

**PRELIMINARY ANALYSIS OF CERAMICS RECOVERED FROM EL VALLECITO  
DURING THE SEVENTH FIELD SEASON OF THE  
ARCHAEOLOGICAL SITE REGISTRY AND RESCUE PROJECT OF BAJA CALIFORNIA**

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*This article describes macroscopic and microscopic analyses of archaeological ceramics recovered from El Vallecito in 2012 by the Instituto Nacional de Antropología e Historia (INAH) during the seventh field season of the Archaeological Site Registry and Rescue Project of Baja California, Phase of the Municipality of Mexicali. The three El Vallecito rock shelter sites of El Corral, La Explanada, and La Cueva del Indio were excavated and have been radiocarbon dated to approximately 500 B.P. We summarize the history of archaeological research at El Vallecito and describe the excavations conducted in the summer of 2012. We present the results of a macroscopic ceramic analysis and introduce a thin-section petrographic study involving 18 sherds from the three sites, as well as a stratified sample of 22 sherds from the rock shelter at El Corral. The ceramic material from El Vallecito will be compared with the existing database of previously analyzed material from southern California and northern Baja California to determine raw material procurement and ceramic production locations, with the aim of investigating the nature of Kumeyaay habitation at the sites and identifying potential inter-site relationships across the Mexico-U.S. border.*

The archaeological zone of El Vallecito is located in the Peninsular Range mountains, 66 km east of Tecate in La Rumorosa, Baja California (Figure 1). Sites in this zone date to the Late Prehistoric and Protohistoric periods, from approximately A.D. 1000 (Bendímez and Laylander 2009:4). They were seasonally occupied by Kumeyaay hunter-gatherer groups in late summer and early fall for the annual pine nut and acorn harvest. El Vallecito derives its name, “the Little Valley,” from its low, protected position between mountains to the east and west of the sites. It contains numerous overhanging rock clusters ideal for human occupation (Oviedo 2005a:271). The archaeological zone is open to the public for camping and hiking on footpaths which wind through the rocky landscape to various archaeological features. INAH employs four custodians and two night watchmen to maintain the grounds and monitor visitors.

In 2012, during the seventh field season of the Archaeological Site Registry and Rescue Project of Baja California, Phase of the Municipality of Mexicali, excavations were conducted at the three El Vallecito sites of El Corral, La Explanada, and La Cueva del Indio (Figure 2). El Corral and La Explanada were first reported and registered during the 2011 field season (Porcayo and Rojas 2011). In contrast, La Cueva del Indio is part of the established tourist circuit and has been recognized since 1936, when archaeologist Adan Treganza and photographer Frederick Rogers (father of the archaeologist Malcolm J. Rogers), both with the Museum of Man in San Diego, surveyed La Rumorosa to compile a series of site descriptions, principally in the El Vallecito zone. Their photographs are the only known images that exist for this period. The rock shelter they photographed and described most was La Cueva del Indio (Hedges 2012). The three sites excavated in 2012 yielded a variety of Late Prehistoric to Protohistoric artifacts, including projectile points, ground stone tools, and abundant ceramic sherds.



*Figure 1. The entrance to the El Vallecito Archaeological Zone in the Mexico/U.S. border region of the Peninsular Range mountains, 66 km east of Tecate in La Rumorosa, Baja California.*

The ceramics were studied macroscopically as hand specimens in the INAH laboratory in Mexicali in order to reconstruct their shape, decoration, and possible function (Graham 2013). Attempts were made to classify them according to ware group typologies used in southern California. A selection of 18 sherds from the three sites was subjected to thin-section petrographic analysis at San Diego State University and sent to the Institute of Archaeology at University College London (UCL) for comparison with a database of previously analyzed Late Prehistoric ceramics and raw material samples from southern California (Burton and Quinn 2013; Gallucci 2001, 2004; Hildebrand et al. 2002; Quinn and Burton 2009; Quinn, Burton, Broughton, and Van Heymbeeck 2013; Quinn, Burton, and Graham 2013). Preliminary thin-section petrographic study led to the selection of a stratified sample of 22 sherds from the rock shelter at the El Corral site for further analysis, which is currently underway at UCL.

### **HISTORY OF ARCHAEOLOGICAL RESEARCH AT EL VALLECITO**

In 1942, Adan Treganza published the article, “An Archaeological Reconnaissance of Northeastern Baja California and Southeastern California,” in which he described the rock shelter paintings at El Vallecito. At that time, the archaeological zone, which encompasses the greatest known concentration of cave paintings attributed to the Kumeyaay people, was known in the U.S. as La Rumorosa. Following the publication of Treganza's article, the zone remained unstudied for decades; his extensive records were not taken up again until 1966, when archaeologist Ken Hedges (1970) began researching these and other rock art sites for which records were on file at the San Diego Museum of Man. Hedges's work culminated in defining three styles of southern California and northern Baja California rock art. Hedges (1973) was also the first to record and make known the archaeoastronomical



