Area 3, B4, strtm 1, level 2	LP134-94-F125	75YR 5/4	7.5YR 4/1			layered slabs			H
Area 3, B4, strtm 1, level 2	LP134-94-F132	7.5YR 5/8				layered slabs			
Area 3, B4, strtm 1, level 2	LP134-94-F195	7.5YR 6/4				a slab and lumps			
Area 3, B4, strtm 1, level 2	LP134-94-F293	7.5YR 6/6	N2.5/			double layered lumps			
Area 2, sect 1,	LP134-96-F56	10YR 7/4				layered lumps			
Area 1, surface	LP134-100-F27					layered lumps			
Area 3, A1, strtm 1, level 1	LP134-101-F67					layered slabs			
	LP134-138?-F233	7.5YR 4/3	7.5YR 4/1			?			
	LP134-142?-F171	7.5YR 4/6	10YR 4/1			layered slabs			L
	LP134-145?-F143	7.5YR 6/4	10YR 5/3			layered slabs			
	LP134-147?-F232		10YR 4/2			?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area 3, B3, strtm 1, level 1	LP134-148-F17			Unkn	folded over rim or 2 slbs prssd making the rim/lip	layered slabs			
Area 3, B3, strtm 1, level 1	LP134-148-F20					layered slabs			
Area 3, B3, strtm 1, level 1	LP134-148-F121	7.5YR 5/8				layered slabs	slabs		H
Area 3, A2, strtm 1, level 2	LP134-149-F225	7.5YR 6/4				layered lumps			
Area 3, B3, strtm 1, level 2	LP134-150-F22					layered slabs			
Area 3, B3, strtm 1, level 2	LP134-150-F34					layered slabs			
Area 3, B3, strtm 1, level 2	LP134-150-F63	7.5YR 6/8				layered slabs and lumps			
Area 3, B3, strtm 1, level 2	LP134-150-F74	7.5YR 5/6				layered slabs			
Area 3, B3, strtm 1, level 2	LP134-150-F134	5YR 6/6				layered slabs			
Area 3, B3, strtm 1, level 2	LP134-150-F138	7.5YR 5/4	7.5YR 2.5/1			layered slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Area 3, B3, strtm 1, level 2	LP134-150-F167	10YR 5/3	10YR 4/1			layered slabs			
Area 3, B3, strtm 1, level 2	LP134-150-F177	10YR 6/4				layered slabs			
Area 3, B3, strtm 1, level 2	LP134-150-F183					layered slabs			
Area 3, B3, strtm 1, level 2	LP134-150-F187	10YR 4/3				layered slabs			
Area 3, B3, strtm 1, level 2	LP134-150-F188					layered slabs			
Area 3, B3, strtm 1, level 2	LP134-150-F190	10YR 4/4				layered slabs			
Area 3, B3, strtm 1, level 2	LP134-150-F207	7.5YR 6/4	10YR 4/1			layered slabs			
Area 3, B3, strtm 1, level 2	LP134-150-F210					layered lumps and slabs			
Area 3, B3, strtm 1, level 2	LP134-150-F217	10YR 5/4				layered lumps			
Area 3, B3, strtm 1, level 2	LP134-150-F222	10YR 5/3				layered slabs			
Area3, B3, strtm 1, level 2	LP134-150-F294	10YR 6/4				lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area 3, B3, strtm 1, level 2	LP134-150-F295	7.5YR 7/6				double layered lumps			
Area 3, C3, strtm 1, level 2	LP134-151-F214	7.5YR 5/4				layered lumps			
Area 3, C3, strtm 1, level 2	LP134-151-F57	10YR 7/4				layered lumps			
Area 3, C3, strtm 1, level 2	LP134-151-F58	7.5YR 5/4				layered lumps			
Area 3, C3, strtm 1, level 2	LP134-151-F64	7.5YR 5/4				layered lumps			
Area 3, C3, strtm 1, level 2	LP134-151-F165	10YR 6/4	7.5YR 2.5/1	Unkn	sqz	layered slabs			L
Area 3, C3, strtm 1, level 2	LP134-151-F181	7.5YR 5/3				lumps			
Area 3, C3, strtm 1, level 2	LP134-151-F204	7.5YR 6/6	7.5YR 5/2			layered lumps			
Area 3, C3, strtm 1, level 2	LP134-151-F220	10YR 5/4				layered slabs			
Area 3, C3, strtm 1, level 2	LP134-151-F237	7.5YR 5/6	10YR 4/1			layered lumps	slabs		L
	LP134-152?-F139	7.5YR 5/4				layered slabs			
Area 3, C2, strtm 1, level 1	LP134-152-F193	10YR 6/4				slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Area 3, C1, strtm 1, level 1	LP134-155-F42	5YR 5/6				layered lumps			
Area 3, C1, strtm 1, level 2	LP134-156-F128	5YR 5/6	N3/			layered slabs			M
Area 3, C1, strtm 1, level 2	LP134-156-F120	7.5YR 5/4	7.5YR 4/1			layered slabs			
	LP134-157-F32	7.5YR 6/4	10YR 4/1			layered lumps			
	LP134-157-F227	7.5YR 5/4				?			
	LP134-158-F182	10YR 6/4				layered slabs			
	LP134-159-F48	7.5YR 6/4	10YR 4/3			layered slabs			
	LP134-160-F54	7.5YR 6/4				layered lumps			
Area 3, strtm 1, level 1	LP134-161-F1			Unkn	pinched glbs	layered slabs			
Area 3, C3, strtm 1, level 1	LP134-161-F5	7.5YR 5/6				layered slabs			
Area 3, C3, strtm 1, level 1	LP134-161-F13	7.5YR 5/4				layered slabs			
Area 3, C3, strtm 1, level 1	LP134-161-F18					layered slabs			
Area 3, C3, strtm 1, level 1	LP134-161-F43	2.5YR 5/6				layered lumps			

		Firing Atmos-phere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxi-dized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradio-graph**	**SEM-EDS (°C)**	**Prosity**
Area 3, C3, strtm 1, level 1	LP134-161-F49	7.5YR 6/6	N3/			layered slabs			
Area 3, C3, strtm 1, level 1	LP134-161-F91	5YR 5/6		Unkn	2 slbs pressed making the rim	layered slabs at the body and added and bended slab added to make the lip			
Area 3, C3, strtm 1, level 1	LP134-161-F191	5YR 6/6	10YR 6/2			layered slabs			
Area 3, C3, strtm 1, level 1	LP134-161-F202	10YR 6/4				layered lumps and slabs			
Area 3, C1, strtm 1, level 1	LP134-164-F189	10YR 5/4				layered slabs			
	LP134-165?-F224	10YR 6/4				layered lumps			
	LP134-167?-F16	10YR 6/4				layered lumps			
Area 3, B4, strtm 1, level 1	LP134-170-F169	7.5YR 5/4				layered slabs	small slabs		M
Area 3, B4, strtm 1, level 1	LP134-170-F209	7.5YR 5/4				layered lumps			
Area 3, C2, strtm 1, level 3	LP134-183-F126					layered slabs and lumps added to make the lip	small slabs		L

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area3, C2, strtm 1, level 3	LP134-183-F186	7.5YR 5/8				layered slabs			
Area 3, C1, T, strtm 1, level 3	LP134-186?-F149					layered slabs			
	LP134-186-F235	?	10YR 4/4			?			
Area 3, B2, strtm 1, level 3	LP134-189-F116	10YR 6/3	10YR 4/1			layered slabs			M
	LP134-195-F55	7.5YR 6/6				layered slabs			
Area 3, B3, strtm 1, level 2	LP134-195-F289	7.5YR 6/6				double layered lumps			
	LP134-198-F162	10YR 6/4				layered slabs			
	LP134-199-F25					layered slabs			
Area 3, A3, strtm 1, level 3	LP134-199-F166	5YR 5/4	N2.5/			layered slabs			
Area 3, A3, strtm 1, level 3	LP134-199-F196					layered slabs			
Area 3, B3, strtm 1, level 3	LP134-202-F127	10YR 6/4	10YR 4/1			layered slabs			L
Area 3, B3, strtm 1, level 3	LP134-202-F292					double layered lumps			
	LP134-205?-F205	10YR 4/2	N3/			layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
	LP134-205?-F215	7.5YR 5/4				layered lumps			
Area 3, A1, strtm 1, level 3	LP134-209-F208	7.5YR 7/4	10YR 4/1			layered slabs			
	LP134-211?-F124	10YR 5/4	10YR 4/1			layered slabs			L
Area 3, B1, strtm 1, level 3	LP134-214-F231	10YR 5/3				?			
Area 3, C2, strtm 1, level 3	LP134-216-F192	7.5YR 6/4	10YR 4/1			slabs and lumps			
	LP134-217?-F81	10YR 7/4				layered lumps			
Area 3, B2, strtm 1, level 3	LP134-218-F140	10YR 6/2	N3/			layered slabs			L
Area 3, B2, strtm 1, level 3	LP134-218-F300	5YR 5/6	10YR 4/1			double layered slabs			
	LP134-223?-F226	2.5YR 5/6	7.5YR 4/1			?			
Area 3, C4, strtm 1, level 3	LP134-224-F4	10YR 6/3	7.5YR 2.5/1			layered slabs			
Area 3, A1, strtm 1, level 4	LP134-225-F123	7.5YR 5/6	7.5YR 4/1			layered slabs			
Area 3, B2, strtm 1, level 4	LP134-228-F161	10YR 6/4	N2.5/			layered lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
	LP134-228-F172	10YR 5/3				layered slabs			
Area 3, B1, strtm 1, level 4	LP134-236-F38	2.5YR 6/6				layered slabs			
Area 3, B1, strtm 1, level 4	LP134-236-F97	10YR 6/4				layered slabs and thin slabs added to make the lip			
	LP134-240?-F147	10YR 6/4	10YR 4/2			double layered slabs and lumps			
Area 3, B2, strat 1, level 5	LP134-241-F24	5YR 6/6				layered lumps			
Area 3, B2, strat 1, level 5	LP134-241-F29	7.5YR 6/4	N2.5/			layered lumps			
Area 3, A3, strtm 1, level 5	LP134-245-F131	7.5YR 6/6				layered slabs			H
Area 3, A1, strtm 1, level 5	LP134-255-F175					layered slabs			
Area 3, B1, strtm 1, level 5	LP134-260-F75	7.5YR 5/6				layered lumps			
Area 3, B3, level 1	LP134-267-F15	7.5YR 5/8				layered lumps			
Area 3, B3, level 1	LP134-267-F62					layered slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Area 3, B4, level 1	LP134-269-F10	7.5YR 5/4				layered lumps			
Area 3, B4, level 1	LP134-269-F11	10YR 5/4				layered slabs			
Area 3, B4, level 1	LP134-269-F33	5YR 5/6				layered lumps			
Area 3, B4, level 1	LP134-269-F65	7.5YR 6/6				layered lumps			
Area 3, B4, level 1	LP134-269-F68	10YR 6/4				layered lumps and slabs			
Area 3, B4, level 1	LP134-269-F70					layered lumps			
Area 3, B4, level 1	LP134-269-F71	7.5YR 6/6				layered slabs			
Area 3, B4, level 1	LP134-269-F73	10YR 7/6				layered lumps			
Area 3, B4, level 1	LP134-269-F80	7.5YR 6/6				layered lumps			
Area3, B4, level 1	LP134-269-F184	7.5YR 5/8				slab and lumps			
Area3, B4, level 1	LP134-269-F206	5YR 5/6				layered lumps			
Area3, B4, level 1	LP134-269-F223	7.5YR 4/4				layered lumps			
Area3, strtm 2, level 1	LP134-271-F3					layered slabs			
Area3, strtm 2, level 1	LP134-271-F6	7.5YR 6/4	7.5YR 5/2			layered slabs			
Area 3, strtm 2, level 1	LP134-271-F7		7.5YR 5/4			layered slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area 3, strtm 2, level 1	LP134-271-F8	7.5YR 5/6				layered slabs			
Area 3, strtm 2, level 1	LP134-271-F14	7.5YR 6/4				layered slabs			
Area 3, strtm 2, level 1	LP134-271-F36					layered lumps			
Area 3, strtm 2, level 1	LP134-271-F37	2.5YR 5/6				layered lumps			
Area 3, strtm 2, level 1	LP134-271-F44	5YR 5/6				layered lumps			
Area 3, strtm 2, level 1	LP134-271-F47	10YR 5/3	10YR 4/2			layered lumps			
Area 3, strtm 2, level 1	LP134-271-F78	7.5YR 6/6	10YR 4/4			layered lumps			
Area 3, strtm 2, level 1	LP134-271-F82	10YR 5/4				layered lumps			
Area 3, strtm 2, level 1	LP134-271-F83	10YR 5/6				?			
Area3, strtm 2, level 1	LP134-271-F84	7.5YR 7/6				?			
Area 3, strtm 2, level 1	LP134-271-F130	10yr 5/3	10YR 4/2			layered slabs			M
Area 3, strtm 2, level 1	LP134-271-F145	7.5YR 5/4				layered slabs			
Area 3, strtm 2, level 1	LP134-271-F156	7.5YR 5/4				double layered lumps			
Area 3, strtm 2, level 1	LP134-271-F158	7.5YR 5/4	7.5YR 4/2			layered lumps			
Area 3, strtm 2, level 1	LP134-271-F164	10YR 6/4	N3/			layered slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
Area 3, strtm 2, level 1	LP134-271-F200					layered lumps			
Area 3, strtm 2, level 1	LP134-271-F228	10YR 4/4				?			
Area 3, A2, level 1	LP134-273-F9	7.5YR 5/6	7.5YR 4/2			layered lumps			
Area 3, A2, level 1	LP134-273-F152					layered slabs			
Area 3, A2, level 1	LP134-276-F40	7.5YR 5/6	10YR 4/2			layered lumps			
Area 3, A2, level 1	LP134-276-F45	5YR 5/6				layered lumps			
	LP134-277?-F50	10YR 6/4	10YR 4/2			layered lumps			
Area 3, A3, level 1	LP134-278-F144	7.5YR 6/6				layered slabs			
Area 3, A3, level 1	LP134-278-F216	10YR 6/3				layered lumps			
Area 3, A3, level 1	LP134-278-F221	10YR 6/4				layered slabs			
Area 3, B1, strtm 1, level 8	LP134-282-F129	10YR 6/4		Unkn	dble layered slbs and folded over slab making rim	layered slabs			
Area 3, B1, strtm 1, level 8	LP134-283-F118					layered slabs			
	LP134-285-F174	10YR 5/3				double layered slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area 3, B2, strtm 1, level 8	LP134-289-F185	N4/				layered slabs	small slabs		
Area 3, B3, strtm 1, level 6	LP134-293-F51					layered slabs			
Area 3, B3, strtm 1, level 6	LP134-293-F52	7.5YR 5/3				layered slabs			L
Area 3, B3, strtm 1, level 6	LP134-293-F79	7.5YR 6/6				layered lumps			
Area 3, B3, strtm 1, level 6	LP134-293-F101	10YR 6/3		Unkn	slb folded over making the rim	layered slabs and a thin slab added to make the lip			
Area 3, B3, strtm 1, level 6	LP134-293-F194	7.5YR 5/4	7.5YR 5/2			layered slabs			
Area 3, B3, strtm 1, level 6	LP134-293-F201	10YR 5/4				layered slabs			
Area 3, C3, strtm 1, level 8	LP134-297-F39	5YR 5/6	N3/	Y	?	layered lumps			
Area 3, C3, strtm 1, level 8	LP134-297-F133	10YR 6/3				layered slabs			M
Area 3, C3, strtm 1, level 8	LP134-297-F159	7.5YR 6/6				layered lumps			
	LP134-297?-F163	7.5YR 6/6				layered slabs and lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area 3, A3, level 2	LP134-301-F229		10YR 4/1			?			
	LP134-307?-F218		7.5YR 4/1			layered lumps			
	LP134-309?-F146					layered slabs			
	LP134-310?-F199	10YR 6/4	7.5YR 4/1			layered slabs			
	LP134-312?-F61	10YR 6/4				layered slabs			
Area 3, B2, strtm 1, level 8	LP134-313-F53	7.5YR 7/6	7.5YR 4/2			layered lumps			
Area 3, B2, strtm 1, level 8	LP134-313-F117	7.5YR 6/6	10YR 7/3			layered slabs			L
Area 3, B2, strtm 1, level 8	LP134-313-F137	10YR 6/4	10YR 4/1			layered slabs			
Area 3, B2, strtm 1, level 8	LP134-313-F150	10YR 6/3	10YR 4/2	Unkn	dble layered slbs	layered slabs			
Area 3, B2, strtm 1, level 8	LP134-313-F234	7.5YR 5/4				?			
	LP134-314?-F151	7.5YR 5/4				layered slabs			
Area 3, C3, T, strtm 1, level 7	LP134-317-F119	7.5YR 5/8				layered slabs			
Area 3, A3, strtm 1, level 3	LP134-317-F197	5YR 6/6	N4/			layered slabs			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area 3, C2, strtm level 1&2	LP134-319-F19					layered slabs			
Area 3, C2, strtm level 1&2	LP134-319-F30	2.5YR 5/8				layered lumps			
Area 3, C2, strtm level 1&2	LP134-319-F23					layered lumps			
Area 3, C2, strtm level 1&2	LP134-319-F41	7.5YR 6/4	5YR 5/4			layered lumps			
Area 3, C2, strtm level 1&2	LP134-319-F120	10YR 6/4	7.5YR 2.5/1			layered slabs			M
Area 3, rasgoT, strtm 1, level 6	LP134-319-F142	7.5R 7/4	10YR 5/1			layered slabs			L
	LP134-319-F155	7.5R 6/4	7.5YR 4/1			layered lumps			
Area 3, B4, strtm 1, level 1	LP134-322-F148					layered slabs			
	LP134-357?-F157	7.5YR 6/6	7.5YR 4/1			layered slabs			
?	LP134-385-F46					layered slabs			
	LP134-385?-F203	10YR 4/3	10YR 4/1			layered lumps			
	LP134-385-F211	5YR 5/6				layered lumps			
?	LP134-389-F35					layered lumps			
	LP134-651-F28	5YR 5/4	10YR 5/1			layered lumps			
	LP134-651-F77	7.5YR 6/6				layered lumps			
	LP134-699?-F85	7.5YR 6/6				?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
	LP134-722?-F160	7.5YR 5/4	7.5YR 5/2			layered lumps			
	LP134-322-127-F86					layered slabs			
	LP134-319-128-F87	5YR 6/6	N2.5/			layered slabs			
	LP134-A35P-36-F88	10YR 7/4				layered slabs			
	LP134-182-35-F89	7.5YR 7/6	N2.5/			layered slabs			
	LP134-150-17-F90					layered slabs at the body and added lump at the lip			
Area 3, A2, strtm 1, level 3	LP134-199-19-F92	7.5YR 6/4	10YR 4/1	Unkn	a large slb, smaller one added to the lip	layered slabs			
	LP134-269-29-F93					layered slabs and lump added to make the lip			
Area 3, C4, strtm 1, level 6	LP134-305-15-F94	10YR 6/4	10YR 4/1	Unkn	slbs/sqz	layered slabs and thin slabs to make the lip			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
Area 3, B1, strtm 1, level 8	LP134-282-27-F95	10YR 6/3	N2.5/			layered slabs and thin slabs added to make the lip			
Area 3, B3, strtm 1, level 2	LP134-150-16-F96	7.YR 6/6	10YR 4/1	Unkn	dble slbs w/ clay added to the tip to make the lip	layered slabs and lumps added to make the lip			
Area 3, B3, rasgo 2, level 1	LP134-271-18-F100/Lp134-208-18-F99	10YR 64	10YR 2/1	Unkn	2 lyrd slbs making the rim	layered slabs		<1050	L
	LP134-83-31-F102	10YR 6/4				layered slabs and a thin slab added to make the lip			
	LP134-150-150-F103	10YR 6/3	7.5YR 2.5/1	Unkn	dble layered slbs, w/ a thin layer of fine clay in the interior	layered slabs and a thin slab added to make the lip			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
	LP134-289-13-F104					layered slabs and lumps added to make the lip			
Area 3, B3, strtm 1, level 2	LP134-148-30-F105	10YR 6/4				layered slabs and lumps added to make the lip			L
	LP134-170-25-F106	10YR 5/4				layered slabs			
Area 3, B3, strtm 1, level 3	LP134-202-218-F107	10YR 8/4	10YR 2/1	Unkn	2 layered slb/sqz	layered slabs and thin slabs to make the lip		850	
Area 3, B3, strtm 1, level 2	LP134-150-14-F108	7.5YR 5/6		Unkn	dble layered slabs and clay lumps added to the lip	layered slabs and lumps added to make the lip			
Area 3, C4, strtm 1, level 2	LP134-56-6-F109	7.5YR 6/4	N4/	Unkn	a lng slb are folded to make the rim	layered slabs and 2 layered lumps added to the lip			
Area 3, C3, strtm 1, level 2	LP134-151-21-F110	10YR 6/4	7.5YR 2.5/1			layered slabs and lumps added to make the lip			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	Ceramic code	Oxidized	Reduced	Thin Section	Thin Section	Visual	Xeroradiograph	SEM-EDS (°C)	Prosity
	LP134-75-23-F111		10YR 5/2			layered slabs and lumps added to make the lip			
Area 3, B3, strtm 1, level 2	LP134-313-32-F112	2.5YR 6/6				layered slabs and lumps added to make the lip			
Area 3, B2, strtm 1, level 5	LP134-150-32-F113	2.5YR 6/6				layered slabs			
Area 3, B2, strtm 1, level 5	LP134-241-241-F114		10YR 4/1			layered slabs and lumps added to make the lip			
	LP134-160-169-F115					layered slabs and lumps added to make the lip			
Area 3, C3, strtm 1, level 1	LP134-161-155-F135	5YR 5/6	N2.5/			layered slabs	slabs		L
Area 3, C2, strtm 1, level 2	LP134-57-155-F136	7.5YR 5/4	N2.5/			layered slabs			
	LP134-xx?-F170	5YR 5/8	7.5YR 4/1			layered slabs			
	LP134-xx?-F173	10YR 4/3				layered slabs			
	LP134-A35P-F180	10YR 7/4	10YR 5/1			slab and lumps			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
	LP134-2602-F219		7.5YR 2.5/1			layered lumps			
	LP134-2??-F230	7.5YR 5/4				?			
Area 3, A3, strtm 1, level 3	LP134-195-26-F236	7.5YR 6/8		Unkn	dble layered slbs	layered slabs and a strip of clay added to make the lip			
	LP134-148-156-F238					layered slabs	small slabs		
Area 3, C4, strtm 1, level 2	LP134-84-234-F290	7.5YR 6/4				layered slabs and lumps			
	SF9-B-61-1	5YR 5/6		Y	slab/ squeezed on the rim and lip added at the end	slab			
	SF9-B-60-1	5YR 6/6		Y	slab/ squeezed, bevel join, and underneath, an added clay piece	?			
	SF9-E20-5-7	2.5YR 6/6	N3/			layered slabs			
	SF9-H20-6	5B 6/1				slabs and lumps			
	SF9-H20-3	5YR 6/6				layered slabs			
	SF9-K20-2-3	2.5YR 5/6	N4/			layered slabs			
	SF9-E20-1	10R 6/8				?			

		Firing Atmosphere (Munsell)		Temper	Manufacturing Technique			Firing Temperatures	
Excavation context	**Ceramic code**	**Oxidized**	**Reduced**	**Thin Section**	**Thin Section**	**Visual**	**Xeroradiograph**	**SEM-EDS (°C)**	**Prosity**
	SF9-I20-3	10R 6.8	N3/			layered slabs			
	SF9-O20-3-11	10 YR 7/4				?			
	SF9-O20-4-3	10YR 8/4				layered slabs			
	SF9-K20-4	7.5YR 8/4				?			
	SF9-O20-2-b-1	10YR 7/4				layered lumps			
	SF9-M20-2	7.5YR 6/4	N4/			?			

APPENDIX C
POST-DEPOSITIONAL ALTERATION OF POTTERY (~4500-2500 ^{14}C yr BP) FROM THE HUMID TROPICS OF PANAMA, IDENTIFIED VIA TOF-LA-ICP-MS, PETROGRAPHY, AND µ-XRF

(*to be submitted to the Journal of Archaeological Science*)

1. Abstract

Chemical and mineralogical post-depositional alterations in pottery and their causal factors have been of interest to ceramic scientists because of their potential to complicate identification of provenance and use through chemical analysis. Currently we know that ceramic post-depositional changes are affected by the burial environment, paste composition, porosity, and permeability. However, detailed mechanisms of the alterations are not well understood and further tests are required. I examined pottery from the Early Ceramic Period (ca. 4500-2500 ^{14}C yr BP) from the humid tropics of central Panama. The pottery pastes are of two major mineralogical and chemical types: the Azuero Peninsula type from the south and the Cordilleran type from the north. In order to understand post-burial changes, I identified secondary minerals forming in pores by petrographic microscopy, and elemental adsorption on walls by time-of-flight laser ablation inductively-coupled plasma mass spectrometry, and micro x-ray fluorescence, subsequently creating elemental maps. Central Panama has different degrees of humidity between the Pacific and the Caribbean sides as well as within these environmental zones. Some pottery was buried in the Pacific coastal shell-bearing middens and others in rock

shelters. Secondary gibbsite was forming only in pottery buried in the Caribbean foothills, which have the highest humidity in the study area. Secondary calcite was deposited in pottery from shell middens on the northeastern Azuero on the Pacific coast and a rock shelter on the Pacific plains; these areas have the lowest precipitation in Central Panama and an extreme contrast between wet and dry seasons. Chemical alterations were found in Ba, Pb, S, and Sr that tended to co-occur on the walls of sherds with Ba-high bulk elemental composition; they came from only two rock shelters from the Pacific foothills. I conclude that the different types of post-depositional changes noted in central Panamanian pottery are mostly determined by differences in the local climate and the burial environment. Differences in pottery porosity, initial composition of pastes, and bedrock geology, are only minor factors.

