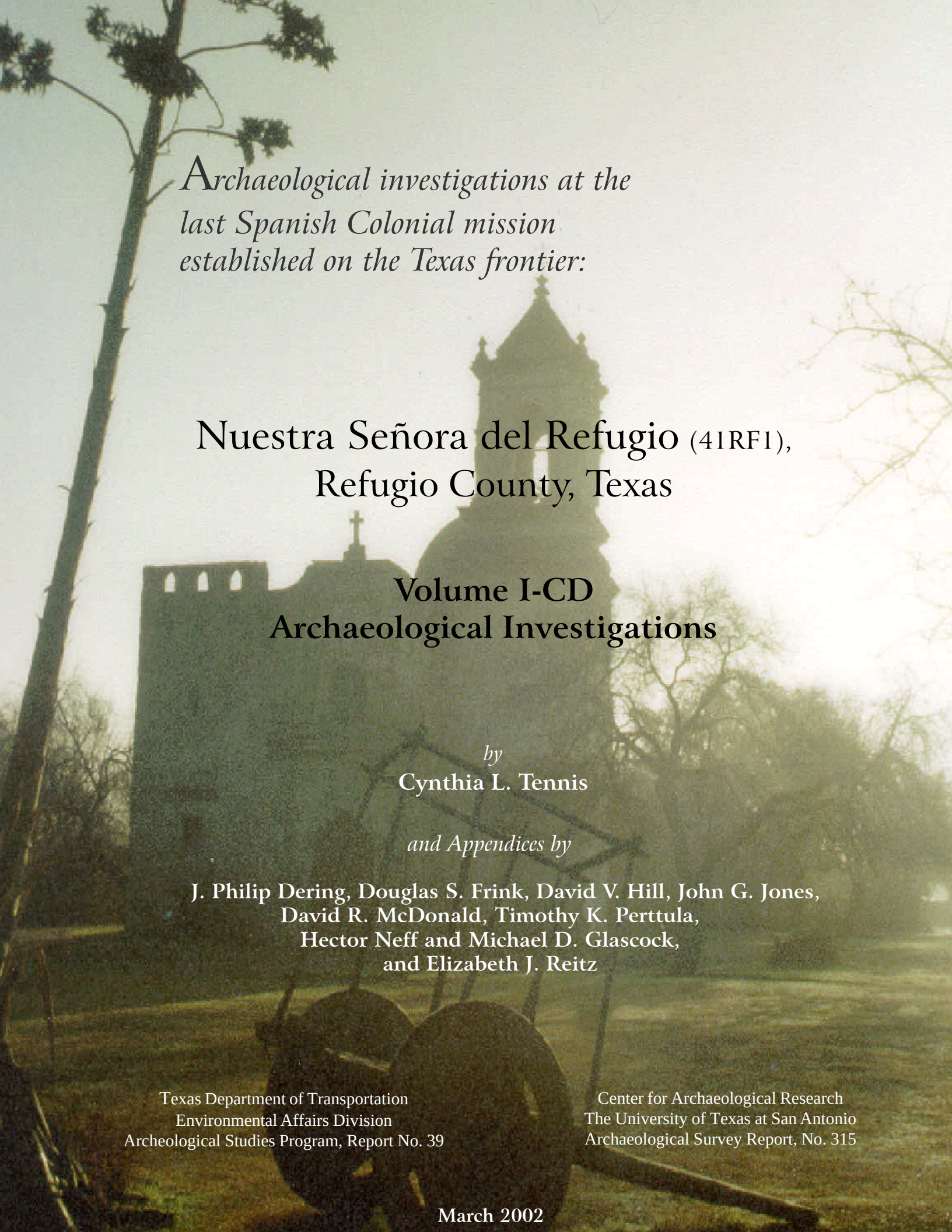

Archaeological investigations at the last Spanish Colonial mission established on the Texas frontier:

Nuestra Señora del Refugio (41RF1), Refugio County, Texas

Volume I-CD
Archaeological Investigations

by

Cynthia L. Tennis

and Appendices by

J. Philip Dering, Douglas S. Frink, David V. Hill, John G. Jones, David R. McDonald, Timothy K. Perttula, Hector Neff and Michael D. Glascock, and Elizabeth J. Reitz

Texas Department of Transportation
Environmental Affairs Division
Archeological Studies Program, Report No. 39

Center for Archaeological Research
The University of Texas at San Antonio
Archaeological Survey Report, No. 315

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Texas Antiquities Committee Permit No. 2025

Raymond P. Mauldin and Cynthia L. Tennis
Principal Investigators

Prepared for:
Texas Department of Transportation
Environmental Affairs Division
Archeological Studies Program, Report No. 39

Prepared by:
Center for Archaeological Research
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Printed by Kwik Kopy Printing on Main., San Antonio, Texas
2002

jointly published by

Texas Department of Transportation
Environmental Affairs Division
Archeological Studies Program
Nancy A. Kenmotsu, Ph.D., Supervisor

Archeological Studies Program, Report No. 39
A. McGraw, Series Editor

and

Center for Archaeological Research
The University of Texas at San Antonio
Archaeological Survey Report, No. 315

ISBN: 1-930788-18-5

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Appendix A

Mission Refugio Inventory

Section 1

1796 Inventory

Appendix A: Inventory Section 1

1796 Inventory

David R. McDonald

Translated by David R. McDonald, March 2000
Several pages of listings of religious items have been omitted.

(Translators note: two copies of Refugio Mission's 1796 inventories were found. One is a contemporary, unsigned manuscript; the other, a typescript made by Fr. Rafael Cervantes', O.F.M. The MSS. he used was not found.[1] The two sources are very similar, but not identical, and each offers some advantages and certain difficulties. It was decided to utilize the manuscript copy for the present translation, since it seemed to involve less uncertainties than the Cervantes typescript. Numbers followed by two slashes (//) indicate page numbers in the MS.)

1// The Mission Nuestra Señora del Refugio was first founded on January 4, 1794 on the bay named Mosquitos. On January 10, 1795, It was moved to this site, located on Medio Creek, a distance of ten leagues from the Presidio of Our Lady of Loreto de la Bahía. The mission pertains to the province of the Tejas, and its lands were given in the name of the King, (our Lord, may God keep him). The land is defined by the four directions stated in the instrument of its foundation that is kept in the mission's archive. The mission has the following.

First, there is designated a church thirty varas in length and eight and one-half varas in width, with its transept, tower and baptistery. At the present time, only the foundations and corners have been laid, and it is enclosed by a stockade. In addition, there are three other structures. One fifteen varas in length, another of twelve varas, both being five varas in width; the third structure measures five and one-half varas square, and each building is five varas in height. They are built with stone and lime, being provided with good rafter beams, bricked [floors] and plastered [walls]. Two of the structures serve as the church; the other as the sacristy…

(Nine pages of descriptions of religious items omitted.)

//10 …In addition, there are twelve jacals in this mission (not including those used by the soldiers, Indians, and servants). One is seventeen and one-half varas in length and six and one-half varas in width. Its walls are made of adobe and it has a grass roof—the others are medium-sized and made of posts.[2] These serve as the living quarters of the missionaries and as workshops. Inside the principal building is the following: Seven chests, five large and two medium, all of which are numbered. In No. 1 [are] two reams of paper and a telescope.

In No. 2 is the archive, containing the document of [the mission's] founding and other papers pertaining to it.

In box No. 5 there is the following: two large padlocks with lockplates and keys for the church, thirteen lock plates with keys for houses, eighteen door crossbars[3] for doors and windows with their ___[4], three rolls of wire—thick, medium and thin, two irons to make hosts,[5] two iron shells,[6] a basket[7] containing a padlock, two lockplates and other old pieces of iron; two bronze stirrups, 180 nails, large and small, a cardboard box with two rolls of strings for guitar and violin, two *escarchados*[8], a small box containing pitch,[9] four pounds of tin, and a small bronze saddletree head.[10]

(Translator's note: Additional pages of Religious items omitted. The following begins on page 11 of the MS, [next to last paragraph])

In Box No. 8 there is the following: fifteen fine napkins, a towel for the table, a metal mortar with pestle, three pots,[11] six very special *molinillos*,[12] seven plates, a wide cup, five *pozole* cups[13], a gravy boat[14]–all made of china; a small crystal vessel, three sieves made of tin plate and wire; a tinned copper jar, a metal caldron cup, twenty-seven utility knives,[15] five sagging packages of earthenware bowls,[16] four table knives, four pair of pliers, large and small; five large knives for the servants, fifteen large wooden spoons for the kitchen and four small ones.

In Box No. 11 there are 135 pages of paper gilded in various colors; four reddish pages and one-half pliego of yellow; nine rolls of blue paper, thirty-one pieces of ribbon, wide and narrow in several colors, and of different types; another twenty-one rolls of the same, eight pieces of ribbon wide, fine, and colored and four rolls of narrow; one roll of cottons for lanterns, a paper of copperas,[17] a small bag of marmasite,[18] another paper with *pajuelas*,[19] another with small ribbons with mother of pearl, a paper with ten [pieces of] mother of pearl with gold thread, another six silvered ribbons.

//12 A paper with a small rosary that was of Saint Francis upon which was put a new crown, and three *carretillas de escarcha*.[20]

In [box] No. 12 there is the following: 389 ribboned necklaces, 552 pairs of ear rings, 418 crucifixes, 2,546 rings, 478 bells, fourteen tops, six whistles, three dozen and one whistling tops. In a medium trunk there is the following: two *tompiates* of accounts,[21] and trade beads of all colors, sixty-eight dozen buttons of different types and sizes, 390 rosaries, ten pair of scissors, a paper having more than 400 needles, eighty-nine small brushes for the Indian women, a small cardboard box containing thirty small combs of china and four made of wood.[22] Also, a medium box with the following items for Indian infants that are baptized: two mantillas, one blue and the other yellow; a little shirt, a half point of Brittany cloth, three ribboned skirts, a small decorated sheet,[23] a head covering, and a silk and gold rebozo for wrapping infants. In another container there are eighteen pairs of narrow coarse cotton cloth, four wide, and four pieces of duck cotton,[24] and 145 varas of braided ribbon[25] for the Indians' clothing,

In No. 4 are the carpenters' tools that consist of the following: five hooks two of them with heads, a jack plane,[26] a jointing plane,[27] four wood planes,[28] five augers,[29] nine chisels, eight gouges,[30] two wood chisels,[31] three crow bars,[32] a tapered punch,[33] four rasps, two large files, a large saw, a pair of iron pieces to assemble a hand saw, two carpenters' squares, two drawing triangles, a pair of handles,[34] two compasses [dividers], a drill, a vara measuring rod, a mason's trowel, a farm digging stick, a *pusabante*,[35] an iron tool for making pairs of glass panes for windows or doors.[36]

Insert here the inventory of the books.[37]

//12 continued
Outside this box are the blacksmith tools, consisting of the anvil, bellows, a vise,[38] three blacksmith hammers, a drill, two pair of tongs, two devices for dressing stone used by hand or foot,[39] a wheel,[40] five files, three chisels, two punches,[41] a reamer, a mold for forming nail heads,[42] drill bit.[43] There are also in this jacal five *tercios* of tobacco that are being used, three barrels of wine for saying mass, two large *tortera* -spoons[44], and two *pozole* makers[45]—the former made of iron and the latter copper. A tin pump for extracting wine from the barrels, three tin funnels, large and small, a large copper pot with its lid; twenty-two small ones, nineteen small pots[46], a large frying pan, seven good metates, and one broken, twelve manos for metates, only two are good, the others are broken. Three *tercios* of blankets, two syringes.[47] one pewter the other of bronze, two pole lanterns.[48] A vara measuring rod, five bottles for wine for mass, including the one that is in the church; two glass bottles of oil, three *tercios* of sugar loaves as a gift,[49] a load of white soap, a low copper *bazin*.[50]

//13 A medium basket[51] a wooden press with iron screws to press books and letters, a lantern with a graduated glass to illumine the Most Holy [*Santissimo*][52] when it is given to the sick, a guitar with its case for the church, a violin with case and lock, a chronological and genealogical tree of the descendents of Adam and Eve until Our Lord, Jesus Christ. There are maps of the world, Europe, Asia, Africa, and both Americas, a brass candlestick with steel candle snuffers. In this jacal there is a door with lock and a window. Each of the three other completed jacals has a door with lock. Also, there is a table with its box and lock lines with leather, a wooden chair with it seat of burlap, two stands with the books, a box with two Roman glass windows,[53] other large *vidrieras* [54] for the forge.

In the padre's jacals are twelve chairs[55] with reed seats, another large wooden table; another small one; three more tables, two with canopy[56] and copper candlesticks with snuffers. Three inkwells, two made of pewter and screws, the other of lead with a crystal base, three *palbaderas,*[57] three containers for sealing wax.[58]

In the jacal that serves as the office for the servants, there is the following: Five arrobas eight pounds of flat iron plate,[59] three arrobas 10 pounds of steel, ten bars, eleven hatchets, four scythes to cut grass, eleven hoes, fifteen large plow points[60] for plowing; one small one, a mason's trowel, two drill bits for [word illegible], an *atacador*,[61] a small spoon for the same, an iron block and tackle to climb up stone, three cart chisels, two saws to dehorn bulls, three lances for weakening bulls, fish-gig for fishing, two copper comals, four small *cazitos*, two balances large and small, a mason's hammer, another of the same for [word illegible], a mason's plumb bob and level, six metates with manos, four branding irons that pertain to this mission, along with one that belongs to Don Juan Barrrera, a razor case with ten razors, large scissors, a grinding stone with two axles, a bottle for oil, a bronze basin for shaving, two small pots, a base for a large shallow pan[62] valued at eighty pesos, some balances with various weights—a half-pound weight, and its other weights, minus the two-ounce and the other small weights, two French pots with three legs, a box with six almuds of salt, sacks of corn ears and fanegas of corn.

Two barrel hoops, a*pozole* pot, three cauldrons[63] large and small—one is at the ranch; two coppers [pots], one large and the other small; a large cross-cut saw lacking handles,[64] ninety-three straw hats, four basins[65] to go with those of the kitchen, an iron punch for [to make] a sieve for corn, a medium trunk with brown sugar for gifts, [66] three arrobas of raw fat.

In this jacal there are three boxes; in the first a bottle containing flour for the hosts, three metal rings for those who marry, a [word illegible], to mix the flour to make the hosts, a small spoon, a pair of spurs, an iron for ironing, four small knives with bone handles, a utility knife, a small pair of fine quality scissors,[67] and another pair, for cutting the hosts, others for cutting the hosts, a [word illegible], to make the hosts, a tobacco duster,[68] a [word illegible] for the same purpose, eight thimbles for women, two dozen serrated buttons.

In the other box, No. 9, is the following: Two dozen and seven blue rebozos; nine of the same, fine quality, white and blue, with flames;[69] a dozen cotton pants, eight pair of stockings for women, four ordinary handkerchiefs, eight of the same, red and white, and fine quality, forty-three varas of blue shag cloth,[70] eleven pieces of Chinese ribbon [valued] at one real, three dozen and three pair of leather shoes, three saddle cushions,[71] two rolls of ribbon [for] the beautiful union,[72] one roll complete the other half used, a bit of white thread, a roll of weak

Century Plant thread[73], a dozen small wooden rosaries, nine ounces of colored twisted silk, twenty varas of blue ribbon, a narrow piece of coarse cotton cloth less than four varas.

In the [word illegible] jacal there are twenty harnesses with ropes and lariats and equipment for nineteen of them, ten [cart] loads of sacks of burlap,[74] ten blankets, a pile of blankets for coats. Outside the jacales are 8,000 bricks, eight casseroles, six barrels, seven basins, nine posts, two carpenter's benches, a [box] for soap. In two jacals that serve as the kitchen there is the following: five metates, one with its mano and four without; two *comales* one made of iron, the other of copper; three small pots, one large; two iron French pots, one large one small; two medium [word illegible], a large frying pan, a [chocolate] pot with two *molinillos*, a roaster[75] an iron spoon, a metal basin[76] for [washing] the hands, a wooden bowl, a table knife, a kitchen knife,[77] a machete, seventeen plates from Puebla, nine soup cups,[78] a large preservers maker,[79] two jars from Michoacan for drinking water.

Box No. 13, with key, [has] a mattress, four sheets, and four pillows, two with pillow slips, for guests, two jars made of tin. [change in handwriting] Also, in the said mission are sixty-five Indians; the others are at the coast. In the corral are ninety fowl, also a metal [word illegible] that serves as the lavatory for Holy Thursday.

[Also] In Box No. 13 are two pair of table cloths, a hand towel, a tin sieve for making *atole*, a copper candlestick with its snuffer, four and one-half arrobas of chocolate. For building supplies there are 8,000 bricks, eight carts, six barrels, nine tubs to carry mortar,[80] nine poles. Also, two kilns to burn lime for bricks.

//14 In the ranch are the following: 2,500 head of large livestock, large and small—mostly breeding cows; twenty-five head of oxen, forty tame horses, two droves of mares of twenty each, each with its stud horse and shepherd burro; twenty tame mules and a two-year old mule; fifteen head of pigs. For the dairy of the said ranch there are two barrels, one large and two small [*sic*], a sieve made of tin and wire, two troughs,[81] large and medium for making whey, and another for making soap.

For the servants who have been employed for some time, there remain twenty pesos, three and one-half reals. The mission owes debts to no one. The accounts, adjusted in accord with our trustee[82], Don Domingo de Outón, a resident of the Presidio of La Bahia, shows a balance of one hundred fifty pesos.

All of the above expressed inventory, with the Mission N. S. del Refugio, R. P. Commissioner of Missions, Fr. Manuel de Silva delivers to his College of N. S. de Guadalupe de Zacatecas, and in its name it is received by its two Father Missionaries, Fr. Antonio de Jesús Garavito

//15 and F. Jose María Saénz, and it was signed by the said R.[everend] P.[adre] Comissionary. It was certified by Captain of la Bahía, Don Juan Cortés, who witnessed everything in the said mission of N.[uestra] S.[eñora] del Refugio, today September 8, 1796.

(Translators note:
This document is a copy; it contains none of the signatures of the participants.)

Endnotes

[1] Microfilm copies of both inventories, dated 9-8-1795, are at Our Lady of the Lake University, in the Old Spanish Missions Historical Research Library. The inventory manuscript is in the Zacatecas Microfilm Roll-3, frames 3861-3875; the Cervantes Typescript is also in the Zacatecas Microfilm, Roll-2, frames 1339-1366.
[2] *Los demas medianos y formados de palo*.
[3] *Aldabas*.
[4] Word illegible.
[5] Eucharistic wafers.
[6] *Caracoles*.
[7] *Chiquihuite*.
[8] Meaning uncertain—probably refers to gold or silver braid.
[9] *Un cajoncito con pez*.
[10] *Una cabezilla de bronze de silla*.
[11] *Calderetes.*
[12] *Molinillo*, a utensil with a beater on one end and a long stem on the other. It is spun between the hands to mix chocolate or other liquids. The name comes from the Mexican plant "*molinillo*" that the tool was traditionally made from and is derived from the Nahuatl, "*moloa*"-to mix or dissolve. *Santamarîa Diccionario*, p. 133.
[13] *Pozole* - a thick drink made from ground corn and various spices.
[14] *Salsera*.
[15] *Belduqes*.
[16] 15 *tecomates*.
[17] *Alcaparossa* - varient of *caparrosa*. Also called vitriol. It is a salt mixed with Ferrous Sulphate that produces blue or green colors used in dyeing procedures. *Diccionario Manual e Ilustrado*, Madrid: Espasa-Calpe, S.A. , Segunda Editión, 1950, p. 302 (hence, DMI)
[18] *Marmagita* - evidently used to blot written pages.
[19] Could be guitar picks, or perhaps toothpicks.
[20] Meaning uncertain. Literally it means "wheel barrows of frost."
[21] Word not found in dictionaries.
[22] 30 *peinecitos de china* - could be porcelain combs.
[23] *Una sabanilla de merlin enlistonada*.
[24] *Rayadillo*.
[25] *Cinta de reata*.
[26] *Garlopa*.
[27] *Juntera*.
[28] *Cepillos*.
[29] *Barrenas*.
[30] *Gurbias*.
[31] *Formones*.
[32] *Pies de cabra*.
[33] Could also be a translated as a burin, graver, punch or boring tool.
[34] "*Codales*" can refer to handles for a saw , or mason's level.
[35] Word not found in any dictionary or encyclopedia.
[36] *Un fierro de emparejar vidrios*.
[37] This note is found in the MS and indicates that this copy of the MS was preliminary a draft of the mission's inventory.
[38] *Tornillo*.
[39] *Tajaderas de pie y mano*.
[40] *Sortija*.
[41] *Punzones*.
[42] *Clavera*.
[43] *Broca*.
[44] Baking spoons.
[45] *Pozoleros*.
[46] *Cazitos*.
[47] *Geringas (jeringas)*.
[48] *2 faroles de palo*.

[49] *Tres tercios depanocha de regalo*.
[50] *Un bajo bazin de cobre*. *Bazin*, under any spelling, was not found in dictionaries or encyclopedias, and thus it does not seem to correspond to its apparent cognate "basin" in English.
[51] *Chiquiguite*.
[52] Fr. Cervantes' reading: the abbreviated word doesn't look like "Santissimo" in the MS.
[53] 2 *vidries romanas*.
[54] *Vidrieras* - Glass for the forge?
[55] "*Sauresitas*" not found in dictionaries.
[56] *Pabelleon*.
[57] Word not found in dictionaries with this spelling or as "*palvaderas*."
[58] *Oblarios*, from "*oblea*": sealing wax.
[59] *Fierro platina*.
[60] *Gatos grandes de arar*.
[61] No appropriate definition found; one example: an instrument to attack cannon.
[62] *Un fondo grande para paila*.
[63] *Tres peroles*.
[64] *Una sierra grande bracera sin armas*.
[65] *Bateas*.
[66] "*Panochas*" a form of *piloncillo* (brown sugar cones) Santamarîa-Diccionario, p. 797.
[67] Word illegible.
[68] *Despolvador de tobaco*.
[69] *…blanco y azul con llamas*.
[70] Tripe.
[71] *Guruperas*.
[72] Evidently the ribbon was used for marriages.
[73] *Pita*.
[74] *Guangoche*.
[75] *Asador*.
[76] *Bacia*.
[77] *Belduque de cocina*.
[78] *Tazas calderas*.
[79] *Una conservera grande*.
[80] *Bateas*.
[81] *Canoas* - hollowed out logs or troughs.
[82] *Sindico*. The sindico kept the mission's cash, and performed its cash transactions since missionaries were forbidden to.