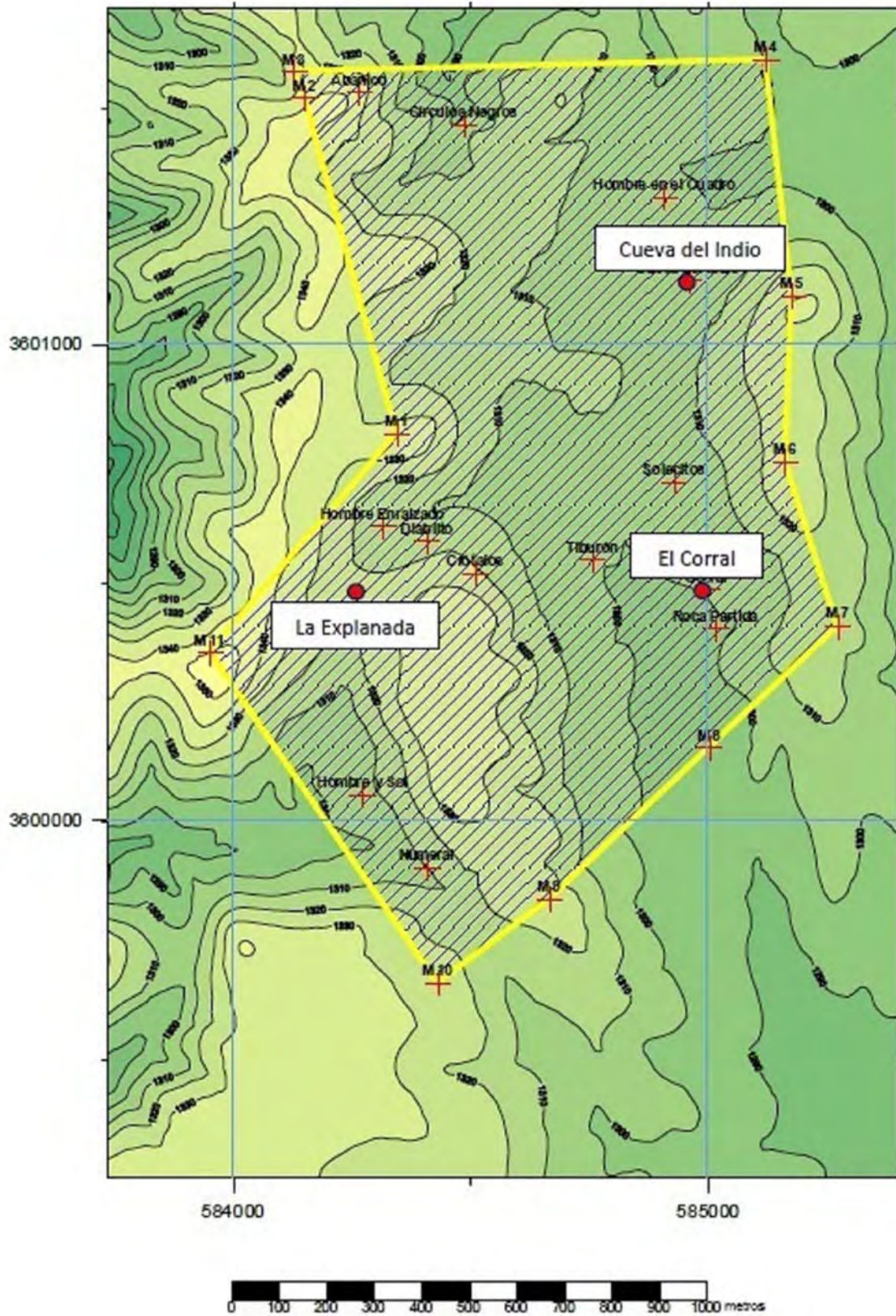


Figure 2. Locations of the three sites excavated at El Vallecito by INAH in the summer of 2012: El Corral (COR), La Explanada (EXP), and La Cueva del Indio (CUE).

phenomenon of El Diablito, “the Little Devil” (Figure 3). He profoundly influenced the study of other paintings in this region by recording at least 30 sets of graphic representations and proposing their meanings and functions.

Mexican archaeologists began research at El Vallecito in July 1987 and produced the *Archaeological Atlas of Pictographs and Petroglyphs of Baja California* through collaboration with the Archaeological Registry Department of INAH (Bendímez and Serrano 1990). In 1988, archaeologists Julia Bendímez Patterson, Jorge Serrano, Dionisio Trujillo, and Silverio Romero completed two phases of a formal investigative project at El Vallecito. In the first phase, they conducted an area reconnaissance to delimit the sites, record topographic data, collect diagnostic materials, and locate features in the rockshelters which could be visited by tourists. In the second phase, excavations were carried out at La Cueva del Indio (Serrano 1988). A decade later, archaeologists Jorge Serrano and César Berkovich surveyed the portion of El Vallecito open to the public and recorded 14 sets of graphic representations as part of the program INAH-PROCEDE (Program for the Certification of Ejido Rights and Titling of Urban Plots) in Baja California (Berkovich 2001). In 2001, the El Vallecito Archaeological Project was initiated under the supervision of archaeology intern Fernando Oviedo Garcia (2002, 2003, 2004, 2005b). During four field seasons from 2001 to 2004, systematic archaeological studies were conducted, including surface reconnaissance, collection of diagnostic materials, and excavations at rock shelters such as El Tiburón, El Diablito, Los Solecitos, Los Crótalos, and La Cueva del Indio, of which only Los Crótalos is located outside the tourist circuit.

The Archaeological Site Registry and Rescue Project of Baja California has incorporated within its purview the investigative archaeology at El Vallecito since 2010 under the direction of archaeologists Antonio Porcayo Micheline and Juan Martín Rojas Chávez (2011, 2012, 2013). This project, which began its first season in 2006, was initially focused on areas of the municipality of Mexicali containing undocumented archaeological remains that were found to be in various states of imminent danger (Porcayo 2007). However, the need to respond to complaints and register sites bordering the municipality of Tecate led to the inclusion of some areas of the Sierra de Juárez into the project, among them the El Vallecito archaeological zone.

Two groups of archaeology students from the Escuela Nacional de Antropología e Historia (ENAH) have participated in the archaeological site registry and rescue project. This was done because, in addition to its well-defined archaeological objectives, the project is designed to train students who will specialize in the desert of Mexicali. During the fifth season of the project, surface reconnaissance led to the registration of new sites and updated information about sites which had already been recorded (Porcayo and Rojas 2011). Diagnostic materials were collected, such as lithic tools, ceramic rims, decorated sherds, and those which suggested general vessel forms. More specialized elements such as projectile points were also collected and analyzed by students in the lithic laboratory at the Museo Nacional de Antropología in Mexico City. During the sixth season of the project, in 2011, excavations were conducted at three of the sites recorded during the previous year: La Punta, El Abrigo del Metate, and Los Numerales (Porcayo and Rojas 2012). The three sites investigated during the seventh field season in 2012 – El Corral, La Explanada, and La Cueva del Indio – were excavated more extensively (Porcayo and Rojas 2013). Ceramic materials from these sites are the subject of this paper and are the first ceramics analyzed from the El Vallecito archaeological zone.