2. Introduction

Scientists in the fields of geology, soil science, and paleontology, have long been concerned about post-depositional modification (diagenesis) of rocks, sediments, and fossils with regards to rates, factors, and mechanisms of alteration, as well as the reconstruction of pre-alteration states. When sediments, rocks, and bones are buried, differential uptake of elements, redistribution and recrystallization of minerals and formation of new minerals occurs as part of the post-depositional alterations (Cochran et al., 2010; Girard et al., 2002; Hover et al., 2002; Ketzer et al., 2002; Koenig et al., 2009; Schaetzl and Anderson, 2005; Trueman et al., 1999, 2004). Diagenetic processes have also been a research topic for archaeological scientists; the possibility of post-depositional alteration of ceramics had been suggested by the mid-1950s (Golitko et al., 2011; Sayre et al., 1957). A variety of studies have been conducted since then. Today, ceramic scientists agree that in pottery, chemical and mineralogical changes are influenced by the burial environment (pH, humidity, and temperature), paste composition (Golitko et al., 2011; Schiffer, 1987), and porosity (and permeability), and diffusion paths of soil solutions (Freestone et al., 1985: 175; Heimann and Maggetti, 1981). Scholars have discussed this in terms of the effect of the vitreous phase of ceramics and glassy volcanic rocks and their post-depositional susceptibility to leaching and uptake of mobile elements as well as quick deterioration caused by hot and humid conditions (Golitko et al., 2011; Greathouse et al,. 1954; Evans and Limbrey, 1974; Heimann, 1982; Maggetti, 1982; Neff et al., 2003; Rice, 1987; Schiffer, 1987). Nonetheless, some of the observed changes are not well understood. For example, environmental factors, mechanisms of elemental adsorptions by ceramics, combination of elements that move together, as well as the new mineral formation after pottery deposition have to be further studied.

This paper examines post-depositional changes to pottery of the Early Ceramics period (ca. 4500-2500 BP) from the humid tropics of Panama. Chemical weathering of rocks and minerals is pronounced in these environments (Schaetzl and Anderson, 2005:237). Thus, pottery deposited in such an environment is quickly affected by geological weathering processes. This could potentially influence the success of ceramic provenance studies that employ trace element analysis, distort the assessment of firing temperatures through mineral phases and porosity, and also complicate studies of pottery use through the identification of organic and inorganic residues. It is particularly important to understand the extent of alteration in the humid tropics, where changes are rapid. The objectives of this paper are: (1) to identify elements that were adsorbed and new minerals formed in pottery after its deposition and to infer the environmental and paste compositional factors that affect these alterations; (2) to contribute to an understanding of the mechanisms of post-depositional changes in the hot and wet tropics; (3) provide suggestions for the elements and minerals to focus on (or to avoid) when studying provenance, and production and use of early ceramics in the tropics.

3. Previous research and site background

Ceramic scientists have studied post-burial alterations by focusing on mobile elements. They have discussed soluble cations such as barium, calcium, and strontium and to a lesser extent, magnesium as well as soluble complex anions such as phosphate. There are also studies on manganese. Occurrence of these elements in combination is also presented as forming a mineral phase and appearing in solutions.

Phosphates are commonly accumulated at sites because human activities redistribute P in soils, organic wastes are rich in P, and the relatively stable compounds of inorganic phosphate minerals and organic esters are quickly formed via bonding of P with Fe, Al, and Ca ions, creating P complexes that are resistant to oxidation, reduction, and leaching. (Holliday and Gartner, 2007:302). When the soil is acidic, P is bonded with Al and Fe, and when it is basic, with Ca (Holliday and Gartner, 2007:303). Although being relatively refractory, P transforms, leaches, and mobilizes in sandy (instead of fine particle clays with Fe and Al-hydroxy oxides), redoximorphic, and neutral pH soils as well as in conditions with land-use related organic amendments and with geomorphic re-arrangements (Holliday and Gartner, 2007:302, 307); the P mobility is also affected by the regime, presence, and chemistry of groundwater as well as activities of micro-organisms (Maritan et al., 2009:148). Archaeologists encounter elevated phosphorous concentrations in pottery. It has been suggested that an even distribution of P in pottery paste is due to manufacturing and firing; uneven P enrichment occurs because of exposure to organic substances (Duma, 1972:127-129). In this context, it has been argued that elevated P concentrations on both vessel walls, but not in the interior, are caused by diagenesis in the burial environment (Freestone et al., 1985). However, if P concentrations are higher on the interior than the exterior walls the elevated P results from use (Dunnell and Hunt, 1990:333). Pottery fired between 600-800°C has connected porosity and thus permeability, which allows soil solutions containing P to penetrate some distance into the interior (Duma, 1972). According to Freestone et al. (1985:173), P adsorption is expected in fired ceramics because the vitreous amorphous phase created through de-hydroxylation and the disordering of clay mineral structures provides a suitable chemical environment for adsorption of phosphate ions. Secondary phosphates also form where P is present in the soil; the phosphates do not concentrate evenly and are found in microstructural sites and pores as an aggregate of grains (Maritan et al., 2009: 149). Apatite ($Ca_5(PO_4)_3(F,Cl,OH)$) forms on the leached glass surface. Vivianite (Fe3(PO4)2-(H2O)8) replaces bone inclusions in pottery with an iron bearing solution of relatively low pH and eH and it is observed that subsequent exposure to the Ca-rich ground water induces the growth of mitridatite ($Ca_2Fe_3^{+3}O_2(PO_4)_3$ $3H_2O$) (Maritan, 2004: 679). Trace elements such as Cr, Sc, Ba and rare earth elements are adsorbed by apatite from bones and fossils (Freestone et al., 1985:174; Koenig et al., 2009). Phosphate in general is found in association with Ba and Sr, manganese oxides or in a metallurgical context with Zn and Pb (Freestone, 1995:621 following Picon, 1991; Walter and Besnus,1989; De Paepe, 1979).

In addition, secondary calcium carbonate is known to deposit on the pottery surface, in pores, in the matrix, or is adsorbed into the matrix of mineral phases due to soil solutions (Freestone 2005:621). Calcitic temper (e.g., shell, limestone) is highly soluble in acid soil solutions and leaches out from pottery, leaving angular voids (Freestone, 2005:621). Bone fragments (e.g., temper) in pottery clay can, for example, recrystallize, forming aggregates of hydroxylapatite when fired above 600°C (Maritan et al., 2009). Calcareous clays vitrify at lower ranges of pottery firing temperatures, and are known to attract alkaline elements (Golitko et al., 2011:8; Picon, 1985, 1987, 1991). When they are fired to about 800-1000°C gehlenite is formed. Tests show that soil solutions decompose this gehlenite when ceramics are buried for long term under humid conditions (Freestone, 1995:622; Heimann and Maggetti, 1981).

In terms of increased barium diagenetic concentration in pottery, it is considered that Ba is enriched in vessel walls and pores and covaries with sulfur (Kowakowsky et al., 1999:384-385). There are also suggestions that volcanic ash temper and the vitreous phase in pottery alter to barite or to baritic zeolites (Neff et al., 2003; Picon, 1987). Given the same volcanic ash inclusions, however, baritic alteration is not likely to occur in pottery deposited in an area with high precipitation (Koskowsky et al., 1999:385; Neff et al., 2003).

Although rare earth elements (REE) have similar chemical properties and are considered to be refractory, heavy REE are more mobile than light REE and are thus depleted in extremely altered rocks (Nesbit 1979). Paleontologists (Koenig et al., 2009) have also shown differential adsorption of light, medium, and heavy REE in fossils. The present paper focuses mainly on highly mobile elements that have been previously discussed as diagenetically adsorbed in pottery. Specifically, I examine Ba and related elements as well as P. Post-depositionally formed mineral phases are also presented.

4. Archaeological sites

In order to study post-burial mineralogical and chemical changes in pottery, we must characterize the pottery depositional contexts and compare them with the raw material sources. Early Ceramic period ware is found in central Panama. My samples are excavated from (Figure 15): (1) He5, Pr14, and Pr32, shell bearing middens on the Pacific coast, (2) Ag13, a rock shelter on the Pacific plains, (3) Cl1, Lp134, and Sf9, rock shelters in the Pacific foothills, and (4) Lp8, a rock shelter on the Caribbean slopes. Samples from Lp134 are selected from the entire Early Ceramics period (ca. 4500-2500 BP) whereas those of He5, Pr14, Pr32, Cl1, Sf9, Ag13, and Lp8 are selected from the context of the first pottery period (ca. 4500-3200 BP), Monagrillo/Early Ceramic A (Iizuka 2013; Willey and McGimsey, 1954; Cooke 1995, 2005). All the samples except for those from Lp8, were borrowed from the Smithsonian Tropical Research Institute (STRI), which stores Early Ceramic period sherds from previous excavations (He5: Ranere's 1975, Pr32: Proyecto Santa María's 1984 and Giausserand's 1987, Ag13: Ranere's 1975 and 1997, Cl1: Bird and Cooke's 1974, Pr14: Hansell's 1988, Lp134:

Mayo’s (2006), and Sf9: Proyecto Santa María and Valerio´s 1983 and 1985) (Cooke, 1995; Hansell, 1988; Peres 2001; Sánchez 2001; Valerio 1985). Samples from Lp8, excavated in 1998, were borrowed from Griggs (2005).

5. Geology and geochemistry

Central Panamanian geology (Figure 15) can be divided into two broad zones. The older Azuero Peninsula has both volcanic and intrusive igneous zones as well as sedimentary rocks, while the younger Cordillera Central is mainly composed of volcanic rocks. The He5 and Pr14 sites are situated in Azuero where they have local sediments as well as materials carried by Parita River flowing through: (1) the Azuero Arc of the Paleocene to Early Eocene (48-66 Ma) igneous intrusive rocks (TE-RIQ) and contemporary volcanic rocks (K-VE), predominantly intermediate to silicic lavas (Buchs et al., 2010; Lissinna et al., 2005) and (2) Late Cretaceous (~78-66 Ma) Ocú Formation (K-ChaAo) with hemipelagic limestones (Buchs et al., 2010: 28-35) and reef limestone of the Middle Eocene (41-49 Ma) (Lissinna et al., 2005). Pr32, Ag13, Sf9, Cl1, Lp134, and Lp8, on the other hand, are situated in the geological units of the Cordillera Central and/or where major sediments are carried by the Santa María River passing through (1) the Miocene arc (18-7 Ma) with basaltic, basaltic andesites to dacite lava flows (TM-CA); (2) the Middle to late Eocene volcanic arc (46-34.3 Ma) (TM-SP) with calc-alkaline aphyritic dacites and andesites (Lissinna et al., 2005: 72; Wörner et al., 2009); and (3) La Yeguada (~2.5 Ma, and 5-~7.5 Ma) (TPLM-Y), Quaternary stratovolcano (de Boer et al., 1988; Defant et al., 1991; Hidalgo, 2007; Hidalgo et al., 2011; Knutsen 2010). Cl1 and Lp134 are by the Grande River that includes materials from #2, from the Cordillera, #3, from La Yeguada, and also materials from El Valle (0.9-0.2 Ma and 5-10 Ma) (TPL-VA), a Quaternary stratovolcano to the east. Pr32, also locally includes some Azuero sediments carried via coastal current moving south to north (Clary et al. 1984).

Geochemically, the Azuero Arc has low-Fe differentiated trends and is depleted in Nb and Ti but enriched in Pb and Ba (Buchs et al., 2010:16, 21) and is low in Sr/Y (Lissinna et al., 2005:62). In the Cordillera, the Middle to Late Eocene calc-alkaline volcanic rock has enriched incompatible elements (e.g. heavy rare earth elements (HREE) (Lissinna, 2005:72) and low Sr/Y in the Miocene arc while the Quaternary volcanic units with adakitic rocks of the Quaternary arc are characterized by high Sr/Y, pronounced depletion of HREE, low-high field strength elements (e.g., Nb, Ta), high La/Yb, and low Ba /La (Defant et al., 1991a,b; Hidalgo, 2007; Hidalgo et al., 2011).

6. Materials and methods

To compare pastes of the Early Ceramic period and assess the environmental effects, I present results from the raw material provenance study I have conducted as part of a broader pottery life-history research. In sourcing ceramics, I examined geological maps of central Panama and conducted tests by three analytical techniques: time-of-flight laser ablation inductively-coupled plasma mass spectrometry (TOF-LA-ICP-MS), portable x-ray fluorescence (p-XRF), and petrography. I acquired quantitative chemical data of the paste matrix via TOF-LA-ICP-MS on sherds (n = 161) and raw clayey soils (n =79) and semi-quantitative bulk compositional ceramic data via p-XRF (n = 263). Statistical analysis was done on the data obtained via TOF-LA-ICP-MS and p-XRF. Ceramic petrography was conducted on 24 x 48 mm thin sections of sherds (n = 130), raw clayey soil (n = 28), and raw sand (n = 4). After the ceramic sources were determined, micro x-ray fluorescence (μ-XRF) was run on ceramic thin section s (n = 13).

6.1. TOF-LA-ICP-MS

At the Institute for Integrated Research on Materials, Environment and Society (IIRMES) at California State University Long Beach (CSULB), TOF-LA-ICP-MS was adopted for characterizing the composition of the bulk paste matrix (of pottery and raw clayey sediments). The analyses were undertaken on a GBC Optimass 800 orthogonal time-of-flight ICP-MS attached to a New Wave UP-213 laser ablation system. A small piece of each sample was chipped from the sherd (n = 161) and from the raw clayey soil samples (n = 79); 10 spots of clay matrix on unflattened and unpolished freshly chipped surfaces were ablated per sample; a blank was measured and then standards were run after every 20 spot runs. The spot size of 75 μm was chosen, the laser was run on the selected clay matrix spots with laser power of 80%, and with the repetition rate of 10 Hz. The following 60 elements, including major, minor, trace, and rare earth were measured: Li, Be, Na, Mg, Al, Si, P, S, K, Ca, Sc, Ti, V, Cr, Mn, Fe, Ni, Co, Cu, Zn, Ga, Ge, As, Rb, Sr, Y, Zr, Nb, Mo, Ag, Cd, Sn, Sb, Te, Cs, Ba, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Hf, Ta, W, Re, Au, Tl, Pb, Bi, Th, and U. Standards used included three NIST glasses, SRM 614, SRM 612, and SRM 610 (concentration given by Pearce, *et al.* 1997), Glass Buttes obsidian, and NIST SRM 679, a brick clay. The Glass Buttes obsidian and New Ohio Red clays have a high Ba concentration of 1188 ppm, which makes it useful for calibrating the high levels of barium observed in some of the sherds included in this study. The reported quantitative data are based on the average of all clay matrix spots from each sample.

6.2. X-ray fluorescence

In order to acquire semi-quantitative bulk compositional data in the pottery, I adopted portable x-ray fluorescence (P-XRF) with the Bruker Tracer III at the STRI and the Bruker Tracer III-V+ at the Institute for Integrated Research on Materials, Environment and Society at California State University Long Beach (IIRMES-CSULB). For the Bruker Tracer III, 40kV and 16 μA, and for Bruker Tracer III-V, 40 kV and 20 μA, were opted. The analysis was done using the filter containing Cu, Ti, and Al. Each sherd was run non-destructively on different spots, 5 times for 300 seconds, with a beam size 2 x 3 mm. Elements between iron (Fe, Z = 26) to niobium (Nb, Z = 41) were analyzed and net peak area energy intensity data (n = 263) were acquired through the Bruker ARTAX software.

6.3. Petrographic Study

Lithic and mineral inclusions in pottery thin sections (n = 130), and secondary minerals deposited in pores after burial, were identified by optical petrography, using Olympus BX-51 and BH2 petrographic microscopes in the optical laboratory at the School of Anthropology of the University of Arizona and Nikon Eclipse 50i POL petrographic microscope at STRI. In addition, the area percentage of porosity was roughly estimated by visual comparison with printed charts.

6.4. Micro-X-ray Fluorescence

The Bruker ARTAX 800 XRF spectrometer, temporarily loaned to IIRMES-CSULB, was used to obtain μ-XRF maps. The μ -XRF spectrometer allows acquisitions of semi-quantitative, net peak area energy intensity-based elemental surface data ranging in elements between Na and U. Commonly, low-Z elements require vacuum for quantitative detection via XRF; however, the low-Z elements are detected with the Bruker 800 XRF because helium filled in the polycapillary lens directed with gas jets, purges the detector paths (Trentleman et al., 2010). Based on the statistical results obtained from the bulk compositional study comparing the data of clay matrix in pottery and raw clayey soil samples, sherds with high, medium, and low Ba were chosen from Cl1 and Ag13, which tended to have higher Ba than the raw clayey soil, and Ba medium and/or low sherds were selected from Pr32, Lp134, He5, and Lp8. A total of 13 sherds were selected for the study. Sherds with flat surface that had been embedded in epoxy to produce thin sections were chosen, in order to run line scans and produce the area map based on compiling the line scanned data. An X-ray beam of approximately 65 μm in diameter irradiated the sample with high excitation intensity. The X-ray tube was operated at 50 kV and current at 600 μA. The collection time for each spectrum was 10 seconds. Spot distance was set to 0.05 mm, creating line scans across the vessel profile. Five to ten line scans were run on each sample. Spacing between lines was <0.4 mm.

Subsequently, through the Bruker ARTAX software, each scanned line was exported to Microsoft Excel. The line-scanned data in Excel were then compiled and run through Surfer 8, in order to construct maps of pottery element concentrations.

7. Results

7.1. Compositional Groups and Diagenetic Elements from TOF-LA-ICP-MS

Results from TOF-LA-ICP-MS (Figure 16) indicated that the bulk composition of the ablated paste matrix of ceramic samples could be separated into three broad compositional groups, based on the log 10-based bivariate plot of Tl and Y and discriminant function analysis. The groups are made at the 90% confidence level after jack-knifing through the Mahalanobis distance test. Group 1 contained all the assigned ceramics from Pr32 (n = 37) and all from Sf9 (n = 4), most from He5 (n = 14), about half from Ag13 (n = 10), and small numbers from Cl1 (n = 2), Lp134 (n = 1), and Pr14 (n = 1). Group 2 contained almost all the assigned sherds from Lp134 (n = 16), two thirds from Lp8 (n = 9), and one from He5. Group 3 contained more than half the assigned sherds from Ag13 (n = 13), a majority from Cl1 (n = 23), and small numbers from Lp8 (n = 3). The remaining samples were unassigned (Ag13 (n = 7), Cl1 (n = 3), He5 (n = 4), Lp134 (n = 5), Lp8 (n = 5), Pr32 (n = 1), Pr14 (n = 2).

While the results from the TOF-LA-ICP-MS were used to source and chemically characterize the ceramics, the diagenetic elements had to be identified. Based on the chemical groups constructed through previous statistical tests, I ran bivariate plots of elements comparing the groups derived from the statistical results of bulk clay matrix composition (Group 1: n = 69; Group 2: n = 26; Group 3: n = 39) and clay matrix from raw clayey sediment samples (n = 79) collected from central Panama. Specifically, raw clayey sediments were gathered from the following geological units (Figure 15): (1) Pesé, Playa Venado, Ocú, Valle Riquito, formations from the Azuero Peninsula, (2) Río Hato

Formation in the Pacific coastal alluvial deposit along the Parita Bay, and (3) Cañazas, Tocué, El Valle, and La Yeguada formations in the Cordillera. I especially focused on Ba and the examination of other mobile elements, Pb, S, Sr, P, Zn, Mn that researchers have suggested co-occur diagenetically with Ba. P is chosen also because it has been identified as diagenetic in the presence of Ca.

The results (Figure 17) indicated that a significant number of samples from Group 3 and some from Group 2 are higher in Ba and Sr than sediment samples. The tendency is that in Group 3, when the Ba is elevated, Sr is also increased although there are some exceptions. Overall, since Pb values were much higher in the sherds of all chemical groups 1 to 3 than in sediment samples, Pb was an appropriate element to be tested for diagenesis on walls via the elemental map of the profile. Although various scholars suggest that P and Ca co-occur diagenetically, both the sherds and sediment samples had about an equal range of Ca, though somewhat higher value in the sherds. However, more than half the samples from each compositional group had P concentrations higher than raw clayey soils. S, Mn, and Zn had similar quantitative ranges as the raw clayey soils, and so did not give any bulk diagenetic signals.

7.2. Compositional groups via P-XRF

Pottery was broadly classified into two compositional groups via biplot analysis of Ga and Nb with data normalized to Zr (most zircon grains are 0.02-0.05 mm, and did not affect the bulk compositional results in a significant way) with subsequent Mahalanobis distance test (Figure 18). There were Cordilleran (n = 109) and Azuero (n = 122) produced ceramic groups.

7.3. Results of petrographic examination

The results of the petrographic analysis (Appendix C.1) were mostly in accordance with the LA-ICP-MS findings. Azuero pottery was classified into two groups, Group 1 with granitic lithic and mineral inclusions, and Group 2 with porphyritic volcanic rocks and grains of monomineralic phenocrysts; some have minor components of intrusive rock fragments. Cordilleran pottery has mainly lithic fragments of pyroclastic rocks and monomineralic phenocrysts of feldspars, with porphyritic or non-porphyritic volcanic rock fragments.

7.4. Provenancing results from three methods

When the results from all three analytical methods were combined and presented with samples that were conducted with petrographic results (Appendix C.1), the quantitative breakdown was as follows: 48 were Azuero coast produced, 51 were Pacific Cordillera produced, and 7 had an intermediate signature with differentially assigned Cordillera and Azuero source types from three analytical results or with a ceramic thin section having inclusions of the Azuero intrusive unit and Cordilleran pyroclastics.

7.5. Secondary Minerals Found in Pottery Pores in Thin Sections

Several sherds (n = 15) from Lp8 in the Caribbean foothills had secondary gibbsite forming in the pores and around plagioclase and rock fragments (Figure 19). Although most Lp8 ceramics compositionally and petrographically match pottery from the eastern Pacific foothills rock shelters, none of the sherds from the latter sites contained secondary gibbsites (Table 34). A limited number of ceramics from Pr32 (n =

2) and He5 (n = 2) had secondary calcite forming in the pores (Figure 19) although several sherds had secondary calcite forming in the pores on exterior surfaces. A small amount of secondary calcites was observed in pores of a small sample from Ag13 (n = 2). Shell middens and Ag13 were the only sites whose pottery contained secondary calcite.

7.6. Elemental Distributional Maps Using µ-XRF

Since there was great variation in Ba in the "bulk" analyses, as measured with TOF-LA-ICP-MS, I selected seven sherds (the entire study is presented in Appendix C.1) with extremely high Ba (Cl1-44-F10; Cl1-45-F2), high Ba (Ag13-8-U1-F3; Cl1-3-F14), and low Ba (Cl1-44-f8; Pr32-C35-N20-2; He5-70-F1) for multi-element spatial mapping with µ-XRF. Figure 20 through Figure 26 show seven of these maps superimposed over photographs of the sherds; the interior surfaces are indicated in each case.

Cl1-44-F10 (Figure 20) (Extremely High Ba: 31590.89 ppm, Cordillera Type)

Ba, Pb, and S are found in concentrations on both vessel walls. The distributions of Pb and S appear nearly identical but optical examination shows no galena (PbS), so these are probably present in the matrix, probably acquired after burial, rich in lead sulfate without the crystal structure, or appearing along with Ba in volcanic glass and the clay matrix. Sr, Ca and Al show similar distributions because of their co-occurrence in grains of plagioclase feldspar, clay matrix, and volcanic glass. Existing volcanic glass fragments in the interior may have adsorbed Ba, Pb, S, and Sr post-depositionally, could have contained these elements originally, or both. Zn shows some diagenetic wall concentrations on the exterior and interior and Mn, perhaps in the exterior. P concentration is on the exterior wall. This sherd exhibits low porosity and a low glassy phase in the volcanic rock fragments.

Cl1-45-F2 (Figure 21) (Extremely high Ba: 24107.75 ppm, Cordillera Type)

Ba and Pb co-occur near the wall on clays and possible volcanic glass in the interior but not S. S is homogenously low in this sherd. Pb is more evenly distributed, co-occurring with K and Al, with a possible illitic clay matrix. Sr also shows wall concentrations along with Ba and Pb but it also appears with calcic plagioclase and is distributed evenly throughout the sherd. Zn and Mn show no wall adsorptions. P is concentrated on both the interior and exterior walls. Ba, Pb, and Sr may be adsorbed post-depositionally on the wall and in volcanic glass but the latter may have also originally contained those elements. The sherd porosity is medium-high, and vitreous volcanic rocks are present in low amounts.