Appendix A

Mission Refugio Inventory

Section 2

Supplies sent to Mission Refugio, 1792–1810

Appendix A: Inventory Section 2

Supplies Sent to Refugio Mission, 1792–1810

David R. McDonald

Translated by David R. McDonald, March 2000

(Translators note: Archives consulted:
Our Lady of the Lake University
Old Spanish Historical Research Library
Archivo Zapópan Roll-1 [frame numbers not visible])

"Book of the Records of What Was Sent to the Missions of the Province of Texas, beginning with the year 1792. I was entrusted with the Service of these Missions for the best order and constancy of my accounts, which I Began on this November 19 of the year 1797"

Page 103

September 14, 1792
Apostolic College of Guadalupe
Memorandum that R.P.G. Fr. Ignacio Maria Lava remits to P.P. Fr. Francisco Mariano de la Garza, Minister of the Mission N.S. del Refugio de la Bahia

	No. 26		**Pesos-Reals**
1	Habit with capilla (hood) of sayal cloth		12-0
1	Another habit of *Saylalete* cloth with a hood		09-0
2	Pair underware [*paños menores*] made of/from *lanquin*[1] @ 20 reals [per vara]		05-0
2	Pair of sandals at 8 reals. and 2 dust cloths at 5 reals		03-2
1	[container] with spices and1/2 pound of saffron		08-4
10	Bunches [*manojos*] of leaf tabacco		08-6
1	Container [bote] with 2 lb. of snuff (tobacco in polvo)		04-2
1	Ream of superior paper		03-4
1	Box with 75 lb. [3 arrobas] of fine chocolate		45-0
1	Box of grass mats [*petates*] and burlap [*arpillera*]		01-0
	Charge for the cost of two *tercios*[2] [packs] from Mexico to the College @ 3 pesos 3 reals		06-3
	Charge of 43 pesos that, by his order, was delivered to Juan Martin		43-0
	Total Cost	[importa]	150-0
	Credit of 150 pesos from a third of the salary of the supernumerary P.P. Vicar Fr. Jose Mariano Roxo		150-0
		Balance	000-0

October 19, 1792
Apostolic College of Guadalupe
Memorandum that P.P. Fr. Jose Mariano Roxo remits to P.P. Fr. Francisco Mariano de la Garza, Minister of the Mission Nuestra Señora del Refugio de la Bahia

February 13, 1794

		Pesos-Reals
1	Box with 23 dozen dolls [*muñecas*]	12-4
4	Containers [vasos] of colored beads [*avalorios*]	4-4
2	pounds of vermillion @ 14 reals	3-4
38	Varas of shawls decorated with mother of pearl @9 reals and 2 pieces of *Camb.a* [1]@ 6 pesos 2 reals	46-2
86	Varas of *Criolla* ribbon in 10 reals and 5 pieces of ribbon, of 7/8, @6 pesos 1 real	47-4
3	Dozen shawls from Puebla --- @ 11 pesos 4 reals	34-4
1	Dozen large knives [*navajas*]	2-0
10	Dozen rings [anillos] and 1 dozen toy tops [*trompos*]	2-0
6	Dozen dwarf-whistles [*pitos de enano*] @ 4 reals	3-0
	[Transportation] charge for the cost of two mule packs from Mexico to the Missions	24-0
	Charge of 14 pesos [to transport] two mule packs from the College to La Bahia	11-7
	Charge of 11 pesos 5 reals not paid by the College	11-5
	Amount [Importa]	214-5
	Credit of 200-0 applied by Padre Vicario Roxo	
	Credit of 14 pesos 5 reals remainder for Padre Pedrajo to pay	214-5
	Balance	000-0

Apostolico College of Guadalupe
Record of the supplies taken from the remnants by Padre Fr. Mariano Velasco and Fr. Francisco Puellas, Ministers of the Mission N.S. del Refugio de la Bahia

		Pesos-Reals
1	Box of 5 arrobas [125 pounds] of fine chocolate, @ 9 pesos	45-0
1	Box of 5 arrobas [125 lbs] ordinary chocolate @6 peso 4 reals	32-0
4	Habits with hoods and cords @ 9 pesos 2 reals	37-0
4	Pair underware [*paños menores]* @ 20 reals	10-0
4	Small, fine, dust cloths from Puebla @ 7 reals	03-4
4	Pair Sandals @ 8 reals	04-0
1	Ream of paper	05-0
1	Mule pack of soap	25-0
1	Container [*bote*] with 6 lbs. snuff [tobacco powder] @2 pesos 4 reals	12-4
3	Boxes of grass mats and burlap 4 loads	04-4
	Charge of 9 pesos for the repairs to a musket	09-0
	Charge of 48 pesos for the freight on four mule packs	48-0
	Amount due:	236-0
	Charge for the mule packs brought to the R. Padre Commisary [Silva]; Charge for freight on one mule pack brought from Mexico to the missions	18-0
	For 3 mule packs…@ 15 pesos from the College to the Missions	45-0
	For 2 mule pack brought at 11 p.s from Saltillo to the Missions	22-0
	For 3 mule pack of blankets, *zomt.s*[1] and Chocolate @ 7 p.s to the college	21-0
	For 2 mule pack from Saltillo to the missions @ 5 pesos	10-0
	3 Boxes of grass mats [petates and burlap. . . .	05-4
	Charge of 709 pesos and one real that this mission left unpaid in the account of Fr. Jose Antonio Garcia of that mission	709-1
	Remainder to pass to the next account	1,066-5

February 13, 1795
Colegio Apostolico de Guadalupe
Record of the supplies entrusted to me by P. Comasario Fr. Manuel Julio Silva, which were taken by P. Fr. Francisco Puellas, Minister of the Mission N. S. del Refugio de la Bahia

		Pesos-Reals
4	Mule packs of leaf tobacco weighing 702 lb. net @ 3 reals	262-2
3	Funnel, a pump, and a venecian[1] of tin plate	4-0
4	Habits with hoods and cords @ 10 p.s	40-0
3	Pair of underware @ 22 reals	8-0
3	Pair shoes and sandals @ 9 reals	3-3
4	Fine small dust cloths from Puebla[2]	3-4
2	Arrobas [50 lbs.] of spoiled bananas @ 3 p.s 2 reals	6-4
1	Arroba (25 lbs.] of sugar 4 p.s 2 reals	4-2
1½	*Almud*[3]of Garbanzos and 1/2 *arrobas of* rice[4]	4-0
2	Boxes with 10 *arrobas*. ordinary chocolate @7 pesos 4 reals	75-0
1	Pound fine cinnamon	8-2
6	Varas Saya cloth red saya cloth @7 reals	5-2
30	Varas of color print cloth from Silecia[5] @ 5 pesos	20-5
1	Dozen of fruit preserves*[cajetas}*	8-0
2	Boxes of grass mats and burlap @ 12 reals	1-4
	Charge for the [freight] cost of six mule packs from Mexico to the missions @ 12 pesos	72-0
	Charge of 10 pesos for the silver flasks for the holy oils	10-0
	Charge of 13 pesos that I paid for freight for a box of relics	13-0
	Charge of 12 pesos, 4 reals for the [freight] cost of the said box from the College to the missions	12-4
	Charge of 6 pesos 5 reals owed by Padre Puelles from an old account	6-5
	Amount Due	568-7
	Charge of 1,066-5 remaining from the previous account	1,066-5
	Total	1,635-4

[Continuation of 2-13-1795 account]

Pesos-Reals		
1,000-0	Credit, given to me by Jose Palacios	
239-2	Credit given to me by Br. Joaquin Juanzli?	
74-0	Credit given to me by Xavier Egua?	
12-0	Credit given to me by Fr. Pablo Aguado	
74-0	Credit for some hides given to me at the mission	
1,399-2		1,399-2
	Balance to pass to the next account	236-2

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December 30, 1795
Apostolic College of Guadalupe
Record of the supplies that R. Padre Commisario, Fr. Manuel Julio Silva, put in my care, and those [supplies] Fr. Francisco Puellas, Ministers of the Mission N.S. del Refugio de la Bahia received in Boca de Leones

		Pesos-Reals
4	Mule packs of Tobacco weighing 715 lb. net @3 reals	268-1
	For the freight of 29 arrobas 13 reals from Mexico to Boca de Leones[1]	45-7
1	Pair of pants [*calzones*] of sayal for Fr. Saenz	04-5
1	Pair of boots of sayal for the same	04-5
2	Small tunics of cotton cloth[2] of *lanquin* from china for [Fr. Saenz].	06-2
1	Saddle with bridle and all the accessories	14-0
2	Boxes with 10 *arrobas* of fine chocolate @ 8 pesos 6 reals	87-4
3	Pieces of blankets [*manta*] of 7/8 @ 9 pesos 2 reals	27-6
2	Boxes of straw mats and burlap @ 12 reals	01-4
	Charge for the [transportation] cost of 2 mule packs from Mexico to Boca de Leones @ 4 pesos 4 reals	09-0
	Balance Due	468-1
	Charge of 236 pesos 2 reals that remains from the previous account	236-2
	Charge of 100 pesos that by his order I delivered to B.r Juanzli	100-0
	Charge of 10 peso that by my order was reduced from Jose Cruz's salary	10-0
	Total	814-3

[Continuation of account]

400-0	Credit, given me by Jose Palacio Romana	
50-0	Credit, given to me by the Sindico Miguel Calderon	
23-4	Credit, for a shroud and a tunic	
19-3	Credit, given me by Fr. Puelles in Boca de Leones	
55-0	Credit given me y the same Friar at the College	
20-4	Credit, given me by Don Ricardo	
97-3	Credit, paid by Fr. Puelles from his salary [*sinodo*]	
55-0	Credit that I put on account for the freight on two mule packs for hauling to the missions	720-6
720-6	Remainder due	93-5
	Credit of 93 pesos 5 reals that I forgot that was not credited from the first that was received from B.r Juanzli	93-5
	Zero Balance	000-0

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August 30, 1796
Apostolic College of Our Lady of Guadalupe
Record of what R. P. Guardian Francisco Gomarra sent to Padre Fr. Antonio Garavito and Fr. Diego[12] Saenz, Ministers of Mission N. S. del Refugio de la Bahia

		Pesos-Reals	
1	Box with 5 arrobas of fine chocolate @13 pesos 2 reals		66-42
1	Box of grass mats and burlap @ 12 reals		01-4
4	Habits with hoods and cords @ 9 pesos		36-2
4	Pair of sandals and shoes @ 6 reals		04-2
8	Pair of Pueblan dust cloths[1] @ 10 pesos	06-0	
4	Pair of underware of *Lanquin* @ 2 reals		10-0
1	Box grass mats and burlap @14 reals		01-6
	Charge of 27 pesos for the cost of 6 mule packs @ 4 pesos hauling to Saltillo		27-0
	Charge of 24 pesos that I paid for freight of the glass[2] that Jose Palacios sent from Mexico with the order that it be paid	24-0	
	Amount due		177-2
	Credit of 177 pesos 2 reals that ---María Luiza Escalona left as a donation		177-2
	Zero Balance		000-0

August 30, 1796
Apostolic College de N. S. de Guadalupe
Record of what R. P. Guardian Francisco Gomarra sent to Manuel Julio Silva, without prices, at the account of the College

		Pesos-Reals
4	Arrobas [100 lbs.] of fine chocolate	X
1	Habit of sayal cloth and two tunics with cords	X
2	Pair of sandals	X
2	Pair of underware [*paños menores*]	X
4	Dust cloths [*pañuelos de polvos*]	X
2	Large blankets	X
1	Ream of paper	X
1	Container [*bote*] of snuff	X
5	Pounds of wax from Campeche, sent by Jose Palacios[1]	X
1	Small box and two shipments [*embios*] that Doña Narcisa sent	X
1	Small box that her brothers sent	X
1	Neck wrap [*emboltorio de garganta*], that Doña Ignacia Man.ro	X

All the above was shipped in the loads recorded in the previous account.

September 3, 1797
Apostolic College of N. S. de Guadalupe
Record of what R. P. Guardian Francisco Gomarra sent to Antonio de Jesús Garavito, Minister of the Mission N. S. del Refugio de la Bahia

	No. 5	**Pesos-Reals**	
3	Arrobas [75 lbs] of fine chocolate @ 15 pesos 3 reals	46-2	
2	Habits with hoods and cords @ 9 pesos 1 real	18-2	
2	Pair underware of *Lanquin* @ 23 reals	05-6	
2	Pair dust cloths, poblanos[1] @ 6 reals	01-4	
2	Pair of shoes and sandals @ 8 reals	02-1	
1	Pound of incense from Castilla @ 10 reals	01-2	
2	**Mule packs of tobacco with 355 lbs. net @ 3 reals**		**133-1**
1	Box grass mats and burlap of 3/3	02-2	
	Amount Due	212-4	
	Credit of 212 pesos 4 reals that Doña Maria Luiza Escalera donated	212-4	
	Zero Balance	000-0	

General Summary from 1792 to 1797

Charges	2, 968-1
Credits	2, 968-1
Balance	0,000-0

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July 19, 1803
Notes of the supplies that R. P. Guardian Ignacio del Río sent to P. Friar Marcelo Gaitán [*sic*], Minister of the Mission N.S. del Refugio with Mark and Number.

	B. No. 2	**Pesos-Reals**
2	Habits with hoods and cords @ 9 pesos 4 reals	19-0
3	Pair of sandals @ 1 peso	03-0
3	Arrobas (75 lbs] good chocolate @ 12 pesos	36-0
3	Loads leaf tobacco with 462 lbs. net @ 20 reals	202-1
1	Box grass mats and burlap @ 7 pesos	07-0
	For freight on 4 mule packs from Saltillo @ 20 reals	70-0
	Amount Due	271-1

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August 16, 1805
Apostolico College of N. S. de Guadalupe
Today, R. P. Guardian Fr. Juan Bautista Larronda sent Fr. Manuel [*sic*] (Marcelo) Gaitan, Minister of Refugio the following supplies

F. with the mark "C No. 3"

		Pesos-Reals
3	Arrobas [75 lb] of common chocolate @ 14 pesos	42-4
2	Tunics, habits @ 9 pesos 4 reals	19-0
1	Ream of paper @ 13 pesos, 1/4 *arroba* of wax @ 4 pesos lb = 22 pesos	35-0
2	Pair small cloths (from the load of Father Noreña	08-2
2	Pair Sandals @ 1 pesos	02-0
1	Box of coats and tie-strings [*lias*]	01-4
	Total	108-2
	Charge from the previous record	271-1
	Subtotal	379-3
	Also, a charge of 4 pesos 4 reals freight paid from here to Saltillo from the interior	04-4
	Remainder	383-7
	Credit of 271 pesos that was sent by Captain Francisco Pereira	271-0
	Owed	112-1
	He also owes 14 pesos for a habit that was sent in the load of Padre Solorsano in May 1806	14-0
	In the mule pack of the same [Solorzano] he was sent two mule packs of tobacco with a net weight of 262 lbs.	114-5
	Also [a charge] for freight paid at Boca de Leones and a ----	10-0
	Remainder to passed to the following account	251-4

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Apostolic College of N. S. de Guadalupe, August, 1807
Memorial remitted by R. P. Guardian Fr. Juan Bautista Larrondo to P.P. Fr. Jose Manuel Gaitan at the Refugio Mission.

	three loads [*tercios*], two tobacco and one box	
2	Mule packs tobacco with 302 lbs. net at 3 reals	132-1
1	Habit, tunic and two hoods	23-4
	1984 Arrobas chocolate @ 14 pesos 6 reals;	
	1 ditto worked wax 39 pesos	68-4
1	Box, 2 reals; coats from the 3 mule packs, 2 pesos 7 reals	3-1
	Sum	227-2
	Owed from previous accounts	251-4
	Total to add to charges on the following account	478-6
	On the 27th of July, 1807, Antonio robledo remitted a pay-order [*libranza*] of 241 pesos 32 reals from the account of P. Padre Gaitan those he credited on August 13th of the same.	211-3
	Remainder	237-3

Apostolic College of N. S. de Gualalupe Agusto 15 1808
Memorial remitted by the R. Guardian, Fr. Francisco Puelles to Fr. Jose Manuel Gaitan, minister of Refugio Mission

	2 Tercios	
1	Mule pack with 159 lbs. net Tobacco 3 1/2 reals	69-4
10	Varas silk cloth @ 3 pesos; 10 varas rough [*rasa*]	
	27 peosos 4 reals	57-4
4	Varas cloth [*saya*] @ 1 peso; 20 varas bright braid	
	[*galón brillante]* 24 pesos 2 reals	28-2
24	Jesus' y Marías, gilded, 29 pesos 5 reals	29-5
1	Box. Coats and ties and two hats	8-0
	Total	193-0
	Owed from the previous accounts, as shown above	237-3
	Total owed to add to following accounts	430-3
	Credit remitted by Antonio Robeledo	430-3
	Zero Balance	00-0

Apostolic College of N. S. de Guadalupe Augusto 1 1809
Memorial remitted by the R. Guardian, Fr. Francisco Puelles to Fr. Jose Manuel Gaitan, minister of Refugio Mission

2	Mule packs and a one extra	
2	Mule packs of tobacco with 303 lbs. @ 3 1/2 reals	132-4
	To the next page	132-4

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	Sum from the front	132-4
2	Tunic habits @9 pesos; 2 pesos for coats and ties	21-0
	Owed, to be added to the next account	153-4

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Apostolic College of N. S. de Gualalupe August 27, 1810
Memorial remitted by the R. Guardian, Fr. Saenz
to Fr. Jose Manuel Gaitan, minister of Refugio Mission de la Bahia

Three mule packs and one extra, No. 4 to 7		
Two mule packs with 358 lbs. gross weigh that yields 292 lbs. net of tobacco in leaf.		127-6
Fifty lbs. of fine chocolate		42-4
One *arroba* of wax . . . . and 1 ream of paper		23-3
4 pesos of cigars, one shepherd's blanket, 9 reals, coats with tie-strings, 31 reals , and a box		9-6
		203-3
	For Padre Sepulveda	
2 habits @ 14 pesos 4 pair of sandals @ 1 peso Also, 100 pesos he took when he sent from the college to the mission	32-0 + 100 =	132-0
	Sum Owed	333-3
Also charged is 153-4 pesos he owes from a past-due account above		153-4
	Total owed	488-7
On October ?4, 1812, for what Señor Robeledo sent by means of Fr. Huerta		25-7
	Remainder owed	262-7
On January 24, 1816, thirteen pesos were charged for a habit and cape that the servants brought to Fr. Vallejo		13-0
	Owed	275-7
Padre Huerta paid the 275 pesos 7 reals		275-7
	Zero Balance	000-0

Endnotes

[1] Neither this word nor its variants are in the dictionaries. It was obviously a type of cloth - perhaps wool because of the prefix "*lan*" as in lana, or wool.
[2] Although "*tercio*" literally means "one third," in this context it means each of the two packs of cargo carried by mules, or other beasts of burden, in pack trains. *Encyclopedia Universal Ilustrado*, vol. 60, p. 1183. Hence, "tercio" is translated as "mule pack."
[3] Probably "cambray," a type of white linen of Cambray, France.
[4] Meaning of abbreviation uncertain.
[5] *Beneciana de oja de lata.*
[6] *Polvos finos Poblanos.*
[7] Twelve almuds equals one fanega which equals 1.6 bushels.
[8] Fractions are uncertain; 12 almuds equals 1.6 bushels
[9] Silecia is an area of Poland.
[10] Present town Villadama, north of Monterrey, in the state of Nuevo León.
[11] *Manta* - ordinary cloth made and used in Mexico (DMI, p. 971).
[12] José María Saénz, supernumerary at Refugio Mission, 1794-1799.
[13] *Paños de polvos Poblanos.*
[14] The abbreviation "*vid.s*" appears to refer to glass.
[15] Word appears to be "*sera*," "*cera*" wax.
[16] Poblanos—Made in Puebla.

Appendix A

Mission Refugio Inventory

Section 3

Inventory of Mission Refugio, 1820

Appendix A: Inventory Section 3

Refugio Mission Inventory, 1820

David R. McDonald

Church

In all of its construction, images, adornments, the church is as it was described in the preceding inventory, done in the year 1818.

Sacristy

Regarding its construction, the roof is missing a piece about a half-vara in width and length that resulted from the windstorm that happened in September 1818. In the line of cloth items and other things that used at the church: 8 small bells, 26 corporal cloths,[1] 7 works of sculpture,[2] everything else described the previous inventory, with the addition of a pair of altar cloths, an altar cloth or frontal, a solertera made of yellow silk for the altar of the Sma. Virgin del Refugio. Two veils of chambray for the niches of the Señores Arcangelas that are at the side of the Virgin. A diamond with its metal ring for cutting glass, six glass flasks, and eight glass bottles.

Ties[3] for the Virgin that are not listed in the previous inventory, and another offered later of the most precious are the following: two *cuerpitos*,[4] six *cabescos*, five eyes, one sharpening stone [*muela*], a bench, a hand doll, two legs, two feet, two hearts large and small made of gold, a complete body also of gold, a [word illegible] of [//2] silver for the small image of the Archangel Raphael and four stars of the same for the mantle of the Most Serene Virgin. There are also two quartz jars, large and medium[5] and a [word illegible] made of the same. An arroba of wine to celebrate Mass; wax, both carved and uncarved, six arrobas six pounds.
[Translators note: this inventory notes above that the description of the church was omitted, saying that it was the same as stated in the previous, 1817 inventory. The following is the description of the church taken from that 1817 inventory:]

It is built with stone and lime, being twenty-one varas long and eight in width, with its corresponding height. It has four doors, the principal of which had two wings is made of red cedar[6] *with boards of cedar and two iron security bolts. The door on the side is also made of red cedar boards, with a lock, key, and a security bolt below. The two doors of the sacristy…have one wing and are made of oak and cedar with lock plates, key and iron latch. The sacristy also has four windows…of the choir…boards of oak with a lock, security bolt and three with boards and wire screens…*

The church is vaulted with wood upon which is an over-roof of double boards secured with iron nails. On the roof, toward the front, is a small, octagonal, shaped wooden tower. In front is a small cemetery made of stone with a wooden cross in the center. An arch stands at the cemetery's entrance and two smaller arches are positioned on the sides.

The choir of the church is formed by four beams that rest on mahogany brackets. Its floor is made of red cedar and cedar, its cross bar[7] and bars of red cedar and oak, door that opens and closes and covered stairway, with crossbar. It is three varas wide, in it there is an [illegible] for the singers and a wooden ladder…that goes up to the bell loft, which has its door. Inside there are six bells of various sizes, even though all medium sized with their corresponding ringers.[8] By the door of the side of the church, is a copper bowl for holy water that sits on a wooden pedestal.[9]

Convent

It is formed by a small portal made of stone and mortar that serves as the entrance of the house, with its door and key. On one side of it is a room five varas square roofed with beams and wooden planks that make up the upper floor, which is the same in height [five varas] and made of the same material [stone and mortar]. Its covered stair is made of wood planks and an corresponding crossbar. At the end is a wooden partition[10] with a wooden door that has a lockplate, key, crossbar, latch all made of iron. The upper floor is roofed like the lower one except that it had wooden deck[11] sealed with pitch[12] with two long wooden canals that carry away rain water. Between the two dams [the wooden canals] are four doors, three of which are built with two wings and have locks and keys, except for one that only has an aldaba three windows, one with two wings and all have *aldabas*.[13]

Through the room below you enter the main room made of stone and mortar. It is twelve varas long and five wide with its corresponding height. It is roofed with beams and a deck with…[three words illegible] the deck fastened with iron nails begun to repair what was knocked down from the over-roof by the mentioned wind storm. In addition to the doors already described, this main room one door with two wings and a postern,[14] with a platelock and key. There is a window with two wings and flying bars[15] and aldabas. In these rooms are the following furniture.

First, there is a stand embedded in the wall. In the room is a table covered with black leather with a drawer, Iron *manigeras* ,[16] two iron screws for a letter press, a metal inkwell with a sand shaker[17] and tin box for sealing wax.

In the said box is a disassembled telescope… A small box with three shaving razors with a stand, scissors, and bottle of oil for shaving. Also a wooden bench and stand that serves to hold the following books:

Library Books	Volumes	Library Books	Volumes
Beyfertudel	3	Fr. Luiz de la Puente	1
Biblia Saera	5	Descripsion de la Indias Occientales	1
Biegra	8	Montenegro	1
Piton	4	Padre Parra	1
Sintanemigo	4	Sumario de Indulgencias a los Cofrades de San Agustin	1
Leyes de Recopilacion de Indias	7	Homo Apostolicus	1
Politica Indiana	2	Sigilatio Ingratitudinis	1
Corega	3	Curia Ecclesiatica	2
Barcia	18	Benegas Medicina	
Ferrario	4	Florilegio Medicina	1
Sporer	2	Centinela Contratos	1
Potestas	2	Molina de Sacerdotes	1
Ligorio	2	Cronicon	1
Forresilla	2	Panegricos de San Francisco Xavier	1
Asemberger Sup.to de Teologia Moral	1	Paradoxas Fisicas	1
Concina	1	Regla Serafica	1
Bocabularios de Castejon	2	Burdalue	1
//4 Oraciones varias Fr. Manuel Guerra	1	Arbol Manual de Sacerdotes	1
La V[enerabl]e Madre Agreda tres tomos grandes y quatro chicos	7	Larraga	2
Concordancia de la Biblia	3	Govierno de Regulares de America	2
Calmet	1	Candelero Bosco	1
Alamin	2	//5 Apologia de Confesores y Predicadores	1
Bocabulario de Nebrija	2	Antonio Natal de Celesti Conversatione	1
Nuevas Indias Alabansas de Maria	1	Escoto Moral	1

Library Books	Volumes
Kempis Religioso	2
Acosta de Promulgando Evangelio	1
Troxes Doctorum	1
Martines Libreria de Jueses	
Resololuciones Morales y Canonicas	1
Voz del Pastor	1
Quaresma del Padre Seneri	2
Flores Bibliorum	1
Principios Geograficos	1
Concilio de Trento	1
Fabula Venistionum	1

Library Books	Volumes
de Nuestro Señor de la Luz	
Carta Apologetica en Fefensa del Titulo	1
Figuras de la Biblia	1
El Sabio Prodigo	1
Galindo Rubricas	1
Ascargorta Compendio Moral	1
Manual del Padre Garcia	1
Opusculo Serafico	1
Estatutos para los Misioneros de Pachuca	
Explicacion de Terminos	1
Epistolas p.a la Conversacion de Nuestro Padre Margil	1
Llanto de las Aves	1
Compendio de Resoluciones Morales	1
Una Obra Año Christiano en dose Tomos	18
Meses y Seis de Dominicus	
Egercicios de San Ignacio	2

There is also a bottle, a large balance scale and another medium one with their weights. Two large padlocks with keys plus iron hobbles [or shackles] a large tambourine, a *xallo* [18] of tin plate, an iron clock incomplete and inoperable, a brass container with four hundred twenty musket cartridges, and six for cannon with their corresponding bullets and shrapnel,[19] that were authorized by Governor Antonio Martines (which record is preserved in the archive of the Presidio of La Bahia) which he delivered to me with the provision that the [armaments] be accountable to the number on record at the supply office of the Presidio, until such time as they may be removed to other places, and the record [of the armaments] changed to correspond to their new location. Two mattresses with benches and boards, two sheets, six pillows with pillowcases, and a cot. Two brass pitchers and one large copper receptacle, a large table made with boards of mahogany [*caoba*], a small table made with red cedar, two benches, a oak arm chair, and nine with reed seats, a wooden framework that is used as a "burro" to raise the chair [saddle]. Two vara bars for measuring, a small bronze balance with a iron pointer[20] and an incomplete set of weights, a wooden cross[21]

//7 another small cross from Jerusalem mounted on metal with a crucifix of the same. Four remainders of silk, six boxes, large and medium sizes, all with lock plates and keys, two boxes, a[word illegible] to keep colors, two medium bottles of Chi oil, four masons' trowels, with two plumb bobs, and a masons' stone hammer, six pair of shearing scissors, eight branding irons, [word illegible] six bars, ten hoes, two and one medium iron bars, an arroba and six pounds of iron for whatever use, three pounds eight ounces of steel, a dismantled loom with combs and other necessary parts for making blankets and cloth, a deteriorated table with *clapa*,[22] an English saw for making boards, two of the same small—one an arm saw and two handsaws, a jack plane,[23] a jointing plane,[24] two carpenters' squares,[25] a template pattern,[26] a box with a plane, another box with a grooving tool,[27] two adzes,[28] a wood rasp, three chisels, a crowbar, a rope-twist auger,[29] two carpenters' gauge,[30] and seven hatchets for all purposes. Some tongs,[31] , a pair of small [blacksmiths']pincers for linking,[32] a small machine to de-seed cotton a small stand, a load [*tercio*] of salt half from la Barra and the other half from Oso, fifty pounds of tobacco from exterior lands , a food stall,[33] a small box with a compass (mariners needle), another with eyes of all sizes for saints [statues], a silversmiths' drill, an English triangular plow point, a bronze chamber [pot?].[34]

The said room that enclosed all of the foregoing is built as a chamaquero on three sides, with a door and key—in which also is kept the six iron crowbars[35] and five points of the same for use in the field.

//8 Outside of these are nine structures that enclose the patio's square.

The first, a small one, serves as a commons.

The second is for weaving;

The third as a granary, in which the poles are kept that serve a the foot of the loom and two benches with their spinning wheels and another bench of the said little mill,[36] and six fanegas of lime. It has a door and lock.