## **2012 EXCAVATIONS AT EL CORRAL, LA EXPLANADA, AND LA CUEVA DEL INDIO**

El Corral, the first site excavated in 2012, includes a large rock shelter comprised of a series of chambers formed by granitic blocks. It features rock paintings comprised of geometric or abstract shapes and lines creating small reticular formations (Porcayo and Rojas 2013). The excavation spanned the north, west, and south chambers. A diverse assemblage of archaeological material was recovered, related to both domestic and nondomestic tool manufacture. The greatest number of projectile points was recovered from this site; among the fragments and complete points, 25 different types of lithic raw material are





*Figure 3. The “El Diablito” cave painting is still visited annually during the winter solstice when, on a clear day, sunlight enters the cave at a precise angle to illuminate the figure from head to toe.*

represented (Porcayo and Rojas 2013). Two fire pits were also found, and as much charcoal as possible was collected and analyzed, providing radiocarbon dates of  $209 \pm 22$  B.P. in the northern chamber and  $564 \pm 26$  B.P. in the western chamber. A total of 530 ceramic sherds were recovered from El Corral.

The site of La Explanada shows signs of occupation outside as well as within two small rock shelters which do not contain cave paintings. Undisturbed stratigraphic deposits were excavated from within the east and west caves, and surface material was systematically collected from a large portion of the site (Porcayo and Rojas 2013). The recovered artifacts provide evidence for the preparation of food or possibly the preparation of organic material used in rituals. The eastern cave contained a metate positioned upside down and a morphologically compatible mano approximately 80 cm away. An intact feature found in the western cave held several manos that appear to have been stored for future use. This site yielded 1,032 ceramic sherds.

At the site of La Cueva del Indio, the majority of the floor was excavated with the objective of recovering a granitic block which appeared to have been painted and had eroded from the highest point of the cave ceiling (Porcayo and Rojas 2013). The entire block could not be salvaged, although a few slabs of granite were recovered which were studied to confirm the existence of paint, along with a great many ephemeral materials. Prehistoric ceramics ( $n = 944$ ) and lithic material were recovered, including approximately 13 fragmented and complete projectile points, as well as historic bullet casings of various sizes, an historic key, and a large quantity of bottle caps and other modern metallic objects. Porcayo and Rojas (2013) indicate that despite the presence of three observable natural stratigraphic layers, it was impossible to identify distinct occupation levels at La Cueva del Indio, as recent human activity had displaced materials from their original contexts.

### MACROSCOPIC CERAMIC STUDY

The 2,506 ceramic sherds recovered from El Corral, La Explanada, and La Cueva del Indio in 2012 were studied macroscopically using a hand lens at the INAH laboratory in Mexicali. Rim sherds large enough to indicate the aperture diameter of the vessel and/or the vessel form were photographed and drawn (Graham 2013:75-111). All rim sherds were classified by lip form as rounded, flat, beveled, or rolled, using illustrations published by Gena Van Camp (1979:108). Diagnostic attributes such as decorative incising, perforations, basket impressions, evidence of coiling, presence of scum coat or stuccoing, and unusual sherd thickness or mineral appearance were also recorded. All sherds were classified macroscopically using the Tizon Brownware/Lower Colorado Buffware typology that is commonly applied to Late Prehistoric and Protohistoric Kumeyaay ceramics from southern California (Colton 1958; Euler and Dobyns 1958; May 1978; Rogers 1936, 1945; Schroeder 1958; Van Camp 1979; Waters 1982). Tizon Brownware represents ceramics produced using iron-rich residual clay with abundant, poorly-sorted, naturally occurring clasts that were derived from the weathering of igneous rocks in the Peninsular Range. Lower Colorado Buffware ceramics were manufactured using finer-grained sedimentary clay coming from ancient marine and non-marine deposits in the Colorado Desert region. This raw material was commonly tempered with dry clay particles, crushed pottery or “grog,” and quartz-rich desert sand. Given the geological and cultural continuity between southern California and northern Baja California, it seems logical to apply the same ware group typology to the sherds of El Vallecito.

The macroscopic study showed that the El Corral ceramic assemblage included four sherds exhibiting scum coat (Figure 4g, h), one with a basket impression, and three that show evidence of coiling. Two sherds from La Explanada had been intentionally perforated below the rim to facilitate the attachment of a handle or lid (Figure 5). The La Cueva del Indio assemblage contained two painted body sherds: one Buffware specimen displaying thick lines of red slip (Figure 4a, b), and one historical Galera Ware sherd coated with orange glaze on the inner surface (Figure 4c, d). Three rims from El Corral and two from La Explanada are from unusually small bowls determined to measure between 2 and 4 cm in aperture diameter which may have functioned as ceremonial vessels or children's toys (Griset 1996:181)