Ag13-8-U1-F3 (Figure 22) (High Ba: 3626.52 ppm, Azuero Type)

Ba, Pb, and S co-occur concentrated on the walls and in the interior clay matrix. Sr occurs on the wall but is more evenly distributed, appearing with possible calcic plagioclase, vitreous volcanic rock fragments, and the paste matrix. Ba also seems to appear in volcanic glass. P shows a higher concentration on the exterior surface. Zn is elevated more on the exterior and interior walls but its distribution differs from Ba, Pb, and S. Mn has diagenetic alteration on the interior. This sherd has a high amount of porosity and a medium quantity of glassy volcanic rock.

Cl1-3-F14 (Figure 23) (High Ba: 2372.88 ppm, possible Cordillera)

Ba, Pb, S co-occurring on exterior and interior walls, almost in an identical manner appear in volcanic glass and clays. Sr comes with these elements but is more evenly distributed and is also contained in calcic plagioclase. Mn is partially concentrated on the interior wall, but may not be diagenetic. Overall, P is adsorbed on both walls but differs from Ba, Pb, and S. The clay contains, Al, Fe, K, and Zn. The sherd has medium porosity and a low amount of glassy volcanic rock fragment inclusions.

Cl1-44-F8 (Figure 24) (Low Ba: 951.07 ppm, Cordillera type)

Ba, Pb, and S are not concentrated on the walls but co-occur in the interior, on volcanic glass. This could be post-depositional, original, or both. Sr appears with these elements but is evenly distributed, also being contained in calcic plagioclase. Phosphorus is post-depositionally adsorbed on both walls. Mn occurs on the exterior wall and is perhaps diagenetic. The sherd has a medium amount of porosity. The vitreous phase of the volcanic rock is low.

Pr32-C35-N20-2 (Figure 25) (Low Ba: 860.37 ppm, Azuero type)

No Ba, Pb, or S concentrations are seen on the vessel walls. Sr is evenly distributed and appears with clay and volcanic glass. Sr may be contained in clay. Zn and Mn show adsorption on the exterior wall in a different pattern but P appears on the interior and exterior walls. The porosity of this sherd is high. The amount of volcanic rock with a vitreous phase is low.

He5-70-F1 (Figure 26) (Low Ba: 237.33 ppm, Azuero type)

Ba shows no wall concentration but perhaps appears with K-feldspars and glassy volcanic rock fragments. Pb and S appear throughout the wall, in a similar manner, and are elevated on the interior wall. Sr does not appear evenly distributed nor does it occur with Ba, Pb, and Sr. P and Ca occurs in small amounts on the interior wall. The porosity of this sherd is high. There is a small number of volcanic rocks with glassy phase.

Other samples not listed in Figure 20 through Figure 26 (see Table 34) exhibit similar results. Ag13-8-U1-F2 with high bulk Ba (4715.51 ppm, mixed source.) has similar thin exterior and interior wall concentrations of Ba, and Pb and S, but Pb and S occur nearly exclusively on the exterior wall. There are thick concentrations of P on both walls. Sherds (Lp134-161-125-F243; Lp134-305-15-F94) from Lp134 sites with low Ba ppm, in the elemental maps, indicate that Ba and Pb are concentrated in the paste in different locations (although Ba and Sr could be diagenetically concentrated on the wall in Lp134-161-125-F243). Sulfur is extremely scarce. Thus, even though sherds from Lp134 can have Ba and Sr wall concentrations, they appear unrelated to S and Pb. There are some P concentrations on an interior wall of Lp134-161-125-F243. Bulk Ba ppm is unknown in Lp134-82-176-F246. In this sherd, there are no Ba, Sr, Pb, or S wall concentrations although P is adsorbed on both walls. Other sherds (He5-64-F3 and Lp8-176-159-2-1) with low Ba bulk values do not show Ba and S concentrations on the walls, although in He5-64-F3 Pb is adsorbed on the wall interior and appears in the paste interior un-related to Ba or S. In this sample, Mn and Ca appear in the exterior wall. In Lp8-176-1.59-2-1, Pb has no wall or body concentrations but Sr is evenly distributed appearing mainly with clays.

The general patterns indicate a tendency for the co-ocurrence of Ba, Pb, S, and Sr with Sr also appearing in calcitic plagioclase and clays in sherds, with *high bulk Ba* *concentrations* (with the exception of Cl1-45-F2; it lacks S but otherwise follows the pattern). In these sherds, P appears on the wall but is distributed differently than Ba, Pb, S, and Sr, and is seemingly uncorrelated with Ca concentrations. Although sherds with high Ba and extremely high Ba from the Cl1site belong chemically and mineralogically to the Cordilleran type and those from Ag13 to the Azuero paste, they show similar wall adsorption patterns of Ba, Pb, S, and Sr. The low Ba sherd, Cl1-44-F8, from the Cl1 site, has Ba, Pb, S, and Sr appearing together in the interior paste, but not in other sherds with low bulk Ba values. The exception could be Lp134-161-125-F243 with low bulk Ba but having the correlated occurrence of Ba and Sr; in this sample, however, Pb and S do not show wall diagenesis. When adsorbed on the walls, P and Mn in the low bulk Ba sherds, show no clear tendency to co-occur with other elements. Sherds that were not buried in the Pacific Cordilleran (including plains) rock shelters, regardless of paste origin and degree of porosity, showed no tendency for Ba and related elements to co-occur on vessel walls. In Azuero samples, however, where bulk Ba concentration tended to be low, He5-70-F1 had a diagenetic co-occurrence of Pb and S. Similar to the Cl1 and Ag13 with extremely high Ba and high Ba sherds, there was an independent appearance of P, and to a lesser extent, Mn and Zn, on the walls in sherds from other sites. Azuero-type sherds tended to have higher porosity and more abundant volcanic rocks with a glassy phase, but the wall adsorption of mobile elements was not necessarily more prevalent than in the Cordilleran sherds.

8. Discussion

I tested Ba diagenesis and further examined whether the above-mentioned elements related to Ba diagenesis exhibit post-depositional chemical alteration signatures, as has been suggested by previous researchers (Golitko et al., 2011; Kosakowsky et al., 1999; Neff et al., 2003; Picon, 1985, 1987). The results suggest that Central Panamanian Early Ceramics showed differential post-depositional secondary mineral formation and elemental adsorption. I offer the following explanations for these differences.

Secondary gibbsite and the Caribbean slope shelter

Sherds from Lp8 (Calaveras rock shelter) were the only ones with gibbsite (Al(OH)3) in pores and as rims around some feldspars and rock fragments. Lp8 ceramics chemically and mineralogically belong to the Cordilleran (volcanic) type while other sherds were produced using Cordilleran raw materials but, when buried elsewhere, did not have this pattern.

The rate of chemical reactions increases with temperature (Schaetzl and Anderson, 2007: 237). The processes of weathering and leaching lead to the formation of new minerals (Jackson et al., 1948; Paton, 1978). Gibbsite is produced from aluminosilicates by the intense weathering associated with high precipitation and temperature (Jackson, 1948:1244; Hay and Jones, 1972 in Paton, 1978). The Caribbean slope of central Panama has annual precipitation ranging between 2000-3000 mm in the continental divide and 4000-5000 mm along the coast (Griggs, 2005: 24; Hansell, 1979:4); this precipitation level and high temperature promote rapid chemical weathering (e.g., Schaetzl and Anderson, 2007). In addition, the acidic soil intensifies weathering (Jackson, 1948:1245) as does the acidic soil of the Caribbean watershed of Panama (Tosi, 1971 in Griggs, 2005:26). Hence Lp8 indicates that in this depositional environment, specifically with annual average precipitation between 2500-3000 mm (Griggs 2005:37), gibbsite forms in pottery in no more than 4000 years. In contrast, we do not find gibbsite in sherds excavated from the Pacific foothills sites near the Río Grande. Although derived from the same Cordilleran source materials, they are subjected in the Pacific foothills to approximately ~1500-2000 mm/yr (Griggs 2005:35; Hansell, 1979; Piperno et al. 1985). I conclude that gibbsite formation is favored by the higher precipitation in the Caribbean Cordillera.

Secondary calcite in pottery buried in the low precipitation Pacific Central Panama

Secondary calcite was found only in ceramics from Ag13, Pr32 and He5. Ag13 is a rock shelter in the Pacific plains and the other two sites are shell bearing middens of the northeastern Azuero coast. Secondary calcite formation commonly occurs in arid and semi-arid regions when the sediments or soils are relatively high in Ca. In $CaCO_3$-rich environments, rain combined with atmospheric and soil CO_2 produces carbonic acid (H_2CO_3). The reaction of $CaCO_3$ with the carbonic acid transports calcium and bicarbonate ions in solution; dry conditions later precipitate secondary carbonates (Schaetzl and Anderson, 2007:404). The northeastern coast of the Azuero Peninsula is the driest area of Panama, with present rainfall of 1000-1400 mm/yr (Cooke 1984) and a strong contrast between wet and dry seasons (Peres, 2001:68). Secondary calcite formation in pottery in shell middens at Pr32 and He5 is therefore easily explained. Ag13 is located in the area with somewhat higher precipitation of about 1300-1500 mm/yr.

Although the interior of the shelter is dry year-round, sediments beyond the drip line experience strong seasonal alternation between wet and dry conditions which have caused marked deterioration of bone from terrestrial and aquatic fauna (Ranere, 1975). This suggests a possible mechanism for the relatively minor amount of secondary calcite deposition observed in pores of sherds from this site.

Ba, Sr, Pb, and S and the Pacific Cordillera environment

Sherds deposited in Cl1 and Ag13 had particularly elevated Ba and this element accompanied Sr, Pb, S; Sr tended to be post-depositionally adsorbed on the sherd walls, showing similar concentration patterns, although Sr appears also with feldspars and clays. This tendency was not found at other sites, Lp134 and Lp8, in the Cordillera or sites, Pr32 and He5, in Azuero, although a sherd from Lp134 has low bulk Ba concentrations with Ba and Sr co-occurring in the wall (with a more even distribution) without Pb or S. What geological factors are responsible for this alteration?

Cl1, a rockshelter in the eastern Pacific foothills (Figure 15), is located in the alluvial zone, and it may receive contributions from the Miocene arc and adakitic Quaternary volcanics. According to geological literature, the adakitic units should have elevated Sr/Y and be low in Ba/La and Miocene Arc should be low in Sr/Y. Ag13, a rock shelter in the central Pacific Plains, is in the alluvial zone between the Cordillera and Azuero. Azuero has elevated Pb and Ba and is low in Sr/Y, but the elemental signatures of the alluvial zones are unclear. In terms of paste types, Cl1 samples should receive contributions from the adakitic units, and are expected to have low Ba and high Sr/Y. In terms of the Lp134 rock shelter, it is in the Miocene Arc zone and has the Cordilleran paste. Unlike the nearby Cl1, sherds from Lp134 have low bulk Ba. Here, despite the Ba ppm, Ba and Sr co-occurred on the walls without Pb and S associations. The reason for this irregularity is unknown. Ceramics from the Lp8 rock shelter have the Cordilleran paste and are buried in the Miocene Arc zone in a geologically similar unit as are the sherds from Lp134. The difference is that Lp8 is in the high-precipitation zone which can leach out Ba (e.g. Kosakowsky et al., 1999). But it is not certain whether the lack of Ba diagenesis in Lp8 can be simply explained by the extremely high precipitation, since Lp134 pottery is low in Ba and can have no Ba-related wall adsorption. Ceramics from Pr32 have the Azuero paste and are buried in the Parita Bay alluvial zone between the Cordillera and Azuero, similar to Ag13; however, it does not have a particular Ba-contamination signal on the walls. Sherds from He5 with Azuero paste were excavated from the Azuero but without high Ba either; however, there is an occurrence of Pb and S on the wall in one sherd. The lack of Ba-diagenesis in Azuero ceramics could result from being deposited in the shell-bearing anthropogenic midden which is rich in sandy sediment, instead of in soil that may have typical Azuero Arc chemical signatures; but the exact reasons are unknown.

Since geologists commonly compare the elemental elevation and depletion of rocks in geological units with the nearby volcanic arc or with the continental crust, geochemical differences between the Azuero Arc and the Cordilleran adakites are not necessarily provided. Thus, geochemical comparisons between Azuero Arc and Adakitic rocks (data in ppm normalized to continental crust, as per Taylor and McLennan (1997)), were made based on geological literature (Buschs et al. 2010; Defant et al. 1991a, b;

Lissina et al. 2005; Hidalgo 2007). According to this study, Sr/Y is higher in adakitic rocks than those in Azuero Arc, but there is no significant difference between the two geological areas with regards to Pb and Ba. Therefore, this study shows that if unusual Pb and Ba wall concentrations are found in sherds, their cause is diagenetic, but the bedrock geology with the high Pb and Ba concentrations is not the cause.

Overall, the study did not explain the Ba-related diagenesis. The diagenesis was not associated with paste type, degree of porosity, and amount of the vitreous phase in the volcanic rock inclusions, but is possibly related to the environment, without regard to the Ba concentrations in the bedrock geochemistry. In addition, Ba-Sr wall diagenesis occurred only in sherds from the Pacific Cordillera, regardless of the bulk Ba ppm values. Thus, the depositional environment at the site has to be systematically (e.g., ground water regime) investigated. What is clear, however, is that unlike previous suggestions, P diagenesis is a separate phenomenon from Ba, Pb, S, and Sr. Only in high bulk-Ba sherds, did Ba, Pb, S, and Sr co-occur on vessel walls. Baritic zeolite formation in altered volcanic ash may not be possible because baritic zeolites, harmotome, Ba(Al2Si6)O16·6H2O, and edingtonite, Ba(Al2Si3)O10·4H2O, do not contain sulfur (e.g., Phillips and Griffin, 1981).

An independent phosphorus concentration

Phophorus concentrations are known to be affected by human activity which occurred in the depositional environment. Elements such as carbon, nitrogen, sodium, and less commonly, potassium, magnesium, sulfur, copper, zinc, and other metals are also detected in association with human activities (Holliday and Gartner 2007).

Phosphate can be found with Ba and Sr, manganese oxides, and with Zn and Pb (Freestone, 1995:621 following Picon, 1991; Walter and Besnus,1989; De Paepe, 1979). However, in my research, the P wall concentrations did not show any particular pattern by site or paste type. Spatial distributions of P do not appear to co-vary with those for Ba or Sr, nor with Mn, Zn, Pb, or Ca. The adsorption perhaps indicates only that sherds were exposed to organic matter during burial or use.

9. Conclusions

This study on the central Panamanian Early Ceramic sherds provides two new understandings: (1) environmental factors, rather than paste type, vitreous phase in volcanic rock inclusions, or porosity and bedrock geochemistry of the sites affect post-depositional alterations and (2) the co-occurrence of elements is visually and precisely demonstrated, which differs from previous hypotheses.

Most ceramics had low to high amount of vitreous volcanic extrusive rock fragments, and porosity tended to be higher in Azuero groups than in Cordilleran groups. Although pastes in Lp8 belong to the Cordilleran group, pottery only buried in the extremely humid Caribbean slopes exhibited gibbsite formation. Only sherds from sites with precipitation of less than about 1500 mm/yr and sources for calcium carbonate had secondary calcites in their pores. This is due to the pronounced contrast between the wet and dry season of the northeastern Azuero coast. Regardless of paste type, porosity, and amount of volcanic glass phase, Ba occurred in pottery deposited at Pacific foothills and plains rock shelters. Sr were also adsorbed on those vessel walls with Ba concentration. Bedrock geology may not be a significant factor since Ba, and Pb previously suggested as occurring diagenetically, do not differ greatly between Azuero Arc and Cordilleran adakitic units. The environmental factors responsible for the Ba post-burial alteration are unknown and need further investigation.

Unlike the suggestions by previous researchers about affiliations of phosphate phases and Ba and Sr, manganese oxides, or Pb and Zn, P adsorbed in studied ceramics has been demonstrated to be independent of post-depositional alteration from all other elements. Instead, my results indicate that Ba, Pb, S, and Sr tend to co-occur, especially Pb and S as lead sulfate adsorbed in the matrix or volcanic glass; they co-occur in high-Ba sherds, although there was an exception for S not being present in such sherd. Baritic zeolites, previously also suggested, did not form post-depositionally because they should not contain S.

In future studies of archaeological ceramics in central Panama, we should be aware of gibbsite and calcite post-depositional secondary mineral formation. These are affected by the levels of precipitation and alternations of wet and dry seasons within the hot climate. Elemental post-depositional alterations of Ba, Sr, S, Pb, P, Mn, and Zn should be taken into consideration. Nevertheless, for sourcing purposes, Ba and Sr are the elements that affect the Azuero and Cordilleran compositional groups and they should be eliminated from comparisons aiming to identify sources. In this paper, special attention has been given to mobile elements and those suggested by previous authors as diagenetic. Thus, other elements that could affect pottery diagenetically in the hot and humid tropics were not investigated.

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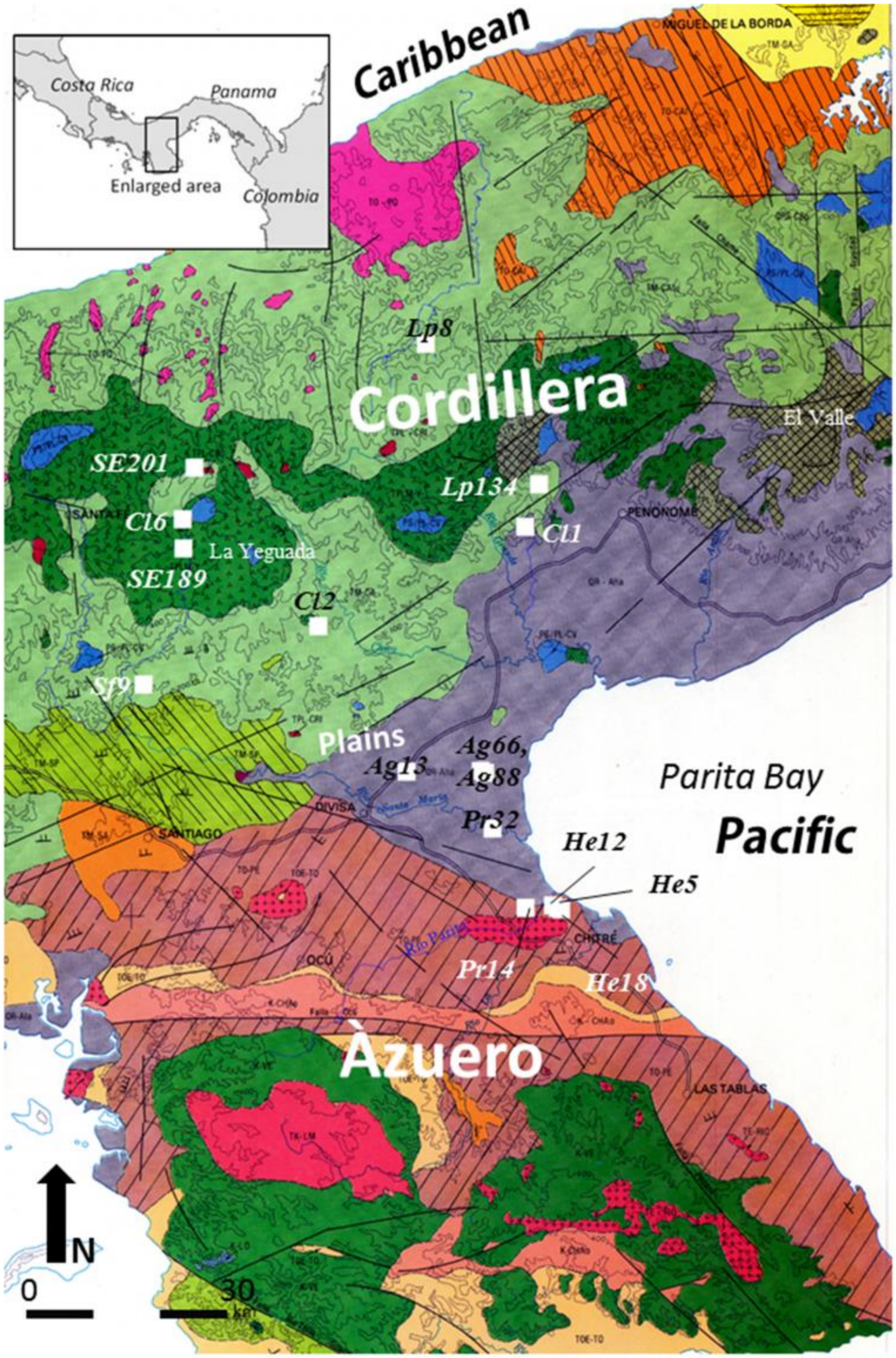

See Caption on the next page.

Intrusive Rocks

	Description
	TPL-CRI – S. Cristóbal Formation: Granodiorites and mangerites
	TO-PQ – Petaquilla Formation: Granodiorites, quartz monzonites, gabbro diorites, diorites, dacites
	TE-RIQ – Valle Riquito Formation: Quartz diorites, norites, gabros
	TK-LM – L. Montuoso Formation: Quartz diorites, quartz gabbros, norites, granodiorites, quartz monzonite

Metamorphic Rocks

	Description
	K-LO – Lovaina Formation: Green schists (chloritic and actinolitic)

Sedimentary Rocks

	Descriptions
	QR-Aha – Río Hato Formation: Conglomerates, sandstones, siltstones, tuffs, non-consolidated sandstone, pumice
	TM-SA – Santiago Formation: Sandstone, conglomerates
	TO-CAI – Caimito Formation: Tuffaceous sandstone and siltstone, tuff, foraminiferous limestone
	TO-PE – Pesé Formation: Continental tuff, sandstone, limestone
	TOE-TO –Tonosi Formation: Siltstone, sandstone, limestone, and tuff
	TK-CHI – Chiguirí Formation: Deformed siltstones
	K-CHAo – Ocú Formation: Limestone, tuff

Volcanic Rocks

	Description
	QPS-CSp - Picacho Fm: Basalt/andesites, conglomerates, alluvial and colluvial deposits, mudstones
	PS/PL-CV – Viejo Fm: Amygdaloidal, vitreous basalt/andesites
	TPL-VA – El Valle Fm: Dacites, breccias, plugs, ignimbrites, pumice, fine tuff, andesites/basalts, tuff and fine-grained subintrusives
	TPLM-Y - La Yeguada Fm: Dacites, ignimbrites, tuffs
	TPLM-Yen – El Encanto Fm: Dacites/riodacites, ignimbrites, subintrusives, tuff, lavas
	TM-CA – Cañazas Fm: Lavas and tuffs
	TM-CAtu - Tucué Fm: Andesites/basalt, lavas, breccias, tuff and plugs
	TM-SP – San Pedrito Fm: Tuff, agglomerates
	TE-MAso – Sur de Sona Fm: Basalts, diabases
	K-VE – Playa Venado Fm: Basalts, pillow lavas

Figure 15. Geological map of Panama with Monagrillo sites.
Sites include those containing Sarigua (Early Ceramic B) vessels. The geological map was adopted from Giudice and Ricchi (1969) and was produced with the assistance of Natalia Hoyos.

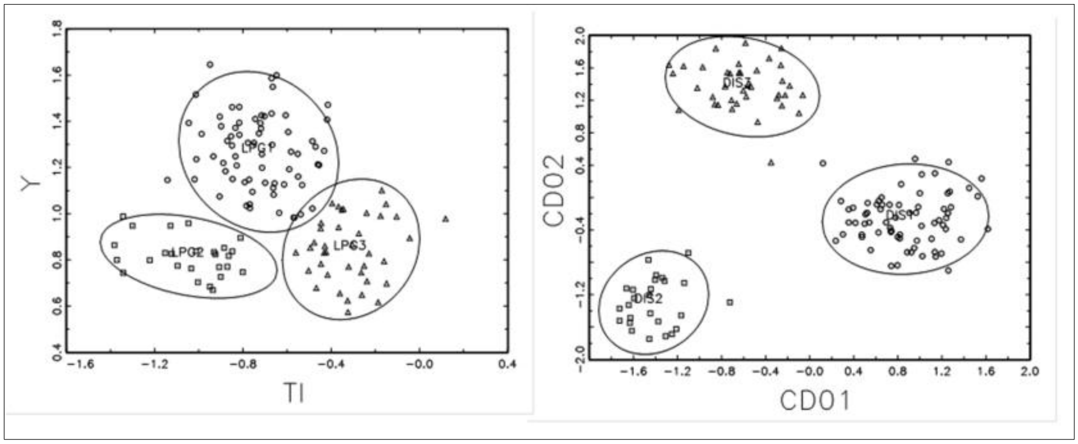

Figure 16. Bivariate plots of data obtained via TOF-LA-ICP-MS.
The left is the compositional groups of pottery clay matrix ablated and quantified via TOF-LA-ICP-MS. The left is the log 10-based bivariate plot of Tl and Y. The right is the bivariate plot, examined with the discriminant scores of the discriminant functional analysis. Both results are based on the 90% confidence level, jack-knifed with the mahalanobis distance test. ◯ is pottery Group 1, ☐ is pottery Group 2, and △ is pottery Group 3.