The fourth serves as a dispensary, and it contains a somewhat deteriorated table with six drawers that hold the ornaments from Rosario Mission and a wooden stand.

The fifth structure functions as the kitchen and contains the following; a chest with key, two pair of mantels, three napkins, eleven covers, twelve forks with black handles; twenty with white handles, two large [forks] with three ladles, four table knives, a bronze platter and plates and quartz plates—twenty-one of the former from Puebla, a soup plate, a quartz jug[37] and cup of the same material, three [word illegible] sheathed with tin, a box with *piez*, four metates with manos, an iron frying pan with handle, seven pots made of strained iron[38] of all sizes, a small copper pot,[39] a iron comal and another of copper with strips of iron,[40] an iron roaster with a hook,[41] four cauldrons[42] some sound others deteriorated, two casos[43] one of which is sound, a large copper with a lid—all of copper and three small ones; a small pot made of copper; two trays in poor condition; a small hatchet to chop meat, a large iron shovel for coals and a

//9 bronze syringe, a *amires* [44] with handle all of copper, a wooden hoop[45] for candles, a small chest with odds and ends pieces of glass, a metal Christ, two barrels for water, a bronze [basin] for shaving, three wooden spoons, a copper brazier for bringing coals to the table, and two small crystal salt shakers. Like the storehouse, [the kitchen] has a plate lock and key.

The sixth structure is small and is the chicken coop[46] in which are kept about 100 boards.

The seventh, serves as the blacksmith shop. It has a fireplace or forge, a pair of bellows with their corresponding air pipes, anvil and vise, an iron lid three iron tongs, two medium hand hammers and another that the Indians have, two large hammers one of which is to pound iron, and the other of about 125 pounds for splitting stone, seven files large and small, a vise[47] –a tool to smooth holes made in iron,[48] a drill, three chisels, [the building has] a [lock]plate and key.

The eighth had a lock and key and is also used with the blacksmith shop.

The ninth, which has a door, lock and key, is for guests. It has a bedroom and window, with an iron lock, that looks outside. All nine structures are chamaqueros.

To one side of the square is a false door with a its door and iron lock. In a corner of the square there is a stone and mortar basin that has a bottom made of copper that is undamaged for making soap, it has its corresponding wooden channels for distilling and receiving lye [*legia*]. Next to the basin are two stone ovens used for the kitchen, and in the corner formed by the church and sacristy a small orange tree is planted.

//10 On one side of the convent is a an area enclosed by a wooden fence. One half is planted to tobacco; in the other half are fruit trees: grapes, pomegranates, peach, and figs. To one side is the corral, which is the same length as the garden, and is also closed by a wooden fence. Also there are two carts, equipped with yokes and traces. There are ten plows, seven more yokes, with six yokes of tame oxen.

The plaza of this mission is formed by fifteen chamaqueros, which are connected one to another by wooden stockades for protection against enemies.

Agriculture and Livestock

In the field are two and one half fanegas of my crops that are ripe and one fanega that is ripening.[49] In this mission's pasture, according to the determination of the corporal, there are 400 cows. Of these 100 have calves and 100 are bulls, and there are 200 that are somewhat manageable in the roundup.[50]

Nineteen horses and one mule, all tame, and two wild[51] horses that are in the remuda.

Sixteen more horses and mules, both tame and wild.[52] These are on record as having been gathered by the good men of the Congregation of Refugio, who gave them to me as a donation.

A sow with two female piglets, and two mature males.

I note that

// 11 in the year 1818, the Reverend Friar Francisco Frejes, President of the Missions at the time, took thirty head of cattle with authorization from Fr. Francisco Jaudenes, or Father Pueyes, and he was to have paid this mission for the stock when he received his stipend, but the debt is still unpaid.

To what is in the fifth structure, I add thirty notebooks of blank writing paper, the four books of the parish, a book of accounts of the servants, a quartz jug,[53] four pounds of cotton, three cords [cordeles], and a shirt for processing tobacco,[54] five measures [*pesos*]of soap, two iron sickles for cutting grass.

The mission owe the servants thirty-four pesos three reals and two eighths, as recorded in the accounts of the said notebook.

Finally, there is a box that serves to keep the papers of the archive. Among which there are the following receipts in favor of this mission:

One for	1,035 [pesos]
Another for	744
Another for	344
Another for	260
Another for	700
Another for	271
	3,354 to the next page

//12 from the previous page	3,354
Another for	460
Another for	120
Another for	234-4
Another for	260
Another for 67 cows at a price of 10 pesos each for a total of 670 pesos minus a credit of 62 pesos 6 reals gives a total of 606 pesos 1 real	606-1
Another for	12
	5,116-5 [55]

All that is contained and expressed above with the said Mission Nuestra Señora del Refugio Fr. José Antonio Díaz de León delivers up to his College of Our Lady of Guadalupe of Zacatecas, in whose name it is received by its Father Minister, Fr. Miguel Muro, and we signed [the inventory] at the said mission on the eighth day of August, of the year 1820.

[signed] *Fr. Miguel Muro*
[signed] *Fr. José Antonio Díaz de León*

[Translator's note: this addition made at the bottom of the page; change in handwriting.]

I removed the 12 Meses and G. Dominica there are other volumes of Año Christiamos that R. R. Fr. Manuel Gaitan gave me… April, 16-1830

[signed] *José Antonio Díaz de León*

Endnotes

[1] *Corporales* - cloth used in the Eucharist.
[2] *Tallas*
[3] *Precintas*.
[4] Probably small statues of Christ.
[5] *Dos xaros* [*jarros*] *de pedernal*.
[6] MS says "*sabino*" - savin.
[7] *Pasamano*.
[8] *Lenguas*.
[9] Inventory of Nuestra Señora del Refugio Mission, 9-10-1817, Zapópan Microfilm Roll-1 Frames 425 ff.
[10] *Cancel.*
[11] *Tablazon*.
[12] *Embetunada*.
[13] *Aldaba* - can be a crossbar, bolt, or door knocker.
[14] *Postigo* - can be a smaller door with a larger one.
[15] *Rejas voladas.*
[16] Meaning not clear. *Manijera* refers to a person whose job is to obtain workers.
[17] *Salbadera*
[18] *Xallo* (or *jallo*) - meaning uncertain.
[19] *Valas y metralla*.
[20] *Fiel de fierro*.
[21] *Una cruz de granadilla* - "*granadilla*" refers to wood that could be tamarind, ebony, or rosewood, black wood.
[22] Name of a plant also called, *tlapate*. Meaning uncertain in this context.
[23] *Garlopa*.
[24] *Juntera*.
[25] *Codal* - can also refer to saw handle or a mason's level.
[26] *Escantillon*.
[27] *Acanalador*.
[28] *Azuelas*.
[29] *Barrena de tor zal*.
[30] *Gramiles*.
[31] *Alicates* - can also refer to pliers or pincers.
[32] *Tenacitas para engarzar.*
[33] *Almuracero* - probably a variant of *almucería*.
[34] *Una camera de bronze*.
[35] *Seis gatos de fierro*.
[36] *Dos bancos de los dos tornos con sus ruedas y mas un banco de dicho molinito…*
[37] *Un xarro [jarro] de pedernal*.
[38] *Siete oyas de fierro colado…*
[39] *Caldereta* - possibly refers to the small copper pots used to prepare chocolate to drink.
[40] *Otro de cobre afixando con sintas de fierro…*
[41] *Garabato*.
[42] *Peroles*.
[43] *Cazos*.
[44] Not found in dictionaries.
[45] *Un aro de madera para belas.*
[46] *Gallinera*.
[47] *Tornillo de marca*.
[48] *Escariador*.
[49] While the fanega was a dry measure(about 1.6 bushels), it was also used to indicate the area of land that a fanega of grain would plant.
[50] …que algo obedecen el rodeo.
[51] *Dos caballos correras*.
[52] *…caballares y mulares mansas y correras,*
[53] *Jarro de pedernal*.
[54] *Una camisa para beneficiar tobacco*.
[55] The correct total of these figures is 5,046 pesos, 5 reals.

Appendix B

Mission Refugio Baptismal Records

Section 1

Baptismal Records of Mission Refugio, 1807 to 1828

Note: Mission Refugio Baptisms, 1807 to 1828, located on Volume I - CD as 00B1-Ref App B1a.pdf.

Baptismal Reference

1. Volume II of Baptisms, Conferred at the Mission of Our Lady of Refuge (de la Bahía), from the year 1807 to 1828, Carlos E. Castañeda Transcripts. Used with permission.

Baptismal Records for Mission Refugio 1807 to 1828

Name	Date	Age	Sex	Ethnicity	Parents	Sponsors	Notes
Maria Joseph Yrison (Yrinoa?)	Apr. 12, 1807[1]	16 days	female	Karankawa/Pihuique	Manuel (Karankawa) and Refugia (Christian Pihuique)	M. Juan Rosales and Eulogia Marin	(Re: parents "children of this Mission"), (Re: sponsors "from Nacogdoches")
Maria del Loretto	Sept. 5, 1807	8 days	female		Pedro Martinez and Maria Luisa Rangel	Antonio Vasques and Josefa Mora	(Re: parents "inhabitants of this Mission"), (Re: sponsors "from La Bahía")
Jose Maria de Pilar	Oct. 12, 1807	25 yrs	male	Karankawa	Karankawa (already deceased)	M. Juan Rosales	(Re: individual "first known among the Lipans") (Re: sponsor "from Nacogdoches")
Jose Crisanto	Oct. 25, 1807	3 days	male	Copan/Karankawa	Crisonomo (Copan) and Maria del Refugio (Christian Karankawa)	Faustino Salazas and Margarita Campa	(Re: parents "children of this Mission"), (Re: sponsors "inhabitants of this Mission")
Jose Martin Antonio	Jan. 19, 1808	2 mos	male	Karankawa	Jose de Jesus (Karankawa) and "a pagan of the same nation"	Martin Gomez and Trinidad Chirino	(Re: sponsors "inhabitants of this Mission")
Juan de la Cruz	May 12, 1808	9 days	male	Guapit/Karankawa	Francisco (Guapit) and Maria (Christian Karankawa)	M. Juan Rosales and Eulogia Morin	(Re: parents "children of this Mission"), (Re: sponsors "from Nacogdoches")
Jose Trinidad	June 12, 1808	6 days	male	Karankawa/Pihuique	Manuel (Karankawa) and Refugia (Pihuique)	M. Juan Rosales and Feliciana Ybarro	(Re: parents "christian children of this Mission"), (Re: sponsors "from Nacogdoches")
Jose Arborio(?)	June 12, 1808	3 days	male	Karankawa/Pamaque	Luna (pagan Karankawa) and Barbara (Christian Pamaque)	M. Juan Rosales and Feliciana Ybarro	(Re: parents "children of this Mission"), (Re: sponsors "from Nacogdoches")
Maria Manuela	June 20, 1808	5 days	female		Faustino Salazar and Margarite Campa	Mathiana de los Santos	(Re: individual "Died"), (Re: parents "inhabitants of this Mission"), (Re: sponsor "from La Bahía")
Maria Assumpcion	Aug. 16, 1808	40 yrs	female	Karankawa	Jose Rosaris (deceased) and Maria Dominga (both Christian Karankawa)	M. Juan Rosales	
Maria Pacifica	Sept. 25, 1808	1 yr	female	Karankawa	Juan Diego and his wife (both pagan Karankawa)	Faustino Salazar and Margarita Campa from the Mission	
Jose Lino	Sept. 25, 1808	4 yrs	male	Karankawa	Juan Diego and his wife (both pagan Karankawa)	M. Juan Rosales and Eulogia Morin of Nacogdoches	
Juan Jose	Oct. 15, 1808	4 mos	male	Copan/Karankawa	Pedro Antonio (Copan) and la Chata (pagan Karankawa)	Jose Chirino	
Juana Maria Barbara	Oct. 23, 1808	2 mos	female	Copan/Karankawa	Jose Miguel (Christian Copan) and "Gordita" (Gondita?) (pagan woman, daughter of Diego, Captain of the Karankawa nation)	Juan Francisco Alvarado and Maria Antonia Trevino	
Cecilio Antonio	Nov. 25, 1808	4 days	male		Ricardo Lopes and Maria Jacinta de Nava	Xavier Vasquez and Maria Trevino	(Re: parents "inhabitants of this Mission")
Pedro Alexandrino	Nov. 26, 1808	19 yrs	male	Karankawa/Copan	unnamed father (Christian Karankawa) and Maria Tacoba (Copan deceased)	M. Juan Rosales	
Maria Timothea	Feb. 2, 1809	11 days	female		Pedro de Luna and Serafina Trexo	Jose Manuel Nandin and Juana Maria de Leon of La Bahía	(Re: parents "servants of this Mission")
Maria Dorothea	Feb. 6, 1809	14 days	female	Karankawa/Copan	Jose Maria del Pilar (Karankawa) and Maria Concepcion (Copan)	Jose de Laso and Maria Dolores Sais of this Mission	(Re: parents "children of this Mission"), (Re: translation "Died on the coast)
Maria Bernarda	Feb. 16, 1809	17 yrs	female	Karankawa	Captain Diego (Christian Karankawa) and Josefa (pagan Karankawa)	M. Juan Rosales	Adult daughter of Captain Diego

Baptismal Records for Mission Refugio 1807 to 1828

Name	Date	Age	Sex	Ethnicity	Parents	Sponsors	Notes
Jose Hilario	Feb. 25, 1809	8 days	male	Karankawa/Cujan	Manuel (Karankawa) and Juana (Cujan)	Casimiro Morin and Elisia Morin of Nacogdoches	(Re: parents "children of this Mission").
Maria Hilaria	Feb. 25, 1809	8 days	female	Karankawa	Leal and Larga (both pagan Karankawa)	Jose Dolores Benites and Maria Josefa Vasquez (servants of this Mission)	
Juan de la Santissima Trinidad	May 27, 1809	23 yrs	male	Karankawa	pagan Karankawa parents - deceased	Don Juan Antonio Espinosa	
Antonio	June 20, 1809	7 days	male	Malaguite/Pajalachi	Thomas (Malaguite) and Francisa (Pajalachi)	Vicente Zamora (corporal of the Villa de Honos and Quitoria Seballas	(Re: parents "children of this Mission").
Maria Francisa Heduvigis	Oct. 30, 1809	3 days	female		Jose Laso and Bernarda Sais of La Bahía	Bartelo and Dolores Sais	
Maria Isabel	Nov. 5, 1809	6 yrs	female	Karankawa	unnamed pagan father and Maria Dominga (both Karankawa)	Pedro Tereda(?) (Texeda?) and Maria Catarina Villareal	
Jose Santos	Nov. 5, 1809	10 yrs	male	Karankawa	unnamed pagan father and Maria Dominga (both Karankawa)	Pedro Texeda and Maria Catarina Villareal	
Maria Leo(c?)adia	Dec. 30, 1809	4 days	female	Cujan	Pedro Alexandrino and Maria del Loreto (both Cujan)	Ricardo Lopes and Isidora Lopes	(Re: parents "children of this Mission").
Maria Petra	Jan. 27, 1810	10 days	female	Copan	Maria Dolores (widow, Copan) and father (unknown)	José Sais and Dolores Sais	
Juan Chrisostomo	Jan. 27, 1810	15 days	male	Karankawa	Vicente Antonio and Maria Gregoria (both Karankawa)	Ricardo Lopes and Isidora Lopes	
Jose Apolonio	Feb. 9, 1810	9 days	male		Faustino Garcia and Margarita Vasques	M. Juan Rosales and Maria Feliciana Ybarro	
Maria Petra	Mar. 14, 1810	16 years	female		Parents (pagan, already deceased)	M. Juan Rosales	(Re: individual "named Leolao in the language of her nation, signifies *squint-eye*") (Re: sponsor "inhabitant of Nacogdoches").
Maria Ana Patricia	Mar. 17, 1810	9 days	female	Tobosa/Karankawa	Jose Maria (Tobosa) and Prudencio (Karankawa)	Antonio Vasques and Mariana de la Garza	(Re: parents "children of this Mission"). (Re: sponsors "of the Presidio of La Bahía")
Jose Patricio	Mar. 17, 1810	5 years	male	Karankawa	Mother "La Larga" (pagan Karankawa) father not named (pagan Karankawa)	Antonio Vasques and Mariana de la Garza	(Re: sponsors "of the Presidio of La Bahía")
Jose Francisco	April 12, 1810	5 days	male	Copan/Karankawa	Pedro Antonio (Copan) and la Chata (pagan Karankawa)	Juan Jose Albarado and Maria Agreda Martines	(Re: sponsors "of the Presidio of La Bahía")
Juan Augustin	May 6, 1810	4 mos	male	Karankawa	Juan Diego and his wife (both pagan Karankawa)	Dolores Sais	
Jose Simon	May 6, 1810	8 days	male	Karankawa	Jose de Jesus and Maria Assumpcion (both Karankawa)	Nicolas Caravajal and Catharina Falcon	
Jose Feliciano	June 9, 1810	adult	male	Coco/Karankawa	Cabozon (Indian chief of the Coco nation, deceased) and Karankawa woman ("Caral Halo" Hard-Heart)	M. Juan Rosales	
Maria Feliciana	June 9, 1810	adult	female	Karankawa	Captain Fresada Pinta (Karankawa, deceased) and Maria Tobosa (deceased)	Geronimo Huizar	(Re: individual "known before as La Chata")

Baptismal Records for Mission Refugio 1807 to 1828

Name	Date	Age	Sex	Ethnicity	Parents	Sponsors	Notes
Jose de la Cruz	July 17, 1810	1 days	male		Pedro de Luna and Serafina Trexo	Seronimo Huizar and Maria Elogia Morin	Members of this Mission
Maria Francisca	Oct. 31, 1810	27 days	female		Pio Quinto de la Garza and Maria Louisa Ramires	Victoriano Ramires and Maria Josefa Gutierres	(Re: parents "living on Nueces River and inhabitants of the Villa de Meir").
Maria Gertrudia Ynes	Nov. 16, 1810	7 days	female		Nicolas Carbajal and Catarina Falcon	M. Juan Rosales and Maria Feliciana Ybarro	
Jose Guadalupe	Dec. 19, 1810	20 yrs	male	Karankawa	parents - pagan Karankawa already deceased	Geronimo Huizar	
Maria Gertrudis	Dec. 19, 1810	28 yrs	female	Karankawa	Vicente and Maria del Rosario (both Karankawa)	Geronimo Huizar	
Maria Gregoria	Dec. 17, 1810[2]	4 days	female	Karankawa/Cujan	Jose Eliseo (Karankawa) and Maria (Cujan)	Juan de Leon and Maria Francisca Rodriguez (servants of this Mission)	(Re: individual "Died")
Juana Maria	Dec. 27, 1810	6 yrs	female	Karankawa	Captain Diego and "a pagan woman" (both Karankawa)	M. Juan Rosales and Maria Feliciana Ybarro	
Jose Estevan	Dec. 27, 1810	9 yrs	male	Karankawa	Captain Diego and "a pagan woman already deceased" (both Karankawa)	M. Juan Rosales and Maria Feliciana Ybarro	
Maria Estefania	Dec. 27, 1810	3 yrs	female	Karankawa	Quinol "Cloudy" and Bahan "Foolish" (both pagan Karankawa)	Juan Francisco Reyes Alvarado and Ana Maria de la Cruz	
Juan Maria	Dec. 27, 1810	2 mos	male	Karankawa	Quinol "Cloudy" and Bahan "Foolish" (both pagan Karankawa)	Juan Francisco Reyes Alvarado and Ana Maria de la Cruz	
Maria Melchara	Jan. 7, 1811	9 days	female	Karankawa/Pamaque	Juan de la Sma. Trinidad (Karankawa) and Barbara (Pamaque	Nicolas Carabajal and Catharina Falcon	
Maria Juana (Juana Maria)	Feb. 29, 1811	3 days	female		Enrique Gonzales and Maria Nicalosa Pabedano	Jose Casimiro Morin and Maria Elogia Morin	
Maria del Refugio Casimira	Mar. 4, 1811	7 days	female	Tobosa/Karankawa	Jose Maria (Tobosa) and Maria Petra (Karankawa)	Don Bernardo Amado	
Juan Jose	May 5, 1811	6 days	male		Vicente Ramos and Jesusa Cano	Jose Chirino and Trinidad Chirino	
Santiago	July 25, 1811	2 mos.	male	Cujan/Karankawa	Jose Miguel (Cujan) and Maria Barnarda (Karankawa)	Juan Francisco Alvarado and Maria Antonia Trevino	(Re: sponsors "servants of this Mission")
Maria Nieves	Aug. 7, 1811	3 days	female		Faustino Garcia and Margarita Vasquez	Manuel Flores and Concepcion Laso	
Maria Augustina	Aug. 28, 1811	2 mos	female	Karankawa	Jose de Jesus and Maria Concepcion (both Karankawa)	Jose Geronimo Huizar and Maria Catharina Huizar	(Re: individual "born on the coast")
Maria Estefana	Sept. 11, 1811	1 mo	female		Felipe Moreno and Nicolasa Sansoval	Maria Victoriana del Castillo	
Maria Merced	Sept. 20, 1811	10 days	female	(Native American)	Feliciano (-----) and Maria Manuela (----)	Martin Gomez and Trinidad Chirino	
Maria Andrea	Oct. 28, 1811	12 days	female	Karankawa/Cujan	Prudencio (Karankawa) and Maria (Cujan)	Maria Josefa Salinas	
Jose Geronimo	Jan. 7, 1812	30 yrs	male	Karankawa	Both (pagan Karankawa) - father deceased	Jose Geronimo Huizar	

Baptismal Records for Mission Refugio 1807 to 1828

Name	Date	Age	Sex	Ethnicity	Parents	Sponsors	Notes
Maria Rafaela	Jan. 7, 1812	27 yrs	female	Karankawa	Both (pagan Karankawa) - both deceased	Jose Geronimo Huizar	
Jose Silvestre	Jan. 7, 1812	8 days	male	Karankawa/Cujan	Manuel (Karankawa) and Juana (Cujan)	Felis Galan and Maria Grande	
Maria Agapita	Mar. 17, 1812[3]	1 day	female		Ricardo Lopez and Jacinta de Nava	Casamiro Morin and Eulogia Morin	(Re: parents, "attaches of this Mission")
Maria Cleta	Apr. 26, 1812	3 days	female		Jose Maria Mireles and Maria Caralina Villarreal	Faustino Garcia and Margarita Vasquez	(Re: parents, "servants of this Mission")
Pedro	Apr. 29, 1812	4 days	male	Copan/Karankawa	Pedro Antonio (Copan) and Maria Feliciana (Karankawa)	Jose Maria de la Garza (soldier) and Tomasa Gonzales	
Maria Magdalona	May 27, 1812	3 days	female		father unknown, mother Maria Francisca Gonzales	Domingo de Lara and Maria Quiteria -----	
Maria Magdalena	May 27, 1812	8 days	female	Copan/Karankawa	Chrisostino (Copan) and Maria del Refugio (Karankawa)	Pedro Tereda(?) (Texeda?) and Maria Catharina Huizar	
Maria Antonia	June 11, 1812[4]	3 days	female	Cujan	Pedro Alexandrino and Maria del Loreto (both Cujan)	Encarnacion Ortis	(Re: parents, "members of the Mission")
Manuela	June 15, 1812	2 mos	female	Karankawa	Leal and Larga (both pagan Karankawa)	Encarnacion Ortis	
Buenaventura	July 22, 1812	1 mo	male	Karankawa	Juan Diego and his woman (both pagan Karankawa)	Henrique Gonzales and Nicolasa Povedano	
Jose Panteleon	July 28, 1812	1 day	male		Lucas Reyna and Vicenta Martines	Casamiro Morin and Eulogia Morin	
Jose Augustin	Aug. 29, 1812	1 day	male		Juan Povedano and Maria Salarno Gonzales	Casamiro Morin and Eulogia Morin	
Maria Luisa(?) Maria Louisa(?)	Oct. 16, 1812	?	female	Karankawa	Jose Antonio and Maria del Rosario (both Karankawa)	Juan Povedano and Maria Salome Gonzales	
Maria Teresa	Oct. 22, 1812[5]	8 days	female	Malaquit/Pajalachi	Tomas (Malaquit) and Francisca (Pajalachi)	Mariana Aldreto	(Re: parents "children of this Mission")
Jose Santos	Nov. 3, 1812	1 day	female		Maria Mireles	Jose Geronimo Huizar and Maria Eulogia Morin	(Re: parent, "inhabitant of this Mission")
Jose Ysidro	Dec. 19, 1812	20 days	male		Vicente Ramos and Maria de Jesus Cartes	Martin Gomez and Trinidad Chirino	
Jose Gregorio	Dec. 20, 1812	1 mo	male		Pablo de la Garza and Rosaria ----	(Manuel?) Flores and Maria (de la Garza?)	
Jose de Jesus	Dec. 25, 1812	20 days	male	Toboso/Karankawa	Jose (Maria) (Toboso) and Maria Petra (Karankawa)	Manuel Flores and Concepcion Laso	
Maria de Jesus	Dec. 27, 1812	3 days	female		Henrique Gonzales and Nicolasa Povedano	Valentin de la Rosa and Rosa Bocanegra	(Re: parents, "servants of this Mission")
Jose Melchor	Jan. 31, 1813	25 days	male	Karankawa/Pamaque	Manuel (Karankawa) and Refugia (Pamaque)	Juan Povedana and Maria Salome Gonzales	(Re: parents, "children of this Mission")
Jose Matheo	Jan. 31, 1813	4 days	male	Karankawa/Pamaque	Juan de la Sma. Trinidad (Karankawa) and Bar(?)ara (Pamaque)	Juan Maria (Karankawa) and Jacinta de Nava	