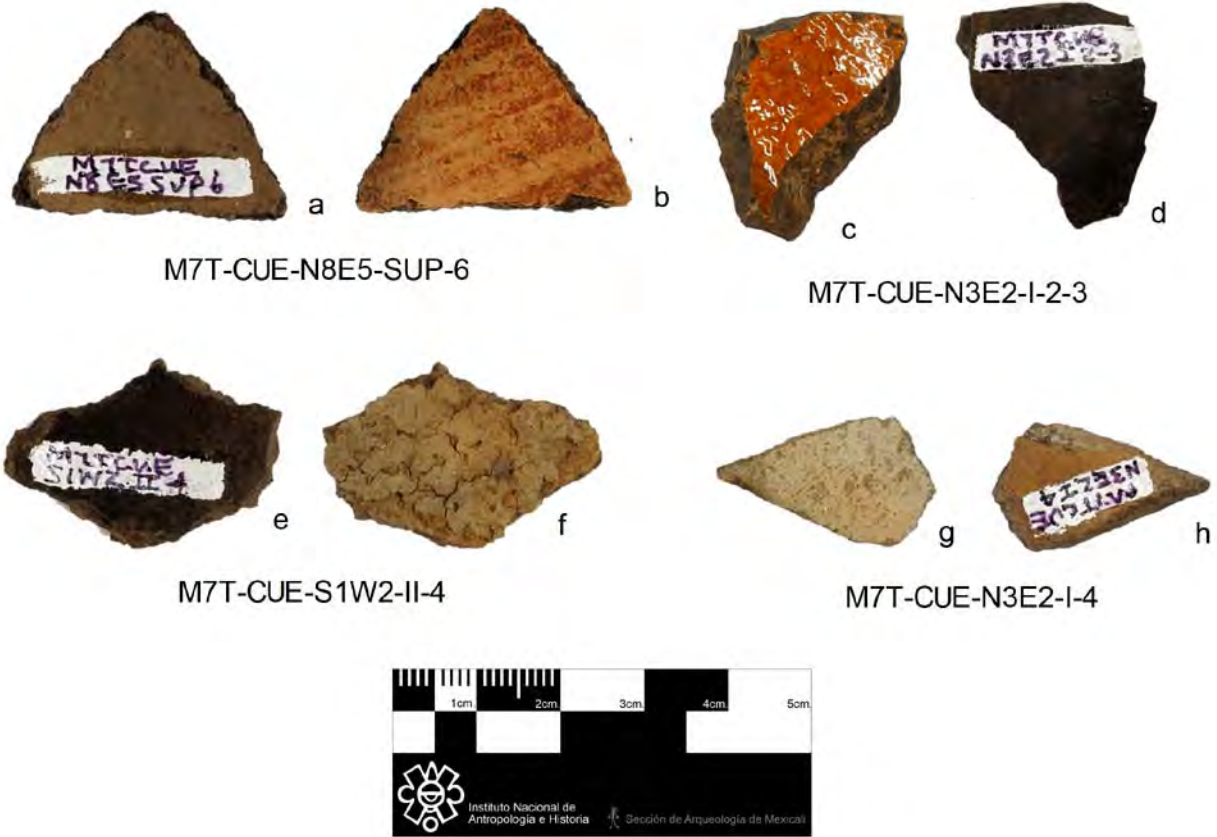


Figure 4. Diagnostic body sherds from the La Cueva del Indio site. a, b: Prehistoric/Protohistoric buffware with red paint; c, d: historic Galera Ware; e, f: stuccoing; g, h: scum coat.



Figure 5. Rim sherds from the La Explanada (EXP) site that were intentionally perforated to attach a lid or handle.

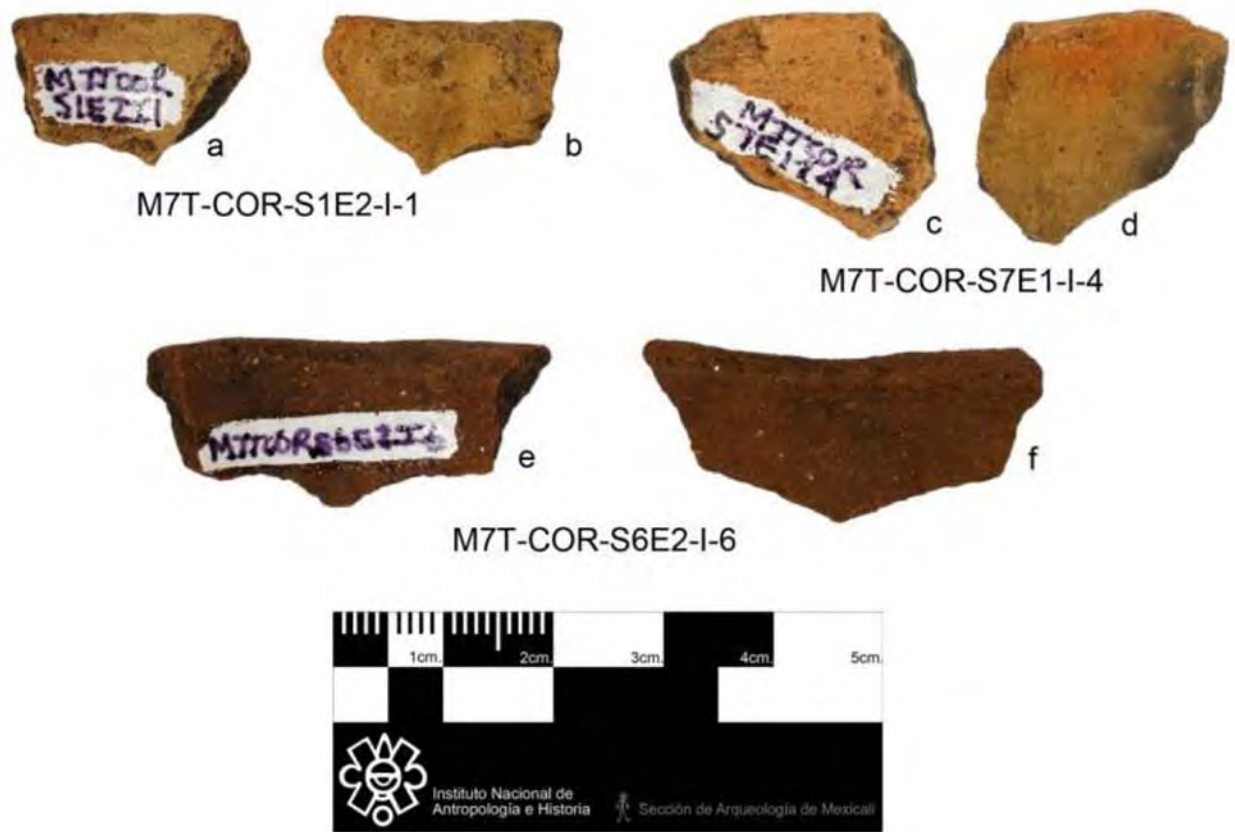


Figure 6. Diagnostic rim sherds from miniature bowls found at the El Corral (COR) site. These may have functioned as children's toys or ceremonial vessels.

Table 1. Rim form data collected during macroscopic analysis of the ceramic assemblages from El Corral, La Explanada, and La Cueva del Indio.

RIM FORM	EL CORRAL N = 71	LA EXPLANADA N = 63	LA CUEVA DEL INDIO N = 74
Rounded	49 %	54 %	49 %
Flat	18 %	29 %	24 %
Beveled	24 %	11 %	16 %
Rolled	9 %	6 %	11 %

(Figure 6). A large incised body sherd was found at the La Cueva del Indio site, as well as a fifth example of scum coat and the only specimen from the three sites which contained stuccoing (Figure 4e, f). Rim sherds (n = 208) represented only 8 percent of the total assemblage. Fifty-one percent of all rims were rounded, 24 percent were flat, 17 percent were beveled, and 9 percent were rolled. Although rim form ratios were comparable across the three sites, El Corral contained significantly more beveled and fewer flat rims than the other two sites. Table 1 summarizes the data for rim sherds from the three sites. Seventy-nine percent of the El Corral sherds were classified as Tizon Brownware, compared with 96 percent at La Explanada, and 81 percent at La Cueva del Indio.