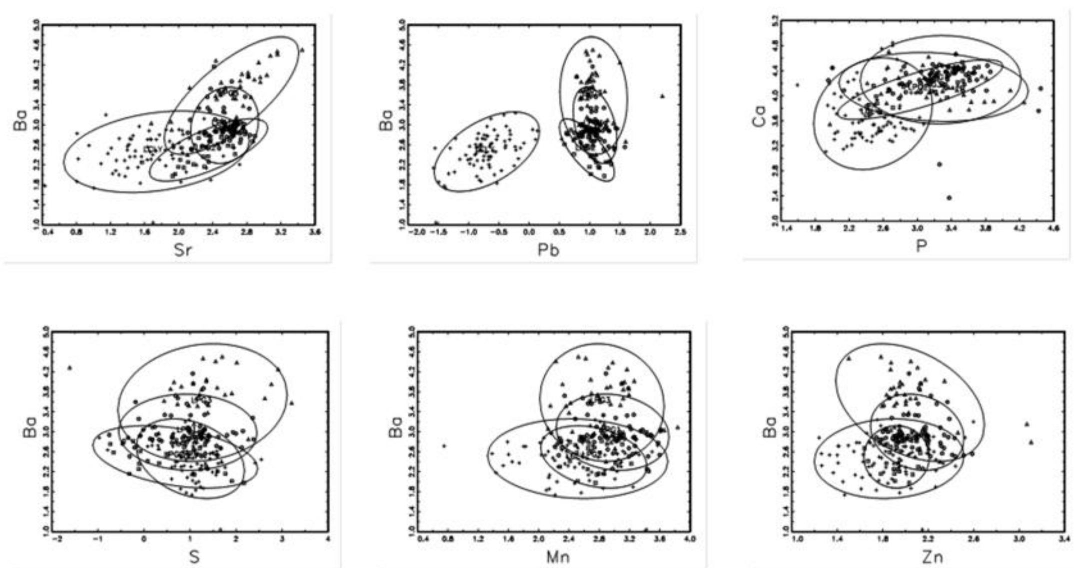

Figure 17. Comparisons of concentrations of elements of sherd paste matrix and raw sediments.
Bivariate plots of of log 10- based geochemical data obtained via TOF-LA-ICP-MS are presented. Pottery Group 3 has hibh Ba and Sr concentration Regardless of the clay composition, pottery buried in Cl1 and Ag13 had higher Ba concentration than ceramics deposited at other sites. ◯ is Group 1, ☐ is Group 2, and △ is Group 3, + is raw clayey soil.

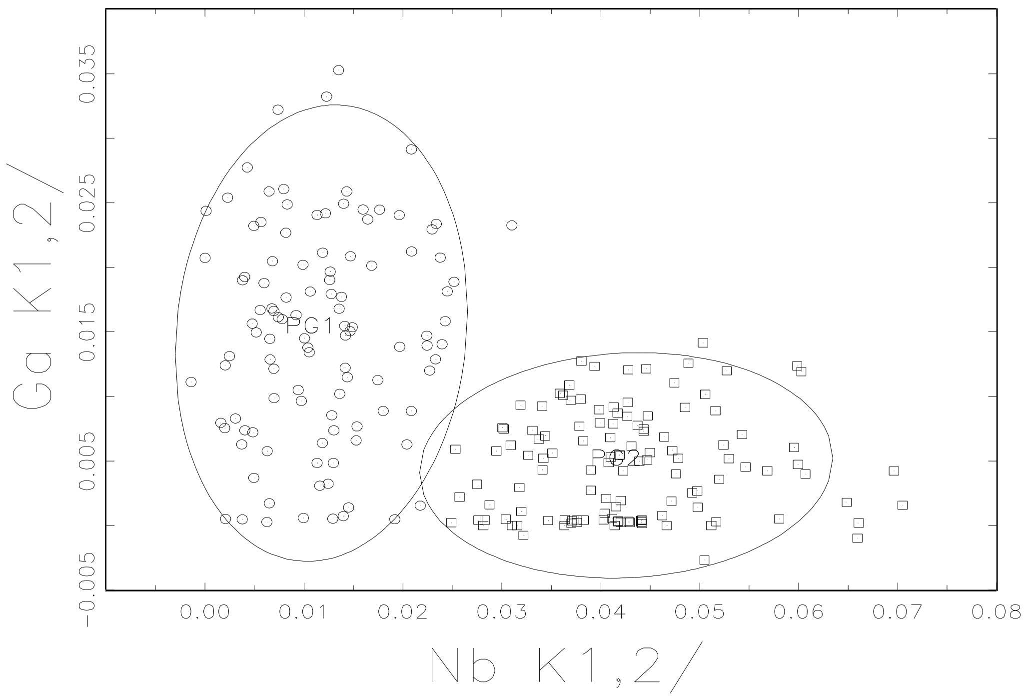

Figure 18. A bivariate plot of data Zr-normalized data, obtained via P-XRF.
The figure shows semi-quantitative compositional data of Ga and Nb energy intensity-based net peak areas, obtained via P-XRF. Group 1 and 2 were determined with the 90% confidence level, jack-knifed with the Mahalanobis distance measurement. ◯ is Group 1, ☐ is Group 2.

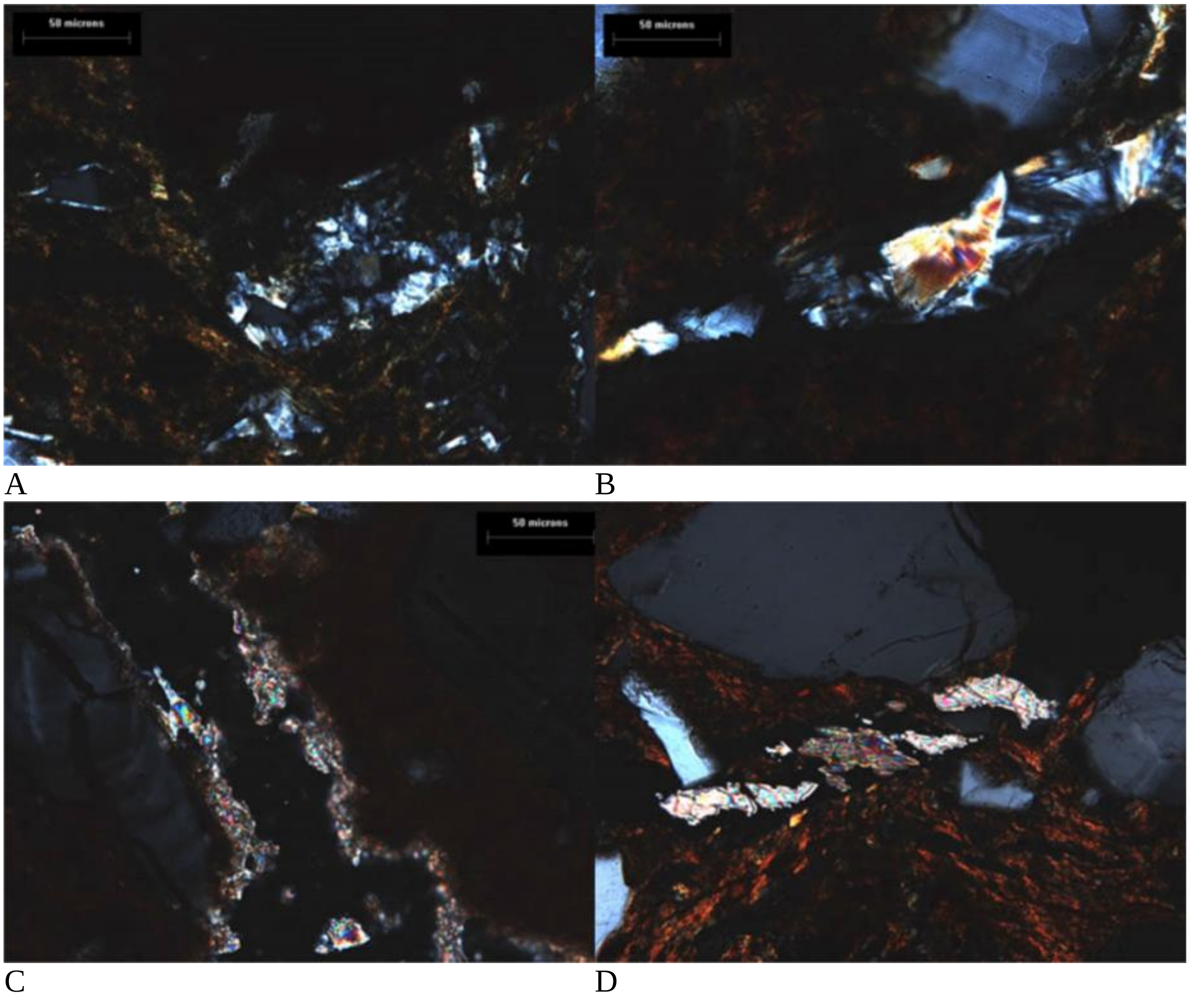

Figure 19. Photos of secondary minerals found in pottery pores.
A, Lp8-164-1.59-2-1 in 40X in XPL; B, Lp8-114-1.57-1-2 in 40X in XPL; C, He5-68-F6 in 40X in XPL; and D, Pr32-C35-N20-3 in 20X in XPL.A and B show secondary gibbsite growth and C and D show secondary calcites growing in ceramic pores viewed in thin sections.

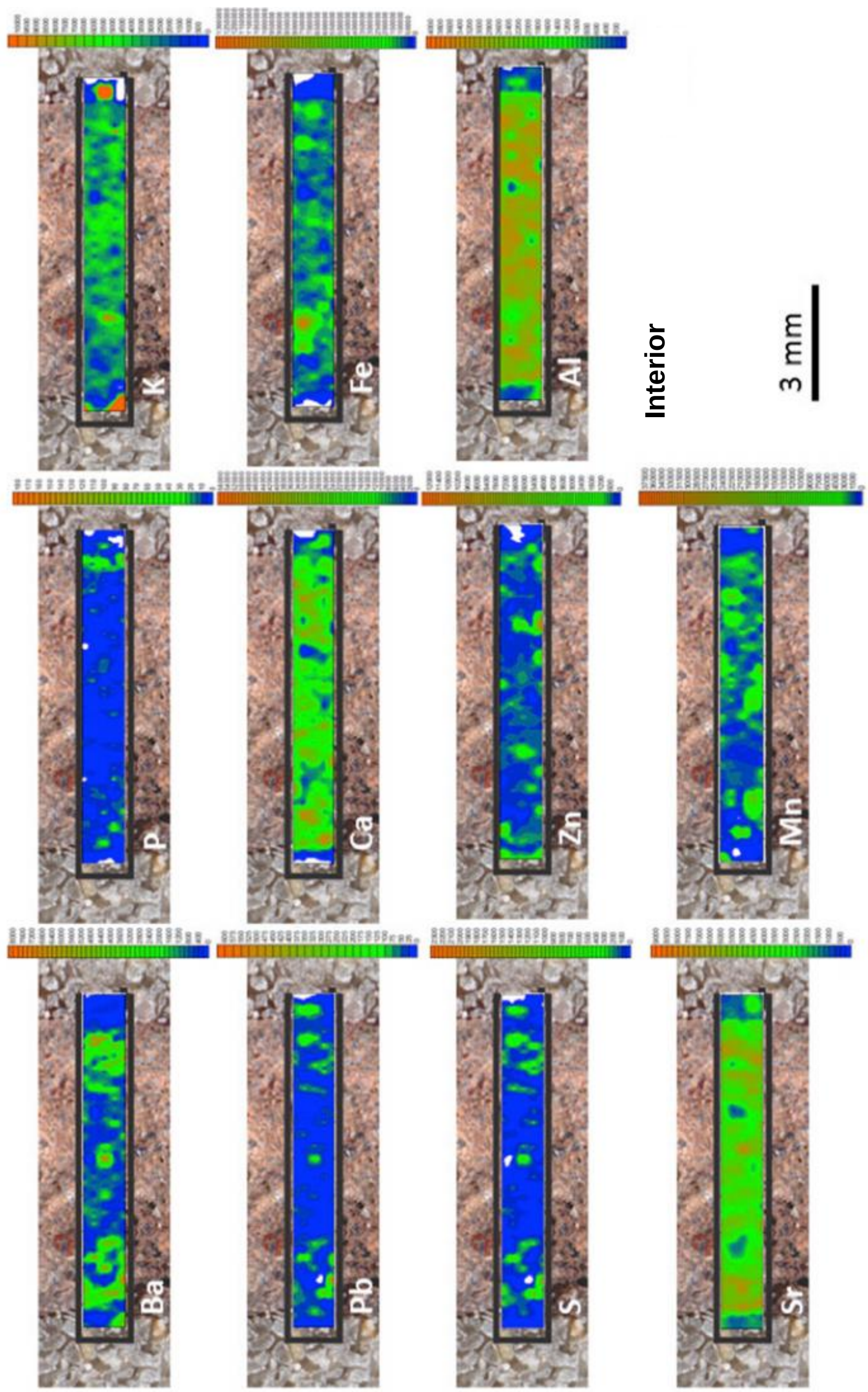

Figure 20. Elemental maps obtained via ARTAX µ-XRF - Cl1-44-F10.
Samples are Ba extremely high, A: Cl1-44-F10 (31590.89 ppm) Sherds are buried in epoxy mixed with sand.

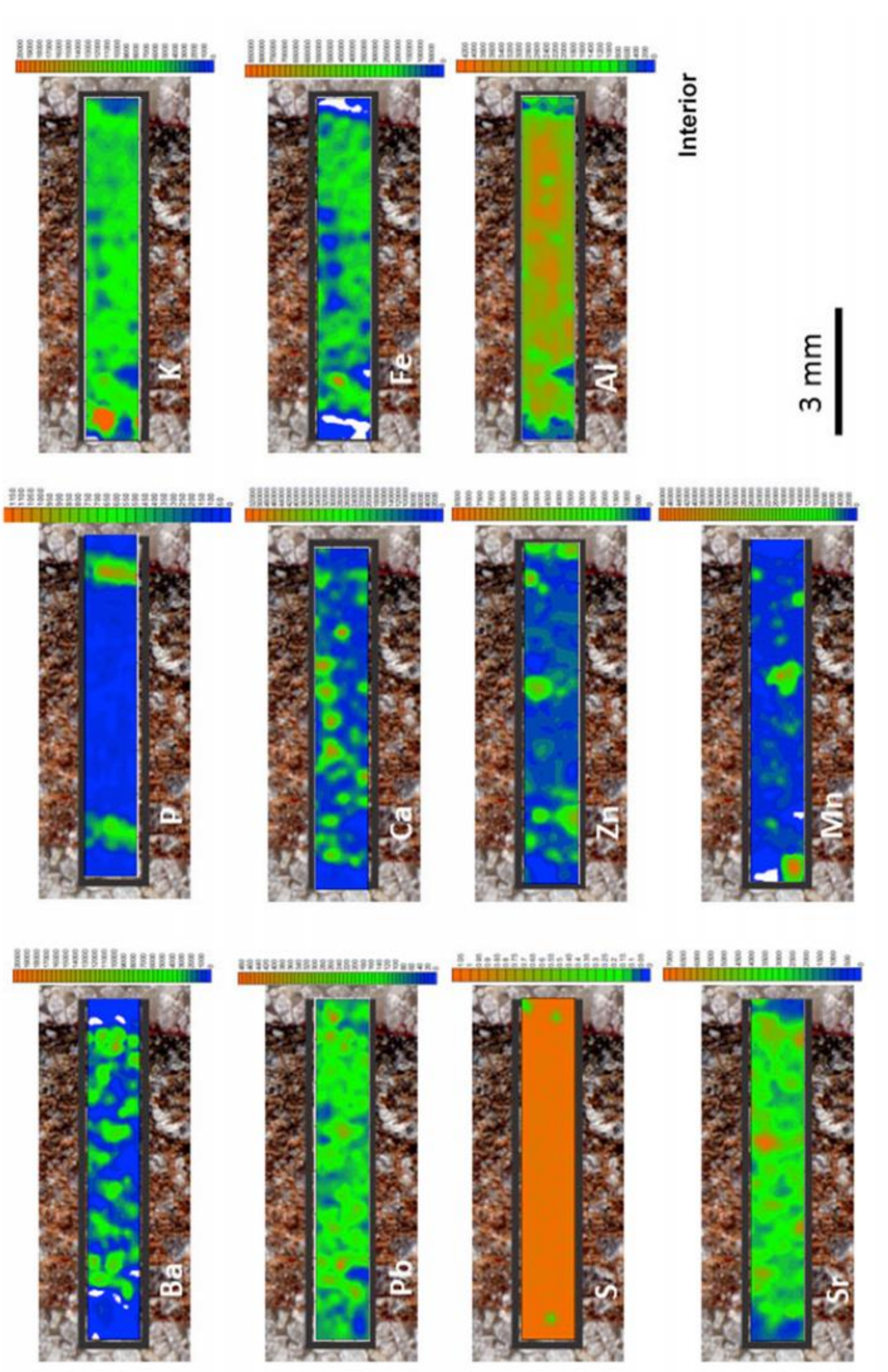

Figure 21. Elemental maps obtained via ARTAX µ-XRF - Cl1-45-F2.
Samples are Ba extremely high, Cl1-45-F2 (24107.75 ppm); Ba high. Sherds are buried in epoxy mixed with sand.

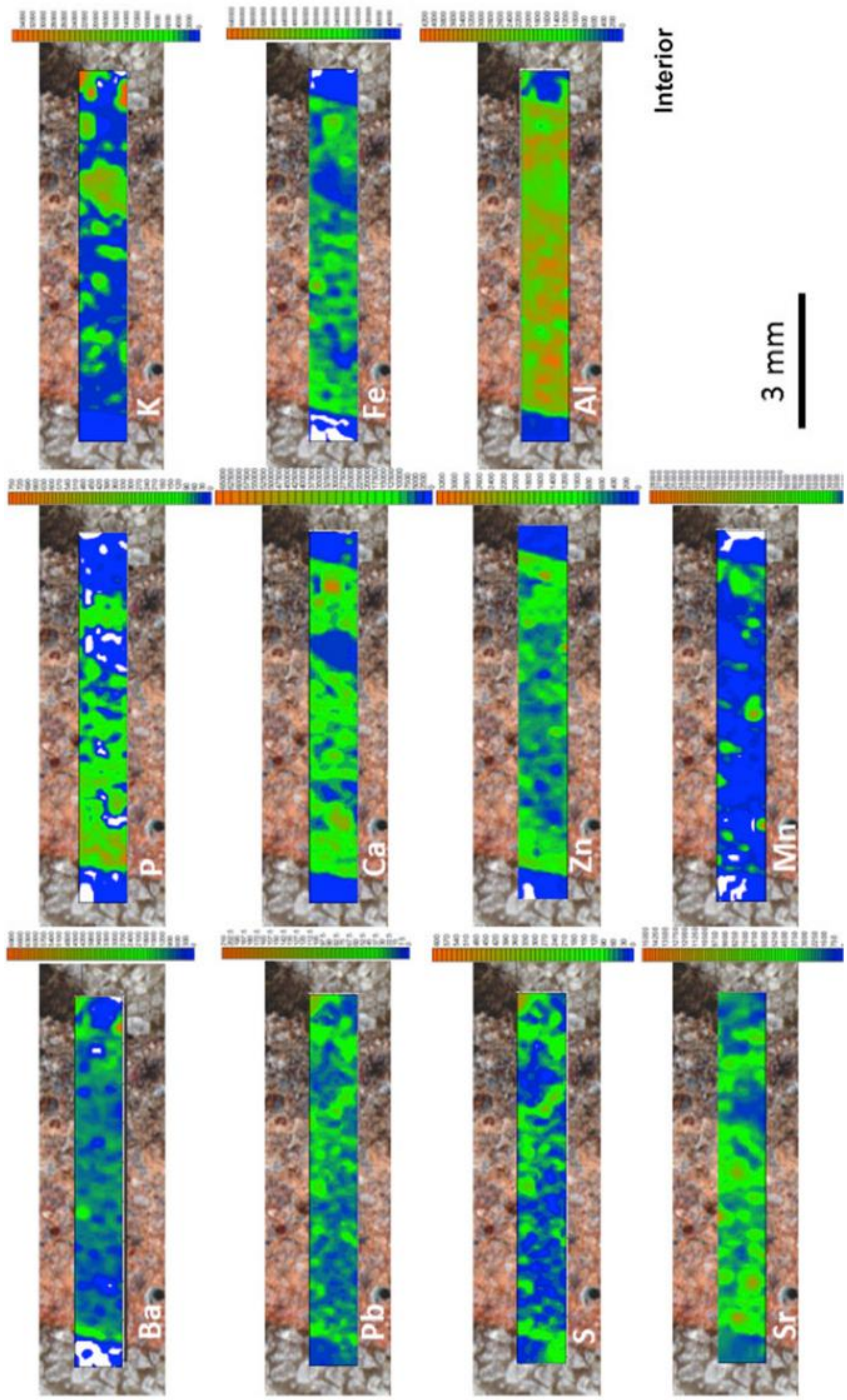

Figure 22. Elemental maps obtained via ARTAX μ-XRF - Ag13-8-U1-F3.
Samples are Ba high, Ag13-8-U1-F3 (3626.52 ppm). Sherds are buried in epoxy mixed with sand.

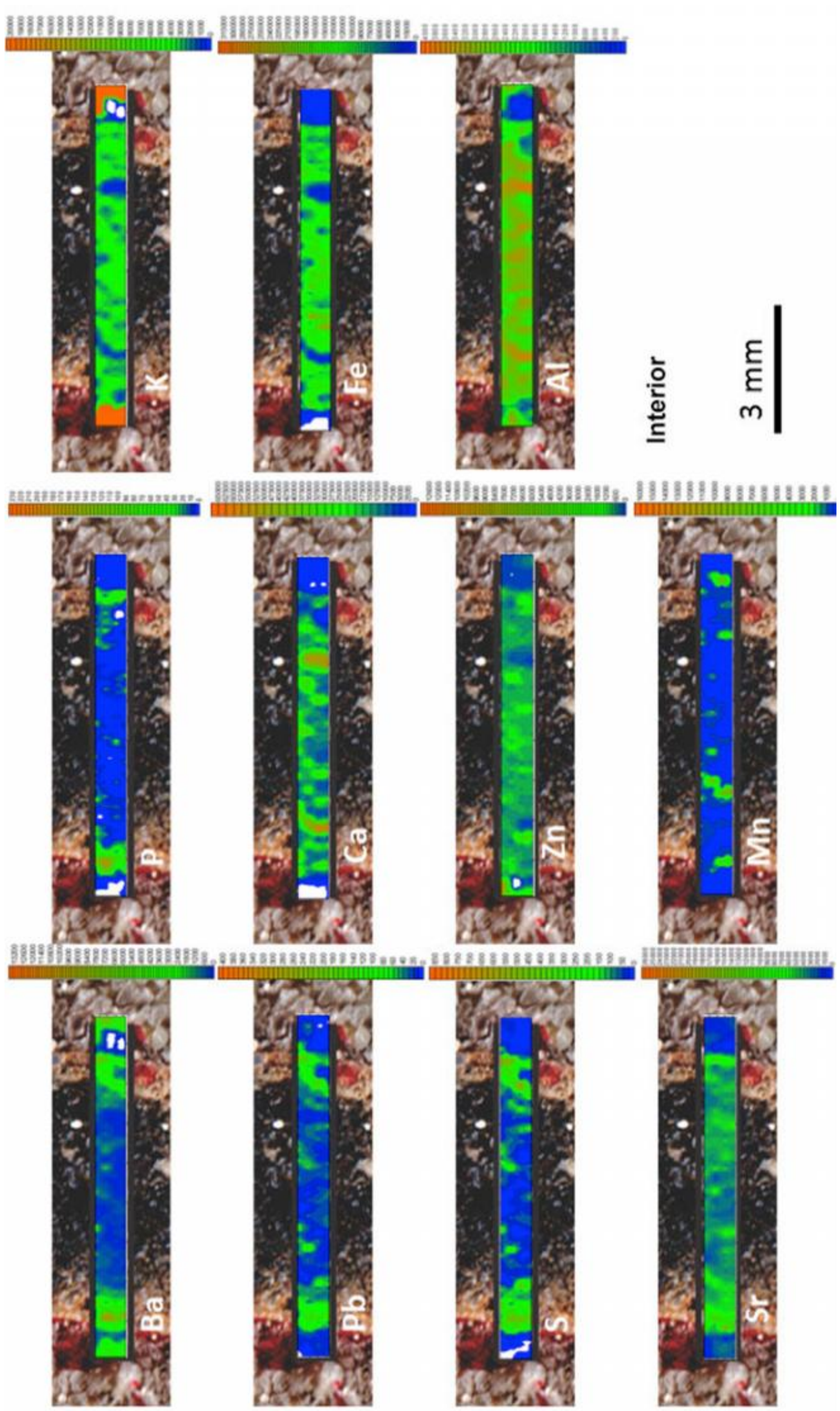

Figure 23. Elemental maps obtained via ARTAX µ-XRF - Cl1-3-F14.
Samples are Ba high Cl1-3-F14 (2372.88 ppm); Ba low. Sherds are buried in epoxy mixed with sand.