Baptismal Records for Mission Refugio 1807 to 1828

Name	Date	Age	Sex	Ethnicity	Parents	Sponsors	Notes
Maria Manuela	Apr. 19, 1813	5 days	female		Jesusa Mexias	Jose Geronimo Huizar and Maria Eulogia Morin	
Maria Gordiana	May 10, 1813	7 days	female		Faustino Garcia and Margarita Vasques	Jose Nepomusceno Villarreal and Maria Feliciana Harbo	
Maria de Carmel(o?)	July 18, 1813[6]	1 day	female	Karankawa	Jose de Jesus and Maria (both Karankawa)	Francisco Golindo and Maria Jacinta de Nava	
Maria Petra	Sept. 3, 1813	1.5 mos	female	Copan/Karankawa	Pedro Antonio (Copan) and Maria Feliciana (Karankawa)	Bartolo Saez and Maria de los Dolores Saez	
Maria Ramona	Sept. 8, 1813	8 days	female		----?------- and --?--- Antonia Garcia	Jose Antonio de la Garza and Maria Josefa Quintanilla	
Maria Eugenia	Sept. 15, 1813	8 days	female		Jose Maria de los Santos and Maria Ensebia Cortez	Don Martin de Leon and Dona Particia de la Garza	
Maria Raf(a?)ela	Oct. 24, 1813	5 days	female		Quinto de la Garza and Maria Louisa Rodriguez	Jose Maria de la Garza and Maria Tomasa Gonzales	
Jose Manuel	Nov. 1, 1813[7]	5 days	male		Vicente Ramos and Maria de Jesus Cortes	Lino Rodriguez and Maria del Refugio Aguilar	
Maria del Refugio	Nov. 4, 1813[8]	2 yrs	female	Karankawa	Parents both (pagan Karankawa)	Dona Josefa Bar(r?)erra and her son Juan Nepomuceno Sequin	
Jose Carlos	Nov. 6, 1813[9]	3 days	male	Karankawa	Parents both (pagan Karankawa)	Dona Patricia de la Garza	
Maria de la Candelaria	Feb. 2, 1814[10]	11 days	female	Guapit/Karankawa	Francisco (Guapit) and Maria (Karankawa)	Dona Josefa Berer(r?)a	(Re: parents "Christians, both children of this Mission")
Jose Romaldo	Feb. 11, 1814	4 days	male		Juan Nepomusceno Villareal and Maria de la Luz Garcia	Antonio Sefuentes and Maria Antonia Monedo	
Maria Rafaela	Feb. 17, 1814	? days	female	Karankawa/Cujan	Pendencio (Karankawa) and Rosa Maria (Cujan)	Dona Josefa Barerra	(Re: parents "both Christian children of this Mission")
Jose Leandro	Feb. 27, 1814	2 mos	male	Coco/Pamaque	Felisiano (Coco) and Manuela (Pamaque)	Bartolo Saez and Isabel Maldonada	(Re: parents "both children of this Mission")
Jose Eulogio	Mar. 12, 1814	2 days	male		Joaquin de Luna and Maria Juana Garcia	Don Jose Antonio de la Garza and Dona Candelaria de Leon	
Jose	Mar. 19, 1814	11 days	male	Karankawa/Cujan	Jose Maria de Pilar (Karankawa) and Maria Concepcion (Cujan)	Antonio Barques and Mariana de la Garza	(Re: parents "children of this Mission")
Maria Felipa	May 4, 1814	4 days	female		Salvador Basan and Maria Visenta Chabes	Faustino Cortes and Anna Maria Rodriguez	
Maria Manuela	June 18, 1814[11]	4 days	female		Gregorio Garcia and Maria de los Reyes Mireles	Santiago Basalduo and Maria Rodrigues	
Jose Paulo	July 6, 1814	1 mo	male	Cujan/Karankawa	Jose Miguel (Cujan) and Maria Bernarda (Karankawa)	Leandro --?---- and Maria Tomasa del Refugio Martinez	
Maria Paula del Refugio	July 12, 1814	3 days	female		Geronimo Huizar and Maria Eulogia Morin	Ancelmo de la Garza and Joachima de los Saez	
Jose Maciano	July 26, 1814	1 mo	male	Cujan	Pedro Alexandrino and Maria de Loreto (both Cujan)	Antonio Basquez and (H?)aciana de la Garza	(Re: parents "children of the Mission")
Clara Maria	Aug. 14, 1814	3 days	female		Benito Villarreal and Maria Antonia Saez	Pedro Texeda and Catarina Huizar	

Baptismal Records for Mission Refugio 1807 to 1828

Name	Date	Age	Sex	Ethnicity	Parents	Sponsors	Notes
Jose Lorenzo de la Asuncion	Aug. 10, 1814	3 days	male		Juan Pabedano and Maria Salome Gonzales	Manuel Bererra and Juana Cadena	
Maria Silvestre	Jan. 21, 1815	22 days	female	Cujan/Karankawa	Jose Guadalupe (Cujan) and Maria del Refugio (Karankawa)	Martin Gomez and Trinidad Chirino	
Maria Dorotea	Feb. 7, 1815	1 day	female		Ygnacio de Luna and ---?---	Leonarida Montalbo	
Francisco de Jesus	Apr. 2, 1815	6 mos	male	Guapit/Karankawa	Francisco (Guapit) and Maria (Karankawa)	Maria Candelaria de Leon	
Jose Trinidad	May 22, 1815	3 days	male		Henry Gonzales and Nicolosa Povedano	Casimiro Morin and Michaela Orrutia	
Jose Gabriel	June 6, 1815	6 mos	male	Malaquit/Pajalachi	Tomas (Maliquit) and Fransisca (Pajalachi)	Jose Lopez and Maria de Jesus Varera	
Jose Ygnacio	June 6, 1815	7 mos	male	Karankawa/Cujan	Manuel (Karankawa) and Juana (Cujan)	Geronimo Huizar and Eulogia Morin	
Jose Maria	June 6, 1815	5 mos	male	Karankawa	Juan Diego and Maria del Rosario (pagan Karankawa)	Geronimo Huizar and Eulogia Morin	
Jose Buenaventura	July 21, 1815[12]	1 day	male		Pedro Huizar and Ysidora Lopes	Leandro Sanchez and Maria Thomosa Martinez	
Jose del Refugio	July 28, 1815	?	male	Karankawa	Mariadel Rosario "Guilota" (Karankawa) and a pagan woman (Karankawa)	Lasaro Recendes and daughter Refugia Recendes	(Re: individual (infant) baptized in "immediate danger of death")
Maria Francisca Augustina	Aug. 28, 1815	1 day	female		Don Martin de Leon and Dona Patricia de la Garza	Dona Gertrudia Orintia	
Augustin	Aug. 28, 1815	2 days	male		Pedro Espinosa and Maria de Jesus Mexias	Jose Dolores Benites and Maria L(o?)uisa Benites	
Francisco Xavier	Dec. 3, 1815[13]	3 days	male		Casimiro Morin and Michaela Orruetia	Manuel Buerra	
Jose Manuel	Jan. 16, 1816[14]	11 days	male		Jose Marie de los Santos and Maria Calebral Cortez	Geronimo Huizar	
Juan Jose (Huizar)	Mar 31, 1816	2 days	male		Jose Geronimo Huizar and Maria Eulogia Morin	Manuel Becerra and Maria Niana Cadena	
Jose Gabriel	Apr. 1, 1816	5 mos	male	Karankawa/Pamaque	Manuel (Karankawa) and Refugia (Pamaque)	Juan Pavedano and Maria Salome Gonzales	(Re: parents "children of this Mission")
Jose Ancelmo	April 20, 1816	6 mos	male	Toboso /Karankawa	Jose Maria (Toboso) and Maria Petra (Karankawa)	Francisco Chirino and Maria Ynes Rangel	(Re: parents "children of this Mission")
Maria Ynes	Apr. 20, 1816	3 yrs	female	Copan/Karankawa	Christostino (Copan) and Refugia (Karankawa)	L(o?)uis Chirino and Catarina Huizar	(Re: parents "children of this Mission")
Jose Maria	May 4, 1816	3 mos	male	Pamaque	Maria Barbara, widow (Pamaque)	Jose Maria de la Garza and Maria Thomasa Gonzales	
Jose de la Cruz	May 4, 1816	4 mos	male	Pamaque/Copan	Juan Nicolas (Pamaque) and Maria Dolores (Copan)	Jose Maria de la Garza and Maria Thomasa Gonzales	
Maria Josefa	May 6, 1816	2 yrs	female	Guapit/Karankawa	Jose de Jesus (Gaupit) and Gertrudis (Karankawa)	Mariana de la Garza	

Baptismal Records for Mission Refugio 1807 to 1828

Name	Date	Age	Sex	Ethnicity	Parents	Sponsors	Notes
Maria Manuela	May 6, 1816	6 mos	female	Guapit/Karankawa	Jose de Jesus (Gaupit) and Gertrudis (Karankawa)	Catharina Huizar	
Maria Pascuala	May 17, 1816	3 mos	female	Karankawa/Cujan	Feliciano (Karankawa) and Manuela (Cujan)	Maria de Jesus Mexias	(Re: parents "children of this Mission")
Maria Gertrudis	May 26, 1816[15]	3 days	female		Luis Chirino and Maria Luisa Benites	Juan Povedano and Maria Nicolosa Povedano	
Jose Leon	June 27, 1816	1 yr	male	Karankawa	Jose de Jesus and Maria Assumpcion (both Karankawa)	Lorenso Zepeda and Maria Josefa Zepeda	
Maria Clara	Aug. 12, 1816	15 days	female	Karankawa	Paulin and Maria Carnel (both Karankawa)	Manuel Gonzales and Maria Jaimo	
Maria Rosa	Aug. 30, 1816[16]	1 yr	female	Karankawa	Mother "La Cojita" (Karankawa), father unknown	Teresa Sarate	
Jose Maria	Sept. 11, 1816[17]	5 days	male		Juan Povedano and Maria Salome Gonzales	Faustino Cortes and Maria Antonia Laso	
Maria Petra	Nov. 26, 1816	9 days	female	Karankawa	Francisco Xavier and Maria del Loreta (both Karankawa)	Nicolosa Povedano	(Re: parents, "belonging to Mission Espíritu Santo")
Jose Ambrocio	Dec. 7, 1816	1 mo	male	Karankawa/Cujan	Jose Maria del Pilar (Karankawa) and Concepcion (Cujan)	Antonio Vasquez and Mariana de la Garza	
Jose Jacobo	Dec. 30, 1816[18]	5 days	female	Cujan/Karankawa	Jose Guadalupe (Cujan) and Maria del Refugio (Karankawa)	Manuel Becerra and Juana Maria Cadena	(Re: individual, "male not female?")
Maria Josefa	Jan. 23, 1817	4 days	female	Iaraname	Masario and Maria Eduarda (both Iaraname)	Maria Feliciano Ybaro and Marcelino Marin	(Re: parents both "children of the Mission Espíritu Santo")
Jose Valentin	Feb. 15, 1817[19]	1 day	male		Trinidad Ramon and Thomas (Tomasa?) Vasques	Henrique Gonzales and Maria Concepcion Gonzales	(Re: father "a soldier of La Bahía")
Jose Marcelo de Jesus	Feb. 22, 1817	1 mo	male	Karankawa/Cujan	Prudencio (Karankawa) and Rosa(e?) Maria (Cujan)	Marcelino Morin and Feliciano Ybarro	
Maria Asencion	May 22, 1817	4 days	female		Henrique Gonzales and Maria Nicolosa Povedano	Geronimo Huizar and Eulogia Morin	
Maria del Refugio	Jun. 26, 1817	5 mos	female	Copan/Karankawa	Pedro Antonio (Copan) and Feliciana (Karankawa)	Teresa Sarato	
Juan Ban(u?)tista	July 1, 1817	3 mos	male	Karankawa	Juan Diego and Maria del Rosario (both pagan Karankawa)	Maria Nicolosa Povedano	
Jose Francisco	Aug. 29, 1817[20]	3 days	male		Deciderio Avila and Maria Ygnacia Garcia	Battasar de Algeria and Josefa Garcia	
Jose Augustin	Aug. 31, 1817	4 days	male	(Native American?)	Hermonogildo and Margarita	Henrique Gonzales and Maria Concepcion Gonzales	(Re: parents "children of the Mission of Espíritu Santo")
Maria del Rosario	Oct. 8, 1817	4 days	female		Juan Pob(v?)edano and Salome Gonzales	Manuel Beserra	
Jose Francisco del Refugio	Oct. 31, 1817	5-6 mos	male	Native American	Manuel Quenon and Juana	Mariana de la Garza	(Re: parents, "Indian children of this Mission")
Jose Maria de los Santos	Nov. 11, 1817	1 yr	male	Cujan	Pedro Alexandrino and Maria Loreta (both Cujan)	Encarnacion Ortis	(Re: parents, "Indians of this Mission")
Jose Teodoro	Nov. 13, 1817	6 days	male		Jose Antonio Arango and Maria Josefa Urrutia	Manuel Beserra and Jo(u?)ana Cadena	(Re: parents, "citizens of this Mission")

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Baptismal Records for Mission Refugio 1807 to 1828

Name	Date	Age	Sex	Ethnicity	Parents	Sponsors	Notes
Maria del Refugio	Dec. 1, 1817[21]	aged	female	Lipan			(Re: individual "in extreme danger of death")
Maria Tomasa	Jan. 3, 1818[22]	6 days	female		Leandro Sanchez and Maria Tomasa Martinez	Maria Tomasa Cordaba	
Maria Corpia	Jan. 29, 1818	4 days	female		Miguel Venites and Maria Rita Frejo	Juan Jose de la Crus(z?) and Maria Josefa de la Crus(z?)	
Maria Louisa	Feb. 3, 1818	4 days	female		Maria Mireles (mother), no father given	Marolino Morin and Maria Micheal --?---	
Pedro Jose	Feb. 26, 1818	5 days	male		Geronimo Huizar and Maria Eulogia Morin	Enrique Gonzales and Maria de la Concepcion Gonzales	(Re: individual "baptized on the same day of birth at home because of necessity"), (Re: parents "both Spanish citizens of this Mission")
Jose Angel	Mar. 4, 1818	11 days	male	Native American	Pedro and Juana	Manuel Beserra and Juan(a?) Cadena	(Re: parents "Indians of this Mission")
Jose Fan(u?)stino	Mar. 4, 1818	18 days	male	Native American	Manuel and Maria del Refugio	Leandro Sanchez and Maria Tomasa Cambero	(Re: parents "children of this Mission")
Jose Nicolas	Mar. 5, 1818	3 mos	male	Native American	Jesus and Maria de la Ascension	Ricardo Lopez and Maria del Refugio Lopes(z?)	(Re: individual "infant born in the forest"), (Re: parents "children of this mission")
Juan Jose	Mar. 5, 1818	3 mos	male	Native American?	Ana Maria (mother)	Enrique Gonzales and Maria Nicolosa Povedano	(Re: mother "child of this Mission")
Maria Gregoria	May 12, 1818	2 days	female		Cirildo Treb(v?)ino and Maria Tomasa Cordova	Casimiro Morin and Maria Michaela Orrutia	
Maria An---?--	July 25, 1818	infant	female	Toboso /Karankawa	Jose Morin (Toboso) and Maria Petra (Karankawa)	Casimiro Morin and Maria Michaela Orrutia	(Re: parents "children of this Mission")
Jose de Jesus	Aug. 8, 1818	3 days	male		Deciderio Dabila and Maria Ygnacia Garcia	B(?)rtolo Isaquerre and Maria Antonio(a?) Martinez	(Re: parents "inhabitants of this Mission")
Jose Gorgonio	Sept. 15, 1818	8 days	male		Ricardo Lopes and Jacinta (de Nava?)	Mariana Morin	
Jose Francisco	Oct. 5, 1818	2 days	male		Juan Povedano and Maria Salome Gonzales	Casimiro Morin and Michaela Orutia	
Jose Francisco	Oct . 5, 1818	2 days	male		Jose Maria de los Santos and Maria Eulogia Morin		(Re: duplication "on the same day, the fifth of October, year…")
Maria del Carmen	Oct. 6, 1818	1 mo	female	Native American	Chrisostimo and Maria del Carmen	Juan Jose Garcia and Maria de Jesus Mexias	(Re: parents "children of this mission")
Maria Ana	Dec. 8, 1818	1 mo	female	Karankawa?	Maria del Rosario (listed prev. as pagan Karankawa)	Francisco Trevino and Isabel Bererra	(Re: mother "child of this Mission")
Mariano	Dec. 8, 1818	1 day	male		Jose Chirino and Maria Gertrudis	Miguel Benites and Maria Rita Frejo	(Re: parents "children of this Mission")
Maria Timotea	Dec. 28, 1818	6 days	female		Francisco Lerma and Maria del Rosario	Miguel Benites and Maria Rita Frejo	
Maria Juana	Dec. 28, 1818	2 days	female		Blas Frejo and Josefa de la Garza	Maria Josefa Gonzales	(Re: parents "inhabitants of this Mission")
Maria Ygnes	Jan. 20, 1819	1 day	female		Juan de la Garza and Maria Estefena Lopes	Maria Feliciana Ybarbo	(Re: parents "inhabitants of this mission")
Maria Juana	Feb. 17, 1819	20 days	female	Malaquit/Pajalachi	Tomas (Malaquit) and Francisca (Pajalachi)	Jose Antonio Rodriguez and Maria del Refugio Alvarrado	(Re: parents "children of this Mission")

Baptismal Records for Mission Refugio 1807 to 1828

Name	Date	Age	Sex	Ethnicity	Parents	Sponsors	Notes
Maria del Refugio	Mar. 11, 1819	5 days	female	Cujan	Pedro and Maria Loreto (listed prev. as both Cujan)	Ricardo Lopez and Maria Jacinta Nava	(Re: parents "children of this mission")
Jose Luis	Aug. 27, 1819	3 days	male	Cujan	Guadalupe and Maria Refugio (both Cujan)	Dona Maria Jesus de Leon	(Re: parents "children of this Mission")
Maria Gertrudis	Sept. 30, 1819	6 mos	female	Native American	Pedro and Juana	Manuel Bererra and Juana Cadenas	(Re: parents "children of this Mission")
Jose Miguel	Oct. 20, 1819	2 mos	male	Karankawa	Jose Maria del Pilar (listed prev. with Concepcion as Karankawa) and Gertrudis (listed prev. with Jose de Jesus as Karankawa)	Jose Antonio Aranso and Josefa Orratin(?)	(Re: parents "children of this Mission")
Rafael	Oct. 20, 1819	?	male		Pedro Najar and Jesusa Alexia	Antonio Rodriguez and Maria Alvarado	(Re: parents "inhabitants of this Mission")
Ladislao	Oct. 27, 1819	6 days	male	Cujan/Karankawa	Miguel (Cujan) and Bernarda (Karankawa)	Mariana Barerra	(Re: parents "children of this Mission")
Maria Andrea	Nov. 30, 1819	20 days	female	Native American	Manuel ---?-- and Juana	Concepcion Laso	(Re: parents "children of this Mission")
Maria Felipa	Feb. 10, 1820	5 days	female		Jose Antonio Aronso and Maria Josefa Orrutia	Don Jose Guadalupe de los Santos and Micaela Orrutia	(Re: parents "inhabitants of this Mission")
Jose Francisco	July 18, 1820	9 days	male	Cujan	Prudencio and Maria Rosa (both Cujan)	Manuel Barerra and Juana Cadena	
Jose Martin	Aug. 8, 1820	4 days	male	Native American	Jesus and Ascension	Pedro Flores and Maria de la Ascension Bontan(?)	(Re: parents "children of this Mission")
Maria Clara	Aug. 12, 1820	3 days	female		Santiago Dona and Maria Francisca Florez	Manuel Gomez and Maria Catarina Huizar	(Re: parents "inhabitants of this Mission")
Jose Miguel	Sept. 30, 1820	day of birth	male	Karankawa	Parents (pagan Karankawa)	Salome Gonzales	(Re: sponsor "inhabitant of this Mission")
Maria del Refugio	Sept. 30, 1820[23]	about 22 yrs	female	Karankawa			(Re: individual "In … danger of death")
Crisanto	Oct. 25, 1820	3 days	male		Cirilo Trevino and Maria Francisca Cardova	Casamiro Morin and M--?-- de la Orrutia	(Re: parents "inhabitants of this Mission")
Maria Francisca	Mar. 10, 1821	8 days	female	Karankawa	Juan de Dios (Christian Karankawa), no mother given		(Re: individual "baptized in the field because of necessity")
Maria del Refugio	Mar. 10, 1821	8 days	female	Karankawa	Jesus and Maria Gertrudis (both Karankawa)		(Re: individual "baptized in the field because of necessity"), (Re: parents "children of this Mission")
Francisco	Mar. 29, 1821	4 days	male	Karankawa	Mother Jesusa (Karankawa), no father given	Dona Gertrudis Orrutia	(Re: Mother "child of this Mission")
Maria del Patricinio Domiga	June 29, 1822	8 days	female		Jose Antonio Aranso and Maria Josefa Orrutia	Marcelino Morin and Concepcion Gonzales	(Re: individuals "all inhabitants of this Mission")
Maria del Refugio	Oct. 30, 1822	5 days	female		Pedro Hasar(?) and Maria de Jesus Mexia	Casimiro Morin and Maria Miceala Orrutia	(Re: parents "inhabitants of this Mission")
Maria Antonia	Jan. 12, 1823	2 mos	female	Karankawa	Mother Jesusa (Karankawa), no father given	Feliz Mendoza and Maria Dolores Martinez	(Re: individual "living on(in?) the field")
Maria del Refugio	Jan. 12, 1823	2 mos	female	Native American		Sinforoza Liendo (soldier) and Maria Antonia de los Santos	(Re: individual "born on the field"), (Re: Mother "established herself nearby before giving birth")

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Baptismal Records for Mission Refugio 1807 to 1828

Name	Date	Age	Sex	Ethnicity	Parents	Sponsors	Notes
Jose Antonio Mario	Jan. 12, 1823	2 mos	male	Native American	Manual Delgadito and Maria Refugio	Jose Antonio Aranso and Maria Josefa Orrutia	(Re: individual "both(?) on the field"), (Re: parents "children of this Mission"), (Re: sponsors "inhabitants of this Mission")
(Jose?) Maria del Refugio	May 17, 1823	4 mos	male	Native American	Prudencio and Rosa Maria	Jose Antonio Aranso and Maria Josefa Orrutia	(Re: parents "children of this Mission")
Jose Maria de los Dolores	July 9, 1824	1 yr	male	Cujan	Mijuel Senior (grande) and Bernarda (both Cujan)	Dona Mariana Aldrete	(Re: location "in the parish of La Bahía")
Jose de Jesus	Sept. 12, 1824	3 yrs	male	Coco	Parents (pagans of the Coco nation)	Ana Maria Garza	(Re: location "signed in La Bahía")
Bernardino	Sept. 28, 1824	2 yrs	male	Karankawa	mother Maria Petra (Karankawa), no father given	Anselmo Cruz and Maria Gertrudis Castro	(Re: location "signed in La Bahía")
Maria del Refugio del Carmen	Aug. 28, 1825	1 yr	male	Karankawa/Cujan	Feliciano (Karankawa) and Manuela (Cujan)	Maria del Rosario Hernandes	(Re: parents "children of this Mission"), (Re: location "signed in La Bahía")
Jose Francisco	Aug. 30, 1825	2 yrs	male	Cujan	Pedro Alejandrino and Maria Loreto (both Cujan)	Dona Gertrudis Barrera	(Re: parents "children of this Mission"), (Re: location "signed in La Bahía")
Juan Jose de San Miguel	Sept. 28, 1825	8 days	male	Karankawa	Maria Antonia (Karankawa), no father given	Manuel Hernandes and Eulogia Hernandes	(Re: location "signed in La Bahía")
Hilario	Oct. 21, 1825	1 mo	male	Cujan	Francisco and Maria (both Cujan)	Candolaria de Leon	(Re: location "signed in La Bahía")
Juan Jose	Oct. 24, 1825	3 yrs	male	Karankawa	Pedro and Juana (both Karankawa)	Dona Maria de Jesus Ybarbo	(Re: parents "children of the Mission"), (Re: location "signed in La Bahía")
Crisante(o?)	Oct 24, 1825	1 yr	male	Karankawa	Pedro and Juana (both Karankawa)	Dona Maria de Jesus Ybarbo	(Re: individual "on the field"), (Re: location "signed in La Bahía")
Maria del Refugio	Oct. 24, 1825	15 days	female	Cujan	Juana (Cujan), no father given	Dona Josefa Galan	(Re: location "signed in La Bahía")
Maria Antonia	Nov. 20, 1825	1 yr	female	Cujan	Guadalupe and Maria del Refugio (both Cujan)	Maria de Jesus Biojas	(Re: individual "baptized in the field because of necessity"), (Re: location "signed in La Bahía")
Maria Antonia de Jesus	June 24, 1827	3 mos	female	Cujan/Karankawa	Jesus (Cujan) and Maria Gertrudis (Karankawa)	Carlos de la Garza and Ana Maria de la Garza	(Re: parents "children of this Mission")
Jose Luis	July 27, 1827	17 mos	male	Cujan	Ana Maria (Cujan), no father given	Dona Mariana Aldrete	
Maria Josefa	July 27, 1827	4 yrs	female	Cujan/Karankawa	Jesus (Cujan) and Maria Gertrudis (Karankawa)	Romeraldo Asdo (of the 12th Batallion[*sic*]) and Maria Inocencia Morales	(Re: individual "baptized… while on the field")
Maria Pantaleone	July 27, 1827	15 days	female	Cujan/Karankawa	Pedro (Cujan) and Juana (Karankawa)	Maria de Jesus Riojas	
Maria Dolores	July 27, 1827	3 yrs	female	Cujan	Ana Maria (Cujan), no father given	Jose Lazascano de la Trinidad Alanzo (permanent bugler of the 12th Batallion[*sic*]) and Maria de la Luz Chavro	(Re: individual "baptized because of necessity on the field")
Juan Jose	July 27, 1827	9 mos	male	Native American	Manual Delgadito and Maria del Refugio	Dona Josefa Galan	(Re: individual "baptized because of necessity… by Don Juan Anaya"), (Re: parents "children of this Mission")
Maria Guadalupe	July 27, 1827	4 mos	male	Cujan/Karankawa	Jose Maria (Cujan) and Maria Petra (Karankawa)	Carried to the church by Maria Cy(?)riana Hillegas	(Re: individual "baptized because of necessity… by Don Narcisco Lopez")
Rafael	Jan. 3, 1828	3 yrs	male	Karankawa	Maria del Rosario (Karankawa), no father given	Rafael Manchola and Dona Jesusa de Leon	

Baptismal Records for Mission Refugio 1807 to 1828

Name	Date	Age	Sex	Ethnicity	Parents	Sponsors	Notes
Antonio	Jan. 3, 1828	8 days	male	Karankawa	Hilario (Karankawa), no father given	Dona Candelaria de Leon	
Nicaola	Jan. 3, 1827(8)	6 mos	female	Cujan	Leocadia (Cujan), no father given	Manuela Carabajal	
Jose Francisco	Jan. 3, 1828	1 yr	male	Cujan	Pedro Alexandrino and Maria de Loreto (both Cujan)	Dona Gertrudis Barrera	(Re: individual "child born on the field"), (Re: parents "children of the Mission")
Jose Maria	Feb. 21, 1828	1 yr	male	Coco	Parents (pagans of the Coco nation)	Ramon Munes and Maria Isabel de Abrego	(Re: parents "already deceased")

Note: [1] Buried Feb. 24, 1808. [2] Buried Feb. 20, 1812. [3] Buried Mar. 22, 1812. [4] Buried Jun 23, 1812. [5] Buried May 1, 1813.
[6] Buried Sept. 15, 1813. [7] Buried Nov. 11, 1813. [8] Buried Jan. 28, 1814. [9] Buried Nov. 19, 1813. [10] Buried Oct. 22, 1814.
[11] Buried June 21, 1814. [12] Buried Nov. 11, 1815. [13] Buried Dec. 12, 1815. [14] Buried Jan. 18, 1816. [15] Buried May 30, 1816.
[16] Buried Sept. 3, 1816. [17] Buried Sept. 12, 1816. [18] Buried Jan. 1, 1817. [19] Buried Feb. 20, 1817. [20] Buried Sept. 13, 1817.
[21] Buried Dec. 2, 1817. [22] Buried Jan. 4, 1818. [23] Buried Sept. 13, 1820 (burial date discrepancy noted).