Table 2. Inventory of the 18 initial samples selected from El Corral (COR), La Explanada (EXP), and La Cueva del Indio (CUE).

#1	M6T-COR-S12W1-I-10	#10	M6T-CUE-N3E2-I-2-3
#2	M6T-COR-S10W1-I-5-6	#11	M6T-CUE-N3E1-I-III-3
#3	M6T-COR-S2E5-I+1+2-1	#12	M6T-CUE-N2E2-I-2
#4	M6T-COR-S10W1-I-9	#13	M6T-CUE-N1W2-I-III-4
#5	M6T-COR-S1E3-I+1+2-1	#14	M6T-CUE-N8E5-I-7
#6	M6T-COR-S7E1-I-4	#15	M6T-EXP-N9E8-SUP
#7	M6T-COR-S11E1-I-8	#16	M6T-EXP-N10E8-SUP
#8	M6T-COR-S1E5-I+1+2-1	#17	M6T-EXP-N4E9-I-5
#9	M6T-CUE-N8E5-SUP-6	#18	M6T-EXP-N3E10-I-4

### THIN-SECTION PETROGRAPHIC STUDY

While the Tizon Brownware/Lower Colorado Buffware dichotomy is widely recognized as encompassing a great deal of diversity within these two general ware groups, many researchers have experienced difficulty in interpreting the region's ceramic assemblages using previously proposed typologies intended to categorize this macroscopic variation (e.g., Laylander 1983). Since the 1990s, the application of petrographic and geochemical techniques has lent greater precision to ceramic compositional analyses and helped to characterize this kind of variability in some parts of southern California (Burton and Quinn 2013; Gallucci 2004; Griset 1996; Guerrero 2004; Hildebrand et al. 2002; Plymale-Schneeberger 1993; Quinn and Burton 2009; Quinn, Burton, Broughton, and Van Heymbeeck 2013; Quinn, Burton, and Graham 2013; Wade 2004). Such studies are still at an early stage in Baja California, but they include X-ray diffraction (XRD) and X-ray fluorescence (XRF) spectrometry conducted by INAH researchers in collaboration with the Berkeley Archaeological XRF lab and the Universidad Nacional Autónoma de México (UNAM) (Porcayo and Rojas 2011; Shackley 2009; Téllez et al. 2009). Comparability of studies across the region will be enhanced through the use of consistent methodologies and analytical techniques.

With this goal in mind and following the examples of thin-section petrographic studies in the adjacent San Diego area, 18 undecorated body sherds from El Corral, La Explanada, and La Cueva del Indio were selected as samples for the preparation of standard 30- $\mu$ m ceramic thin sections (Table 2; Figure 7). Rim sherds and diagnostic body sherds were avoided, given the semi-destructive nature of the petrographic sampling process. Sample selection was based on the observation of a fresh edge using a hand lens, with the goal of obtaining the widest possible compositional variety for analysis without adhering to previously proposed typological systems for the ceramics of this region (Colton 1958; Euler and Dobyms 1958; May 1978; Rogers 1936, 1945; Schroeder 1958; Van Camp 1979; Waters 1982). The El Corral site contained the widest range of variation in compositional appearance, and eight samples were selected for petrographic analysis. Four samples were selected from La Explanada, and six from La Cueva del Indio. The thin-sectioned specimens were analyzed under a polarizing light microscope in the geological sciences laboratory at San Diego State University. As a preliminary means of classification, the samples were divided based on the appearance of the clay matrix with regard to the broad macroscopic brownware and buffware types. Good agreement existed between the hand specimen classification of the 18 sherds and the interpretation of clay source as either residual or sedimentary in origin (Quinn, Burton, and Graham 2013). The thin-sectioned specimens were further classified based on the type and relative size and shape of their mineral inclusions and their degree of sorting.

The range of sorting and rounding was estimated using diagrams provided by Hildebrand and Schaefer (2000:2-3). The degree of sorting could be estimated with a measure of confidence using the above rubric, yet the degree of rounding varied so greatly within each sample that determinations were quite generalized. In this preliminary petrographic study, crushed shell, grog, and organic temper use