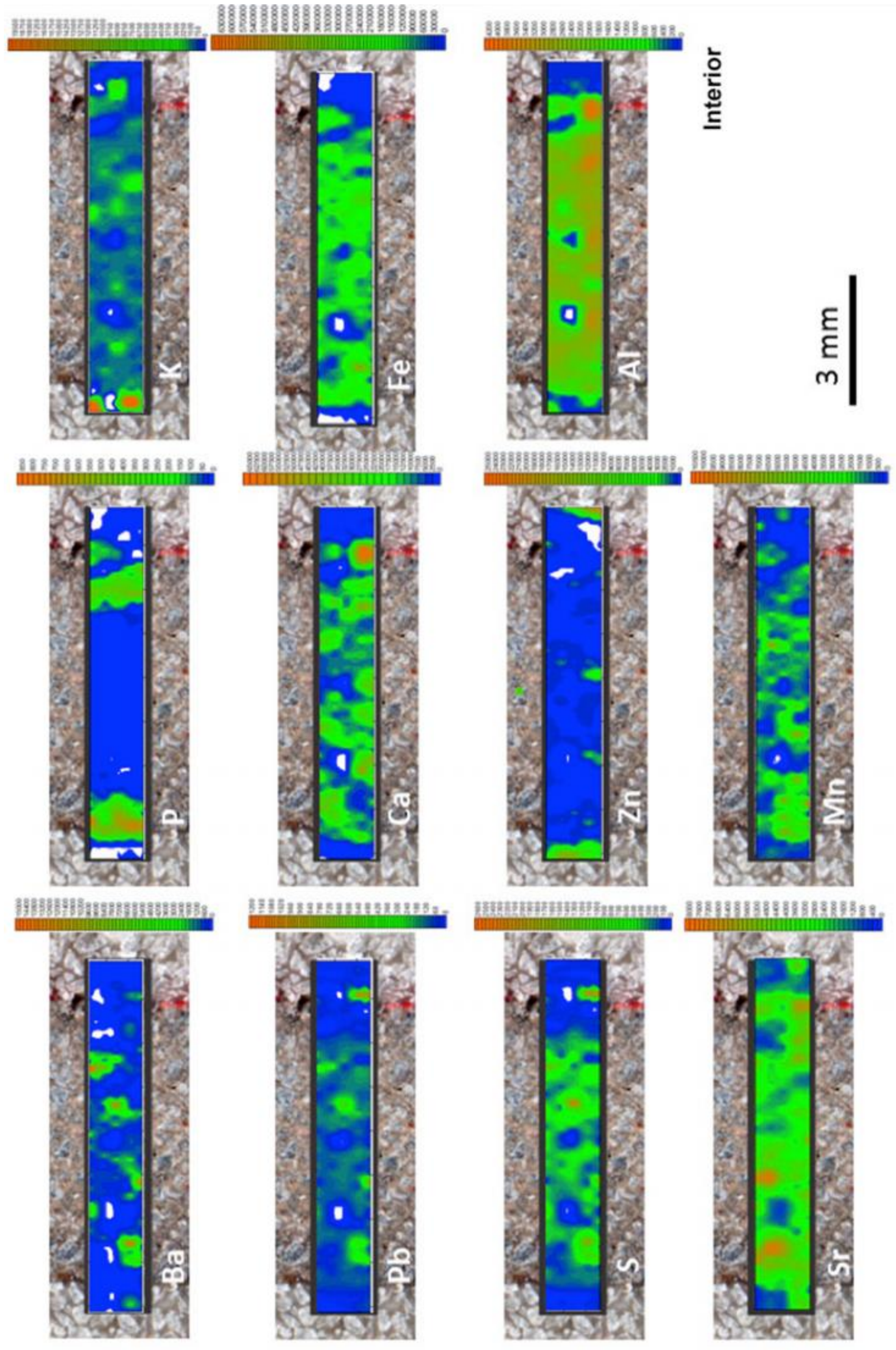

Figure 24. Elemental maps obtained via ARTAX µ-XRF - Cl1-44-F8.
Samples are Ba low Cl1-44-F8 (951.06 ppm). Sherds are buried in epoxy mixed with sand.

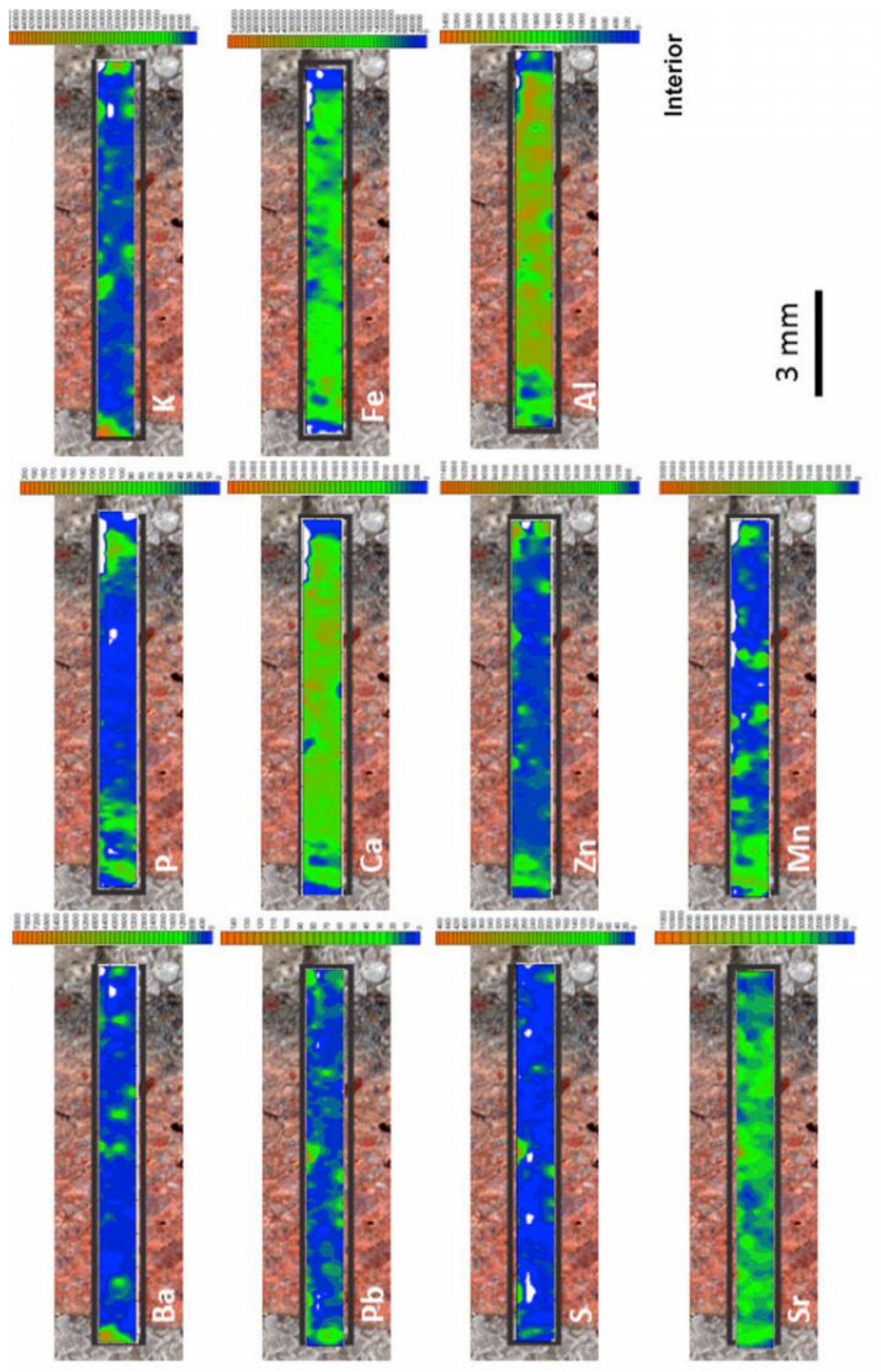

Figure 25. Elemental maps obtained via ARTAX μ-XRF - Pr32-C35-N20-2.
Samples are Ba low Pr32-C35-N20-2 (860.37 ppm). Sherds are buried in epoxy mixed with sand.

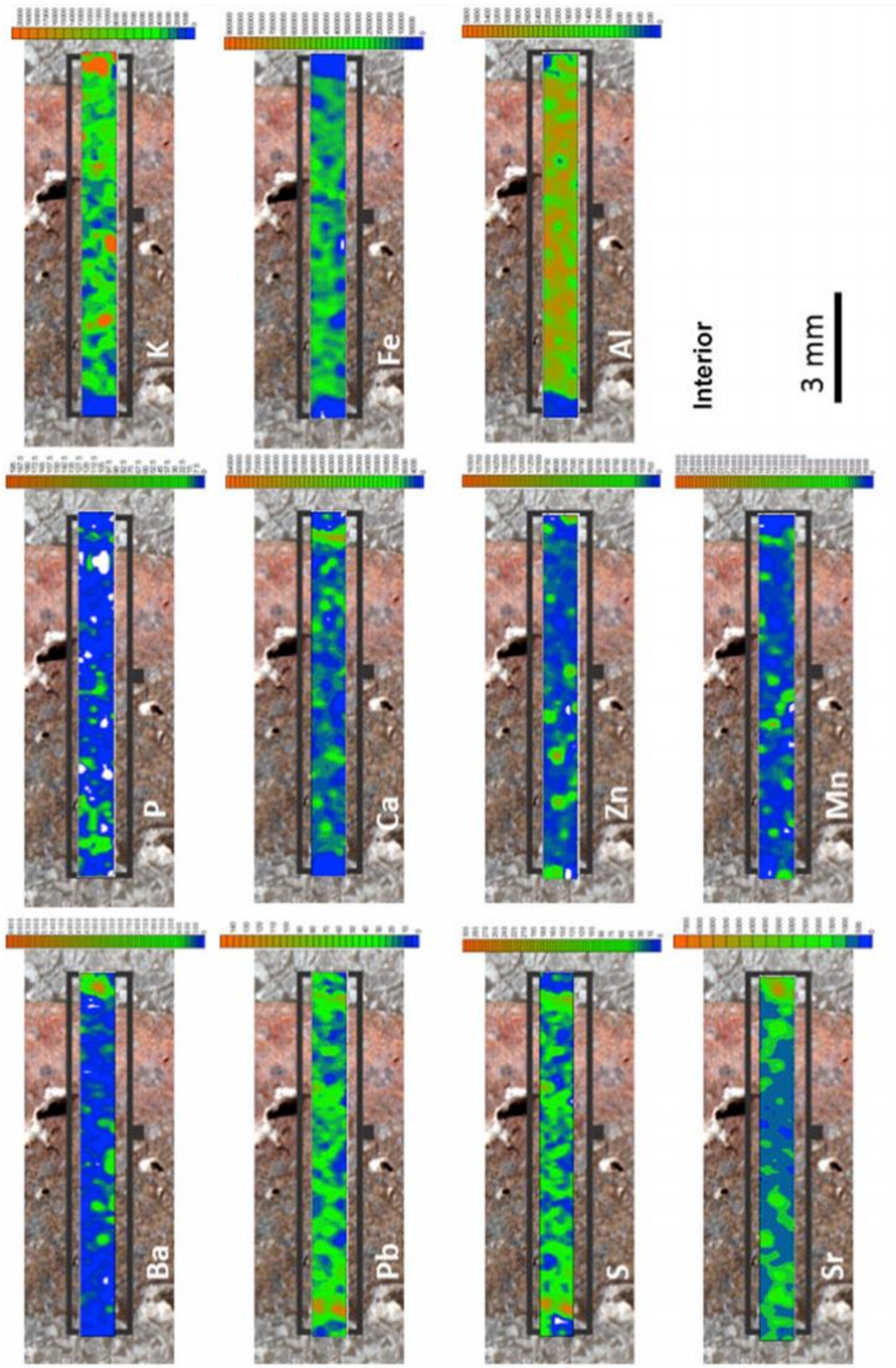

Figure 26. Elemental maps obtained via ARTAX μ-XRF - He5-70-F1.
Samples are Ba very low He5-70-F1 (237.33 ppm). Sherds are buried in epoxy mixed with sand.

Site	Environmental Zone	Site Type	Sample	Overall source group	Secondary Mineral in Pores and Quantity	Petro-graphic Group
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-34-2.01-1	Crd	Ab	G3
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-37-2.01-1	Crd?	G-H	G3
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-38-2.01-1	Crd?	Ab	G3
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-38-2.01-2	Crd	G-H	G3
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-94-145-1-1	Crd	G-H	G3
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-114-1.57-1-1	Crd	G-H	G3
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-114-1.57-1-2	Crd	G-H	G3
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-120-1.35-1	Crd	Ab	G3
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-122-1.35-1	Crd	G-L	G3
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-126-1.35-3-1	Crd	Ab	G3
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-135-1.47-1 (2.01-1)	Crd	Ab	G3
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-144-1.47-1	Crd	G-L	G3
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-150-1.47-4-1	Crd	G-M	G3
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-176-1.59-2-1	Crd	G-H	G3
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-154-1.47-4-1	Crd	G-L	G3
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-164-1.59-2-1	Crd?	G-H	G3
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-167-1.59-2-1	Crd	G-M	G3
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-170-1.59-2-1	Crd	G-M	G3
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-174-1.59-2-1	Crd	G-L	G3
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-182-1.59-2-1	Crd	G-M	G3
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-2-f3	Crd	Ab	G3
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-2-f9	Crd?	Ab	G3

Site	Environmental Zone	Site Type	Sample	Overall source group	Secondary Mineral in Pores and Quantity	Petro-graphic Group
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-2-f11	Crd	Ab	G3
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-2-f13	Crd?	Ab	G3
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-2-f17	Crd	Ab	G3
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-3-f11	Crd	Ab	G3
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-3-f14	Crd?	Ab	G2/G3
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-3-f120	Crd	Ab	G3
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-3-f122	Crd?	Ab	G3
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-4-f17	Crd?	Ab	G3
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-4-f35	Crd	Ab	G3
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-4-f39	Crd?	Ab	unassiend possible Cordillera
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-4-f44	Crd	Ab	G3
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-4-f48	Crd?	Ab	G3
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-4-f50	Crd	Ab	G3
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-44-f8	Crd	Ab	G3
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-44-f10	Crd	Ab	G3
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-45-f2	Crd	Ab	G3
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-45-f4	Crd?	Ab	G2/G3
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-45-f8	Crd?	Ab	G3
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-45-f13	Crd	Ab	G3
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-45-F16	Crd	Ab	G3
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-56-6-f109	Mix	Ab	G3
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-82-176-f246	Crd?	Ab	G3
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-83-f168	Crd?	Ab	G3
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-148-30-f105	Crd	Ab	G3
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-150-14-f108	Crd	Ab	G3
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-150-16-f96	Mix	Ab	G3
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-150-150-f103	Crd	Ab	G3

Site	Environmental Zone	Site Type	Sample	Overall source group	Secondary Mineral in Pores and Quantity	Petro-graphic Group
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-151-20-f278	Crd?	Ab	G3
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-151-f165	Crd?	Ab	G3
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-161-f1	Crd?	Ab	G3
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-161-f91	Crd	Ab	G3
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-161-f125-f243	Crd	Ab	G3
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-195-26-f236	Crd	Ab	G3
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-199-19-f92	Crd	Ab	G3
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-202-218-f107	Crd	Ab	G3
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-236-f97	Crd	Ab	G3
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-271-18-f100	Crd	Ab	G3
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-282-27-f95	Crd	Ab	G3
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-293-f101	Crd?	Ab	G3
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-297-2-f279	Crd?	Ab	G3
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-305-15-f94	Crd	Ab	G3
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-313-f150	Crd?	Ab	G3
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-318-37-281	Az	Ab	unassigned
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-2-u1-f1	Crd	Ab	G3
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-5-u1-f1	Mix	C-L	G3
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-6-u1-f1	Az	Ab	G2
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-6-u1-f2	Mix	Ab	G2/G3

Site	Environmental Zone	Site Type	Sample	Overall source group	Secondary Mineral in Pores and Quantity	Petro-graphic Group
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-8-u1-f2	Mix	Ab	G3
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-8-u1-f3	Az	Ab	G2
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-9-u1-f1	Az/Mix	C-L	G2/G3
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-22-u2-f1	Crd	Ab	G3
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-32-u3-f1	Az	Ab	G2
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-32-u3-f2	Az	Ab	G2
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-32-u3-f3	Mix	Ab	G3
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-34-u3-f1	Crd	Ab	G3
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-34-u3-f2	Az	Ab	G2
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-35-u3-f1	Az	Ab	G2
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-35-u3-f2	Az	Ab	G2
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-114-u4-f1	Crd	Ab	G3
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-116-u4-f1	Crd	Ab	G3
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-116-u4-f2	Crdr	Ab	G3
Pr14 (Mula)	Pacifi coast	shell midden	Pr14-24-1	Az	Ab	G2
Pr14 (Mula)	Pacifi coast	shell midden	Pr14-22-1	Az	Ab	G2
Pr14 (Mula)	Pacifi coast	shell midden	Pr14-25-1	Az	Ab	G2
Sf9 (Carabalí)	Pacific foothills	rockshelter	Sf9-B-60-1	Az	Ab	G2
Sf9 (Carabalí)	Pacific foothills	rockshelter	Sf9-B-61-1	Az	Ab	G2
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N9-1	Az	Ab	G2

Site	Environmental Zone	Site Type	Sample	Overall source group	Secondary Mineral in Pores and Quantity	Petro-graphic Group
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N9-2	Az	Ab	G2
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N9-3	Az	Ab	G2
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N9-4	Az	Ab	G2
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N12-1	Az	Ab	G2
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N12-2	Az	Ab	G2
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N12-3	Az	Ab	G2
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N12-4	Az	Ab	G2
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N14-1	Az	Ab	G2
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N14-2	Az	Ab	G2
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N14-3	Az	Ab	G2
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N14-4	Az	Ab	G2
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N17-1	Az	Ab	G2
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N17-2	Az	Ab	G2
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N20-1	Az	Ab	G2
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N20-2	Az	C-L	G2
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N20-3	Az	C-L	G2
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N20-4	Az	Ab	G2
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N20-5	Mix	Ab	G3
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N22-1	Az	Ab	G2
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-1-16-1	Az	Ab	G2
He5 (Monagrillo)	Pacific coast	shell midden	He5-60-F18	Az	Ab	G1
He5 (Monagrillo)	Pacific coast	shell midden	He5-60-F9	Az	Ab	G1
He5 (Monagrillo)	Pacific coast	shell midden	He5-61-F10	Az	Ab	G1

Site	Environmental Zone	Site Type	Sample	Overall source group	Secondary Mineral in Pores and Quantity	Petro-graphic Group
He5 (Monagrillo)	Pacific coast	shell midden	He5-61-F11	Az	Ab	G2
He5 (Monagrillo)	Pacific coast	shell midden	He5-62-F1	Az?	Ab	G1
He5 (Monagrillo)	Pacific coast	shell midden	He5-62-F12	Az	Ab	G2
He5 (Monagrillo)	Pacific coast	shell midden	He5-62-F20	Az	Ab	G2
He5 (Monagrillo)	Pacific coast	shell midden	He5-63-F1	Az	Ab	G1
He5 (Monagrillo)	Pacific coast	shell midden	He5-63-F2	Az	Ab	G2
He5 (Monagrillo)	Pacific coast	shell midden	He5-64-F4	Az	Ab	G1
He5 (Monagrillo)	Pacific coast	shell midden	He5-64-F3	Az	Ab	G1
He5 (Monagrillo)	Pacific coast	shell midden	He5-66-F1	Az	Ab	G2
He5 (Monagrillo)	Pacific coast	shell midden	He5-68-F1	Az?	Ab	G1
He5 (Monagrillo)	Pacific coast	shell midden	He5-68-F6	Az	C-L	G1
He5 (Monagrillo)	Pacific coast	shell midden	He5-68-F4	Crd	Ab	G3
He5 (Monagrillo)	Pacific coast	shell midden	He5-69-F3	Az?	Ab	G1
He5 (Monagrillo)	Pacific coast	shell midden	He5-69-F8	Az?	Ab	G1
He5 (Monagrillo)	Pacific coast	shell midden	He5-69A-F3	Az	Ab	G1
He5 (Monagrillo)	Pacific coast	shell midden	He5-70-F1	Az	C-L	G1
He5 (Monagrillo)	Pacific coast	shell midden	He5-70-F2	Az?	Ab	G1
He5 (Monagrillo)	Pacific coast	shell midden	He5-76-F1	Crd	Ab	G3

Sample	Major inclusions	Volcanic glass/ vitreous phase	Porosity	P-XRF group	LA-ICP-MS group
Lp8-34-2.01-1	Qtz, Plg, K-feld?, Z-feld	Y-L	M	G1	unassigned
Lp8-37-2.01-1	Qtz, Plg, Z-feld, Rhy	Y-L	M	G1	N/A
Lp8-38-2.01-1	Qtz, Plg, Z-feld	Y-L	M	G1	N/A
Lp8-38-2.01-2	Qtz, Plg,, Z-feld	Y-L	M	G1	G3
Lp8-94-145-1-1	Qtz, Plg, Z-feld	Y-L	H	G1	Unassigned
Lp8-114-1.57-1-1	Qtz, Plg, Z-feld	Y-L	H	G1	G2
Lp8-114-157-1-2	Qtz, Plg, Z-feld	Y-L	H	G1	Unassigned
Lp8-120-1.35-1	Qtz, Plg, Z-feld	Y-L	H	G1	Unassigned
Lp8-122-1.35-1	Qtz, Plg, K-feld?, Z-feld	Y-L	H	G1	G2
Lp8-126-1.35-3-1	Qtz, Plg, Z-feld	Y-L	H	G1	G2
Lp8-135-1.47-1 (2.01-1)	Qtz, Plg, K-feld?, Z-feld, Rhy	Y-L	H	G1	G2
Lp8-144-1.47-1	Qtz, Plg, K-feld?, Z-feld	Y-L	H	G1	Unassigned
Lp8-150-1.47-4-1	Qtz, Plg , Z-feld	Y-L	H	G1	G2
Lp8-176-1.59-2-1	Qtz, Plg, Z-feld	Y-L	H	G1	G3
Lp8-154-1.47-4-1	Qtz, Plg, K-feld?, Z-feld	Y-L	M	G1	Unassigned
Lp8-164-1.59-2-1	Qtz, Plg, K-feld?, Z-feld	Y-L	H	G1	Unassigned
Lp8-167-1.59-2-1	Qtz, Plg,Z-feld	Y-L	M	G1	G2
Lp8-170-1.59-2-1	Qtz, Plg, Z-feld	Y-L	M	G1	G3
Lp8-174-1.59-2-1	Qtz, Plg, Z-feld	Y-L	M	G1	G2
Lp8-182-1.59-2-1	Qtz, Plg, Z-feld	Y-L	H	G1	G2
Cl1-2-f3	Qtz, Plg, Z-feld	Y-L	H	un	G3
Cl1-2-f9	Qtz, Plg, Z-feld	Y-L	L	G1	N/A
Cl1-2-f11	Qtz, Plg, K-feld, Z-feld	Y-L	M	Un	G3
Cl1-2-f13	Qtz, Plg, K-feld?, Z-feld, Rhy, Tff	Y-L	M	un	Unassigned
Cl1-2-f17	Qtz, Plg, Z-feld	Y-M	M	G1	G3
Cl1-3-f11	Qtz, Plg, Z-feld	Y-L	M	un	G3
Cl1-3-f14	Qtz, Plg, mixed-VR, Z-feld	Y-L	M	un	G3
Cl1-3-f120	Qtz, Plg, Z-feld	Y-L	L	un	G3
Cl1-3-f122	Qtz, Plg, Z-feld, K-feld?	Y-L	M	un	Unassigned
Cl1-4-f17	Qtz, Plg, Z-feld	Y-L	M	un	N/A
Cl1-4-f35	Qtz, Plg, Z-feld, Rhy, Tff	Y-L	H	G1	G3
Cl1-4-f39	Rhy, Tff	Y-H	H	G1	N/A
Cl1-4-f44	Qtz, Plg, K-feld?, Z-feld	Y-L	M	G1	G3
Cl1-4-f48	Qtz, Plg, Z-feld	Y-L	M	un	N/A
Cl1-4-f50	Qtz, Plg, K-feld?, Z-feld, Rhy, Tff	Y-L	M	G1	G3