Appendix B

Mission Refugio Burial Records

Section 2

Burial Records of Mission Refugio, 1807 to 1825

Note: Mission Refugio Burials, 1807 to 1825, located on Volume I - CD as 00B2-Ref App B2a.pdf.

Burial Reference

1. Catholic Archives of Texas. William H. Oberste Papers [1774] 1938–1982. The papers of Monsignor oberste (1899–1983), author of works on Irish colonists in Texas; parish priest at Our Lady of Refuge, Refugio, from 1933 to 1969. Our Lady of Refuge Church, Refugio, Texas. Burial Records, 1807–1825. (Castañeda Transcripts - Bexar Archives) [Box 5]. Used with permission.

Burial Records for Mission Refugio 1807 to 1825

Name	Date	Ethnic Affiliation	Sex	Age	Relatives	Cause of Death	Notes
Ana Maria Leonarda	May 16, 1807		male	child	parents: Ricardo Lopez and Jacima (Jacinta) de Nava		parents: members of the mission
Jose Guadalupe Morin	July 19, 1807		male	11 yrs	parents: Jose Maria Morin (deceased) & Maria Feliciana Ybarro	fever	parents: inhabitants of Nacodoches
Margarita Maria Dolores	Feb. 8, 1807	Copan/Karankawa	female	9 mo.	parents: Pedro Antonio & La Chata (pagan woman and daughter of Chief Fresada Pinta)		
Maria Yrinoa	Feb. 24, 1808	Karankawa/Pihuique	female	child	parents: Manual (Karankawan) & Maria del Refugio (Pihuique)		
Maria Micaela Carrasco	Mar. 28, 1808		female	70+yrs	widow of Sebastian Maldonado	old age	husband: inhabitant of the mission
Maria Manuela	June 22, 1808		female	child	parents: Faustino Salamar and Margarita Campa		parents: servants of the mission
Jose Maria Carrillo	Aug. 6, 1808		male	28 yrs	parents: Juan Antonio Carrillo and Maria Rita del Castillo of Escandon	very maligant fever	a soldier
Cecilio Antonio Lopez	Dec. 1, 1808		male	9 days	parents: Ricardo Lopez and Maria Jacinta de Nava		parents: servants of the mission
Gil	Feb. 21, 1809	Copan	male	70 yrs	wife: Maria Dolores (also Copan)		parents: children of the mission
Pablo (Cabo) Reges	Mar. 4, 1809	Karankawa	male	20 yrs	parents: Manuel and Mioaela (deceased)		
Jesus (Manoo)	Apr. 28, 1809	Copan	male	50 yrs	widower of Gertrudis (Malaquiit)		
Justo Rufino Zapata/ Justo Rufino de la Ira Trinidad	Oct. 1, 1809		male	23 yrs	parents: inhabitants of Saltillo	malignant fever	
Josefa Maria	Oct. 28, 1809	Karankawa	female	40 yrs	woman of General Diego of the Karankawa Nation		
Maria Antonia Trevino	Nov. 1, 1809		female	50 yrs	husband: Xavier Vasques		inhabitants of La Bahia
Maria del Refugio (Coue-Vec or Cabello Puesto meaning combed hair)	Nov. 4, 1809	Karankawa	female	15 yrs	parents: pagan parents of the Karankawa Nation		
Jose Lucas	Jan. 12, 1810		male	3 mo.	parents: Manoique Gonzales and Maria Nicolosa Povedano		parents: members (agragados) of this Mission
Mariana Patricia	Apr. 3, 1810	Karankawa/Toboso	female	22 days	parents: Prudencio (Karankawa) and Rosa Maria (Toboso)		parents: children of the Mission
Jose Simon	May 12, 1810	Karankawa	male	14 days	parents: Jose de Jesus and Maria Assumpcion (both Karankawa)		parents: children of the Mission
Vicente Antonio	May 28, 1810	Karankawa	male	40 yrs	wife: Maria Gregaria (Karankawa)		
Serafina Trexo	July 17, 1810		female	38 yrs	husband: Pedro de Luna		servants of the Mission
Jose de los Santos	July 25, 1810		male	infant	parents: Pedro de Luna and Serafina Trexo (deceased - see above)		parents: servants of the mission
Jose Fransisco (Cono)	Aug. 22, 1810	Karankawa	male	26 yrs	parents: pagan (deceased)		
Infant	Nov. 16, 1810		female	newborn	parents: Ygnacio Olivares and Maria Encarnacion Ortis		
Maria Petra	Dec. 9 , 1810	Karankawa	female	newborn	parents: pagan (Karankawa)		
Francisco Xavier	Dec. 11, 1810	Karankawa	male	newborn	parents: pagan (Karankawa)		
Silvestre	Jan. 26, 1811	Cujan	male	70 yrs	widower		
Joana Maria	Jan. 28, 1811	Karankawa	female	25 yrs	"woman of Juan, a soldier, and a pagan"		
Juan Chirino	July 6, 1811		male	23 yrs	parents: Jose Chirino and Maria Josefa Cabrera - deceased		
Joachin	Aug. 30, 1811	Toboso	male	28 yrs	widower of Josefa of the Phenque nation - deceased		
Jose Casimiro Gonzales	Sept. 8, 1811		male	61 yrs	wife: Leonarda Montalvo	apoplexy	
Juan Alivares	Sept. 18, 1811		male	40 yrs	wife: Vicente Martinez		
Maria Josefa	Oct. 26, 1811		female		there is a Maria Josefa Gomez (11 yrs old) on 1810 census - parents: Martin Gomez and Maria Trinidad		
Manuel Delgado	Nov. 24, 1811	Cujan	male	74 yrs	wife: Lula (also Cujan)		given private burial because of fever
Maria Agapita	Mar. 22, 1811		female	6 days	parents: Ricardo Lopez and Jacinta de Nava		parents: members of the Mission
Jose de los Santos	Jan 23, 1812		male	1 yr	parents: Jose Luciano de los Santos (deceased) and Maria Francisca Gonzales		
Maria Gregoria	Feb. 30(?), 1812	Karankawa/Cujan	female	14 mo	parents: Jose Eliseo (Karankawa) and Maria (Cujan)		
Maria Antonia	June 23, 1812	Cujan	female	10 days	parents: Pedro Ale--ndrino and Maria del Loreto (both of Cujan Nation)		parents: children of the Mission
Maria Luisa	Oct. 19, 1812	Karankawa	female	9 days	parents: Antonio and Maria del Rosario (both of Karankawa Nation)		parents: children of the Mission
Maria Caterina Falcon	Dec. 10, 1812		female	27 yrs	husband: Nicoloso Carabajal		
Jose Maria (Jota)	Dec. 17, 1812	Cujan	male	35 yrs	wife: Maria del Rosario (Karankawa)		
Maria Teresa	May 1, 1813	Malaquiit/Pahalachi	female	5.5 mo	parents: Tomas (Malaquiit) and Franciana (Pahalachi)		children of the Mission
Jose Antonio Garcia	Aug. 5, 1813		male	3 mo	parents: Faustino Garcia and Margarita Basques(z)?		
Coyotano Flores Falcon	Aug. 25, 1813		male	adult		(?)swelling	died about 1 league form Mission
Maria del Carmel	Sept. 15, 1813	Karankawa	female	1 mo	parents: Jesus and Asuncion (both Karankawa)		
Maria Ramona	Oct. 3, 1813		female	1 mo	parents: Enotaquio Cantu and Maria Antonia Garcia		
Jose Antonio	Oct. 19, 1813	(Native American)	male	4 days	parents: both pagan		
Jose Manuel	Nov. 11, 1813		male	17 days	parents: Vicente Ramos and Maria de Jesus Cartes		
Jose Carlos	Nov. 19, 1813	(Native American)	male	20 days	parents: both pagan		
Maria del Refugio	Jan. 28, 1814	Karankawa	female	3 yrs	parents: pagan of Karankawa Nation		
Benito Bela	Apr. 26, 1814	(Native American?)	male	infant	parents: Pio Quinto Bela and Maria Josefa Quintanilla		brought from the Nueces
Maria Manuella	June 21, 1814		female	6 days	parents: Jose Gregorio Garcia and Maria de los Reyes Mireles		
Pio Bela	July 12, 1814	(Native American?)	male	3 days	parents: Pio Quinto Bela and Maria Josefa de la Garza		father's name same as Benito Bela, different mother
Maria Margarita Basquez	July 25, 1814		female	25	husband: Faustino Garcia		3 mo. old son (Jose Antonio) died Aug. 15, 1813
Carmelo de Laso	Aug. 2, 1814		male	24 yrs	wife: Claudia Liendro	killed by Barbarian Indians	
Vicente	Aug. 2, 1814	Karankawa	male	20 yrs	parents: pagan Karankawa	killed by Barbarian Indians near Mission	
Jose Agapito de la Abra	Aug. 3, 1814		male	1 yr	parents: Perfecto de la Abra and Maria Ynes Moreno	killed by Barbarian Indians on the Nueces	
Francisco de la Sma. Trinidad (Luna)	Sept. 7, 1814	Karankawa	male	adult	wife: Anna Maria Barbara (Pamaque)	killed by Barbarian Indians	
Antonio Sefuentes	Sept. 8, 1814		male	adult	wife: Maria Anna Mireles	killed by Barbarian Indians	

Catholic Archives of Texas. William H. Oberste Papers [1774] 1938–1982. Burial Records, 1807–1825. (Castañeda Transcripts - Bexar Archives) [Box 5].

Burial Records for Mission Refugio 1807 to 1825

Name	Date	Ethnic Affiliation	Sex	Age	Relatives	Cause of Death	Notes
Clemente de la Carma known as Felipe Torres	Sept. 23, 1814		male	adult		killed by Barbarians	a servant
Manuel Flores	Oct. 8, 1814		male	49 yrs	wife: Maria Concepcion Lazo	Yoroperia	
Maria Candelaria	Oct. 22, 1814	Guapit/Karankawa	female		parents: Francisco (Guapit) and Maria (Karankawa)		parents: children of the Mission
Maria Sarape Lopez	Oct 30, 1814		female		wife of Cristobal Castillo	killed on the ranch of the Diermero (Diezmero – tithesman) on the banks of the Nueces by Barbarian Indians	*"huesos"* bones buried
Gartrudis del Castillo	Oct 30, 1814		female		parents: Cristobal Castillo and Maria Yllaria del Castillo	killed on the ranch of the Diezmero	
Maria Yllaria del Castillo	Oct 30, 1814		female		parents: Cristobal Castillo and Maria Yllaria del Castillo	killed on the ranch of the Diezmero	
Julian (Julinos) Alvarez	Oct 30, 1814		male		husband of Juana Alvarez	killed on the ranch of the Diezmero	
Juana Alvarez	Oct 30, 1814		female		wife of Julian Alvarez	killed on the ranch of the Diezmero	
Simon Barquez	Oct 30, 1814		male			killed on the ranch of the Diezmero	
Rafael Olivares	Oct 30, 1814		male			killed on the ranch of the Diezmero	
Arellano	Oct 30, 1814		male			killed on the ranch of the Diezmero	
Gerarldo	Oct 30, 1814		male			killed on the ranch of the Diezmero	
Santiago Sanchez	Oct 30, 1814		male			killed on the ranch of the Diezmero	
Berna(n)cio Garcia	Oct 30, 1814		male			killed on the ranch of the Diezmero	
Morillo (a captive)	Oct 30, 1814		male			killed on the ranch of the Diezmero	
Nicolas Bocanegra	Oct 30, 1814		male			killed on the ranch of the Diezmero	
Jose Maria Oloya	Oct 30, 1814		female		father: Perfecto Oloya the shoemaker	killed on the ranch of the Diezmero	
Jose Eliseo	May 21, 1815	Karankawa	male	adult	wife: Maria (Karankawa)		
P.R. Fr. Juan Maria Sepulveda	June 28, 1815		male	34 yrs	Minister of the Mission of Espiritu Santo		buried in the Sanctuary of this Church
Maria Ysidra Lopez	July 21, 1815		female	adult	husband: Pedro Najar		
Victoriano Lambroras	July 28, 1815		male	adult	wife: Josefa Margarita	killed by Indians in the field	bones buried
Pedro Arrambido	Aug. 25, 1815		male	adult	wife: Petra Carter		
Diego Chirino	Oct. 9, 1815		male	adult	wife: Maria Luisa Rodriguez	killed in Oct. 1814 by Comanche Indians near the mission	bones buried with Tomas Torres
Tomas Torres	Oct. 9, 1815		male	adult		killed in Oct. 1814 by Comanche Indians near the mission	
Buenaventura Najar	Nov. 11, 1815		male	4 mo	father: Pedro de Najar, mother: Maria Ysidra Lopez (died July 21, 1815)		
Francisco Xavier Morin	Dec. 7, 1815		male	4 days	parents: Casimiro Morin and Michaela Orratia		
Jose Rafael de los Santos	Jan. 18, 1816		male	7 days	parents: Jose Maria de los Santos and Maria Cortes		
Martin Gomez	Jan. 19, 1816		male	40 yrs	wife: Trinidad Chirino		
Maria Gertrudis Chirino	May 30, 1816		female	8 days	parents: Luis Chirino and Maria Luian Benitas		
Pedro Espinosa	May 31, 1816		male	35 yrs	wife: Maria de Juana Maria	killed by Indians near the mission	
Jose Chirino	June 17, 1816		male	75 yrs	widower of Maria Josefa Cabrera		
Maria Barbara	July 12, 1816	Cujan/Karankawa	female	8 yrs	parents: Jose Miguel (Cujan) and Maria Bernarda (Karankawa)		
Maria Rosa	Sept. 3, 1816	Karankawa	female	1 yr	mother: pagan known as Cojita		
Jose Maria Povendano	Sept. 12, 1816		male	6 days	parents: Juan Povedano and Maria Salome Gonzales		inhabitants of the Mission
Pedro Texeda	Nov. 23, 1816		male	50 yrs	wife: Catarina Huizar		
Jose Jacobs(o?)	Jan. 1, 1817	Cujan/Karankawa	male	5 days	parents: Guadalupe (Cujan) and Maria del Refugio (Karankawa)		
Jose Melchor	Jan. 2, 1817	Karankawa/Pamaque	male	3 yrs	parents: Manuel (Karankawa) and Maria del Refugio (Pamaque)		
Gregoria	Jan. 6, 1817	Karankawa	female	40 yrs	widow by second marriage of Vicento Antonio (Cujan)		
Valentin Ramon	Feb. 20, 1817		male	6 days	parents: Trinidad Ramon (soldier at La Bahia) and Tomasa Vasquez		
Josefa Maria	Aug. 11, 1817	Lipan	female	adult			buried in cemetery (Campo Santo)
Jose Francisco Avila	Sept. 13, 1817		male	18 days	parents: Deciderio Avila and Maria Ygnacia Garcia		parents: inhabitants of the Mission
Maria del Rosa	Oct. 12, 1817		female	8 days	parents: Juan Povedano and Maria Salome Gonzales		parents: inhabitants of the Mission; lost 6 day old son Sept. 12, 1816
Antonio	Nov. 30, 1817	Karankawa	male	adult	buried in the cemetery of the Holy Kiss of Our Lady of Refugio		son of the Mission
Maria del Refugio	Dec. 2, 1817	Lipan	female	adult (old)			
Faustino Garcia	Dec. 31, 1817		male		wife: Maria Ra---gilda de la Carmen		caretaker of the tobacco warehouse (a Faustino Garcia is listed on 1810 census as Master Stone Mason, but has different wife)
Maria Tomasa	Jan. 4, 1818		female	6 days	parents: Edwardo Sanchez and Terresa Martinez		parents: inhabitants of the Mission
Desiderio Davila	Mar. 16, 1818		male	adult	wife: Maria Ygnacia Garcia	killed by hostile Indians	
Maria Lousia	Oct. 11, 1819		female	20 mo	mother: Maria Mireles	due to un dolar (a pain)	
Jose Luis	Oct. 25, 1819	Cujan/Karankawa	male	2 mo	parents: Guadalupe (Cujan) and Maria del Refugio (Karankawa)	fever	parents: children of the Mission
Rafael Najar	Oct. 28, 1819		male	9 days	parents: Pedro Najar and Maria de Jesus (Majions?)	swelling	
Teodoso Aranso	Mar. 10, 1820		male	2 yrs	parents: Jose Antonio Aranso and Maria Josefa Orrutia	fever	parents: inhabitants of the mission
Blas Trejo	June 22, 1820		male	adult	wife: Josefa de la Garza	killed by Barbarian Indians	a soldier
Jose Francisco	July 19, 1820	Karankawa/Cujan	male	10 days	parents: Prudencio (Karankawa) and Rosa Maria (Cujan)		
Maria Refugio	Aug. 15, 1820	Karankawa	female	80 yrs			

Catholic Archives of Texas. William H. Oberste Papers [1774] 1938–1982. Burial Records, 1807–1825. (Castañeda Transcripts - Bexar Archives) [Box 5].

Burial Records for Mission Refugio 1807 to 1825							
Name	**Date**	**Ethnic Affiliation**	**Sex**	**Age**	**Relatives**	**Cause of Death**	**Notes**
Ricardo Lopez	Sept. 3, 1820		male	40 yrs	wife: Jacinta Nava (based on 1810 census his age would have been 50)	hernia	buried in cemetery of this church
Maria del Refugio	Sept. 13, 1820	Karankawa	female	22 yrs	Burial record error states "he"		
Jose Marcelo	Sept. 16, 1820	Karankawa/Cujan	male	3 yrs	parents: Prudencio (Karankawa) and Rosa Maria (Cujan)	fever	parents: children of the Mission
Jose Miguel	Sept. 19, 1820	Karankawa	male	7 days	parents: pagan Karankawa		
Jose Ygnacio	Sept. 20, 1820	Karankawa/Cujan	male	5 yrs	parents: Manuel (Karankawa) and Juana (Cujan)	fever	buried in cemetery of this church
Maria Dionigia Bulogia	Nov. 15, 1820	Karankawa/Cujan	female	14 yrs	parents: Prudencio (Karankawa) and Rosa Maria (Cujan)	fever	parents: children of the Mission
Manuel Gomez	Feb. 25, 1821		male	30 yrs	wife: Catarina Huizar	died at the hands of Barbarian Indians	inhabitant of the Mission
Antonia Garcia	Mar. 23, 1821		female	71 yrs	widow of Jose de los Santos		on 1810 census
Francisco	Apr. 10, 1821	Karankawa	male	1 mo	mother: Maria de Jesus (Karankawa)		
Juan Maria	Sept. 24, 1821	Cujan	female	50 yrs		fever	
Bernardino	Sept. 29, 1825	Karankawa	male	3 yrs	mother: Maria Petra (Karankawa)	(born in the field)	buried in cemetery at La Bahia
Leandro	Oct. 8, 1825	Coco/Pamaque	male	11 yrs	parents: Feliciano (Coco) and Manuel (Pamaque)	fever	buried in cemetery at La Bahia
Maria del Refugio	Nov. 5, 1825	Cujan	female	27 days	mother: Juana (Cujan)		buried in cemetery at La Bahia

Catholic Archives of Texas. William H. Oberste Papers [1774] 1938–1982. Burial Records, 1807–1825. (Castañeda Transcripts - Bexar Archives) [Box 5].

Appendix B

Mission Refugio General Census

Section 3

General Census of Mission Refugio 1810

(under the jurisdiction of La Bahía del Espíritu Santo, January 4th, 1810).

Note: Mission Refugio Census, 1810, located on Volume I - CD as 00B3-Ref App B3a.pdf.

Census Reference

1. The University of Texas Institute of Texan Cultures at San Antonio, Residents of Texas, 1782–1836. San Antonio, TX: University of Texas Institute of Texan Cultures at San Antonio, 1984; distributed by Ericson Books. Used with permission.

1810 Census of Residents of Refugio Mission					
Name	**Date Arrived**	**Arrived From**	**Household Members**	**Occupation**	**Property**
Francisco Vasquez	Aug 3, 1807	Nueva Leon	Francisco Vasquez - native of La Punta de Lampazos - age 48 widower	farmer	2 horses
Martin Gomez		La Bahía	Martin Gomez - native of La Bahia - age 28 wife: Maria Trinidad Chirino - native of La Bahía - age 28 daughter: Maria Josefa - born in La Bahía - age 11 daughter: Maria Miguela - born La Bahía - age 8	farmer	3 yoke of oxen 4 horses, 3 cows
Jose Manuel Flores	July 4, 1789	La Bahía	Jose Manuel Flores - native of La Bahía - age 35 wife: Maria Josefa de la Garza - native of Bexar - age 25	herder	wooden house, 3 horses
Jose Antonio del la Garza	Oct. 2, 1794	Coahuila	Jose Antonio del la Garza - native of Rio Grande - age 58 wife: Barbara Texeda - native of La Bahía - age 23 son: Jesus de la Garza - native of La Bahía - age 5		wooden house, 2 horses
Jose Ricardo Lopes	Oct 8, 1784	San Luis Potosi	Jose Ricardo Lopes - native of Real de Cedros - age 40 wife: Jacinta Nava - native of Linares - age 28 daughter: Maria Isidora - native of La Bahía - age 14 daughter: Maria del Refugio - native of La Bahía - age 11 daughter: Mariana - native of La Bahía - age 3 (resides in La Bahía) servant: Jose Esmeregildo Ramirez - native of Queretaro - age 30 (arrived from Queretaro Aug. 8, 1807) servant: Jose Vicente Gonzalez - native of Camargo - age 25 (arrived from La Colonia Mar. 2, 1809)	farmer mule driver herder	wooden house, 2 yoke of oxen 4 horses
Juan Jose Chirino	Nov. 7, 1804	Bexar	Juan Jose Chirino - native of Bexar - age 52 widower son: Juan - native of Bexar - age 22	farmer farmer	wooden house, 5 horses, 2 mares
Jose Casimiro Gonzalez	Dec. 4, 1808	La Colonia	Jose Casimiro Gonzalez - native of Camargo - age 60 wife: Leonarda Montalvo - native of Camargo - age 40	herder	100 cows, 6 horses, 3 yoke of oxen
Ignacio Garcia	Oct. 8, 1789	Nuevo Leon	Ignacio Garcia - native of Monterrey - age 56 wife: Dolores Saenz - native of La Bahía - age 27	herder	wooden house, 60 cows, 5 yoke of oxen 9 horses

The University of Texas Institute of Texan Cultures at San Antonio, Residents of Texas 1782–1836. San Antonio, TX: University of Texas Institute of Texan Cultures at San Antonio, 1984; distributed by Ericson Books.

1810 Census of Residents of Refugio Mission					
Name	**Date Arrived**	**Arrived From**	**Household Members**	**Occupation**	**Property**
Maria Antonia Garcia		La Bahía	Maria Antonia Garcia - native of La Bahía - age 60 widow son: Jose Maria de los Santos - native of La Bahía - age 30 (later married Maria Cortez)	housewife farmer	wooden house, 2 yoke of oxen 3 horses
Juan Rosales	Aug. 8, 1802	Bordeaux	Juan Rosales - native of Bordeaux - age 35 wife: Maria Feliciana Ibarvo - native of Nacogdoches - age 34 daughter: Maria Elogia - native of Nacogdoches - age 15 son: Jose Casimiro - native of Nacogdoches - age 14 Marcelino - native of Nacogdoches - age 12 servant: Geronimo Huizar - native of Bexar - age 17 (arrived from Bexar Oct. 8, 1807) servant: Juan Povedano - native of Bexar - age 15 (arrived from Bexar Oct. 8, 1807) (later marries Nacia Salorno Gonzales) servant: Jose del Carmen Cruz - native of La Bahía - age 20	carpenter carpenter carpenter carpenter herder herder	30 mares
Manuel Flores	Oct. 8, 1802	San Savas	Manuel Flores - native of San Savas - age 52 wife: Maria Concepcion Lazo - native of La Bahía - age 38 boarder? - Ramon de los Santos - native of Real del Vallecillo - age 35	herder	none reported
Pedro de Luna	Oct. 4, 1796	Saltillo	Pedro de Luna - native of Saltillo - age 50 wife: Serafina Trexo - native of La Bahía - age 38 son: Teodoro - native of La Bahía - age 12 son: Jose Bautista - native of La Bahía - age 10 son: Jose Lazaro - native of La Bahía - age 7 daughter: Maria Petra - native of La Bahía - age 3 daughter: Maria Timotea - native of La Bahía - age 8 months	farmer farmer farmer farmer	none reported
Jose Esmeregildo Villa-Estribo	Oct. 4, 1807	Coahuila	Jose Esmeregildo Villa-Estribo - native of Monclova - age 30 Jose Zeferino Naxar - Native of La Bahía - age 23 Naxars wife: Maria Gertrudis Valdez - native of La Bahía - age 20 servant: Dolores Benitez - native of La Bahía - age 20	farmer herder farmer	none reported
Jose de los Reyes Alvarado		La Bahía	Jose de los Reyes Alvarado - native of La Bahía - age 60 wife: Guadalupe de la Cruz age 51 - native of Patos	tailor	none reported

The University of Texas Institute of Texan Cultures at San Antonio, Residents of Texas 1782–1836. San Antonio, TX: University of Texas Institute of Texan Cultures at San Antonio, 1984; distributed by Ericson Books.