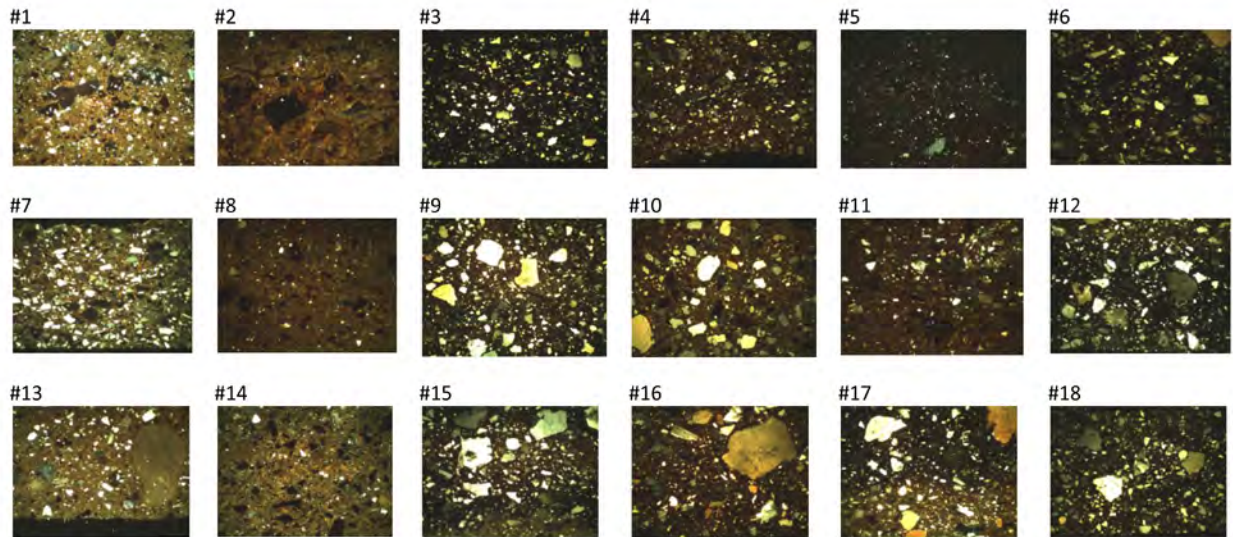


Figure 7. Photomicrographs of 18 ceramic thin sections analyzed from El Vallecito in the present report. El Corral samples: #1 M6T-COR-S12W1-I-10, #2 M6T-COR-S10W1-I-5-6, #3 M6T-COR-S2E5-I+1+2-1, #4 M6T-COR-S10W1-I-9, #5 M6T-COR-S1E3-I+1+2-1, #6 M6T-COR-S7E1-I-4, #7 M6T-COR-S11E1-I-8, #8 M6T-COR-S1E5-I+1+2-1; La Cueva del Indio samples: #9 M6T-CUE-N8E5-SUP-6, #10 M6T-CUE-N3E2-I-2-3, #11 M6T-CUE-N3E1-I-III-3, #12 M6T-CUE-N2E2-I-2, #13 M6T-CUE-N1W2-I-III-4, #14 M6T-CUE-N8E5-I-7; La Explanada samples: #15 M6T-EXP-N9E8-SUP, #16 M6T-EXP-N10E8-SUP, #17 M6T-EXP-N4E9-I-5, #18 M6T-EXP-N3E10-I-4. Images were taken in crossed polars. Image width = 2.9 mm. Photos were taken at UCL by Margie Burton.

were tentatively identified in some samples. These initial 18 samples from the three El Vallecito sites have been sent to the Institute of Archaeology at UCL for more comprehensive analysis.

### CONTINUING RESEARCH

The El Corral site (Figure 8) was selected as the best candidate for further ceramic studies, due to the diverse nature of the assemblage noted during the preliminary macroscopic and petrographic analyses, as well as the site's well-preserved stratigraphy. In contrast, the vast majority of the sherds recovered from the La Explanada rock shelter were collected from the peripheral surface of the site and had clearly been washed down to their archaeological context by sheet erosion. The rock shelter at La Cueva del Indio had been affected by recent human activity to the extent that undisturbed stratigraphy could not be ascertained. A stratified sample of 22 sherds was selected from the western chamber of the El Corral rockshelter for thin sectioning and study at UCL (Table 3; Figure 9). The sample was selected by first spatially organizing the sherds from all 11 quadrants of the western chamber and eliminating material from the quadrants to the northwest, which contained the least ceramic material. Stratigraphic arrangement of the remaining sherds revealed that the vast majority were concentrated in the third and fourth layers, 20 to 40 cm below the surface.

At UCL, standard 30- $\mu$ m thin sections will be prepared from each sample and analyzed under the polarizing light microscope at magnifications of 25-400 power, using a modification of the descriptive, semiquantitative approach pioneered by Ian Whitbread (1989, 1995). This methodology, which focuses on the nature of the clay matrix and voids as well as the more conspicuous aplastic inclusions, is regularly used for the study of archaeological ceramics in the prehistoric Mediterranean region and has previously been applied in southern California (Quinn and Burton 2009; Quinn, Burton, Broughton, and Van Heymbeek 2013) and North Dakota (Josephs 2005). The initial 18 El Vallecito thin sections and the



Figure 8. Archaeology students from the *Escuela Nacional de Antropología e Historia (ENAH)* excavating the western chamber of the El Corral rockshelter in the summer of 2012.

Table 3. Inventory of the stratified sample of 22 sherds from the western chamber of the El Corral (COR) rockshelter.

PROVENIENCE	NO. OF SAMPLES
M7T-COR-S6E2-I-3	4
M7T-COR-S6E2-I-5	1
M7T-COR-S6E2-I-6	1
M7T-COR-S6E2-I-7	1
M7T-COR-S6E3-I-3	2
M7T-COR-S7E2-I-3	1
M7T-COR-S7E2-I-4	2
M7T-COR-S7E2-I-6	2
M7T-COR-S7E3-I-3	1
M7T-COR-S7E3-I-4	1
M7T-COR-S8E2-I-4	2
M7T-COR-S8E3-I-3	2
M7T-COR-S8E3-I-4	2

previously described fabric groups and raw material samples will be noted, and the implications of these in terms of the possible provenance of the El Vallecito sherds will be considered. The results of the comprehensive analysis, to be completed in the fall of 2014 at UCL, will provide further information about the ceramics and the people who made and used them within the greater archaeological context that is continuous across the Mexico/U.S. international border. Cross-border studies of this nature are essential to understanding a culture which transcends our current political boundary.