Sample	Major inclusions	Volcanic glass/ vitreous phase	Porosity	P-XRF group	LA-ICP-MS group
Cl1-44-f8	Qtz, Plg, Z-feld, K-feld,	Y-L	M	G1	G3
Cl1-44-f10	Qtz, Plg, Z-feld, K-feld	Y-L	L	G1	G3
Cl1-45-f2	Qtz, Plg, Z-feld,	Y-L	M	G1	G3
Cl1-45-f4	Qtz, Plg, K-feld, Z-feld, Rhy, Tff	Y-M	M	G1	G3
Cl1-45-f8	Qtz, Plg, Z-feld, K-feld,	Y-L	M	G1	N/A
Cl1-45-f13	Qtz, Plg, Z-feld, Rhy	Y-L	M	G1	N/A
Cl1-45-F16	Qtz, Plg, Z-feld, K-feld, Rhy	Y-L	M	G1	G3
Lp134-56-6-f109	Qtz, Plg, Z-feld,	Y-L	L	G1	G1
Lp134-82-176-f246	Qtz, Plg, Z-feld	Y-L	M	G1	N/A
Lp134-83-f168	Qtz, Plg , Z-feld	Y-L	M	G1	N/A
Lp134-148-30-f105	Qtz, Plg, Z-feld, K-feld	Y-L	M	G1	G2
Lp134-150-14-f108	Qz, Plg, Z-feld, K-feld	Y-L	H	G1	G2
Lp134-150-16-f96	Qtz,, Plg, Z-feld, Rhy, Tff	Y-M	H	G2	unassigned
Lp134-150-150-f103	Qtz, Plg, Z-feld,	Y-L	M	G1	G2
Lp134-151-20-f278	Qtz, Plg, Z-feld	Y-L	M	G1	N/A
Lp134-151-f165	Qtz, Plg, Z-feld	Y-L	H	G1	N/A
Lp134-161-f1	Qtz, Plg, Z-feld, Rhy, Tff	Y-L	H	G1	N/A
Lp134-161-f91	Qtz, Plg, Z-feld, K-feld	Y-L	H	G1	G2
Lp134-161-f125-f243	Qtz, Plg , Z-feld, K-feld,	Y-L	L	G1	unassigned
Lp134-195-26-f236	Qtz, Plg, Z-feld, Rhy	Y-L	H	G1	G2
Lp134-199-19-f92	Qtz, Plg, Z-feld	Y-L	H	G1	unassigned
Lp134-202-218-f107	Qtz, Plg, Z-feld	Y-L	H	G1	G2
Lp134-228-f161	Qtz, Plg, Z-feld, Rhy	Y-L	M	G1	unassigned
Lp134-236-f97	Qtz, Plg, Z-feld,	Y-L	M	G1	G2
Lp134-241-241-f114	Qtz, Plg, Z-feld,	Y-M	H	G1	G2
Lp134-271-18-f100	Qtz, Plg, Z-feld, K-feld	Y-L	M	G1	G2
Lp134-282-27-f95	Qtz, Plg, Z-feld,	Y-L	H	G1	G2
Lp134-293-f101	Qtz, Plg, Z-feld,	Y-L	L	G1	N/A
Lp134-297-2-f279	Qtz, Plg, Z-feld,	Y-L	M	G1	N/A
Lp134-305-15-f94	Qtz, K-feld, Plg, Z-feld,	Y-L	M	G1	G2
Lp134-313-f150	Qtz, Plg, Z-feld,	Y-L	H	G1	N/A
Lp134-318-37-281	Rhy, Tff	Y-L	M	G2	unassigned
Ag13-2-u1-f1	Qtz,, Plg, Z-feld, Rhy, Tff	Y-L	M	G1	G3
Ag13-5-u1-f1	Qtz, Plg, Z-feld	Y-L	L	G2	unassigned
Ag13-6-u1-f1	Qtz Plg, mixed-VR, IG intrusive	Y-M	H	G2	G1

Sample	Major inclusions	Volcanic glass/ vitreous phase	Porosity	P-XRF group	LA-ICP-MS group
Ag13-6-u1-f2	Qtz, Plg, Z-feld, Rhy	Y-M	H	G2	G3
Ag13-8-u1-f2	Qtz, Plg, Z-feld, K-feld, IG intrusive	Y-M	H	un	G1
Ag13-8-u1-f3	Qtz, Plg, mixed-VR, IG intrusive, K-feld, Z-feld	Y-M	H	G2	G1
Ag13-9-u1-f1	Qtz, Plg, Z-feld, mixed-VR, IG intrusive	Y-M	H	un	G1
Ag13-22-u2-f1	Qtz. Plg, Z-feld	Y-L	M	G1	G3
Ag13-32-u3-f1	Qtz, Plg, mixed-VR, IG intrusive, Z-feld	Y-M	H	G2	G1
Ag13-32-u3-f2	Qtz, Plg, Rhy, Tff, IG intrusive	Y-M	L	G2	G1
Ag13-32-u3-f3	Qtz, Plg, Z-feld, IG intrusive?	Y-L	M	G1	G1
Ag13-34-u3-f1	Qtz, Plg, Z-feld	Y-L	M	G1	unassigned
Ag13-34-u3-f2	Qtz, Plg, mixed-VR, IG-intrusive	Y-M	L	G2	G1
Ag13-35-u3-f1	Qtz, Plg, mxed-VR, Z-feld, IG-intrusive	Y-M	H	G2	G1
Ag13-35-u3-f2	Qtz, Plg, mixed-VR, Z-feld, IG-intrusive	Y-L	H	G2	unassigned
Ag13-114-u4-f1	Qtz, Plg, mixed-VR, Z-feld, IG-intrusive	Y-H	L	G1	G3
Ag13-116-u4-f1	Qtz, Plg, mixed-VR, Z-feld, IG-intrusive	Y-M	M	G1	G3
Ag13-116-u4-f2	Qtz, Plg, mixed-VR, Z-feld, IG-intrusive	Y-L	L	un	G3
Pr14-24-1	Mixed-VR, Qtz, Plg, Z-feld, IG-intrusive	Y-M	M	G2	unassigned
Pr14-22-1	Mixed-VR, Qtz, Plg, Z-feld	Y-M	M	G2	G1
Pr14-25-1	Mixed-VR, Qtz, IG-intrusive	Y-M	M	G2	unassigned
Sf9-B-60-1	Mixed-VR, Qtz, Plg, Z-feld, IG-intrusive	Y-M	L	G2	G1
Sf9-B-61-1	Mixed-VR, Qtz, Plg, Z-feld, IG-intrusive	Y-M	L	G2	G1
Pr32-C35-N9-1	Mixed-VR, Qtz, Plg, Z-feld, IG-intrusive	Y-M	M	G2	G1
Pr32-C35-N9-2	Mixed-VR, Qtz, Plg, Z-feld, K-feld?, IG-intrusive	Y-M	M	G2	G1
Pr32-C35-N9-3	Rhy, Plg, Qtz, Z-feld	Y-M	M	G2	G1
Pr32-C35-N9-4	Mixed-VR, Qtz, Plg, Z-feld, IG-intrusive	Y-M	H	G2	G1
Pr32-C35-N12-1	Mixed-VR, Qtz, Plg, Z-feld, IG-intrusive	Y-M	M	G2	G1

Sample	Major inclusions	Volcanic glass/ vitreous phase	Porosity	P-XRF group	LA-ICP-MS group
Pr32-C35-N12-2	Mixed-VR, Qtz, Plg, Z-feld, IG-intrusive	Y-M	M	G2	G1
Pr32-C35-N12-3	Mixed-VR, Qtz, Plg, Z-feld	Y-L	L	G2	G1
Pr32-C35-N12-4	Mixed-VR, Qtz, IG-intrusive	Y-M	L	G2	G1
Pr32-C35-N14-1	Mixed-VR, Qtz, Plg, Z-feld, IG-intrusive	Y-M	M	G2	G1
Pr32-C35-N14-2	Qtz, Plg, Rhy, IG-intrusive	Y-M	L	G2	G1
Pr32-C35-N14-3	Mixed-VR, Qtz, Plg, Z-feld, IG-intrusive	Y-M	M	G2	G1
Pr32-C35-N14-4	Mixed-VR, Plg, Z-feld, IG-intrusive	Y-M	H	G2	G1
Pr32-C35-N17-1	Mixed-VR, Qtz, Plg, IG-intrusive	Y-L	L	G2	G1
Pr32-C35-N17-2	Mixed-VR, Qtz, Plg, IG-intrusive	Y-M	M	G2	G1
Pr32-C35-N20-1	Mixed-VR, Qtz, Plg, IG-intrusive	Y-M	H	G2	G1
Pr32-C35-N20-2	Qtz, K-feld, Z-feld, mixed-VR, Plg	Y-L	H	G2	G1
Pr32-C35-N20-3	Mixed-VR, Qtz, Plg	Y-M	H	G2	G1
Pr32-C35-N20-4	Mixed-VR, Atz, Plg	Y-M	H	G2	G1
Pr32-C35-N20-5	Qtz, Plg, Z-feld	Y-L	M	G2	unassigned
Pr32-C35-N22-1	Mixed-VR, Plg, Qtz, Z-feld	Y-M	H	G2	G1
Pr32-1-16-1	Mixed-VR, Z-feld, Plg, K-feld?, IG-intrusive	Y-M	M	G2	G1
He5-60-F18	Gr, Qtz, K-feld, Qtz-aggregate	Y-L	H	G2	G1
He5-60-F9	Qtz, K-feld, Plg, Grn	Y-L	H	G2	G1
He5-61-F10	Qtz, K-feld, Plg, Grn	Y-L	L	G2	G1
He5-61-F11	Mixed-VR, Qtz, Plg, IG-intrusive	Y-M	H	G2	G1
He5-62-F1	Qtz, Plg, K Grn	Y-L	L	G2	N/A
He5-62-F12	Mixed-VR, Qtz, Plg, Z-feld	Y-M	L	G2	G1
He5-62-F20	Hematite, Mixed-VR, Qtz,IG-intrusive	Y-L	M	G2	G1
He5-63-F1	Qtz, Grn	Y-L	L	G2	G1
He5-63-F2	Mixed-VR, IG-inrtrusive, Qtz, Plg	Y-M	L	Un	G1
He5-64-F4	Qtz, Grn	Y-L	L	G2	G1

Sample	Major inclusions	Volcanic glass/ vitreous phase	Porosity	P-XRF group	LA-ICP-MS group
He5-64-F3	Qtz, Grn, K-feld, Plag	Y-L	H	G2	G1
He5-66-F1	Mixed-VR, Qtz, Plg, Z-feld, IG-intrusive	Y-M	L	G2	G1
He5-68-F1	Qtz, Grn,	L or N	L	G2	N/A
He5-68-F6	Qtz, Plg, Grn, Zoned-feld	Y-L	H	G2	G1
He5-68-F4	Qtz, Plg, Z-feld, Mixed-VR	Y-L	M	G1	unassigned
He5-69-F3	Qtz, Grn	Y-L	L	G2	N/A
He5-69-F8	Qtz, Grn,	Y-L	L	G2	N/A
He5-69A-F3	Qtz, Grn,	N?	H	G2	unassigned
He5-70-F1	Qtz, Plg, Grn, K-feld	V-L	H	G2	unassigned
He5-70-F2	Qtz, Grn	Y-L	H	N/A	N/A
He5-76-F1	Qtz, Z-feld, Plg	Y-L	M	Un	G2

Table 34. Thin section data with secondary mineral growth in pottery pores.
The table has, colums from left to right, (1) site name, (2) environmental zone, (3) site type, (4) thin section sample IDs, (5) overall source group based on three analytical methods, (6) secondary mineral in pores with secondary gibbsite described as G and secondary calcite as C; secondary mineral quantity is evaluated with high [H], medium [M], and low [L], (7) petrographic groups, (8) major minerals (Qtz for quartz, Plg for plagioclase, K-feld for K-feldspar, Z-feld for zoned feldspar) and rock (VR for volcanic rock, Grn for granite, Tff for tuff) inclusions, (10) volcanic glass phase with ‘Y’ and ‘N’ indicating ‘yes’ and ‘no;’ ‘L,’ ‘M,’ and ‘H’ indicating low, medium, and high, in terms of quantity, (11) porosity of ceramic sherds found in thin sections evaluated with high [H], medium [M], and low [L], (12) bulk compositional group based on the results from p-XRF, and (13) paste matrix chemical groups based on the results from TOF-LA-ICP-MS. “Un” means unassigned.

Appendix C.1. Data obtained for the post-depositional alteration study of Early Ceramic sherds

Data are of (1) site name, (2) environmental zone, (3) site type, (4) thin section sample IDs, (5) overall source group based on petrography, LA-ICP-MS, p-XRF, Crd is Cordillera, Az is Azuero, Mix is source with mixed Cordilleran and Auzero characteristics (6) secondary mineral in pores with quantity evaluated with high [H], medium [M], and low [L], (7) Petrographic groups (G1 for paste with mainly granitic rock-derived inclusions from Azuero, G2 for mixed porphyritic volcanic sand and their monomineralic phenocrysts from Azuero, and G3 for pytoclastics with mainly monomineralic phenocrysts from Cordillera); G2 for major mineral (Qtz for quartz, Plg for plagioclase, K-feld for K-feldspar, Z-feld for zoned feldspar), (8) major inclusions (VR for volcanic rock, Grn for granite, Tff for tuff) inclusions, (9) absence presence of inclusions with volcanic glass or vitrous phase with yes [Y] or no [N] and their quantity with [L] for low (< 5% of total inclusion), [M] for medium (5-< 15%), and [H] for high (>15%), (10) porosity of ceramic sherds found in thin sections evaluated with low (<10%) [L], medium (10-<30%) [M], and high [H] (>30%), (11) Ba and Sr source inferred via comparisons of elemental maps and petrographic thin sections, (12) source by p-XRF, with G1 assigned to Cordillera and G2 assigned to Azuero, and ‘un’ meaning unassigned, (13) chemical groups [G1, G2, and G3] based on LA-ICP-MS data, assigned via statistical tests, with G1 assigned to Azuero and G2 and G3 assigned to Cordillera, and (14) concentrations of Al, P, S, K, Ca, Mn, Zn, Sr, Ba, and Pb in ppm, taken with LA-ICP-MS.

Site	Environmental Zone	Site Type	Sample	Overall source group	Secondary Mineral in Pores and Quantity
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-34-2.01-1	Crd	Ab
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-37-2.01-1	Crd?	G-H
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-38-2.01-1	Crd?	Ab
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-38-2.01-2	Crd	G-H
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-94-145-1-1	Crd	G-H
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-114-1.57-1-1	Crd	G-H
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-114-1.59-2-1	Crd	G-H
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-120-1.35-1	Crd	Ab
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-122-1.35-1	Crd	G-L
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-126-1.35-3-1	Crd	Ab
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-135-1.47-1 (2.01-1)	Crd	Ab
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-144-1.47-1	Crd	G-L
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-150-1.47-4-1	Crd	G-M
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-176-1.59-2-1	Crd	G-H
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-154-1.47-4-1	Crd	G-L
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-164-1.59-2-1	Crd?	G-H
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-167-1.59-2-1	Crd	G-M
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-170-1.59-2-1	Crd	G-M
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-174-1.59-2-1	Crd	G-L
Lp8 (Calaveras)	Caribbean slope	rockshelter	Lp8-182-1.59-2-1	Crd	G-M
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-2-f3	Crd	Ab
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-2-f9	Crd?	Ab
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-2-f11	Crd	Ab

Site	Environmental Zone	Site Type	Sample	Overall source group	Secondary Mineral in Pores and Quantity
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-2-f13	Crd?	Ab
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-2-f17	Crd	Ab
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-3-f11	Crd	Ab
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-3-f14	Crd?	Ab
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-3-f120	Crd?	Ab
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-3-f122	Crd?	Ab
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-4-f17	Crd?	Ab
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-4-f35	Crd	Ab
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-4-f39	Crd?	Ab
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-4-f44	Crd	Ab
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-4-f48	Crd?	Ab
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-4-f50	Crd	Ab
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-44-f8	Crd	Ab
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-44-f10	Crd	Ab
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-45-f2	Crd	Ab
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-45-f4	Crd?	Ab
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-45-f8	Crd?	Ab
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-45-f13	Crd	Ab
Cl1 (Ladrones)	Pacific foothills	rockshelter	Cl1-45-F16	Crd	Ab
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-56-6-f109	Mix	Ab
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-82-176-f246	Crd?	Ab
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-83-f168	Crd?	Ab

Site	Environmental Zone	Site Type	Sample	Overall source group	Secondary Mineral in Pores and Quantity
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-148-30-f105	Crd	Ab
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-150-14-f108	Crd	Ab
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-150-16-f96	Mix	Ab
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-150-150-f103	Crd	Ab
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-151-20-f278	Crd?	Ab
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-151-f165	Crd?	Ab
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-161-f1	Crd?	Ab
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-161-f91	Crd	Ab
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-161-f125-f243	Crd	Ab
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-195-26-f236	Crd	Ab
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-199-19-f92	Crd	Ab
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-202-218-f107	Crd	Ab
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-236-f97	Crd	Ab
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-271-18-f100	Crd	Ab
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-282-27-f95	Crd	Ab
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-293-f101	Crd?	Ab
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-297-2-f279	Crd?	Ab
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-305-15-f94	Crd	Ab
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-313-f150	Crd?	Ab
Lp134 (Cebollal)	Pacific foothills	rockshelter	Lp134-318-37-281	Az	Ab

Site	Environmental Zone	Site Type	Sample	Overall source group	Secondary Mineral in Pores and Quantity
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-2-u1-f1	Crd	Ab
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-5-u1-f1	Mix	C-L
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-6-u1-f1	Az	Ab
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-6-u1-f2	Mix	Ab
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-8-u1-f2	Mix	Ab
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-8-u1-f3	Az	Ab
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-9-u1-f1	Az/Mix	C-L
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-22-u2-f1	Crd	Ab
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-32-u3-f1	Az	Ab
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-32-u3-f2	Az	Ab
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-32-u3-f3	Mix	Ab
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-34-u3-f1	Crd	Ab
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-34-u3-f2	Az	Ab
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-35-u3-f1	Az	Ab
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-35-u3-f2	Az	Ab
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-114-u4-f1	Crd	Ab
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-116-u4-f1	Crd	Ab
Ag13 (Aguadulce)	Pacific plains	rockshelter	Ag13-116-u4-f2	Crd	Ab
Pr14 (Mula)	Pacifi coast	shell midden	Pr14-24-1	Az	Ab
Pr14 (Mula)	Pacifi coast	shell midden	Pr14-22-1	Az	Ab
Pr14 (Mula)	Pacifi coast	shell midden	Pr14-25-1	Az	Ab
Sf9 (Carabal'i)	Pacific foothills	rockshelter	Sf9-B-60-1	Az	Ab
Sf9 (Carabal'i)	Pacific foothills	rockshelter	Sf9-B-61-1	Az	Ab
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N9-1	Az	Ab
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N9-2	Az	Ab
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N9-3	Az	Ab

Site	Environmental Zone	Site Type	Sample	Overall source group	Secondary Mineral in Pores and Quantity
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N9-4	Az	Ab
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N12-1	Az	Ab
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N12-2	Az	Ab
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N12-3	Az	Ab
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N12-4	Az	Ab
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N14-1	Az	Ab
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N14-2	Az	Ab
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N14-3	Az	Ab
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N14-4	Az	Ab
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N17-1	Az	Ab
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N17-2	Az	Ab
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N20-1	Az	Ab
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N20-2	Az	C-L
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N20-3	Az	C-L
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N20-4	Az	Ab
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N20-5	Mix	Ab
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-C35-N22-1	Az	Ab
Pr32 (Zapotal)	Pacific coast	shell midden	Pr32-1-16-1	Az	Ab
He5 (Monagrillo)	Pacific coast	shell midden	He5-60-F18	Az	Ab
He5 (Monagrillo)	Pacific coast	shell midden	He5-60-F9	Az	Ab
He5 (Monagrillo)	Pacific coast	shell midden	He5-61-F10	Az	Ab
He5 (Monagrillo)	Pacific coast	shell midden	He5-61-F11	Az	Ab
He5 (Monagrillo)	Pacific coast	shell midden	He5-62-F1	Az?	Ab
He5 (Monagrillo)	Pacific coast	shell midden	He5-62-F12	Az	Ab
He5 (Monagrillo)	Pacific coast	shell midden	He5-62-F20	Az	Ab
He5 (Monagrillo)	Pacific coast	shell midden	He5-63-F1	Az	Ab
He5 (Monagrillo)	Pacific coast	shell midden	He5-63-F2	Az	Ab
He5 (Monagrillo)	Pacific coast	shell midden	He5-64-F4	Az	Ab
He5 (Monagrillo)	Pacific coast	shell midden	He5-64-F3	Az	Ab

Site	Environmental Zone	Site Type	Sample	Overall source group	Secondary Mineral in Pores and Quantity
He5 (Monagrillo)	Pacific coast	shell midden	He5-66-F1	Az	Ab
He5 (Monagrillo)	Pacific coast	shell midden	He5-68-F1	Az?	Ab
He5 (Monagrillo)	Pacific coast	shell midden	He5-68-F6	Az	C-L
He5 (Monagrillo)	Pacific coast	shell midden	He5-68-F4	Crd	Ab
He5 (Monagrillo)	Pacific coast	shell midden	He5-69-F3	Az?	Ab
He5 (Monagrillo)	Pacific coast	shell midden	He5-69-F8	Az?	Ab
He5 (Monagrillo)	Pacific coast	shell midden	He5-69A-F3	Az	Ab
He5 (Monagrillo)	Pacific coast	shell midden	He5-70-F1	Az	C-L
He5 (Monagrillo)	Pacific coast	shell midden	He5-70-F2	Az?	Ab
He5 (Monagrillo)	Pacific coast	shell midden	He5-76-F1	Crd	Ab

Sample	Overall source group	Secondary Mineral in Pores and Quantity	Petrography		
			Petrographic Group	Major inclusions	Volcanic glass/vitreous phase
Lp8-34-2.01-1	Crd	Ab	G3	Qtz, Plg, K-feld?, Z-feld	Y-L
Lp8-37-2.01-1	Crd?	G-H	G3	Qtz, Plg, Z-feld, Rhy	Y-L
Lp8-38-2.01-1	Crd?	Ab	G3	Qtz, Plg, Z-feld	Y-L
Lp8-38-2.01-2	Crd	G-H	G3	Qtz, Plg,, Z-feld	Y-L
Lp8-94-145-1-1	Crd	G-H	G3	Qtz, Plg, Z-feld	Y-L
Lp8-114-1.57-1-1	Crd	G-H	G3	Qtz, Plg, Z-feld	Y-L
Lp8-114-157-1-2	Crd	G-H	G3	Qtz, Plg, Z-feld	Y-L
Lp8-120-1.35-1	Crd	Ab	G3	Qtz, Plg, Z-feld	Y-L
Lp8-122-1.35-1	Crd	G-L	G3	Qtz, Plg, K-feld?, Z-feld	Y-L
Lp8-126-1.35-3-1	Crd	Ab	G3	Qtz, Plg, Z-feld	Y-L
Lp8-135-1.47-1 (2.01-1)	Crd	Ab	G3	Qtz, Plg, K-feld?, Z-feld, Rhy	Y-L
Lp8-144-1.47-1	Crd	G-L	G3	Qtz, Plg, K-feld?, Z-feld	Y-L
Lp8-150-1.47-4-1	Crd	G-M	G3	Qtz, Plg , Z-feld	Y-L
Lp8-176-1.59-2-1	Crd	G-H	G3	Qtz, Plg, Z-feld	Y-L
Lp8-154-1.47-4-1	Crd	G-L	G3	Qtz, Plg, K-feld?, Z-feld	Y-L
Lp8-164-1.59-2-1	Crd?	G-H	G3	Qtz, Plg, K-feld?, Z-feld	Y-L
Lp8-167-1.59-2-1	Crd	G-M	G3	Qtz, Plg,Z-feld	Y-L
Lp8-170-1.59-2-1	Crd	G-M	G3	Qtz, Plg, Z-feld	Y-L
Lp8-174-1.59-2-1	Crd	G-L	G3	Qtz, Plg, Z-feld	Y-L
Lp8-182-1.59-2-1	Crd	G-M	G3	Qtz, Plg, Z-feld	Y-L

Sample	Overall source group	Secondary Mineral in Pores and Quantity	Petrography: Petrographic Group	Petrography: Major inclusions	Petrography: Volcanic glass/vitreous phase
Cl1-2-f9	Crd	Ab	G3	Qtz, Plg, Z-feld	Y-L
Cl1-2-f11	Crd	Ab	G3	Qtz, Plg, K-feld, Z-feld	Y-L
Cl1-2-f13	Crd?	Ab	G3	Qtz, Plg, K-feld?, Z-feld, Rhy, Tff	Y-L
Cl1-2-f17	Crd	Ab	G3	Qtz, Plg, Z-feld	Y-M
Cl1-3-f11	Crd	Ab	G3	Qtz, Plg, Z-feld	Y-L
Cl1-3-f14	Crd?	Ab	G2/G3	Qtz, Plg, mixed-VR, Z-feld	Y-L
Cl1-3-f120	Crd	Ab	G3	Qtz, Plg, Z-feld	Y-L
Cl1-3-f122	Crd?	Ab	G3	Qtz, Plg, Z-feld, K-feld?	Y-L
Cl1-4-f17	Crd?	Ab	G3	Qtz, Plg, Z-feld	Y-L
Cl1-4-f35	Crd	Ab	G3	Qtz, Plg, Z-feld, Rhy, Tff	Y-L
Cl1-4-f39	Crd?	Ab	unassiend possible Cordillera	Rhy, Tff	Y-H
Cl1-4-f44	Crd	Ab	G3	Qtz, Plg, K-feld?, Z-feld	Y-L
Cl1-4-f48	Crd?	Ab	G3	Qtz, Plg, Z-feld	Y-L
Cl1-4-f50	Crd	Ab	G3	Qtz, Plg, K-feld?, Z-feld, Rhy, Tff	Y-L
Cl1-44-f8	Crd	Ab	G3	Qtz, Plg, Z-feld, K-feld,	Y-L
Cl1-44-f10	Crd	Ab	G3	Qtz, Plg, Z-feld, K-feld	Y-L
Cl1-45-f2	Crd	Ab	G3	Qtz, Plg, Z-feld	Y-L
Cl1-45-f4	Crd?	Ab	G2/G3	Qtz, Plg, Z-feld, K-feld, Rhy, Tff	Y-M