1810 Census of Residents of Refugio Mission					
Name	**Date Arrived**	**Arrived From**	**Household Members**	**Occupation**	**Property**
Jose de Dios Ramos	Aug. 7, 1805	Bexar	Jose de Dios Ramos - native of Bexar - age 38 wife: Maria Rubalcaba - native of Bexar - age 40 boarder: Jose Cayetano Falcon - native of Bexar - age 52	herder farmer	none reported
Jose Faustino Garcia	Aug. 7, 1805	Bexar	Jose Faustino Garcia - native of Bexar - age 33 wife: Margarita Vasquez - native of La Bahía - age 21 female servant: Trinidad Morin - native of Guadalajara - age 28	master mason	wooden house, 20 cows, 2 horses, 3 yoke of oxen
Juan de la Forcade	Oct. 8, 1803	Bordeaux	Juan de la Forcade - native of Bordeaux - age 40 servant: Juan Jose Ortiz - native of San Fernando - age 28 (arrived from Coahuila July 2, 1807)	herder herder	40 horses
Pedro Jose Texeda		La Bahía	Pedro Jose Texeda - native of La Bahía - age 44 wife: Catarina Huizar - native of Bexar - age 23 (arrived from Bexar Nov. 7, 1801)	herder	none noted

The University of Texas Institute of Texan Cultures at San Antonio, Residents of Texas 1782–1836. San Antonio, TX: University of Texas Institute of Texan Cultures at San Antonio, 1984; distributed by Ericson Books.

Appendix C

Mission Refugio (41RF1) Artifacts

Artifact Data

Appendix C: 41RF1 Artifacts

Mission Refugio Artifact Data

Information

The information assembled from the archaeological investigations conducted at Mission Refugio has been recorded on this CD-Volume as:

1. A cross-tabulation of proveniences by class in a spreadsheet format (Microsoft *.xls); and
1. A printable version of the Microsoft *.xls file as an (Adobe Acrobat *.pdf).

1. Mission Refugio cross-tabulation file is on Volume I - CD as– 00C1-Ref App C1.xls
2. Mission Refugio printable version is on Volume I - CD as– 00C2-Ref App C2.pdf

UTSA 41RF1 Catalog

	Provenience					Ceramics							Glass								Lithics		Ornaments					Organics						Metal							Construction				Misc	
Bag	Unit	CM BD	Other	Ftr.	Lime	Native	ther unc	T Gz	L Gz	Burnish	WW	SfW	Other	Clear	Brown	Green	Black	Aqua	Blue	Other	ked gla	Debitage	Tools	Gnd Str	Buttons	Beads	Shell	Coral	Bone	unalBo	Wgt (g)	Burned	Shell	Other	Describe	nd Meta	Describe	Cut Nail	Wire Nai	offin Na	opper fra	iron frag	Other	Brick/Til	Mortar	Slag	Asphalt	Other	Describe
1	60/100	0-20				23		3	5					18	11	4				18		15	4								377	641.1		36									2	3	9					
2	85/100	0-10			AL	6					5			5		1							0								182	110.1	47	4			2	wire				1	6							
3	75/100	0-20				7	1	1			1	1	1	5	5	4	3					3									162	119	10				1	barbed wire	2	2		1	19		2					
4	95/100	0-20				25		2	1		3			82	12					3		32	9								419	519.3	10	30			4	ire frag; 2 pcs. o	5	3			217		9					
5	95/100	20-30				21		3	4	1	1			18	5			2	2			9	2								409	442	37	5						8		1	37							
6	85/100	10-20				43		1	6		16			7			4	8				3									465	338.3	163	5			1	wire	2				8	1	3			2		
7	75/100	20-30				22	1	1	4	1	3	1		9	1	6						3			1						563	633	28						2			1	4							
8	60/100	20-30				2																																												
9	75/100	30-40			AL	23			4	1	6					2						1									476	671	30	4										1						
10	75/100	30-40		2	BL	17		1	12	1	7			2																	598	599	3	4									2				1			
11	95/100	20-30	S 1/2			35		1	6		7			1		1		2					1								1289	1700.1	177				5	side plate, powd	4	1			1		2			1		
12	85/100	20-30				53		2	3		8			6								4									873	1110.3	326	40								3	46		5					
13	75/100	40-50		2	BL	8	3	23	29		3											2									1203	2138.8	38	29								7	21		9		9			
14	70/100	0-20				16		1	2		7			42	28	35				2		1	1								600	736.2	15	75			1	iron pot handle	1				4	6	2		25			
15	95/100	30-40				15		2	2					10	3	7						10	6								456	1164.5	57	8						5		1	16		16	5				
16	85/100	30-40				55		4	4		1			5		2						3	3								446	491.5	97	12			2	spur, hook	10			13	73		4	8				
17	95/100	40-50				7		1	2																						64	212.5	21	2					1	1					3	2				
18	85/100	40-53				43		2	2		4	1		2		3															485	1042.1	49	3					1			3	25			3				
19	95/100	50-60				6		1	1					2								5									67	110.3	10	7						1			1				1			
20	75/100	50-60		2	BL	40		10	8	2						1						2									1228	2864.2	43	27								12	15		1	9	13			
21	70/100	20-30				2		2	1					3	1	1				2											106	123.5		11										2	1	2				
22	80/100	0-11			AL	35		3	5	1	14			4	2		2														477	597.1	22	12					2			4	5		7					
23	90/100	0-20			AL	21		2	2		1											2									872	1193.6	525	5								3	22				1			
24	90/100	20-30			BL	7		1	2																						211	377.3	43										1		3					
25	90/100	30-40			BL											1															55	169.3	3										2		1					
26	75/100	60-70		2	BL	43	2	16	4	1												4									1352	6429	30	7								4	11				4			
27	78/99	0-20				7			5		4			21	14	2				3		5	2								278	201.6	7	4			4	o wire, screw, p	4				3	2			2			
28	78/99	20-30				12			2	1	3			9	2					1		4	1	1							187	499	4	17			1	fence staple	2				1	1			2			
29	80/100	11-20			BL	7		1	2		1						1					1									142	237	5	3								1	1		1	3				
30	80/100	20-30			BL	16		5	3		2			6									1								337	488.7	32	4					1			2	18							
31	90/100	40-50	no artifacts		BL																																													
32	75/100	70-80		2	BL	17		14	13	1				1		2						4	3								1804	4238.9	106	24			1	one knife handle				2	22		5	10				
33	78/99	30-40				3			1					8		1						5									61	36.3		1									3							
34	73/99	20-30				11		1						10	5							6									93	79.9	8	9								10	118							
35	80/100	30-40			BL	10			3		4			2		1						2									66	1128.5	23	3			1	washer	1	1			14		2		2			
36	75/100	80-90	flot	2	BL	3		2	1														1								610	1456.9	381									2								
37	75/100	80-90		2	BL	8		13	5																						1086	3997.4	572	28								3	10		1	3	1			
38	75/100	90/100	flot	2	BL			2	2													1									299	809.4	193	11									2			1				
39	75/100	90-95		2	BL			4	1																						238	313.8	19																	
40	80/100	40-50			BL	5		4	1					2		3						1									236	611.9	13	3											2					
41	78/99	40-50	east 1/2 only																												1	18.4																		
42	73/99	30-40				3								1																	115	395.1							1						5					
43	78/100	0-20	duplicate (see 47)																																															
44	75/100	95-100		2	BL			1						4	1																212	406.8	32	1					1											
45	73/99	40-50				6		1																							53	163.4	4	2									1							
46	75/100	100-110		2	BL																										397	1414.3	70										1							
47	78/100	0-20				64		12	13		14			20	3	2	5			1		2									1323	1525.9	36	15								2	22		9					
48	80/100	50-60			BL																										28	84.8	2																		
49	78/100	20-30				37		6	9		6			1		2							1								1233	2158.7	33	48					1			1	23		1					
50	73/99	50-60	pit only	2				1																							11	11.9																		
51	73/100	0-20				9	1		3		6			10	1																158	197.8	3										11							
52	89/100	0-20				6			1		2																2				504	1118.1	102										5		4		4			
53	73/100	20-30				21		2	6	1	13			3	1		1						1								324	523.3	13						1			1	2	2		1				
54	85/99	0-20				26		3	4		7			48	10							14	1								235	184	45	13									33							
55	89/100	20-30				3		1	3	1				1		1							1								314	277.1	51												19		2			
56	78/100	30-40				2			1		2			2	1																83	149.5	1	1					1											
57	73/100	30-40				18		1	5	1	3			2	1	2						5	2								451	1256.5	14						1				5		6					
58	89/100	30-40				2			1																						82	120.5	8																	
59	85/99	20-30				47		5	5		6			13	1	3				1		10			1						507	556.6	81	11					4			1	23	9						
60	73/100	40-50			AL	34		2	6	1		1										2									655	1786.9	29	9					1				4		2					
61	57/100	0-20				7								5	12			5				3	2								96	161	7	18																
62	57/100	20-30				6								3	4					1		2	1								21	27.8	3	23									5		1					
63	73/100	50-60		2	BL	34		8	4							1															320	1289.5	21	6								9	11		4	1				
64	84/100	0-20				51		9	6	1	8	1		2		5		13	1												504	530.8	311	14			1	lg nail head	3				10		4		1			
65	85/99	30-40				62		6	13		6			7		2						2									804	1740	89	2					4			4	55			7	3			
66	84/100	0-20				9		1	2		2			19	12	19						1									179	239.5	9	8			1	fencing staple	2					1	5		2			
67	57/100	30-40												3	1							5	9								13	13	3	5									1							
68	57/100	40-50												7		2						4									3	2.3	1	1									3							
69	85/99	40-50			AL	38		5	10		2			2		2	1			1											397	1315.3	31	7			2	al crown, metal	2			2	13			2	5			
70	64/100	20-30				2		1	1				2	7	1							3									190	267.9	2	6					1				2		2	1				
71	64/100	30-40																				2									4	4.6	1						1											
72	84/100	30-40			AL	53	1	8	7	1	3			5								3	1								600	817.5	151	8					1			7	24		5	2	3			
73	85/99	40-50	flot		AL	12		2	1																						111	550.7	8	2									3			1				
74	84/100	40-50			AL	27		1	5	1	1			4		1															358	934.6	70	4								1	18							
75	85/99	50-60			AL	13		1	2													2									142	562.53	28	2													3			
76	83/100	0-20			AL	27		5	2		7			7	1	3															288	734.4	71						2			3	17		4	1				
77	86/100	0-20				47	2	6	6		21			14		1															616	676.4	230	4					4	1		1	19		2		1			
78	84/100	20-30				69		8	11		5			4		3				4		1	3								536	681.4	210	2			1	s" shaped hook	6			3	42		2	5	2			
79	67/100	10-20				8			3		3			20	10		2			1											474	520.4	8	8						1			4						1	marble
80	67/100	20-30				10		3	2		2			4	2							1									268	417.9	6	2									3			1	1			
81	72/100	0-20				12			2		1			5	10	2		2	1			7	1								259	294.2	10	6									15				4			
82	72/100	20-30				8		1	2		1			4	2							1									211	255.4	14		1	c14						1	3				3			
83	83/100	20-30			AL	14		2	1	1	2																				190	294.1	51	2									10		2	4	3			
84	86/100	20-30				111		5	16	2	11			11		1						8	1		2						908	1146.6	105	4	1	corn cob	1	gold earring hoo	7			3	39		10		5			
85	67/100	30-40												1																	11	34.8		1																
86	72/100	30-40				5		1	1					2																	80	222.2	9	1									2							
87	83/100	30-40			AL	1			1																						14	60.5															1			
88	83/100		wall cleanup		AL	2			1																						23	93.7											1							
89	83/100	10-20			BL	10					2																				168	381.6	23	20									4		8		1			
90	86/100	30-40				72	2	6	13		1			13		3	1					3	1				1				751	1206.8	225	5					22			10	79		9	2	95			
91	72/100	40-50	NE corne	2		8		1	4			1																			10	11.7	1																	
92	72/100	50-60	NE corne	2		2																									22	33.5	6																	
93	76/100	0-10				22		1	4		6	3		40	5	1	2					5	1								433	389.8	28	18			4	e nail, fence sta	4	1			5		3	4				
94	83/100	20-30			BL	12		4	1		3			1			1					3									304	996.6	51	3	2	gg shell, c14	1	unkn					6			1				
95	86/100	40-50			AL	53		3	4		5					3							1								976	2430.7	41	7			1	nd rhinestone o	2			3	58		1	6	20			
96	76/100	10-20			AL	26		7	3		10	7	1	6								2	1								753	1050.5	28	7	1	c14	1	screw w/washer	3			2	18		9	6	1			
97	75/99	20-30				9		1	6	1	5			9	3	1		1				1	1								221	337.7	9	4			1	cap	1	1		5	34		1	1				
98	83/100	30-40		1	BL	4			2			1			1					1											138	356.6	18	1			1	cap				4	14		1	2	2			
99	76/100	20-25	w/s	2	BL	22		2	6		4			1	2	2	1					2									390	494.4	41	14					1			4	16		11					

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	Provenience					Ceramics							Glass								Lithics		Ornaments					Organics					Metal							Construction				Misc	
Bag	Unit	CM BD	Other	Ftr.	Lime	Native	ther unc	T Gz	L Gz	Burnish	WW	SfW	Other	Clear	Brown	Green	Black	Aqua	Blue	Other	eked gla	Debitage	Tools	Gnd Str	Buttons	Beads	Shell	Coral	Bone	unalBo	Wgt (g)	Burned	Shell	Other	Describe	nd Meta	Describe	Cut Nail	Wire Nai	offin Na	opper fr	iron frag	Other	Brick/Til	Mortar	Slag	Asphalt	Other	Describe
100	86/100	50-56			AL	18			1		4	1										1								237	1701	7						1			1	15							
101	75/99	30-40				16		5	5		3			6	1	1	1				1									690	1561.4	18	10	1	seed			2			1	16		1		1			
102	83/100	40-50		1	BL	11		3	2		8					1					1									195	420.7	43	1								2	6				1			
103	75/99	40-50		2		13	1	12	5	1				2	1															399	952.5	3	5					1			1	8		2		3			
104	86/100	56/60	flot	1	BL	4		1																						165	928.6	44										2		10					
105	86/100	56/60		1	BL	6		1			1			1																406	1040.7	122	1									12		12	2	2			
106	76/100	25-30	w/s	2	BL	26		2	9		3			2	1	2						2				1				558	1040.3	19	17	1	c14						13	12		2	8				
107	75/99	50-60		2		6		4	1													4								226	855.1	5	2												1	1			
108	83/100	50-60		1	BL				2													1								74	95.1	13	2						1		1	1			1				
109		surf	gradall backdirt			17		2	2		5			17	4	2		3	1				6							397	2933.8	39	18			4	k latch, hinge, unkn		1			4	3		4	3			
110	83/100	60-70	pit only	1	BL	3		1		1				2																215	399.3	9										8							
111	75/99	60-70		2		7		7	1													1								193	559	60	4								1			1	2				
112	76/100	30-35	w/s	2	BL	10		3	3		2			1		1					1	4								406	565.1	11									9	1		1	4				
113	83/100	70-80	pit only	1	BL			4	1		2			3																124	290.4	5	1					1				3	10		1				
114	83/100	80-90	pit only	1	BL				2																					154	305	11		1	c14							4	2						
115	59/100	0-20				11		1	2		2			3	2															109	153.4	10	22			1	fence staple					2			3				
116	75/99	70-80		2		6		5	3		1											2								404	698	319									2	2		1					
117	85/100	53-58			AL	21			2			1		1																282	1345.6	35										28		3		2			
118	85/100	53-60		1	BL	5			2													2								193	275	34										5			2	1			
119	75/99	80-90		2		17		5	6	1				2	1							3								526	2088.3	444	23					1			2	2		2	2	2			
120	83/100	90-100	pit only	1	BL	1								1																31	127.5	4		2	corn cob, c14														
121	84/100	30-40		1	BL	1										2														27	156	12										3							
122	75/99	90-100		2				1		2																				448	948	17									1				1				
123	75/99	100-110		2		1																								623	1542.3	3																	
124	85/100	60-70		1	BL	28		2	8	2	1											4								656	2893.2	268	3								4	26		2	3	4			
125	73/100	60-70	flot	2	BL	8		2																						41	133	1									1								
126	73/100	60-70		2	BL	13		2																						144	689.4	91									2	3							
127	73/100	70-80		2	BL	21		7	2						1						1	2								366	1968	74	4					2					9	1	2				
128	73/100	70-80	flot	2	BL	13		1	1													2								144	463.7	34	1								1	1		2					
129	84/100	40-50		1	BL	3		1		1	4																			95	605.1	8									4	7							
130	84/100	50-60		1	BL	16		7	10	6	7					3				1		6								885	1859	256	10			1	pen tip	2			9	68	1	10	5				
131	73/100	80-90	flot	2	BL	7			2	1				2		1														690	1687.5	569	7								1	9			2			1	clay figurine
132	73/100	80-90		2	BL	18		7	4		1			1		1				1										1442	3099	1254	67			1	ilitary decoratio	3			6	4		1	10				
133	85/100	70-80		1	BL	34		3	3		5			6		2						2								1540	3148.4	581	3					1			2	16		11	1	4			
134	84/100	60-70		1	BL	10		5	5	1	5			1								2				1				270	1152.2	56	1					2			2	13			1				
135	76/100	35-40	w/s	2	BL	7		2	3							1						2								519	854	321	12	1	ackberry seed	2	n pot, wire handle				2	10			2				
136	76/100	40-45	w/s	2	BL	16		3	2	2				2						1		1								458	1326	13	3	3	ted bone, 1 unkn			2			4	2		2	2	2			
137	73/100	90-100	flot	2	BL	1	2	1	2																					634	1027.3	571	9									2		2	9	1		13	burned clay
138	73/100	90-100		2	BL	9	3	5		1													1							1889	2845.7	1850	22			1	iron spike				2	11			1				
139	84/100	70-80		1	BL	18		3	2		2					1				1			3							408	1227.1	48	8	1	c14						4	23		15	4				
140	76/100	45-50	w/s	2	BL	7		3	3													1								380	820.2	8	7								1	5		1	4	5			
141	85/100	80-90		1	BL	65								6								1								580	2155.4	186	8	1								6		4		5			
142	85/100	80-90	flot	1	BL																									360	709.9	195										1			6				
143	76/100	50-55	w/s	2	BL	16			1	2						2						1								338	875.9	17	4	1	c14							5		4	2	10			
144	72/100	60-70	pit only	2				2														1								37	28.7	27																	
145	72/100	70-80	pit only	2		1			1													1								14	101.9																		
146	72/100	80-90	pit only	2																		1								91	388.1	9													2				
147	84/100	80-90		1	BL	2		2	1		1			2								1	1							256	1199.8	12	3								1	7		7	1	1			
148	72/100	90-100	pit only	2																										55	91.8	23																	
149	81/100	0-15			AL	9			2		7			2		1														218	517	10	1								1	4		3		2			
150	81/100	15-20			AL	4		3	5		3			1		1														97	312.6	17	3	3	egg shell	1	washer				2	7	1	4	11	14			
151	79/100	0-20						1	2		4			4						1		1	1							127	424.6	4												1	2				
152	79/100	20-30				9		2	5		7	1		2							1		1							261	1043.6	11	4	1	c14						4	10						1	pumice
153	72/100	40-100	wall clea	2				1	1																					94	720.7	31												2					
154	85/100	90-100		1	BL	10		2	3													2								412	1519.9	81	3	13	egg shell							6		64	2	1			
155	84/100	90-100		1	BL	7		9	5		4			2		2														622	1628.6	32	3	3	sed, egg shell						3	30		3		16			
156	79/100	30-40				1		2	1		4				1															34	76.6	3									2							1	pumice
157	76/100	55-60	w/s	2	BL	14	1	5	5	1				1		1						2	1							443	753.8	6	8									2	1	3					
158	81/100	20-30			BL	32		8	4		6			6	1		1				2									484	691	46	6								17	21	1	9		14			
159	81/100	30-40			BL	14		4	3		2			3		2	2					2								188	637.5	16	1								3	14		1		5			
160	85/100	100-110		1	BL	18	1	4			1			1		1														465	2167.2	15		8	burned bone in breccia							3		11		5			
161	84/100	100-110		1	BL	6		13	4		1			4		1						2	2							662	2762.5	50	3	10	14, egg shell						2	25			19	1			
162	76/100	60-65	w/s	2	BL	5		3	6					4		1						3								223	439.2	25	12								1	1				3			
163	81/100	40-50			BL	1								1								1								89	255.9	6										3			1				
164	76/100	65-70	w/s	2	BL	6		1	5	1																				313	999.1	179	9	1	unkn			1			5	5		9	2				
165	73/99	60-70	pit only	2		2																								43	308.1	4																	
166	73/99	70-80	pit only	2		3								1		1														96	392.7	73													2				
167	73/99	80-90	pit only	2																										13	52	12																	
168	73/99	90-100	pit only	2																										5	9.4	5																	
169	76/100	70-75	w/s pit	2	BL	4		2	6																					366	826.8	167	15	4	corn cobs						3	7		2	3	1			
170	85/100	110-120		1	BL	14		2	4	1				1								1								1236	4687.7	56	5	8	cob, seed, egg shell							22			7				
171	84/100	110-120		1	BL	6		3	5		3			2																1235	4123.5	23	10	4	egg shell	1	copper tube				6	17		14	5				
172	81/100	50-60			BL	1			1													1								77	164.7	2	1	3	egg shell						1	6							
173	76/100	70-75	flot	2	BL	10		2	4					1		1						2								404	875.4	213	25									12		2	10				
174	Skipped this bag																																																
175	76/100	75-80	flot pit	2	BL	1			2																					138	155	94	20									1			3				
176	74/100	0-15	w/s						1					1												1				36	19.5	4				1	.35mm lead sho	2				1							
177	76/100	75-80	w/s	2	BL	2		5	3																					131	568	66	13									1			1				
178	76/100	80-85	flot pit	2	BL				2		1																			162	281.3	157	5								1	1		1					
179	74/100	15-20	w/s			3					1			2	14															18	14.8	5	1			1	16mm lead disc	17				10		1		1			
180	82/100	0-20				21		6	2		6			12	3	1														423	681.4	27	22					2	1		4	39		9		3			
181	76/100	wall cleaning		2		3		2	1																					98	248	38	3											1	3				
182	84/100	120-130		1	BL	7		3	1		4			1		1														1270	9216.5	29	3	13	egg shell						2	16		8		6			
183	76/100	85-90	flot	2	BL				2							1														78	104.5	34		2	corn cob, c14							3							
184	85/100	120-130		1	BL	23		6	3	2						1							1							2472	10482.8	35	6								1	20		9	2	7		2	grooved stone, glazed tile
185	74/100	20-25	w/s			4			1		1			1	13			4				3								86	105.6	8	1	1	c14			4							2				
186	84/100	130-140		1	BL			1																						156	546.5	3		1	bone handle							6		3				3	burned clay
187	85/100	130-140		1	BL	1																								115	919.6																		
188	82/100	20-30			BL	43		3	3		3			2	1	1				1										443	525.1	38	5					2			1	39		1	2	4			
189	82/100	30-40			BL	55		1	1	1				1																248	240.8	7	3			1	tack				2	1				2			
190	77/100	10-20				16		2	4		12			8	66															736	1414.2	7	6					7	2		4		7	10		1			
191	74/100	25-30	w/s			20	1	2	3		4		2	4		7						3	1							248	371.6	23	1					1			1				2				
192	83/100	100-110	pit only	1	BL			2																						42	495											14							
193	74/100	30-35	w/s	2		26		3	3		4			2		3														329	575.5	22						2			1	2		2	1	2			
194	77/100	20-30				32		9	9		12			3	3															1501	2769.4	21	6	2	14, egg shell						14	27		11	8				
195	83/100	110-120	pit only	1		1																1								438	1395.3	16	2											1					
196	74/100	35/40	w/s	2		8		2	3	1	1			2				1									1	1		224	727.7	7						2				2							
197	82/100	40-50		1	BL	3			1																					26	23.4	2																	
198	85/99	40-50	flot	1	BL	7					2			1	1	1														187	840.5	9	2			1	painted logo	4			5	33		1	2	4			