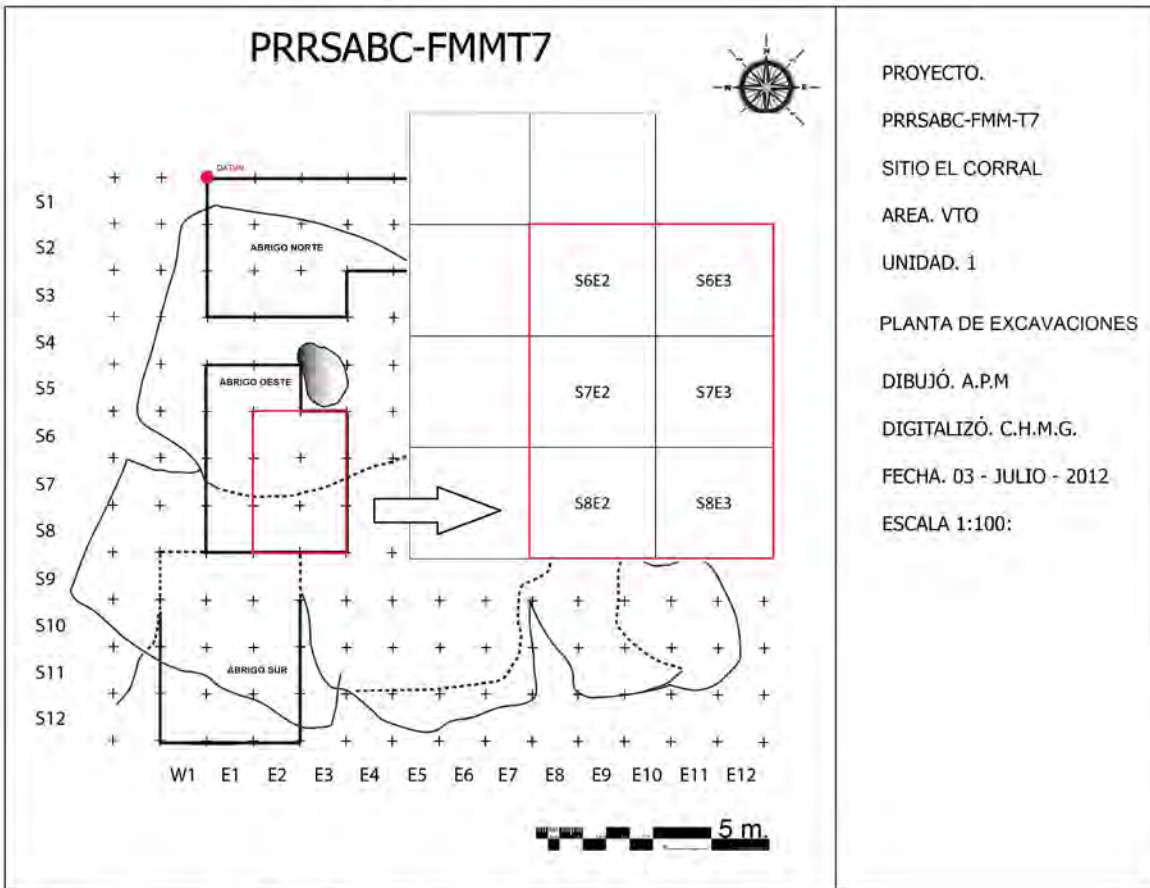


Figure 9. Sketch map of the El Corral rock shelter stratified sample quadrants. INAH's field methodology requires the excavation of sq.-m quadrants which are labeled by their distance from the location of the site datum. Arbitrary 10-cm layers, or capas, are excavated and documented, while natural soil stratigraphy is recorded as separate levels, or niveles. For example, the classification M7T-COR-S6E2-I-3 represents artifacts recovered from: Mexicali 7<sup>th</sup> Season - El Corral - South 6 East 2 - Layer 1 - Level 3.

### ACKNOWLEDGMENTS

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#### REFERENCES CITED

- Bendímez Patterson, Julia, and Don Laylander  
2009 Proposal for a Study of the La Rumorosa Rock Art Style, Northern Baja California. *Proceedings of the Society for California Archaeology* 23.
- Bendímez Patterson, Julia, and Jorge Serrano González  
1990 *Informe del proyecto de registro de sitios arqueológicos con pictografías y petrograbados en Baja California: informe de la segunda temporada de trabajo de campo*. Instituto Nacional de Antropología e Historia, Mexico City.
- Berkovich, César  
2001 *Informe del programa INAH-PROCEDE en Baja California del año de 1997 al 2000*. Instituto Nacional de Antropología e Historia,, Ensenada, Baja California.
- Burton, Margie M., and Patrick S. Quinn  
2013 Malcolm J. Rogers on Archaeological Ceramics: Foundations and Current Studies in the San Diego Region. *Pacific Coast Archaeological Society Quarterly* 48(3&4):97-108.
- Colton, Harold S. (editor)  
1958 *Pottery Types of the Southwest*. Museum of Northern Arizona Ceramic Series No. 3D. Flagstaff.
- Euler, Robert C., and Henry F. Dobyns  
1958 Tizon Brown Ware: A Descriptive Revision. In *Pottery Types of the Southwest*, edited by Harold S. Colton. Museum of Northern Arizona Ceramic Series No. 3D. Flagstaff.
- Gallucci, Karen  
2001 From the Desert to the Mountains: Salton Brownware Pottery in the Mountains of San Diego. Unpublished Master's thesis, Department of Anthropology, San Diego State University.  
2004 Ceramic Analysis at Wikalokal, San Diego County (CA-SDI-4787). *Proceedings of the Society for California Archaeology* 14:119-123.
- Graham, Michelle D.  
2013 Análisis de materiales: cerámica. In *Informe de la séptima temporada de campo del proyecto registro y rescate de sitios arqueológicos de Baja California, fase del municipio de Mexicali y propuesta para la octava temporada de campo 2013*, pp. 75-111. Instituto Nacional de Antropología e Historia, Mexicali.
- Griset, Suzanne  
1996 Southern California Brown Ware. Unpublished Ph.D. dissertation, Department of Anthropology, University of California, Davis.
- Guerrero, Monica  
2004 *Petrographic Analysis of Ceramic Artifacts from Sites CA-SDI-812, CA-SDI-5139, CA-SDI-5699, CA-SDI-9824, CA-SDI-10158, CA-SDI-10712/13, CA-SDI-14613 San Diego County, California*. Gallegos and Associates, Carlsbad, California.
- Hedges, Kenneth E.  
1970 An Analysis of Diegueño Pictographs. Unpublished Master's thesis, Department of Anthropology, San Diego State College.  
1973 Rock Art in Southern California. *Pacific Coast Archaeological Society Quarterly* 9(4):2-28.  
2012 La Rumorosa: The Discovery of a Rock Art Style. Paper presented at the 13th binational conference "Encuentro Binacional Balances y Perspectivas de la Investigación Antropológica en Baja California," Mexico City.