Sample	Overall source group	Secondary Mineral in Pores and Quantity	Petrography		
			Petrographic Group	Major inclusions	Volcanic glass/vitreous phase
Cl1-45-f8	Crd?	Ab	G3	Qtz, Plg, Z-feld, K-feld,	Y-L
Cl1-45-f13	Crd	Ab	G3	Qtz, Plg, Z-feld, Rhy	Y-L
Cl1-45-F16	Crd	Ab	G3	Qtz, Plg, Z-feld, K-feld, Rhy	Y-L
Lp134-56-6-f109	Mix	Ab	G3	Qtz, Plg, Z-feld,	Y-L
Lp134-82-176-f246	Crd?	Ab	G3	Qtz, Plg, Z-feld	Y-L
Lp134-83-f168	Crd?	Ab	G3	Qtz, Plg , Z-feld	Y-L
Lp134-148-30-f105	Crd	Ab	G3	Qtz, Plg, Z-feld, K-feld	Y-L
Lp134-150-14-f108	Crd	Ab	G3	Qz, Plg, Z-feld, K-feld	Y-L
Lp134-150-16-f96	Mix	Ab	G3	Qtz,, Plg, Z-feld, Rhy, Tff	Y-M
Lp134-150-150-f103	Crd	Ab	G3	Qtz, Plg, Z-feld,	Y-L
Lp134-151-20-f278	Crd?	Ab	G3	Qtz, Plg, Z-feld	Y-L
Lp134-151-f165	Crd?	Ab	G3	Qtz, Plg, Z-feld	Y-L
Lp134-161-f1	Crd?	Ab	G3	Qtz, Plg, Z-feld, Rhy, Tff	Y-L
Lp134-161-f91	Crd	Ab	G3	Qtz, Plg, Z-feld, K-feld	Y-L
Lp134-161-f125-f243	Crd	Ab	G3	Qtz, Plg , Z-feld, K-feld,	Y-L
Lp134-195-26-f236	Crd	Ab	G3	Qtz, Plg, Z-feld, Rhy	Y-L
Lp134-199-19-f92	Crd	Ab	G3	Qtz, Plg, Z-feld	Y-L
Lp134-202-218-f107	Crd	Ab	G3	Qtz, Plg, Z-feld	Y-L
Lp134-236-f97	Crd	Ab	G3	Qtz, plg, Z-feld	Y-L

Sample	Overall source group	Secondary Mineral in Pores and Quantity	Petrography: Petrographic Group	Petrography: Major inclusions	Petrography: Volcanic glass/vitreous phase
Lp134-271-18-f100	Crd	Ab	G3	Qtz, Plg, Z-feld, K-feld	Y-L
Lp134-282-27-f95	Crd	Ab	G3	Qtz, Plg, Z-feld,	Y-L
Lp134-293-f101	Crd?	Ab	G3	Qtz, Plg, Z-feld,	Y-L
Lp134-297-2-f279	Crd?	Ab	G3	Qtz, Plg, Z-feld,	Y-L
Lp134-305-15-f94	Crd	Ab	G3	Qtz, K-feld, Plg, Z-feld,	Y-L
Lp134-313-f150	Crd?	Ab	G3	Qtz, Plg, Z-feld,	Y-L
Lp134-318-37-281	Az	Ab	unassiend	Rhy, Tff	Y-L
Ag13-2-u1-f1	Crd	Ab	G3	Qtz,, Plg, Z-feld, Rhy, Tff	Y-L
Ag13-5-u1-f1	Mix	C-L	G3	Qtz, Plg, Z-feld	Y-L
Ag13-6-u1-f1	Az	Ab	G2	Qtz Plg, mixed-VR, IG intrusive	Y-M
Ag13-6-u1-f2	Mix	Ab	G2/G3	Qtz, Plg, Z-feld, Rhy	Y-M
Ag13-8-u1-f2	Mix	Ab	G3	Qtz, Plg, Z-feld, K-feld, IG intrusive	Y-M
Ag13-8-u1-f3	Az	Ab	G2	Qtz, Plg, mixed-VR, IG intrusive, K-feld, Z-feld	Y-M
Ag13-9-u1-f1	Az/Mix	C-L	G2/G3	Qtz, Plg, Z-feld, mixed-VR, IG intrusive	Y-M
Ag13-22-u2-f1	Crd	Ab	G3	Qtz, Plg, Z-feld	Y-L

Sample	Overall source group	Secondary Mineral in Pores and Quantity	Petrography: Petrographic Group	Petrography: Major inclusions	Petrography: Volcanic glass/vitreous phase
Ag13-32-u3-f1	Az	Ab	G2	Qtz, Plg, mixed-VR, Ig-intrusive, Z-feld	Y-M
Ag13-32-u3-f2	Az	Ab	G2	Qtz, Plg, Rhy, Tff, IG intrusive	Y-M
Ag13-32-u3-f3	Mix	Ab	G3	Qtz, Plg, Z-feld, IG intrusive?	Y-L
Ag13-34-u3-f1	Crd	Ab	G3	Qtz, Plg, Z-feld	Y-L
Ag13-34-u3-f2	Az	Ab	G2	Qtz, Plg, mixed-VR, IG-intrusive	Y-M
Ag13-35-u3-f1	Az	Ab	G2	Qtz, Plg, mxed-VR, Z-feld, IG-intrusive	Y-M
Ag13-35-u3-f2	Az	Ab	G2	Qtz, Plg, mixed-VR, Z-feld, IG-intrusive	Y-L
Ag13-114-u4-f1	Crd	Ab	G3	Qtz, Plg, mixed-VR, Z-feld, IG-intrusive	Y-H
Ag13-116-u4-f1	Crd	Ab	G3	Qtz, Plg, mixed-VR, Z-feld, IG-intrusive	Y-M
Ag13-116-u4-f2	Crd	Ab	G3	Qtz, Plg, mixed-VR, Z-feld, IG-intrusive	Y-L
Pr14-24-1	Az	Ab	G2	Mixed-VR, Qtz, Plg, Z-feld, IG-intrusive	Y-M
Pr14-22-1	Az	Ab	G2	Mixed-VR, Qtz, Plg, Z-fld	Y-M
Pr14-25-1	Az	Ab	G2	Mixed-VR, Qtz Ig-intrusive	Y-M

Sample	Overall source group	Secondary Mineral in Pores and Quantity	Petrography: Petrographic Group	Petrography: Major inclusions	Petrography: Volcanic glass/vitreous phase
Sf9-B-60-1	Az	Ab	G2	Mixed-VR, Qtz, Plg, Z-feld, IG-intrusive	Y-M
Sf9-B-61-1	Az	Ab	G2	Mixed-VR, Qtz, Plg, Z-feld, IG-intrusive	Y-M
Pr32-C35-N9-1	Az	Ab	G2	Mixed-VR, Qtz, Plg, Z-feld, IG-intrusive	Y-M
Pr32-C35-N9-2	Az	Ab	G2	Mixed-VR, Qtz, Plg, Z-feld, K-feld?, IG-intrusive	Y-M
Pr32-C35-N9-3	Az	Ab	G2	Rhy, Plg, Qtz, Z-feld	Y-M
Pr32-C35-N9-4	Az	Ab	G2	Mixed-VR, Qtz, Plg, Z-feld, IG-intrusive	Y-M
Pr32-C35-N12-1	Az	Ab	G2	Mixed-VR, Qtz, Plg, Z-feld, IG-intrusive	Y-M
Pr32-C35-N12-2	Az	Ab	G2	Mixed-VR, Qtz, Plg, Z-feld, IG-intrusive	Y-M
Pr32-C35-N12-3	Az	Ab	G2	Mixed-VR, Qtz, Plg, Z-feld	Y-L
Pr32-C35-N12-4	Az	Ab	G2	Mixed-VR, Qtz, IG-intrusive	Y-M
Pr32-C35-N14-1	Az	Ab	G2	Mixed-VR, Qtz, Plg, Z-fld, IG-intrusive	Y-M
Pr32-C35-N14-2	Az	Ab	G2	Qtz, Plg, Rhy, Ig-intrusive	Y-M

Sample	Overall source group	Secondary Mineral in Pores and Quantity	Petrography Petrographic Group	Petrography Major inclusions	Petrography Volcanic glass/vitreous phase
Pr32-C35-N14-3	Az	Ab	G2	Mixed-VR, Qtz, Plg, Z-feld, IG-intrusive	Y-M
Pr32-C35-N14-4	Az	Ab	G2	Mixed-VR, Plg, Z-feld, IG-intrusive	Y-M
Pr32-C35-N17-1	Az	Ab	G2	Mixed-VR, Qtz, Plg, IG-intrusive	Y-L
Pr32-C35-N17-2	Az	Ab	G2	Mixed-VR, Qtz, Plg, IG-intrusive	Y-M
Pr32-C35-N20-1	Az	Ab	G2	Mixed-VR, Qtz, Plg, IG-intrusive	Y-M
Pr32-C35-N20-2	Az	C-L	G2	Qtz, K-feld, Z-feld, mixed-VR, Plg	Y-L
Pr32-C35-N20-3	Az	C-L	G2	Mixed-VR, Qtz, Plg	Y-M
Pr32-C35-N20-4	Az	Ab	G2	Mixed-VR, Atz, Plg	Y-M
Pr32-C35-N20-5	Mix	Ab	G3	Qtz, Plg, Z-feld	Y-L
Pr32-C35-N22-1	Az	Ab	G2	Mixed-VR, Plg, Qtz, Z-feld	Y-M
Pr32-1-16-1	Az	Ab	G2	Mixed-VR, Z-feld, Plg, K-feld?, IG-intrusive	Y-M
He5-60-F18	Az	Ab	G1	Gr, Qtz, K-feld, Qtz-aggregate	Y-L
He5-60-F9	Az	Ab	G1	Qtz, K-feld, Plg, Grn	Y-L
He5-61-F10	Az	Ab	G1	Qtz, K-feld, Plg, Grn	Y-L
He5-61-F11	Az	Ab	G2	Mixed-VR, Qtz, Plg, Ig-intrusive	Y-M

Sample	Overall source group	Secondary Mineral in Pores and Quantity	Petrography: Petrographic Group	Petrography: Major inclusions	Petrography: Volcanic glass/vitreous phase
He5-62-F1	Az?	Ab	G1	Qtz, Plg, K Grn	Y-L
He5-62-F12	Az	Ab	G2	Mixed-VR, Qtz, Plg, Z-feld	Y-M
He5-62-F20	Az	Ab	G2	Hematite, Mixed-VR, Qtz,IG-intrusive	Y-L
He5-63-F1	Az	Ab	G1	Qtz, Grn	Y-L
He5-63-F2	Az	Ab	G2	Mixed-VR, IG-inrtrusive, Qtz, Plg	Y-M
He5-64-F4	Az	Ab	G1	Qtz, Grn	Y-L
He5-64-F3	Az	Ab	G1	Qtz, Grn, K-feld, Plag	Y-L
He5-66-F1	Az	Ab	G2	Mixed-VR, Qtz, Plg, Z-feld, IG-intrusive	Y-M
He5-68-F1	Az?	Ab	G1	Qtz, Grn,	L or N
He5-68-F6	Az	C-L	G1	Qtz, Plg, Grn, Zoned-feld	Y-L
He5-68-F4	Crd	Ab	G3	Qtz, Plg, Z-feld, Mixed-VR	Y-L
He5-69-F3	Az?	Ab	G1	Qtz, Grn	Y-L
He5-69-F8	Az?	Ab	G1	Qtz, Grn,	Y-L
He5-69A-F3	Az	Ab	G1	Qtz, Grn,	N?
He5-70-F1	Az	C-L	G1	Qtz, Plg, Grn, K-feld	V-L
He5-70-F2	Az?	Ab	G1	Qtz, Grn	Y-L
He5-76-F1	Crd	Ab	G3	Qtz, Z-feld, Plg	Y-L

	Petrography			P-XRF
Sample	**Porosity**	**Ba Source**	**Sr Source**	**P-XRF group**
Lp8-34-2.01-1	M	N/A	N/A	G1
Lp8-37-2.01-1	M	N/A	N/A	G1
Lp8-38-2.01-1	M	N/A	N/A	G1
Lp8-38-2.01-2	M	N/A	N/A	G1
Lp8-94-145-1-1	H	N/A	N/A	G1
Lp8-114-1.57-1-1	H	N/A	N/A	G1
Lp8-114-157-1-2	H	N/A	N/A	G1
Lp8-120-1.35-1	H	N/A	N/A	G1
Lp8-122-1.35-1	H	N/A	N/A	G1
Lp8-126-1.35-3-1	H	N/A	N/A	G1
Lp8-135-1.47-1 (2.01-1)	H	N/A	N/A	G1
Lp8-144-1.47-1	H	N/A	N/A	G1
Lp8-150-1.47-4-1	H	N/A	N/A	G1
Lp8-176-1.59-2-1	H	Ab	Clay	G1
Lp8-154-1.47-4-1	M	N/A	N/A	G1
Lp8-164-1.59-2-1	H	N/A	N/A	G1
Lp8-167-1.59-2-1	M	N/A	N/A	G1
Lp8-170-1.59-2-1	M	N/A	N/A	G1
Lp8-174-1.59-2-1	M	N/A	N/A	G1
Lp8-182-1.59-2-1	H	N/A	N/A	G1
Cl1-2-f3	H	N/A	N/A	Un
Cl1-2-f9	L	N/A	N/A	G1
Cl1-2-f11	M	N/A	N/A	Un
Cl1-2-f13	M	N/A	N/A	Un
Cl1-2-f17	M	N/A	N/A	G1
Cl1-3-f11	M	N/A	N/A	Un
Cl1-3-f14	M	Wall-diagenesis (wall also has Vg),	Even distribution (possibly Ca-plag, and clay)	Un
Cl1-3-f120	L	N/A	N/A	Un
Cl1-3-f122	M	N/A	N/A	Un
Cl1-4-f17	M	N/A	N/A	Un
Cl1-4-f35	H	N/A	N/A	G1
Cl1-4-f39	H	N/A	N/A	G1
Cl1-4-f44	M	N/A	N/A	G1
Cl1-4-f48	M	N/A	N/A	Un
Cl1-4-f50	M	N/A	N/A	G1
Cl1-44-f8	M	Vg	Ca-Plg, Vg	G1
Cl1-44-f10	L	clay (wall) + Vg	Ca-Plg? + some Ba location	G1
Cl1-45-f2	M	clay (wall) + Vg	Ca-Plg + Ba location	G1
Cl1-45-f4	M	N/A	N/A	G1

	Petrography			P-XRF
Sample	**Porosity**	**Ba Source**	**Sr Source**	**P-XRF group**
Cl1-45-F8	M	N/A	N/A	G1
Cl1-45-f13	M	N/A	N/A	G1
Cl1-45-F16	M	N/A	N/A	G1
Lp134-56-6-f109	L	N/A	N/A	G1
Lp134-82-176-f246	M	clay?	Ca-plg	G1
Lp134-83-f168	M	N/A	N/A	G1
Lp134-148-30-f105	M	N/A	N/A	G1
Lp134-150-14-f108	H	N/A	N/A	G1
Lp134-150-16-f96	H	N/A	N/A	G2
Lp134-150-150-f103	M	N/A	N/A	G1
Lp134-151-20-f278	M	N/A	N/A	G1
Lp134-151-f165	H	N/A	N/A	G1
Lp134-161-f1	H	N/A	N/A	G1
Lp134-161-f91	H	N/A	N/A	G1
Lp134-161-f125-f243	L	posible Clay + Vg wall diagnesis	Ca-Plg, clay (co-occuring with Ba in clay)	G1
Lp134-195-26-f236	H	N/A	N/A	G1
Lp134-199-19-f92	H	N/A	N/A	G1
Lp134-202-218-f107	H	N/A	N/A	G1
Lp134-236-f97	M	N/A	N/A	G1
Lp134-271-18-f100	M	N/A	N/A	G1
Lp134-282-27-f95	H	N/A	N/A	G1
Lp134-293-f101	L	N/A	N/A	G1
Lp134-297-2-f279	M	N/A	N/A	G1
Lp134-305-15-f94	M	Vg	Ca-plg, Vg	G1
Lp134-313-f150	H	N/A	N/A	G1
Lp134-318-37-281	M	N/A	N/A	G2
Ag13-2-u1-f1	M	N/A	N/A	G1
Ag13-5-u1-f1	L	N/A	N/A	G2
Ag13-6-u1-f1	H	N/A	N/A	G2
Ag13-6-u1-f2	H	N/A	N/A	G2
Ag13-8-u1-f2	H	Wall clay + Vg	Ca-Plg, Vg, clay	Un
Ag13-8-u1-f3	H	Wall clay + Vg	Ca-Plg, Vg, clay	G2
Ag13-9-u1-f1	H	N/A	N/A	Un
Ag13-22-u2-f1	M	N/A	N/A	G1

	Petrography			P-XRF
Sample	**Porosity**	**Ba Source**	**Sr Source**	**P-XRF group**
Ag13-32-u3-f1	H	N/A	N/A	G2
Ag13-32-u3-f2	L	N/A	N/A	G2
Ag13-32-u3-f3	M	N/A	N/A	G1
Ag13-34-u3-f1	M	N/A	N/A	G1
Ag13-34-u3-f2	L	N/A	N/A	G2
Ag13-35-u3-f1	H	N/A	N/A	G2
Ag13-35-u3-f2	H	N/A	N/A	G2
Ag13-114-u4-f1	L	N/A	N/A	G1
Ag13-116-u4-f1	M	N/A	N/A	G1
Ag13-116-u4-f2	L	N/A	N/A	Un
Pr14-24-1	M	N/A	N/A	G2
Pr14-22-1	M	N/A	N/A	G2
Pr14-25-1	M	N/A	N/A	G2
Sf9-B-60-1	L	N/A	N/A	G2
Sf9-B-61-1	L	N/A	N/A	G2
Pr32-C35-N9-1	M	N/A	N/A	G2
Pr32-C35-N9-2	M	N/A	N/A	G2
Pr32-C35-N9-3	M	N/A	N/A	G2
Pr32-C35-N9-4	H	N/A	N/A	G2
Pr32-C35-N12-1	M	N/A	N/A	G2
Pr32-C35-N12-2	M	N/A	N/A	G2
Pr32-C35-N12-3	L	N/A	N/A	G2
Pr32-C35-N12-4	L	N/A	N/A	G2
Pr32-C35-N14-1	M	N/A	N/A	G2
Pr32-C35-N14-2	L	N/A	N/A	G2
Pr32-C35-N14-3	M	N/A	N/A	G2
Pr32-C35-N14-4	H	N/A	N/A	G2
Pr32-C35-N17-1	L	N/A	N/A	G2
Pr32-C35-N17-2	M	N/A	N/A	G2
Pr32-C35-N20-1	H	N/A	N/A	G2
Pr32-C35-N20-2	H	Ab	Vg (non-diagenesis)	G2
Pr32-C35-N20-3	H	N/A	N/A	G2
Pr32-C35-N20-4	H	N/A	N/A	G2
Pr32-C35-N20-5	M	N/A	N/A	G2
Pr32-C35-N22-1	H	N/A	N/A	G2
Pr32-1-16-1	M	N/A	N/A	G2
He5-60-F18	H	N/A	N/A	G2
He5-60-F9	H	N/A	N/A	G2
He5-61-F10	L	N/A	N/A	G2
He5-61-F11	H	N/A	N/A	G2
He5-62-F1	L	N/A	N/A	G2
He5-62-F12	L	N/A	N/A	G2
He5-62-F20	M	N/A	N/A	G2
He5-63-F1	L	N/A	N/A	G2

	Petrography			P-XRF
Sample	**Porosity**	**Ba Source**	**Sr Source**	**P-XRF group**
He5-63-F2	L	N/A	N/A	Un
He5-64-F4	L	N/A	N/A	G2
He5-64-F3	H	Vg	?	G2
He5-66-F1	L	N/A	N/A	G2
He5-68-F1	L	N/A	N/A	G2
He5-68-F6	H	N/A	N/A	G2
He5-68-F4	M	N/A	N/A	G1
He5-69-F3	L	N/A	N/A	G2
He5-69-F8	L	N/A	N/A	G2
He5-69A-F3	H	N/A	N/A	G2
He5-70-F1	H	K-feldspar and possible Vg	nearly Ab	G2
He5-70-F2	H	N/A	N/A	N/A
He5-76-F1	M	N/A	N/A	Un

Sample	LA-ICP-MS group	LA-ICP-MS (ppm) Al	P	S	K
Lp8-34-2.01-1	Un	219010.34	190.93	76.33	1240.68
Lp8-37-2.01-1	N/A	N/A	N/A	N/A	N/A
Lp8-38-2.01-1	N/A	N/A	N/A	N/A	N/A
Lp8-38-2.01-2	G3	162701.45	374.30	48.44	3756.81
Lp8-94-145-1-1	unassigned	216951.20	93.47	17.80	2607.80
Lp8-114-1.57-1-1	G2	195414.24	280.24	16.95	1655.33
Lp8-114-157-1-2	Un	211708.97	473.26	12.48	1630.71
Lp8-120-1.35-1	unassigned	191194.93	165.64	9.25	1881.33
Lp8-122-1.35-1	G2	199814.48	328.11	0.78	2065.97
Lp8-126-1.35-3-1	G2	208465.94	269.01	0.48	1571.78
Lp8-135-1.47-1 (2.01-1)	G2	252265.98	366.12	148.74	2180.21
Lp8-144-1.47-1	unassigned	178193.42	253.16	0.00	1422.90
Lp8-150-1.47-4-1	G2	207121.76	254.27	22.43	1794.95
Lp8-176-1.59-2-1	G3	110819.79	257.93	2.09	16027.74
Lp8-154-1.47-4-1	unassigned	193026.87	496.17	0.80	785.91
Lp8-164-1.59-2-1	N/A	N/A	N/A	N/A	N/A
Lp8-167-1.59-2-1	G2	199676.19	337.56	0.77	1460.72
Lp8-170-1.59-2-1	G3	136120.52	461.21	4.79	2094.09
Lp8-174-1.59-2-1	G2	188836.44	305.79	58.62	1544.84
Lp8-182-1.59-2-1	G2	231801.22	516.66	81.31	859.86
Cl1-2-f3	G3	160923.59	3487.77	0.00	3527.34
Cl1-2-f9	N/A	N/A	N/A	N/A	N/A
Cl1-2-f11	G3	163435.43	1979.91	0.00	5023.32
Cl1-2-f13	unassigned	149490.77	1613.41	49.44	6732.00
Cl1-2-f17	G3	138627.25	6477.77	4.49	5462.62
Cl1-3-f11	G3	142199.18	4283.48	38.91	8302.29
Cl1-3-f14	G3	142062.57	686.58	24.18	6127.04
Cl1-3-f120	G3	187685.92	4034.07	19.04	2681.45
Cl1-3-f122	unassigned	156453.65	0.00	0.00	5936.21
Cl1-4-f17	N/A	N/A	N/A	N/A	N/A
Cl1-4-f35	G3	163222.98	93.98	0.00	1147.34
Cl1-4-f39	N/A	N/A	N/A	N/A	N/A
Cl1-4-f44	G3	211642.90	6136.95	584.41	5826.90
Cl1-4-f48	N/A	N/A	N/A	N/A	N/A
Cl1-4-f50	G3	116616.65	0.00	0.00	6111.23

Sample	LA-ICP-MS (ppm)				
	LA-ICP-MS group	**Al**	**P**	**S**	**K**
Cl1-44-f8	G3	131531.22	5716.25	18.89	3863.69
Cl1-44-f10	G3	114180.84	1372.98	103.55	14007.98
Cl1-45-f2	G3	156977.18	7901.13	80.84	7216.87
Cl1-45-f4	G3	174748.58	1684.46	185.14	6213.24
Cl1-45-f8	N/A	N/A	N/A	N/A	N/A
Cl1-45-f13	N/A	153343.89	2328.82	2.08	4254.62
Cl1-45-F16	G3	145268.15	1499.58	14.52	8422.97
Lp134-56-6-f109	G1	135033.50	695.36	12.09	5697.75
Lp134-82-176-f246	N/A	N/A	N/A	N/A	N/A
Lp134-83-f168	N/A	N/A	N/A	N/A	N/A
Lp134-148-30-f105	G2	147810.76	1491.25	0.22	3323.51
Lp134-150-14-f108	G2	120824.36	1691.16	1.21	3804.24
Lp134-150-16-f96	unassigned	158745.31	4695.65	0.27	5119.60
Lp134-150-150-f103	G2	148751.94	3395.94	0.58	3961.23
Lp134-151-20-f278	N/A	N/A	N/A	N/A	N/A
Lp134-151-f165	N/A	N/A	N/A	N/A	N/A
Lp134-161-f1	N/A	N/A	N/A	N/A	N/A
Lp134-161-f91	G2	168312.43	3374.61	0.83	3364.19
Lp134-161-f125-f243	unassigned	124144.17	1019.65	0.73	5064.79
Lp134-195-26-f236	G2	151632.69	2231.07	5.04	7015.19
Lp134-199-19-f92	unassigned	145898.14	3182.58	128.76	3740.66
Lp134-202-218-f107	G2	133236.10	1969.16	0.36	4351.60
Lp134-236-f97	G2	163716.61	3565.46	8.46	5561.02
Lp134-271-18-f100	G2	N/A	N/A	N/A	N/A
Lp134-282-27-f95	G2	141016.02	0.00	0.00	3908.13
Lp134-293-f101	N/A	N/A	N/A	N/A	N/A
Lp134-297-2-f279	N/A	N/A	N/A	N/A	N/A
Lp134-305-15-f94	G2	137566.10	687.32	2.13	4185.44
Lp134-313-f150	N/A	N/A	N/A	N/A	N/A
Lp134-318-37-281	unassigned	144299.52	2530.55	0.58	22743.45