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	Provenience					Ceramics							Glass								Lithics			Ornaments					Organics					Metal						Construction					Misc	
Bag	Unit	CM BD	Other	Ftr.	Lime	Native	ther ung	T Gz	L Gz	Burnish	WW	SfW	Other	Clear	Brown	Green	Black	Aqua	Blue	Other	sked gla	Debitage	Tools	Gnd Str	Buttons	Beads	Shell	Coral	Bone	unallBo	Wgt (g)	Burned	Shell	Other	Describe	nd Meta	Describe	Cut Nail	Wire Nai	offin Na	opper fra	iron frag	Other	Brick/Til	Mortar	Slag	Asphalt	Other	Describe
199	77/100	30-40				3		3	1		1			1																174	984.5	3	3	1	c14						1	3		1					
200	85/99	40-50		1	BL	2		2																						79	642.1	5						1			1	13		1		1			
201	85/99	50-60	flot	1	BL	5		2	2																					239	570.9	32	7								4	18		5					
202	85/99	50-60		1	BL	29		4	5		3																			575	3901.1	60	3					2			1	16	1	5					
203	87/100	0-20				156	3	10	21	2	26			16	5		3					3	1							1949	3341	473	17	1	c14	2		11	1		5	52		14	10	5			
204	71/100	0-20				17		1	1		5			25	5	3				1										67	338.5	13	3						3			3		1		8			
205	74/100	40-45	w/s	2		20		5	4	2	2			2																282	704.2	3	3					1				5				5			
206	85/99	60-70		1	BL	40		4	7		6			2		2														957	3676.4	150	6	3	egg shell			2			4	38		10	1	1			
207	74/100	45-50	w/s	2		17		3	5					1																364	2167.2	14	6								3	5		3	5				
208	74/100	50-55	w/s	2		16		8	3																				1	975	3676.1	14	2								3	6			9				
209	87/100	20-30				74		12	11		3					1				4										1058	2290.3	136	1					14			1	65	1	12		1			
210	71/100	20-30				11			2		1			7		1		3				1								215	498.6	10	4	1	c14	2	crwon cap		1			2	15	2	1				
211	85/99	70-80	flot	1	BL	16		1	1		2																			153	193.6	47	1	1	egg shell			1				6		1	1	1			
212	85/99	70-80		1	BL	21		4	2		1											1								523	2143	67	7	5	egg shell			2			4	2		4	4	3			
213	74/100	55-60	w/s	2	BL	6		9	2																					1627	7035.8	9				1	copper				9	6		3	33				
214	87/100	30-40				38		1	2		5			1		1						2	1							1352	3395.4	319	3					2			1	27		25	3	11			
215	71/100	30-40	east 1/2			2																								5	3.7		2																
216	85/99	80-90	flot	1	BL	4																	1							75	156.1	17												1		1			
217	85/99	80-90		1	BL	1		1	3					1																248	833.9	9	3	10	egg shell							5		5		32			
218	87/100	40-50			AL	6		2	1	1						2														651	1992.3	313										11							
219	87/100	50-60			AL	8		2	1							1				1		2								476	1301.2	323	2	1	burned seed			4				5		1	1	1			
220	74/100	60-65	w/s	2		23		12	10	1				1		2						1								1240	6226.6	58	4	1	burned seed	1	copper ring					3		7		1		3	burned clay
221	83/99	0-20				36		1	8		1			12	6	2	1	12		1		9	1		1					381	1221.3	11	14						1		1	8	3	1	1				
222	85/99	90-100	flot	1	BL	1		1																						81	94.5	5																	
223	85/99	90-100		1	BL	10		8	11	4	3																			400	2256.4	43	3					1			3	35		4		8			
224	87/100	60-70			AL	7		1	1					1																326	729.9	307	1	4	corn cobs						3	6							
225	87/100	40-50		1	BL																									113	155.7	11												6	2				
226	83/99	20-30			AL	5	1		5	1	5			1	1	1														224	804.6	19							1		1	16							
227	83/99	20-30		1	BL	9			3		3																			304	1277.7	23	4								6	46				1		1	clay figurine
228	74/100	65-70	w/s	2		6		4	1		1					1														707	3983.2	141										1		2	3				
229	85/99	100-110		1	BL	5		13	10		1			1								5	1							1205	3809.9	43	3	30	14, egg shel	1	hook	1			14	40	1	4	15	13			

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	Provenience					Ceramics							Glass								Lithics			Ornaments					Organics					Metal						Construction					Misc	
Bag	Unit	CM BD	Other	Ftr.	Lime	Native	ther ung	T Gz	L Gz	Burnish	WW	SfW	Other	Clear	Brown	Green	Black	Aqua	Blue	Other	sked gla	Debitage	Tools	Gnd Str	Buttons	Beads	Shell	Coral	Bone	unallBo	Wgt (g)	Burned	Shell	Other	Describe	nd Meta	Describe	Cut Nail	Wire Nai	offin Na	opper fra	iron frag	Other	Brick/Til	Mortar	Slag	Asphalt	Other	Describe
230	60/101	0-20				13.738		3.9075	3.4526					0.9634	7.5401	0.7146				0.3094		0.7178	0.7453							440.27	1650.16871		3.6716									10.832	4.3936	5.6767					
231	85/101	0-10			AL	13.707					3.514			0.9191		0.6998							0.7371							440.56	1655.111133	90.957	3.6291			0.9766	wire			3.4764	10.796	4.4009	5.6818					
232	75/101	0-20				13.676	1.6316	3.9093			3.5064	2.2125	1.9538	0.8749	7.5681	0.6849	1.1334					0.6788	0.7289							440.86	1660.053555	91.021	3.5866			0.972	barbed wire	3.6824	0.9048		3.4767	10.759		5.6869					
233	95/100	0-20				13.646		3.9102	3.4394		3.4848			0.8306	7.5822	0.67				0.2596		0.6594	0.7206							441.15	1664.999978	91.084	3.5441			0.9674	ire frag; 2 pcs. o	3.688	0.8977		3.477	10.723		5.692					
234	95/100	20-31				13.615		3.9111	3.435	1.795	3.4911			0.7864	7.5962	0.6552		5.005	0.7833	0.2431		0.6399	0.7124							441.44	1669.9384	91.148	3.5016			0.9627		3.6937	0.8906		3.4773	10.687	4.423	5.6971					
235	85/101	10-21				13.585		3.912	3.4306		3.4835			0.7421	7.6102	0.6403	1.1164	5.0079		0.2265		0.6205	0.7042							441.74	1674.880823	91.211	3.4591			0.9581	wire	3.6993	0.8834		3.4775	10.651	4.4303	5.7022			0		
236	75/101	20-30				13.554	1.6319	3.9129	3.4262	1.8018	3.4759	2.2404		0.6979	7.6242	0.6254	1.1107	5.0108		0.2099		0.601	0.6959		1.2048					442.03	1679.823246	91.275	3.4166			0.9535		3.7049	0.8763		3.4778	10.615	4.4377	5.7073					
237	60/101	20-30				13.523	1.6319	3.9137	3.4218	1.8052	3.4682	2.2474	1.9761	0.6536	7.6383	0.6106	1.1051	5.0136	0.7523	0.1933		0.5816	0.6877		1.2044					442.32	1684.765668	91.338	3.3741			0.9489		3.7105	0.8691		3.4781	10.579	4.445	5.7124					
238	75/100	30-40			AL	13.493	1.632	3.9146	3.4174	1.8086	3.4606	2.2544		0.6094	7.6523	0.5957	1.0994	5.0165		0.1768		0.5621	0.6795							442.62	1689.708091	91.402	3.3316			0.9443		3.7161	0.862		3.4784	10.543	4.4524	5.7175					
239	75/100	30-40		1.305	BL	13.462	1.632	3.9155	3.413	1.812	3.453	2.2614		0.5651	7.6663	0.5809	1.0937	5.0194		0.1602		0.5427	0.6712							442.91	1694.650513	91.465	3.2891			0.9396		3.7217	0.8549		3.4787	10.507	4.4597	5.7226		4.9869			
240	95/101	20-30	S 1/3	1.302		13.432	1.6321	3.9164	3.4086	1.8155	3.4453	2.2684		0.5209	7.6803	0.566	1.0881	5.0222		0.1436		0.5232	0.663							443.2	1699.592936	91.529	3.2466			0.935	side plate, powd	3.7274	0.8477		3.479	10.471	4.4671	5.7277			-1		
241	85/101	20-30		1.298		13.401	1.6321	3.9173	3.4042	1.8189	3.4377	2.2754		0.4766	7.6944	0.5511	1.0824	5.0251		0.127		0.5038	0.6548							443.49	1704.535358	91.592	3.2041			0.9304		3.753	0.8406		3.4793	10.435	4.4744	5.7328		4.9793			
242	75/101	40-51		1.295	BL	13.37	1.6322	3.9182	3.3998	1.8223	3.4301	2.2824		0.4323	7.7084	0.5363	1.0767	5.0279		0.1104		0.4843	0.6465							443.79	1709.477781	91.656	3.1616			0.9258		3.7386	0.8334		3.4796	10.399	4.4818	5.7379		4.9756			
243	70/101	0-21		1.292		13.34	1.6322	3.9191	3.3954	1.8257	3.4224	2.2894		0.3881	7.7224	0.5214	1.0711	5.0308		0.0939		0.4649	0.6383							444.08	1714.420204	91.719	3.1191			0.9212	iron pot handle	3.7442	0.8263		3.4799	10.363	4.4891	5.743		4.9718			
244	95/101	30-40		1.289		13.309	1.6323	3.92	3.391	1.8291	3.4148	2.2964		0.3438	7.7365	0.5065	1.0654	5.0337		0.0773		0.4454	0.6301							444.37	1719.362626	91.783	3.0766			0.9165		3.7498	0.8192		3.4802	10.327	4.4965	5.7481	5.0668	4.968			
245	85/101	30-40		1.286		13.279	1.6323	3.9209	3.3866	1.8326	3.4072	2.3034		0.2996	7.7505	0.4917	1.0597	5.0365		0.0607		0.4259	0.6218							444.67	1724.305049	91.846	3.0341			0.9119	spur, hook	3.7554	0.812		3.4805	10.291	4.5038	5.7532	5.078	4.9642			
246	95/101	40-56		1.283		13.248	1.6324	3.9218	3.3822	1.836	3.3995	2.3103		0.2553	7.7645	0.4768	1.0541	5.0394		0.0441		0.4065	0.6136							444.96	1729.247471	91.91	2.9916			0.9073		3.7611	0.8049		3.4808	10.255	4.5112	5.7583	5.0891	4.9604			
247	85/101	40-59		1.28		13.217	1.6324	3.9226	3.3778	1.8394	3.3919	2.3173		0.2111	7.7785	0.462	1.0484	5.0423		0.0276		0.387	0.6054							445.25	1734.189894	91.973	2.9491			0.9027		3.7667	0.7977		3.4811	10.219	4.5185	5.7634	5.1003	4.9567			
248	95/101	50-60		1.277		13.187	1.6325	3.9235	3.3734	1.8428	3.3843	2.3243		0.1668	7.7926	0.4471	1.0428	5.0451		0.011		0.3676	0.5971							445.55	1739.132316	92.037	2.9066			0.8981		3.7723	0.7906		3.4814	10.183	4.5259	5.7685	5.1115	4.9529			
249	75/101	50-60		1.273	BL	13.156	1.6325	3.9244	3.369	1.8462	3.3766	2.3313		0.1226	7.8066	0.4322	1.0371	5.048		-0.006		0.3481	0.5889							445.84	1744.074739	92.101	2.8641			0.8935		3.7779	0.7835		3.4817	10.147	4.5332	5.7736	5.1226	4.9491			
250	70/101	20-31		1.27		13.126	1.6326	3.9253	3.3646	1.8496	3.369	2.3383		0.0783	7.8206	0.4174	1.0314	5.0509		-0.022		0.3287	0.5807							446.13	1749.017162	92.164	2.8216			0.8888		3.7835	0.7763		3.482	10.111	4.5406	5.7787	5.1338	4.9453			
251	80/101	0-29		1.267	AL	13.095	1.6327	3.9262	3.3602	1.8531	3.3614	2.3453		0.034	7.8347	0.4025	1.0258	5.0537		-0.039		0.3092	0.5724							446.43	1753.959584	92.228	2.7791			0.8842		3.7891	0.7692		3.4823	10.075	4.548	5.7838	5.1449	4.9415			
252	90/100	0-38		1.264	AL	13.064	1.6327	3.9271	3.3558	1.8565	3.3537	2.3523		-0.01	7.8487	0.3876	1.0201	5.0566		-0.055		0.2898	0.5642							446.72	1758.902007	92.291	2.7366			0.8796		3.7948	0.762		3.4826	10.039	4.5553	5.7889	5.1561	4.9378			
253	90/100	20-31		1.261	BL	13.034	1.6328	3.928	3.3514	1.8599	3.3461	2.3593		-0.054	7.8627	0.3728	1.0144	5.0594		-0.072		0.2703	0.556							447.01	1763.844429	92.355	2.6941			0.875		3.8004	0.7549		3.4829	10.003	4.5627	5.794	5.1673	4.934			
254	90/100	30-41		1.258	BL	13.003	1.6328	3.9289	3.347	1.8633	3.3385	2.3663	2.0517	-0.099	7.8767	0.3579	1.0088	5.0623		-0.088		0.2509	0.5477							447.31	1768.786852	92.418	2.6516			0.8704		3.806	0.7478		3.4832	9.9665	4.57	5.7991	5.1784	4.9302			
255	75/101	60-71		1.255	BL	12.972	1.6329	3.9298	3.3426	1.8667	3.3308	2.3733		-0.143	7.8908	0.3431	1.0031	5.0652		-0.105		0.2314	0.5395							447.6	1773.729274	92.482	2.6091			0.8657		3.8116	0.7406		3.4835	9.9305	4.5774	5.8042	5.1896	4.9264			
259	86/99	100-110		1	BL	4		2							1															319	1483.1	12						2				2		1	2	174			
260	74/100	90-95	w/s	2		5	1	12	3	1	1			4	2	1				1										2035	4954.3	1689	16	6	d wood, egg shell						4	5		1	5				
261	86/99	110-120		1	BL	1			5																					375	3752.7	5												2	1	8			
262	74/100	95-100	w/s	2		2		5						2																1078	2968.4	938	30		c14						5	2		3	3				
263	74/100	100-105	w/s	2				3							1							1								404	1609.6	164	3		c14									1	4				
264	86/100	65-70	w/s	1	BL	12		1	5		1			1								2								459	1481	116	5	6	14, egg shell							12		6	5			3	rope
265	86/100	70-75	w/s	1	BL	12		1			2								1			1								751	2929.5	606	1	2	egg shell			2				7		6		1		9	burned clay
266	86/100	75-80	w/s	1	BL	2		1																						2057	5442.3	2050										4		5					
267	86/100	80-85	w/s	1	BL	9		3	1					42																1887	4072.8	1666	2	3	corn cobs									20	6	4			
268	86/100	85-90	w/s	1	BL	9		1	1					43		1						1								490	1287.5	259										1		12	2	2			
269	86/100	90-95	w/s	1	BL	4		1	2													1								150	460.6	39						1				3		60	3				
270	86/100	95-100	w/s	1	BL	3			1					1		1					1	1								214	280.8	43	1									1		26	2				
271	86/100	100-105	w/s	1	BL	3																								215	556.8	46		1	c14							4		99	3	1			
272	86/100	105-110	w/s	1	BL	3		1	1													2				1				203	1305.9	37		1	egg shell							6		49	2	1			
273	86/100	110-115	w/s	1	BL	3	3	1	1																					490	1873	55	7	9	h cob, 6 egg shell						38	21		21	6	1			
274	86/100	115-120	w/s	1	BL	2		2	1					1																733	2690.3	19	8	6	h cob, 5 egg shell								1	3	3	5			
275	86/100	120-125	w/s	1	BL	12			1														1							652	3637.2	13	7	7	h cob, 6 egg shell							1		1	2				
276	86/100	125-130	w/s	1	BL	1		5														1								430	2450.8	2		1	c14										3				
						3813.2	64.279	741.98	788.45	99.48	579.56	68.349	11.982	904.67	502.05	220.75	55.388	166.77	6.5356	54.087	8	340.64	104.7	1	7.4092	4	4	1	1	51094	332158.3038	27819	1497.6	193		84.029		313.93	57.746	0	506	2939.9	192.8	1086.3	473.54	733.28	2	38	
305	BP 2	fill		BF2				1																						50										9									
306	BP 5	fill		BF5		1			1																					82			1					5				1							
307	BP 4	fill		BF4		1																											1									29.3g metal frags						
309		surface		4					8													1								19	87.3							1	1			1							
310	Gradall scraping (s side)								1													1								170	424.1												1						
311	BP 5	fill		BF 5																																													
312	BP 4	fill		BF 4																														1	charcoal														
313	BP 5	fill		BF 5																																													
314		fill (c)		BF 4		4																1											1										4						
315		fill		BF 4																																								1						
316	BP 1	fill		wall trench		1																									214.3	4/6.2													3					
318	Gradall backdirt (sw side)					2					3				2																590.1		4					8	3						1					
319	sh shave	surface									1									window																		5						4	1					
320	BP 2	fill		BF 2		3																1											2												5					
321	beneath sidewalk																			window											169.9										1									
322	wall trench	surf	w of BP1							6																					49.1																			
325	BP 2	fill																													50.9							1											
327	Ft 10	fill		10																																		2											
328	Gradall scraping (s side)																					2									25.5																			

UTSA 41RF1 Catalog

	Provenience					Ceramics								Glass								Lithics			Ornaments					Organics					Metal							Construction					Misc	
Bag	Unit	CM BD	Other	Ftr.	Lime	Native	ther ung	T Gz	L Gz	Burnish	WW	SfW	Other	Clear	Brown	Green	Black	Aqua	Blue	Other	ked gla	Debitage	Tools	Gnd Str	Buttons	Beads	Shell	Coral	Bone	unalBo	Wgt (g)	Burned	Shell	Other	Describe	nd Meta	Describe	Cut Nail	Wire Nai	offin Na	opper fra	iron frag	Other	Brick/Til	Mortar	Slag	Asphalt	Other	Describe
329	Gradall scraping (s side)																					2								6	6.5											1	1							
330	Gradall scraping (under sidewalk)																																			1	bullet casing													
331	BP 8			BF 8		1					1																			9			1	1	bone tool						1	2			1				
332	BP 10	fill																																																
333	BP 11	surf		BF 11																													1																	
335	BP 5		pipe tr	BF 5																																						1								
336	BP 5		pipe tr	BF 5																																					1								
337	BP 5		pipe tr	BF 5																						1																								
338	Ft 4	fill		Ft 4																		1								5	493.5	15.7																		
339	Ft 7	fill		Ft 7		13		4	8		3																						16	1	bone tool	1	poss metal poin	4						8		10				
340	BP 17	fill		BF 17		2		1	1											window										46			8					9												
341	Ft 8	surface		Ft 8				1		1						1																																		
342	BP 22	fill		BF 22		6		2																							81.3													4	1				
343	Gradall scraping (N end)																					1																				1								
344	Gradall scraping (N of burials)															2																																		
372	BP 2	fill		BF 2		7																														3	spring						1							
373	BP 22	fill above #91		BF 22		15		4	9													1									205.9		1					1							1	1				
374	Ft 8	fill		8		1									1			2															7			1	bolt	3								1				
375																																																		
376	BP 26	fill	pipe tr	BF 26		4		1	2		1		1	11	4	3		4	2	ke&window													20			1	bottle cap	29	6				2	7				14	1982 penny/concrete
377	BP 30	fill		BF 30		1																														1	bracket		3											
378	BP 22	fill		BF 22																										2	27.7																			
379	shovel scraping above BP 11			BF 11		1					1				1																																			
380	BP 22	fill above #117		BF 22		16		1	2		2				1	1															197.5		1			1	fence staple	4	1			4	5							
381	BP 22	fill above #127		BF 22																										12	509.9																			
382	BP 22	fill above #129		BF 22																										5	471.1																			
383	BP 5	fill above 17		BF 5		1		1														1									208.3					1	lead ball	5	2			6								
384	BP 26	fill above #120		BF 26		2		1	1					2		1		2		modern bottle																		1	4					3				1	plastic	
385	BP 22	fill above #116		BF 22		2			1																																									
386	BP 22	fill above #111		BF 22				1																																										
387	BP 29	fill above #100		BF 29				1																																										
388	BP 17	fill		BF 17										1						purple		1											4					2	1			1			1					
389	BP 22	fill baove #97		BF 22					1																																									
391	BP 24	fill		BF 24		2					1																			1	41.4							1						1						
392	Ft 32	fill		32																										1																				
393	Ft 31	fill		31																										9																				
394	Ft 33	fill		33					1																					14																				
395	Ft 34	fill		34																										24																				
396	Ft 37	fill		37		1																								37																				
397	Ft 38			38							1																			11			1																	
398	BP 35	fill		BF 38																										6																				
399	BP 15	fill		BF 15										5				1															1																		
400	BP 6	fill		BF 6																																1	nut													
401	BP 16	fill		BF 16		1			1													1								102																				
402	BP 14	fill		BF 14		2						1																		2			1					2	1			8								
403	BP 23	fill		BF 23		1																								1																				
404	BP 26	fill above #126		BF 26																																				1										
405	BP 20	fill		BF 20		1																																												
406	BP 19	fill		BF 19		3																											1																	
407	BP 39	fill		BF 39																																						39								
408	BP 13	fill		BF 13		3																																												
						98	0	19	37	7	14	1	1	19	9	8	0	9	2	0	0	14	0	0	0	1	0	0	0	614	3854.3	15.7	72	3		11		83	22	10	3	65	15	38	5	10	0	15	
					1998	3813.2	35	710	805	67	544	68.349	11.982	921	332	225	32	59	5	60	8	340.64	104.7	1	6	4	6	1	1	56473	360479.43	30701	1510	212	0	62	0	243	38	0	494	2981	96	1100	553	771	3	56	
					1999	98	0	19	37	7	14	1	1	19	9	8	0	9	2	0	0	14	0	0	0	1	0	0	0	614	3854.3	15.7	72	3	0	11	0	83	22	10	3	65	15	38	5	10	0	17	
					Totals	3911.2	35	729	842	74	558	69.349	12.982	940	341	233	32	68	7	60	8	354.64	104.7	1	6	5	6	1	1	57087	364333.73	30717	1582	215	0	73	0	326	60	10	497	3046	111	1138	558	781	3	73	
	Totals					3813.2	64.279	741.98	788.45	99.48	579.56	68.349	11.982	904.67	502.05	220.75	55.388	166.77	6.5356	54.087	8	340.64	104.7	1	7.4092	4	4	1	1	116019	332158.3038	27819	1497.6	193		84.029		313.93	57.746		506	2939.9	192.8	1086.3	473.54	733.28	2	38	

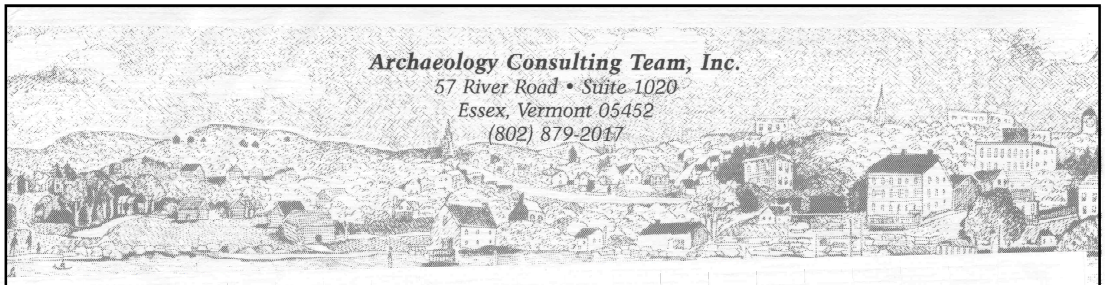
Appendix D

Mission Refugio

Oxidizable Carbon Ratio Analyses

Appendix D: Oxidizable Carbon Ratio Analyses

Douglas S. Frink



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(802) 879-2017

February 23, 1999

Ms. Cindy Tennis
Center for Archaeological Research
University of Texas at San Antonio
6900 N. Loop 1604 W.
San Antonio, TX 78249

Dear Ms. Tennis:

Thank you for sending us the soil samples from the archaeological sites 41-KA-26-B and 41-RF-1 for OCR_{DATE} analyses. These samples were received on January 29, 1999. Seven of the samples were received in good condition, however three of the samples (FT2-#2,3, and 4) were slightly moist requiring additional drying time prior to analyses. Based on the analyses, I do not think that the moist condition of the three samples have adversly effected the results. Prior to our analyses, we screened the samples through a 2mm-meshed screen to remove any cultural material. The coarse fraction recovered from these samples are being returned to you for further study. The OCR_{DATE} analyses were conducted in accordance with the procedures outlined in:

Frink, D.
1992 *The Chemical Variability of Carbonized Organic Matter Through Time.* Archaeology of Eastern North America, Vol. 20:67-79.

using the data format and formula as presented in:

Frink, D.
1994 *The Oxidizable Carbon Ratio (OCR): A Proposed Solution to Some of the Problems Encountered with Radiocarbon Data.* North American Archaeologist. Vol.15 (#1).

The results of the OCR analyses for your samples are presented on the separate computer printouts. The bottom line OCR_{DATE} and confidence interval has been rounded nearest year. Also, the expression of results has been adjusted to "years before present"—defined as 1950, to correspond with ^{14}C radiocarbon data. For example, your sample from #2 Post B (ACT #3687) should read OCR_{DATE}: 173 $\pm$ 5 YBP. Further rounding may be prudent (e.g., 175 $\pm$ 10 YBP).

I hope that the OCR_{DATE} data provided will be helpful in your evaluation of your site. If you have further questions on the OCR procedure, please don't hesitate to give us a call. To aid us in improving this dating technique, we would appreciate it if you would send us information on how the OCR_{DATE} corresponds to other data classes for these samples.