- Hildebrand, John A., Timothy G. Gross, Jerry Schaefer, and Hector Neff  
 2002 Patayan Ceramic Variability: Using Trace Elements and Petrographic Analysis to Study Brown and Buff Wares of Southern California. In *Ceramic Production and Circulation in the Greater Southwest: Source Determination of INAA and Complementary Mineralogical Investigations*, edited by Donna M. Glowacki and Hector Neff, pp. 121-139. Cotsen Institute of Archaeology Monograph No. 44. University of California, Los Angeles.
- Hildebrand, John, and Jerry Schaefer  
 2000 Aboriginal Ceramics of Southern California. Paper presented at a USDI Bureau of Land Management workshop, Riverside California.
- Josephs, Richard L.  
 2005 A Petrographic Analysis of Extended Middle Missouri Ceramics from North Dakota. *Plains Anthropologist* 50:111-119.
- Laylander, Don  
 1983 Ceramic Analysis in Research Designs. In *Casual Papers: Cultural Resource Management* 1(3):144-159. San Diego State University.
- May, Ronald V.  
 1978 A Southern California Indigenous Typology: A Contribution to Malcolm J. Rogers Research. *Archaeological Survey Association of Southern California Journal* 2(2):1-54.
- Oviedo García, Fernando  
 2002 *Informe del proyecto arqueológico "El Vallecito," La Rumorosa, B.C., Centro INAH-BC, temporada 2001*. Instituto Nacional de Antropología e Historia, Mexicali, Baja California.  
 2003 *Informe del proyecto arqueológico "El Vallecito", La Rumorosa, B.C., Centro INAH-BC, temporada 2002*. Instituto Nacional de Antropología e Historia, Mexicali, Baja California.  
 2004 *Informe del proyecto arqueológico "El Vallecito", La Rumorosa, B.C., temporada 2003*. Instituto Nacional de Antropología e Historia, Mexico City.  
 2005a El Vallecito: A Prehistoric Site in Baja California. *Proceedings of the Society for California Archaeology* 19:271-273.  
 2005b *Informe del proyecto arqueológico "El Vallecito", La Rumorosa, B.C., temporada 2004*. Instituto Nacional de Antropología e Historia, Mexico City.
- Plymale-Schneeberger, Sandra  
 1993 Application of Quantifiable Methodologies in Ceramic Analysis: Petrographic and Geochemical Analysis of Ceramics from Riverside County, California. *Proceedings of the Society for California Archaeology* 6:257-276.
- Porcayo Michelini, Antonio  
 2007 *Proyecto registro y rescate de sitios arqueológicos de Baja California, fase municipio de Mexicali: informe técnico parcial de la primera temporada y propuesta para trabajo de campo 2007*. Instituto Nacional de Antropología e Historia, Mexicali, Baja California.
- Porcayo Michelini, Antonio, and Juan Martín Rojas Chávez  
 2011 *Informe de la quinta temporada de campo del proyecto registro y rescate de sitios arqueológicos de Baja California, fase municipio de Mexicali y propuesta para la sexta temporada de campo 2011*. Instituto Nacional de Antropología e Historia, Mexicali, Baja California.  
 2012 *Informe de la sexta temporada de campo del proyecto registro y rescate de sitios arqueológicos de Baja California, fase municipio de Mexicali y propuesta para la séptima temporada de campo 2012*. Instituto Nacional de Antropología e Historia, Mexicali, Baja California.  
 2013 *Informe de la séptima temporada de campo del proyecto registro y rescate de sitios arqueológicos de Baja California, fase municipio de Mexicali y propuesta para la octava temporada de campo 2013*. Instituto Nacional de Antropología e Historia, Mexicali, Baja



- California.
- Quinn, Patrick S., and Margie Burton  
 2009 Ceramic Petrography and the Reconstruction of Hunter-Gatherer Craft Technology in Late Prehistoric Southern California. In *Interpreting Silent Artifacts: Petrographic Approaches to Archaeological Ceramics*, edited by Patrick S. Quinn, pp. 267-295. Archaeopress, Oxford.
- Quinn, Patrick S., Margie M. Burton, David Broughton, and Sophie Van Heymbeeck  
 2013 Deciphering Compositional Patterning in Plainware Ceramics from Late Prehistoric Hunter-Gatherer Sites in the Peninsular Ranges, San Diego County, California. *American Antiquity* 78:779-789.
- Quinn, Patrick S., Margie M. Burton, and Michelle D. Graham  
 2013 *Preliminary Petrographic Report on Late Prehistoric Ceramics from El Vallecito, Baja California, Mexico*. Institute of Archaeology, University College London.
- Rogers, Malcolm J.  
 1936 *Yuman Pottery Making*. San Diego Museum Papers No. 2.  
 1945 An Outline of Yuman Prehistory. *Southwestern Journal of Anthropology* 1:167-198.
- Schroeder, Albert H.  
 1958 Lower Colorado Buff Ware: A Descriptive Revision. In *Pottery Types of the Southwest*, edited by Harold S. Colton. Museum of Northern Arizona Ceramic Series No. 3D. Flagstaff.
- Serrano, Jorge  
 1988 *Informe preliminar de actividades del 10 al 30 de junio de 1988, proyecto arqueológico Vallecitos*. Instituto Nacional de Antropología e Historia, Mexicali, Baja California.
- Shackley, M. Steven  
 2009 *An Energy Dispersive X-ray Fluorescence (EDXRF) Analysis of Archaeological Ceramics from Baja California, Mexico*. Instituto Nacional de Antropología e Historia, Mexicali, Baja California..
- Téllez, Miguel, Antonio Porcayo, Ana Celis, and Eloísa Aparicio  
 2009 Análisis composicional preliminar de cerámicas del norte de Baja California. Paper presented at the X Encuentro Binacional: Balances y Perspectivas, Mexicali, Baja California.
- Treganza, Adan E.  
 1942 An Archaeological Reconnaissance of Northeastern Baja California and Southeastern California. *American Antiquity* 8:152-163.
- Van Camp, Gena R.  
 1979 *Kumeyaay Pottery: Paddle and Anvil Techniques of Southern California*. Ballena Press Anthropological Papers No. 15. Socorro, New Mexico.
- Wade, Sue Anne  
 2004 Kumeyaay and Paipai Pottery as Evidence of Cultural Adaptation and Persistence in Alta and Baja California. Unpublished Master's thesis, Department of Anthropology, San Diego State University.
- Waters, Michael R.  
 1982 The Lowland Patayan Ceramic Typology. In *Hohokam and Patayan: Prehistory of Southwestern Arizona*, edited by Randall H. McGuire, and Michael B. Schiffer, pp. 537-570. Academic Press, New York.
- Whitbread, Ian K.  
 1989 A Proposal for the Systematic Description of Thin Sections towards the Study of Ancient Ceramic Technology. In *Archaeometry: Proceedings of the 25<sup>th</sup> International Symposium*, edited by Y. Maniatis, pp. 127-138. Elsevier, Amsterdam.  
 1995 We Are What We Study: Problems in Communication and Collaboration between Ceramologists and Archaeological Scientists. In *The Aim of Laboratory Analyses of Ceramic*

*in Archaeology*, edited by Anders Lindahl and Ole Stilborg, pp. 91-100. KVHAA Konferenser No. 34. Stockholm.