		LA-ICP-MS (ppm)			
Sample	**LA-ICP-MS group**	**Al**	**P**	**S**	**K**
Ag13-2-u1-f1	G3	133753.45	2746.19	17.65	2541.50
Ag13-5-u1-f1	unassigned	129017.56	257.44	13.51	5530.05
Ag13-6-u1-f1	G1	199518.41	0.00	0.00	3849.58
Ag13-6-u1-f2	G3	127332.22	450.33	22.56	7473.78
Ag13-8-u1-f2	G1	192028.82	28080.11	0.00	2309.77
Ag13-8-u1-f3	G1	181414.83	6471.89	8.55	2585.54
Ag13-9-u1-f1	G1	193537.26	4053.76	0.65	1596.30
Ag13-22-u2-f1	G3	142038.37	1200.56	13.69	4324.21
Ag13-32-u3-f1	G1	156723.69	460.58	0.77	5076.51
Ag13-32-u3-f2	G1	163118.11	1231.94	19.63	3677.96
Ag13-32-u3-f3	G1	203840.67	0.00	0.00	373.19
Ag13-34-u3-f1	unassigned	202560.69	11880.83	17.05	2560.52
Ag13-34-u3-f2	G1	142929.81	26426.35	0.00	9671.35
Ag13-35-u3-f1	G1	150767.08	1403.13	23.26	8607.19
Ag13-35-u3-f2	unassigned	172013.65	411.27	0.27	7179.07
Ag13-114-u4-f1	G3	166234.79	12311.83	1612.07	3697.63
Ag13-116-u4-f1	G3	193171.36	17888.21	16.12	3377.29
Ag13-116-u4-f2	G3	194838.74	2398.22	0.02	4510.51
Pr14-24-1	unassigned	176473.04	395.67	166.72	2625.53
Pr14-22-1	G1	173792.33	416.29	10.97	3878.06
Pr14-25-1	unassigned	184283.38	2127.35	34.55	3605.56
Sf9-B-60-1	G1	187217.35	2132.04	20.84	5272.29
Sf9-B-61-1	G1	165538.28	4526.73	229.51	5435.68
Pr32-C35-N9-1	G1	164955.82	4994.02	0.00	8505.66
Pr32-C35-N9-2	G1	154832.36	3002.06	16.58	6728.16
Pr32-C35-N9-3	G1	140391.42	2221.17	0.97	12711.40
Pr32-C35-N9-4	G1	142396.08	1755.40	99.05	12575.32
Pr32-C35-N12-1	G1	158910.95	3721.25	0.00	7230.64
Pr32-C35-N12-2	G1	182746.90	3457.49	0.00	2685.32
Pr32-C35-N12-3	G1	154011.29	2771.39	17.25	6604.96
Pr32-C35-N12-4	G1	164653.67	4673.65	0.45	6933.10
Pr32-C35-N14-1	G1	N/A	N/A	N/A	N/A
Pr32-C35-N14-2	G1	149282.20	6635.29	86.08	9418.49
Pr32-C35-N14-3	G1	175639.51	4477.90	7.39	4541.53
Pr32-C35-N14-4	G1	181355.82	2736.87	6.87	4921.14
Pr32-C35-N17-1	G1	153007.82	2583.86	13.40	5755.07
Pr32-C35-N17-2	G1	200856.38	7206.96	23.15	2906.20

	LA-ICP-MS (ppm)				
Sample	**LA-ICP-MS group**	**Al**	**P**	**S**	**K**
Pr32-C35-N20-1	G1	123526.35	1089.57	0.49	10830.61
Pr32-C35-N20-2	G1	161109.27	4660.60	17.19	7292.36
Pr32-C35-N20-3	G1	157782.63	2352.52	17.72	3959.03
Pr32-C35-N20-4	G1	175948.43	2256.14	24.42	4412.19
Pr32-C35-N20-5	unassigned	172444.16	4106.20	313.98	4647.84
Pr32-C35-N22-1	G1	155138.31	1671.35	0.83	7620.88
Pr32-1-16-1	G1	166939.73	4115.80	0.18	4962.52
He5-60-F18	G1	131771.22	612.40	46.20	10234.13
He5-60-F9	G1	136278.13	3001.54	12.57	6523.38
He5-61-F10	G1	123940.47	137.19	17.73	10367.49
He5-61-F11	G1	141183.74	1455.70	4.01	10224.45
He5-62-F1	N/A	N/A	N/A	N/A	N/A
He5-62-F12	G1	219857.97	1054.83	17.48	4946.48
He5-62-F20	G1	169650.20	1083.26	0.34	7028.27
He5-63-F1	G1	104486.83	2162.54	14.00	17668.27
He5-63-F2	G1	143656.85	1981.76	0.00	9105.79
He5-64-F4	G1	104543.99	0.00	3.30	12496.65
He5-64-F3	G1	85208.95	1417.84	0.00	12689.22
He5-66-F1	G1	139970.32	651.61	132.67	7806.38
He5-68-F1	N/A	N/A	N/A	N/A	N/A
He5-68-F6	G1	168971.46	729.92	39.22	17486.05
He5-68-F4	unassigned	169139.12	892.53	21.73	5675.18
He5-69-F3	N/A	N/A	N/A	N/A	N/A
He5-69-F8	N/A	N/A	N/A	N/A	N/A
He5-69A-F3	unassigned	174824.37	783.56	21.85	12553.83
He5-70-F1	unassigned	250399.08	481.18	11.17	4567.98
He5-70-F2	N/A	N/A	N/A	N/A	N/A
He5-76-F1	G2	139246.27	310.71	39.53	10562.08

		LA-ICP-MS (ppm)			
Sample	**LA-ICP-MS group**	**Ca**	**Mn**	**Fe**	**Zn**
Lp8-34-2.01-1	Un	5342.11	392.59	79751.83	101.77
Lp8-37-2.01-1	N/A	N/A	N/A	N/A	N/A
Lp8-38-2.01-1	N/A	N/A	N/A	N/A	N/A
Lp8-38-2.01-2	G3	10650.80	774.05	71950.53	200.31
Lp8-94-145-1-1	Unassigned	4327.19	132.03	80744.33	87.50
Lp8-114-1.57-1-1	G2	5152.40	442.63	103660.08	85.43
Lp8-114-157-1-2	Un	12129.55	585.56	94405.98	115.50
Lp8-120-1.35-1	unassigned	12063.09	1246.50	69492.00	84.70
Lp8-122-1.35-1	G2	9760.06	1677.02	91730.11	85.85
Lp8-126-1.35-3-1	G2	7169.89	720.78	55137.71	60.76
Lp8-135-1.47-1 (2.01-1)	G2	5382.98	562.79	117724.88	107.78
Lp8-144-1.47-1	unassigned	8244.22	1400.56	104678.95	77.67
Lp8-150-1.47-4-1	G2	6738.14	190.33	83104.53	129.64
Lp8-176-1.59-2-1	G3	15741.02	1016.10	39923.33	160.15
Lp8-154-1.47-4-1	unassigned	11938.47	638.00	70264.02	83.87
Lp8-164-1.59-2-1	N/A	N/A	N/A	N/A	N/A
Lp8-167-1.59-2-1	G2	7594.14	2707.55	104961.45	78.82
Lp8-170-1.59-2-1	G3	50347.47	910.74	75907.02	1274.05
Lp8-174-1.59-2-1	G2	14472.27	622.03	67248.66	79.71
Lp8-182-1.59-2-1	G2	6457.07	326.22	75325.28	80.87
Cl1-2-f3	G3	10307.16	634.47	68174.58	123.51
Cl1-2-f9	N/A	N/A	N/A	N/A	N/A
Cl1-2-f11	G3	11788.02	417.50	36239.68	31.68
Cl1-2-f13	unassigned	11884.23	1132.17	66390.06	77.85
Cl1-2-f17	G3	18703.75	1362.05	96317.31	89.72
Cl1-3-f11	G3	7916.19	793.20	47400.27	78.82
Cl1-3-f14	G3	15386.18	251.27	42087.20	106.57

		LA-ICP-MS (ppm)			
Sample	**LA-ICP-MS group**	**Ca**	**Mn**	**Fe**	**Zn**
Cl1-3-f120	G3	5961.86	49.45	66318.84	86.67
Cl1-3-f122	unassigned	0.00	372.95	45733.66	109.00
Cl1-4-f17	G3	N/A	N/A	N/A	N/A
Cl1-4-f35	G3	3482.29	132.88	72578.71	142.22
Cl1-4-f39	N/A	N/A	N/A	N/A	N/A
Cl1-4-f44	G3	7949.44	206.16	61640.93	93.44
Cl1-4-f48	N/A	N/A	N/A	N/A	N/A
Cl1-4-f50	G3	0.00	1313.53	55156.59	288.82
Cl1-44-f8	G3	20425.82	4557.98	89493.55	74.40
Cl1-44-f10	G3	11247.32	950.61	42934.15	74.63
Cl1-45-f2	G3	8132.00	496.29	54705.91	83.58
Cl1-45-f4	G3	10623.36	371.75	39616.40	62.43
Cl1-45-f8	N/A	N/A	N/A	N/A	N/A
Cl1-45-f13	G3	13374.32	540.62	69683.63	94.36
Cl1-45-F16	G3	18713.26	228.99	27612.29	62.27
Lp134-56-6-f109	G1	29305.07	817.44	50078.15	128.23
Lp134-82-176-f246	N/A	N/A	N/A	N/A	N/A
Lp134-83-f168	N/A	N/A	N/A	N/A	N/A
Lp134-148-30-f105	G2	16733.50	642.46	39975.14	72.60
Lp134-150-14-f108	G2	18631.91	257.84	33191.39	46.82
Lp134-150-16-f96	unassigned	7863.27	539.47	66858.57	177.98
Lp134-150-150-f103	G2	24683.36	199.15	39751.05	96.79
Lp134-151-20-f278	N/A	N/A	N/A	N/A	N/A
Lp134-151-f165	N/A	N/A	N/A	N/A	N/A
Lp134-161-f1	N/A	N/A	N/A	N/A	N/A
Lp134-161-f91	G2	13553.59	497.46	70458.57	90.28
Lp134-161-f125-f243	unassigned	23020.19	416.21	49724.85	95.31
Lp134-195-26-f236	G2	9344.34	435.81	72492.68	83.22
Lp134-199-19-f92	unassigned	28786.37	207.68	31590.29	50.95
Lp134-202-218-f107	G2	15528.69	678.56	54488.04	125.54

	LA-ICP-MS (ppm)				
Sample	**LA-ICP-MS group**	**Ca**	**Mn**	**Fe**	**Zn**
Lp134-236-f97	G2	15129.67	257.94	39420.40	86.79
Lp134-271-18-f100	G2	N/A	N/A	N/A	N/A
Lp134-282-27-f95	G2	0.00	355.37	56858.62	156.36
Lp134-293-f101	N/A	N/A	N/A	N/A	N/A
Lp134-297-2-f279	N/A	N/A	N/A	N/A	N/A
Lp134-305-15-f94	G2	13969.80	1035.07	46123.40	67.88
Lp134-313-f150	N/A	N/A	N/A	N/A	N/A
Lp134-318-37-281	unassigned	7280.39	179.72	57485.67	194.73
Ag13-2-u1-f1	G3	24250.44	1311.06	51180.87	133.95
Ag13-5-u1-f1	unassigned	20322.88	561.72	61309.81	74.64
Ag13-6-u1-f1	G1	232.56	773.86	62687.09	107.42
Ag13-6-u1-f2	G3	28255.13	1828.28	60839.77	220.07
Ag13-8-u1-f2	G1	13080.36	380.49	54516.54	72.21
Ag13-8-u1-f3	G1	12146.26	497.04	54658.09	188.08
Ag13-9-u1-f1	G1	19748.58	647.18	48517.03	233.28
Ag13-22-u2-f1	G3	19155.17	1304.46	34424.44	110.19
Ag13-32-u3-f1	G1	12775.74	304.40	48674.19	243.01
Ag13-32-u3-f2	G1	18850.48	1530.57	39402.48	131.26
Ag13-32-u3-f3	G1	11975.11	220.05	57211.80	167.15
Ag13-34-u3-f1	unassigned	17549.19	813.81	46240.30	184.68
Ag13-34-u3-f2	G1	5737.77	442.21	59988.77	105.16
Ag13-35-u3-f1	G1	21792.66	447.06	45868.62	129.20
Ag13-35-u3-f2	unassigned	21411.55	258.79	44388.49	77.30
Ag13-114-u4-f1	G3	12098.71	261.99	54695.45	83.46
Ag13-116-u4-f1	G3	7782.24	1555.81	56559.47	98.40
Ag13-116-u4-f2	G3	5882.50	827.84	53459.49	127.73
Pr14-24-1	unassigned	12328.67	586.81	97353.10	61.30
Pr14-22-1	G1	18023.78	394.44	60406.90	55.45

Sample	LA-ICP-MS group	LA-ICP-MS (ppm) Ca	Mn	Fe	Zn
Pr14-25-1	unassigned	20903.31	2258.17	87083.56	79.09
Sf9-B-60-1	G1	15084.11	1803.08	52115.00	96.19
Sf9-B-61-1	G1	11846.69	1036.49	71389.66	75.72
Pr32-C35-N9-1	G1	17953.79	1921.54	93937.30	152.93
Pr32-C35-N9-2	G1	26374.16	1210.49	72486.49	87.92
Pr32-C35-N9-3	G1	24052.71	2345.52	72774.53	148.46
Pr32-C35-N9-4	G1	23915.55	701.81	68720.17	149.76
Pr32-C35-N12-1	G1	21532.93	1310.43	81718.38	124.25
Pr32-C35-N12-2	G1	26944.18	1054.60	67599.57	92.98
Pr32-C35-N12-3	G1	23277.66	527.24	52602.84	93.13
Pr32-C35-N12-4	G1	27685.74	1848.53	97573.83	116.80
Pr32-C35-N14-1	G1	N/A	N/A	N/A	N/A
Pr32-C35-N14-2	G1	30353.41	2643.98	76641.61	140.70
Pr32-C35-N14-3	G1	23085.28	509.80	67420.98	158.64
Pr32-C35-N14-4	G1	28595.32	189.99	51407.90	77.04
Pr32-C35-N17-1	G1	24170.14	1140.39	57281.67	108.62
Pr32-C35-N17-2	G1	24164.45	1071.71	56859.17	83.43
Pr32-C35-N20-1	G1	11481.67	1561.53	59786.47	166.01
Pr32-C35-N20-2	G1	23243.37	2746.08	71816.88	154.17
Pr32-C35-N20-3	G1	21414.64	1358.27	79692.09	102.14
Pr32-C35-N20-4	G1	18025.65	349.83	78992.38	159.85
Pr32-C35-N20-5	unassigned	27238.60	722.29	52930.50	64.59
Pr32-C35-N22-1	G1	22542.85	1171.96	101785.43	79.37
Pr32-1-16-1	G1	17503.75	3033.41	99375.39	218.41
He5-60-F18	G1	9050.18	1550.05	104324.41	217.60
He5-60-F9	G1	28128.52	1833.13	69938.07	128.44

		LA-ICP-MS (ppm)			
Sample	**LA-ICP-MS group**	**Ca**	**Mn**	**Fe**	**Zn**
He5-61-F10	G1	12200.63	2785.73	74819.46	273.82
He5-61-F11	G1	22986.06	3785.60	100164.43	202.73
He5-62-F1	N/A	N/A	N/A	N/A	N/A
He5-62-F12	G1	17826.71	370.21	63656.47	238.28
He5-62-F20	G1	16047.26	177.68	66319.92	156.96
He5-63-F1	G1	13169.88	3963.68	102805.87	257.62
He5-63-F2	G1	14622.87	542.97	82809.11	83.47
He5-64-F4	G1	15293.99	1747.12	109739.67	387.22
He5-64-F3	G1	15151.41	944.87	60645.82	141.57
He5-66-F1	G1	15506.97	203.32	72218.88	114.65
He5-68-F1	N/A	N/A	N/A	N/A	N/A
He5-68-F6	G1	23087.55	183.61	40252.34	324.54
He5-68-F4	Unassigned	13945.38	342.07	57991.17	180.64
He5-69-F3	N/A	N/A	N/A	N/A	N/A
He5-69-F8	N/A	N/A	N/A	N/A	N/A
He5-69A-F3	Unassigned	12114.63	744.48	55432.26	155.68
He5-70-F1	Unassigned	8554.58	774.85	96433.03	67.25
He5-70-F2	N/A	N/A	N/A	N/A	N/A
He5-76-F1	G2	7078.69	2839.08	48527.62	88.11

Sample	LA-ICP-MS (ppm)			
	LA-ICP-MS group	**Sr**	**Ba**	**Pb**
Lp8-34-2.01-1	Un	113.31	241.53	10.27
Lp8-37-2.01-1	N/A	N/A	N/A	N/A
Lp8-38-2.01-1	N/Ae	N/A	N/A	N/A
Lp8-38-2.01-2	G3	127.25	248.82	12.79
Lp8-94-145-1-1	unassigned	86.80	383.75	13.83
Lp8-114-1.57-1-1	G2	37.09	177.23	12.94
Lp8-114-157-1-2	G2	114.94	138.67	14.42
Lp8-120-1.35-1	unassigned	262.10	259.98	11.08
Lp8-122-1.35-1	G2	194.76	229.96	11.34
Lp8-126-1.35-3-1	G2	99.05	143.49	9.93
Lp8-135-1.47-1 (2.01-1)	G2	84.94	94.48	17.41
Lp8-144-1.47-1	unassigned	149.99	189.10	10.31
Lp8-150-1.47-4-1	G2	104.26	199.00	12.29
Lp8-176-1.59-2-1	G3	234.69	458.30	39.32
Lp8-154-1.47-4-1	unassigned	211.00	228.66	9.98
Lp8-164-1.59-2-1	N/A	N/A	N/A	N/A
Lp8-167-1.59-2-1	G2	128.92	179.19	18.39
Lp8-170-1.59-2-1	G3	229.26	614.69	12.40
Lp8-174-1.59-2-1	G2	200.81	144.82	13.94
Lp8-182-1.59-2-1	G2	90.92	103.16	10.42
Cl1-2-f3	G3	444.19	4642.94	17.74
Cl1-2-f9	N/A	N/A	N/A	N/A
Cl1-2-f11	G3	1435.16	29290.38	8.73
Cl1-2-f13	unassigned	427.90	6381.53	5.48
Cl1-2-f17	G3	1082.99	9786.42	13.26
Cl1-3-f11	G3	525.76	7567.46	11.62
Cl1-3-f14	G3	571.90	2372.88	9.17
Cl1-3-f120	G3	82.73	784.49	9.02
Cl1-3-f122	unassigned	423.80	2419.57	4.25
Cl1-4-f17	N/A	N/A	N/A	N/A
Cl1-4-f35	G3	47.64	1063.59	13.98
Cl1-4-f39	N/A	N/A	N/A	N/A
Cl1-4-f44	G3	867.67	17552.71	10.41
Cl1-4-f48	N/A	N/A	N/A	N/A
Cl1-4-f50	G3	359.05	918.58	7.49
Cl1-44-f8	G3	430.77	951.06	24.61

	LA-ICP-MS (ppm)			
Sample	**LA-ICP-MS group**	**Sr**	**Ba**	**Pb**
Cl1-44-f10	G3	2812.51	31590.89	14.51
Cl1-45-f2	G3	1189.43	24107.75	11.19
Cl1-45-f4	G3	1442.75	25553.83	6.93
Cl1-45-f8	N/A	N/A	N/A	N/A
Cl1-45-f13	G3	322.22	1219.38	8.94
Cl1-45-F16	G3	674.06	2112.64	6.95
Lp134-56-6-f109	G1	525.97	441.59	7.10
Lp134-82-176-f246	N/A	N/A	N/A	N/A
Lp134-83-f168	N/A	N/A	N/A	N/A
Lp134-148-30-f105	G2	376.51	382.00	9.07
Lp134-150-14-f108	G2	458.38	258.52	5.51
Lp134-150-16-f96	unassigned	180.21	673.48	7.76
Lp134-150-150-f103	G2	594.59	648.64	6.49
Lp134-151-20-f278	N/A	N/A	N/A	N/A
Lp134-151-f165	N/A	N/A	N/A	N/A
Lp134-161-f1	N/A	N/A	N/A	N/A
Lp134-161-f91	G2	286.41	406.30	3.84
Lp134-161-f125-f243	unassigned	429.35	721.60	5.27
Lp134-195-26-f236	G2	198.95	677.74	4.15
Lp134-199-19-f92	unassigned	682.54	427.12	5.55
Lp134-202-218-f107	G2	321.57	652.08	4.30
Lp134-236-f97	G2	208.45	624.88	6.80
Lp134-271-18-f100	G2	N/A	N/A	N/A
Lp134-282-27-f95	G2	438.80	791.33	4.89
Lp134-293-f101	N/A	N/A	N/A	N/A
Lp134-297-2-f279	N/A	N/A	N/A	N/A
Lp134-305-15-f94	G2	221.84	233.00	10.39
Lp134-313-f150	N/A	N/A	N/A	N/A
Lp134-318-37-281	unassigned	94.25	1075.81	8.65

	LA-ICP-MS (ppm)			
Sample	**LA-ICP-MS group**	**Sr**	**Ba**	**Pb**
Ag13-2-u1-f1	G3	315.02	6974.13	8.86
Ag13-5-u1-f1	unassigned	309.48	9834.57	15.33
Ag13-6-u1-f1	G1	260.54	14690.38	11.17
Ag13-6-u1-f2	G3	552.61	10322.63	10.98
Ag13-8-u1-f2	G1	294.25	4715.51	7.13
Ag13-8-u1-f3	G1	217.69	3626.52	12.62
Ag13-9-u1-f1	G1	309.90	3946.49	9.35
Ag13-22-u2-f1	G3	329.70	4591.16	8.34
Ag13-32-u3-f1	G1	335.61	1809.74	10.68
Ag13-32-u3-f2	G1	419.58	7400.80	10.09
Ag13-32-u3-f3	G1	237.73	5255.75	8.69
Ag13-34-u3-f1	unassigned	301.48	3141.78	7.57
Ag13-34-u3-f2	G1	219.39	2179.94	17.21
Ag13-35-u3-f1	G1	601.35	3663.74	10.25
Ag13-35-u3-f2	unassigned	508.72	20146.00	10.95
Ag13-114-u4-f1	G3	271.29	3719.09	158.93
Ag13-116-u4-f1	G3	134.40	5473.11	11.08
Ag13-116-u4-f2	G3	273.02	19199.90	10.11
Pr14-24-1	unassigned	175.26	725.20	13.04
Pr14-22-1	G1	321.83	769.64	11.94
Pr14-25-1	unassigned	239.14	1603.80	21.53
Sf9-B-60-1	G1	338.30	2189.54	12.91
Sf9-B-61-1	G1	232.90	1894.98	12.70
Pr32-C35-N9-1	G1	207.00	704.82	12.75
Pr32-C35-N9-2	G1	414.08	850.38	10.42
Pr32-C35-N9-3	G1	345.43	1096.37	17.98
Pr32-C35-N9-4	G1	400.36	921.92	18.70
Pr32-C35-N12-1	G1	460.18	854.57	8.72
Pr32-C35-N12-2	G1	440.71	653.75	9.97
Pr32-C35-N12-3	G1	422.74	853.57	9.54
Pr32-C35-N12-4	G1	441.41	756.61	16.34
Pr32-C35-N14-1	G1	N/A	N/A	N/A
Pr32-C35-N14-2	G1	484.63	977.15	14.95
Pr32-C35-N14-3	G1	338.13	817.59	13.67
Pr32-C35-N14-4	G1	601.68	736.51	13.84
Pr32-C35-N17-1	G1	412.23	694.16	9.73
Pr32-C35-N17-2	G1	264.44	742.43	10.53

Sample	LA-ICP-MS (ppm) **LA-ICP-MS group**	**Sr**	**Ba**	**Pb**
Pr32-C35-N20-1	G1	140.15	320.15	17.04
Pr32-C35-N20-2	G1	312.08	860.37	18.00
Pr32-C35-N20-3	G1	276.72	727.64	7.64
Pr32-C35-N20-4	G1	522.04	671.73	12.63
Pr32-C35-N20-5	unassigned	364.01	778.95	15.41
Pr32-C35-N22-1	G1	277.33	828.53	13.29
Pr32-1-16-1	G1	572.67	862.80	26.88
He5-60-F18	G1	229.48	469.19	17.58
He5-60-F9	G1	404.93	791.02	11.77
He5-61-F10	G1	143.77	322.27	25.53
He5-61-F11	G1	438.12	600.97	13.40
He5-62-F1	N/A	N/A	N/A	N/A
He5-62-F12	G1	449.82	779.60	20.18
He5-62-F20	G1	366.05	574.58	7.25
He5-63-F1	G1	107.76	345.25	25.57
He5-63-F2	G1	342.98	482.11	12.16
He5-64-F4	G1	211.98	359.46	38.17
He5-64-F3	G1	225.29	181.22	20.85
He5-66-F1	G1	397.06	482.96	10.48
He5-68-F1	N/A	N/A	N/A	N/A
He5-68-F6	G1	299.81	337.63	8.50
He5-68-F4	unassigned	324.40	291.59	8.75
He5-69-F3	N/A	N/A	N/A	N/A
He5-69-F8	N/A	N/A	N/A	N/A
He5-69A-F3	unassigned	221.91	660.78	117.14
He5-70-F1	unassigned	151.74	237.33	16.56
He5-70-F2	N/A	N/A	N/A	N/A
He5-76-F1	G2	149.97	161.39	22.88