Also please feel free to keep track of the OCR literature and data on our WEB-Site:

http://members.aol.com/dsfrink/ocr/ocrpage.htm

Sincerely,

Douglas S. Frink

Calculated OCR DATE Report

For Center for Archaeological Resear

23-Feb-99

Sample Id:	ACT # 3686		
Site Id #:	41-KA-26-B		
Location:	TU 21		
Feature Type:	Cultural		
Feature Designation:	#1 Post A		
Sample Recieved:	1/29/99		
Calculated OCR DATE:	187	YBP(1950)	+/- 5

Sample Id:	ACT # 3687		
Site Id #:	41-KA-26-B		
Location:	TU 21		
Feature Type:	Cultural		
Feature Designation:	#2 Post B		
Sample Recieved:	1/29/99		
Calculated OCR DATE:	173	YBP(1950)	+/- 5

Sample Id:	ACT # 3688		
Site Id #:	41-KA-26-B		
Location:	TU 18		
Feature Type:	Cultural		
Feature Designation:	#3 Post D		
Sample Recieved:	1/29/99		
Calculated OCR DATE:	169	YBP(1950)	+/- 5

Sample Id:	ACT # 3689		
Site Id #:	41-RF-1		
Location:	75N/100E		
Feature Type:	Cultural		
Feature Designation:	Ft.2 #1		
Sample Recieved:	1/29/99		
Calculated OCR DATE:	213	YBP(1950)	+/- 6

Calculated OCR DATE Report

For Center for Archaeological Resear

23-Feb-99

Sample Id:	ACT # 3690		
Site Id #:	41-RF-1		
Location:	75N/100E		
Feature Type:	Cultural		
Feature Designation:	Ft.2 2		
Sample Recieved:	1/29/99		
Calculated OCR DATE:	168	YBP(1950)	+/- 5

Sample Id:	ACT # 3691		
Site Id #:	41-RF-1		
Location:	75N/100E		
Feature Type:	Cultural		
Feature Designation:	Ft.2 3		
Sample Recieved:	1/29/99		
Calculated OCR DATE:	110	YBP(1950)	+/- 3

Sample Id:	ACT # 3692		
Site Id #:	41-RF-1		
Location:	75N/100E		
Feature Type:	Cultural		
Feature Designation:	Ft.2 4		
Sample Recieved:	1/29/99		
Calculated OCR DATE:	156	YBP(1950)	+/- 4

Sample Id:	ACT # 3693		
Site Id #:	41-RF-1		
Location:	84N/100E		
Feature Type:	Cultural		
Feature Designation:	Ft.1 1		
Sample Recieved:	1/29/99		
Calculated OCR DATE:	190	YBP(1950)	+/- 5

Calculated OCR DATE Report

For Center for Archaeological Resear

23-Feb-99

Sample Id:	ACT # 3694		
Site Id #:	41-RF-1		
Location:	84N/100E		
Feature Type:	Cultural		
Feature Designation:	Ft. 1 2		
Sample Recieved:	1/29/99		
Calculated OCR DATE:	141	YBP(1950)	+/- 4

Sample Id:	ACT # 3695		
Site Id #:	41-RF-1		
Location:	84N/100E		
Feature Type:	Cultural		
Feature Designation:	Ft.1 3		
Sample Recieved:	1/29/99		
Calculated OCR DATE:	160	YBP(1950)	+/- 4

Appendix E

Mission Refugio

Botanical Remains Analysis

Appendix E: Analysis of Botanical Remains

J. Philip Dering

This report presents results of the analysis of 10 flotation samples and 14 macrobotanical samples that were recovered during excavations conducted at Mission Nuestra Señora del Refugio (41RF1), Refugio County, Texas. Flotation samples are samples of archaeological sediment that have been floated in water to separate lighter charred plant remains from heavier material, or clays/silts that can be suspended in water and rinsed out of the sample. The sediment samples were floated by personnel from the Center for Archaeological Research at The University of Texas at San Antonio, and the light fractions were submitted to Texas A&M University for analysis. The macrobotanical samples consist of charred plant remains either point collected *in situ* or from screens.

Laboratory Methods and Definition of Taxonomic Categories

Standard archaeobotanical laboratory procedures were followed during analysis. Samples were usually opened and dried in an herbarium dryer. Each sample was then sorted through a series of four nested geological screens with mesh sizes of 4-mm, 2-mm, 1-mm, and 0.450-mm. The material caught on all of the sieve levels, including the pan, was scanned for floral parts, fruits, and seeds. Identification of all carbonized and uncarbonized wood was accomplished by using the "snap technique," examining a newly exposed surface at 8 to 45 magnifications with a hand lens or a binocular dissecting microscope, and comparing them to samples in the herbarium at the Texas A&M University Archaeobotanical Laboratory. Charred seeds, fruit and nut fragments were counted. Identifications were made using reference collections at Texas A&M University.

The anatomy of many woods is difficult to identify to the species level, and the anatomy of some woods is so similar that it is very difficult to identify to the genus level. Often woods are identified as a "type" that includes several different species. In addition to several tree and shrub genera, this analysis refers to two wood types, the rose family wood type and the hard pine wood type. The hard pine wood type refers to pines in which the early wood–late wood transition in each annual ring is quite abrupt. This type includes loblolly pine, longleaf pine, ponderosa pine, slash pine, shortleaf pine, and pitch pine. Loblolly and longleaf are commercial woods of eastern North America, and ponderosa pine of western North America. Most of these pine species produce commercial quality lumber that is utilized in construction. The rose family wood type (Rosaceae) includes hawthorns, and wild and domesticated plums and peaches. A final category, indeterminate wood, refers to any wood fragment that cannot be identified because diagnostic anatomical features are lacking. All of the identified plant material is carbonized. In most depositional contexts in southern Texas uncarbonized seeds or wood does not survive more than a few decades.

Results of the Macrobotanical Analysis

Overview of the Archaeobotanical Assemblage

Maize cob/cupule fragments and kernels, beans, squash rind, seeds, and wood were identified in the flotation and macrobotanical samples (Tables E-1 and E-2). The samples contained 20 plant taxa or wood types, and indeterminate wood. A total of 35 maize cob, cupule, and kernel fragments were noted in the samples. Other domesticated plants included two bean cotyledons, two peach pit fragments, three squash rind fragments, two wheat seeds, and four watermelon seeds. The wood analysis examined 241 wood fragments. Results are presented by sample number and provenience in Tables E-1 and E-2, and Figure E-1.

Analysis of Maize

A total of 26 cob fragments were examined. Six of the cob fragments were complete enough to allow a total row count. Row counts of the other 20 cob fragments had to be estimated. Of the six more complete cobs, four were medial sections and two were distal fragments. The two distal fragments had tapering tips.

Although most of the material from 41RF1 is 14-row maize, a few cobs exhibited 16 rows. Both of the distal cob fragments are tapered. The single whole kernel is a dented grain. The maize from 41RF1 is of the dent variety that was imported from Mexico and grown in Texas during the

Table E-1. Maize remains from 41RF1

Sample	Provenience		Type	# Ranks	Length x Width (mm)	Row Count
84	86N/100E	20-30 cmbd	cob fragment	2	11 X 7	14 (est)
219	87N/100E	50-60 cmbd (AL)	kernel fragment	--	--	—
224	87N/100E	60-70 cmbd (AL)	cob fragment	apical	27 X 14	14
			cob fragment	4	14 X 12	14 (est)
			burned kernel		4.3 X 6.9 6.1	—
274	86N/100E	115-120 cmbd	cob fragment	3	12 X 14	14 (est)
275	86N/100E	120-125 cmbd	cob fragment	4	2 X 7	—
267	86N/100E	80-85 cmbd Ft. 1 (BL)	cob fragment a	1	8 X 12	14 (est)
			cob fragment b	1	9 X 8	14 (est)
			cob fragment c	1	8 X 11	14 (est)
120	83N/100E	90-100 cmbd Ft. 1 (BL)	cob fragment - a	2	11 X 7	14 (est)
			cob fragment - b	2	10 x 9	14 - 16 (est)
			cob fragment - c	2	6 x 8	14 - 16 (est)
170	85N/100E	110-120 cmbd Ft. 1 (BL)	cob fragment a	2	29 X15	14 (est)
			cob fragment b	2	17 X 16	14 (est)
			cob fragment c	1	8 X 7	14 - 16 (est)
273	86N/100E	110-115 cmbd Ft. 1 (BL)	cob fragment a	4	18 X 13	14 (est)
			cob fragment b	2	9 X 8	—
			cob fragment c	6	23 X 18	14 (est)
169	76N/100E	70-75 cmbd Ft. 2 (BL)	cob fragment - a	2	26 x 7	14 - 16 (est)
			cob fragment - b	2	3 X 5	14 - 16 (est)
			cob fragment - c	2	8 X 7	14 (est)
234	74N/100E	75-80 cmbd Ft. 2 (BL)	cob fragment	apical	29 X 17	14
183	76N/100E	85-90 cmbd Ft. 2 (BL)	cob fragment	medial	38 X 21	16
240	74N/100E	80-85 cmbd Ft. 2 (BL)	cob fragment - a	medial	27 X 16	14
			cob fragment - b	medial	10 X 11	14
246	74N/100E	85-90 cmbd Ft. 2 (BL)	cob fragment - a	medial	25 X 14	14
			cob fragment - b	2	2.5 X 1.7	14 - 16 (est)

Table E-2. Plant remains from flotation samples

Sample	Unit	Level	Feature	Scientific	Common	Part	Count
216	85N/100E	80-90 cmbd	Ft. 1 (BL)	*Pinus* sp.	hard pine	wood	4
236	85N/100E	110-120 cmbd	Ft. 1 (BL)	*Zea mays*	maize	cupule	9
				Pinus sp.	hard pine	wood	25
211	85N/99E	80-90 cmbd	Ft. 1 (BL)	*Prosopis* sp.	mesquite	wood	19
				Indeterminate		wood	6
243	85N/99E	80-90 cmbd	Ft. 1 (BL)	*Prosopis* sp.	mesquite	wood	12
				Quercus sp.	white oak	wood	5
				Acacia sp.	acacia	wood	8
				Phaseolus vulgaris	common bean	seed	1
				Poaceae	grass family	stems	7
				Cucurbita sp.	squash	rind	2
104	86N/100E	80-90 cmbd	Ft. 1 (BL)	*Quercus* sp.	white oak	wood	12
				Ilex vomitoria	yaupon	wood	5
				Condalia sp.	bluewood	wood	7
				Rosaceae	hawthorn/wild plum	wood	4
				Salix sp.	willow	wood	3
				Prunus persica	peach	seed	2
				Sporobolus sp.	dropseed	seed	7
125	73N/100E	80-90 cmbd	Ft. 2 (BL)	*Prosopis* sp.	mesquite	wood	8
				Platanus occidentalis	sycamore	wood	10
				Carya sp.	hickory/pecan	wood	7
				Poaceae	grass family	stems	14
				Citrullus vulgaris	watermelon	seed	4
36	75N/100E	80-90 cmbd	Ft. 2 (BL)	*Acacia* sp.	acacia	wood	6
				Prosopis sp.	mesquite	wood	12
				Celtis sp.	hackberry	wood	5
				Quercus sp.	white oak	wood	2
				Zea mays	maize	cupules	4
				Triticum sp.	wheat	seed	2
173	76N/100E	80-90 cmbd	Ft. 2 (BL)	*Zea mays*	maize	cupules	3
				Pinus sp.	hard pine	wood	7
				Celtis sp.	hackberry	wood	7
				Quercus sp.	white oak	wood	5
				Bumelia sp.	ironwood	wood	6
175	76N/100E	80-90 cmbd	Ft. 2 (BL)	*Prosopis* sp.	mesquite	wood	5
				Quercus sp.	white oak	wood	7
				Ulmus sp.	elm	wood	13
				Poaceae	grass family	stems	14
73	85N/99E	40-50 cmbd	(AL)	*Quercus* sp.	white oak	wood	12
				Ulmus sp.	elm	wood	7
				Prosopis sp.	mesquite	wood	6

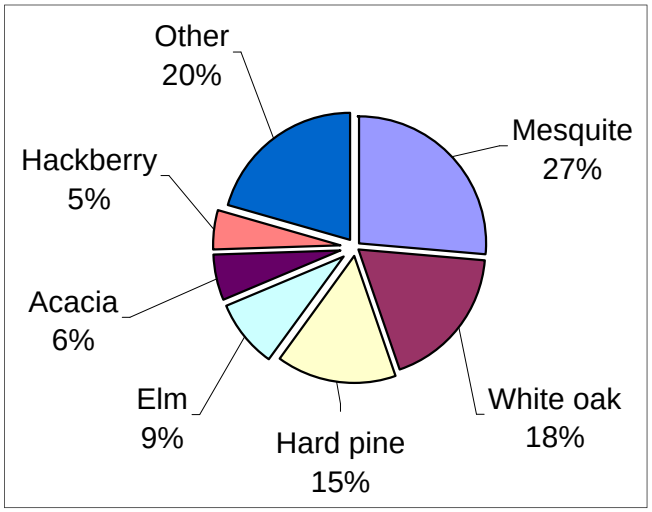

Figure E-1. *Wood frequency from Refugio (41RF1).*

seventeenth and eighteenth centuries. By contrast, Eastern Complex or Northern flint maize, which was grown in North America prior to European contact has primarily 8 - 10 rows but can exhibit up to 12 rows (Wagner 1986).

Flotation Analysis

The 10 flotation samples yielded abundant quantities of charred wood and 34 fragments of charred cobs/cupules, seeds, and squash rind. Maize, beans, squash, watermelon, and wheat were identified in the plant material. All of the cultigens identified were recovered from below the lime layer.

Feature 1 seeds included maize, beans, peach pit fragments, dropseed grass, and squash rind. Hard pine, oak, willow, and mesquite wood, along with wild grass stem fragments also were present. Almost of the material was concentrated in the 80-90 cm level. Feature 2 contained wheat, watermelon, and maize. Wood and grass stems also were abundant, including pine, mesquite, oak, elm, and ironwood. The single sample from above the lime layer contained only wood charcoal, including mesquite, elm, and oak.

Although maize was the most abundant cultigen, the samples contained considerable evidence of other domesticated plants. Squash rind and beans are two American cultivars represented in the sample. However, there are more Old World domesticated taxa than the representatives from the New World. These include watermelon, wheat, cantaloupe, and fragments of peach pits.

Equally interesting is what is missing from the assemblage. There is little direct evidence of dependence on local plant resources for food. Dropseed grass, a known edible seed, was present in the assemblage, but it may have been associated with grasses used in adobe or thatch. Although absence of evidence should not be taken as evidence of absence, the data suggest that reliance on locally available wild plant food resources had waned at least around the mission. One would expect, for example, that mesquite bean pods, acorns, or hickory/pecan nut fragments would be present in the features. Thus, a hunter-gatherer lifeway was being modified to accept cultivated plant resources.

Wood

The charred wood assemblage is composed of 13 taxa or types. Of these 13 types, 12 represent woody plants that are locally available. Hackberry, sycamore, oak, willow, and elm are primarily river valley plants and reflect the location of the site near the Mission River. Ironwood, wild plum, and yaupon live in the understory or at the edge of stream valleys. Mesquite, acacia, and bluewood live primarily along the edge of stream valleys and other erosional breaks in the coastal prairies. All of these woody plants would have been abundant in the vicinity of the mission.

As noted in Figure E-1, mesquite and oak were the most abundant wood types, most likely reflecting both local availability and preference for use as fuel. The assemblage of cultigens and the hard pine wood, recovered from both Features 1 and 2, deserve special consideration. Hard pine was the next most abundant wood type. Hard pine was utilized extensively for construction at the Spanish missions, and the material in Features 1 and 2 would have been either discarded after a structure burned, or used as firewood after a structure was remodeled. Building construction ensured that fires were fairly common, and there are accounts of fires destroying houses (Schuetz 1980:289).

Pine is an exotic wood to the region and the closest extant hard pine stands in the are located 120 miles (193 km) to the north near Bastrop, and 150 miles (242 km) to the east near Houston. The material had to be transported either from Mexico, southeastern Texas, or shipped from the southeastern United States.

Elm, hackberry, and acacia were also fairly common. Seven other wood types, including pecan, ironwood, yaupon, and wild plum, accounted for 20 percent of the wood charcoal

in the flotation samples. The taxon abundance of the wood assemblage is unusually diverse for just two features, a clear suggestion that these features were trash pits, a conclusion supported by many other lines of evidence including the faunal assemblage from these pits. Trash pits give a composite record, albeit somewhat mixed, of multiple activities occurring at the site.

Discussion

Features

The assemblage of both faunal (primarily *Bos* sp.) and botanical material indicates that the features contain trash pits, strengthening the argument that local Native American groups may have been extremely dependent on resources provided by the mission, at least while they were encamped nearby. Wild food resources were certainly locally available, and the types of wild food resources in the region, such as mesquite bean pods, and pecan or hickory nut fragments, are often visible in the archaeological record. I realize that the archaeobotanical record of southern Texas is very poor, but the young age and excellent preservation of botanical remains in the trash pits at 41RF1 suggest that if mesquite or other natural resources had been utilized, they would appear in the plant assemblage.

Colonial Period Maize

The largest comparable assemblage of maize from other colonial sites in Texas was recovered from Mission San Juan Capistrano (41BX5). A total of 98 cobs were recovered from two fire pits excavated at this site. These features were associated with a mission Indian occupation, and were dated between 1731, the date the mission was founded, and 1762, when remodeling covered the features. The average row count for the San Juan Capistrano specimens was 14.5, the median cupule width was 7.0 mm. The range of row counts varied from 10 (n=1) to 16 or higher (n=34). The most common row count was 14 (n=44). Most of the material had dented grains (kernels) and tapered ears.

The maize from San Juan Capistrano was considered to be very similar to races identified from western and central Mexico. Mexican dent corn was brought into northern New Spain, including Texas, during the seventeenth and eighteenth centuries. It spread into eastern North America and hybridized with the northern flints, producing the seed stock from which much of today's Midwestern corn has been developed Although a few cobs were considered to be similar to pre-Columbian types, the report does not specify how many, nor does it describe these cobs (Cutler and Blake 1980).

The maize from Mission Refugio is, therefore, quite similar to that from Mission San Juan Capistrano. It is a type which was developed in central or western Mexico and the seed stock was imported into southern Texas by the Spanish.

Structural Material

The most obvious structural material identified in the samples is pine. Although we lack direct documentation, pine was most likely utilized in the construction of buildings and fences. Historical and archaeological records indicate that doorways and windows were constructed with heavy wooden lintels, and ceiling beams, shutters, and doors were constructed with wood. Roofs were thatched with locally available grasses or reeds, and had to be gabled to repel water (Schuetz 1968:232-233). The type of wood was not specified, but pine would have been an ideal material for this application. Other items made of wood included carts, gates, and fences (Schuetz 1980:279). Other woods adequate for building construction include elm, hickory/pecan, and white oak, all hardwoods suitable for beams, doors, and shutters. Structures that were fashioned entirely from locally available materials were *jacales*, with walls constructed of sapling posts placed vertically into the ground. Multi-stemmed mesquite trees, which grow in areas that burn often, make ideal jacal posts. Willow branches are often used to weave among the vertical posts. Thus, local resources probably continued to contribute to the construction of these shelters.

Subsistence

There is currently no archaeological or ethnohistoric evidence to suggest that farming was conducted in coastal or southern Texas before the arrival of Europeans. The environment of the region was not conducive to Native American agriculture in North America. In fact, the western limits of Native American agriculture in eastern North America did not extend far beyond the Brazos River (Judjahn 1999:115).

The colonial period saw a major shift in the subsistence economy, particularly for those Indians directly associated with the missions. The presence of an economy based on agriculture is well-documented for the San Antonio missions (Almaraz 1989; de la Teja 1995; Schuetz 1968; 1980), yet little attention has been given to a detailed description of the nature of that agricultural system. Such a description is beyond the scope of a technical report, but a brief overview would serve to put the plant remains at Mission Refugio into perspective. We may cautiously assume that the agricultural economy present at Mission Refugio somewhat resembled, albeit on a smaller scale, that which was present at the San Antonio missions.

The agricultural system imported into southern Texas was primarily an Old World system modified for use in the Americas. The primary components that distinguish the Old World system from the Native North American system are cattle raised for both meat and as beasts of burden, sheep and goats for food and clothing, plows pulled by oxen, and several Old World cultigens including wheat, cantaloupe, sugarcane, watermelon, and fruit trees. American domesticates included maize, cotton, beans, sweet potatoes, and squash (de la Teja 1995:76; Schuetz 1968:40; 1980:269).

Southern Texas was not a particularly hospitable region for an agricultural economy and as a result, maize farming was consistently reliable only if the fields were irrigated. At Mission La Bahía where the landscape was not conducive to irrigation, maize farming was often unsuccessful, and La Bahía relied on the San Antonio missions for staples (de la Teja 1995:90). Efforts at dry-farming maize were probably limited both by the seasonal distribution of precipitation (spring–fall) and by extreme interannual variation of precipitation (Norwine 1995).

Wheat was an Old World cultigen that apparently was not grown successfully in southern Texas because the local environment was so poor for that crop. Attempts to grow wheat between 1778 and 1790 produced mixed results, and by 1790 it was reported that wheat was not grown at Béxar. It may be assumed that the missions also had problems with wheat production. Because the majority of wheat consumed in the region was imported from Coahuila (de la Teja 1995:93), the wheat identified in the garbage pits at 41RF1 may have been imported.

The seasonal agricultural cycle began by cleaning out the irrigation canals in February and burning the maize stalks left in the fields from the previous harvest (Schuetz 1980:275). Maize was planted from May to June, but an early crop was sometimes attempted as early as February or March. Cotton was planted along with chiles or beans in June. Hoeing, weeding and irrigating were carried out daily by the mission Indians. Maize could be harvested green, but mature cobs were usually not picked until August. Cotton was harvested in September, which made it particularly vulnerable to tropical storms. Cotton bolls were picked and dried on hides by women and girls. According to Schuetz (1980:276) children received 3 oz. of de-seeded cotton each day to spin into thread, women given 1.5-2 oz. with seeds to pick and spin. Thus, the mission Indians were involved in agricultural production from the planting of the produce to the manufacture of durable goods from that produce. Involving mission Indians in an agricultural and market system would restrict or completely eliminate indigenous subsistence patterns. This would keep Indians dependent on the Spanish for their livelihood, as long as they remained at the missions, and the signature of this subsistence shift would be a plant assemblage dominated by domesticated plants not previously seen in the archaeological record.

Conclusions

The examination of plant remains from flotation and macrobotanical samples has documented an assemblage dominated by domesticated plants. Maize, beans, and squash, were the primary cultigens. Garden cultigens included watermelon and cantaloupe, and peaches must have been cultivated in groves. Wheat was present in the archaeobotanical assemblage, but according to historical documents it may have been imported. Pine wood, another non-local plant common in the trash pits, was probably an important wood used in construction.

The plant remains reflect a subsistence system based on agriculture. Few wild plant seeds or other undomesticated foods such as roots or nuts were noted in the samples. The evidence indicates that the inhabitants of the mission relied primarily on agricultural resources. The only locally available plant resources identified in the samples were obtained from native trees and grasses, materials that would have been used for fire or shelter.

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Appendix F

Mission Refugio

Pollen and Phytoliths Analysis

Appendix F: Pollen and Phytoliths Analysis

John G. Jones

Introduction

A total of 10 sediment samples from Mission Refugio (41RF1), were submitted to the Palynology Laboratory at Texas A&M University for pollen and phytolith analysis. These samples were selected for analysis based on their strategic proveniences (Table F-1), as well as on the likelihood of successfully extracting well-preserved microfossil remains. The features examined in this study represent historic-period trash features associated with the historic mission (1794-1830). Feature 8, is a probable trash pit that may date to some period after mission activity ceased. It was anticipated that a detailed analysis of the fossil pollen and phytoliths in these sediments might provide clues as to past environmental conditions, early plant use, and offer information on past feature function.

Methodology

Recognizing that pollen and phytoliths may not be well-preserved in the highly oxidizing environment present at Mission Refugio, conservative microfossil extraction techniques were employed.

Pollen

The samples were first quantified (15 mls), placed in sterile beakers, and a known quantity of exotic tracer spores was added to each sample. Here, *Lycopodium* spp. spores were chosen as an exotic, because these spores are unlikely to be found in the actual fossil pollen assemblages from this region. Tracer spores are added to samples for two reasons. First, by adding a known quantity of exotic spores to a known quantity of sediment, fossil pollen concentration values can be calculated. Second, in the event that no fossil pollen is observed in the sediment sample, the presence of *Lycopodium* tracer spores verifies that processor error was not a factor in the pollen loss.

Following the addition of the tracer spores, the samples were washed with concentrated hydrochloric acid. This step removed carbonates and dissolved the bonding agent in the tracer spore tablets. The samples were then rinsed in distilled water, sieved through 150 micron mesh screens and swirled to remove the heavier inorganic particles. Next the samples were consolidated, and 70 percent hydrofluoric acid was added to the residues to remove unwanted silicates. After the silicates had been removed, the residues were rinsed thoroughly, and sonicated in a Delta D-5 sonicator for 30 seconds. This step deflocculated the residues, effectively removing all colloidal material smaller than two microns.

Next, the samples were dehydrated in glacial acetic acid, and were subjected to an acetolysis treatment (Erdtman 1960) consisting of nine parts acetic anhydride to one part concentrated sulfuric acid. During this process, the samples were placed in a heating block for a period not exceeding eight minutes. This step removed most unwanted organic materials, including cellulose, hemi-cellulose, lipids, and proteins, and converted these materials to water-soluble humates. The samples were then rinsed until a neutral pH was achieved.

Following this treatment, the samples were next subjected to a heavy density separation using Zinc Bromide (Sp.G. 2.00). Here, the lighter organic fraction was isolated from the heavier minerals. After this treatment, the lighter pollen and organic remains were collected, and washed in 1% KOH to remove any remaining humates. The residues were then dehydrated in absolute alcohol, and transferred to a glycerine medium for curation in glass vials.

Slides were prepared using glycerine, and identifications were made on a Jenaval compound stereomicroscope at 400-1250x magnification. Identifications were confirmed by using the Palynology Laboratory's extensive pollen reference collection.

A standardized technique was employed in counting the fossil pollen, where a 200 or more grain count was made for each sample, as suggested by Barkley (1934). This technique is standard practice among most palynologists, and is thought to reflect past vegetation or economic plant use fairly well. Following the achievement of a 200+ grain count, the remainder of the slide was carefully scanned for economic pollen types or other significant taxa not recorded during the actual counting.

Table F-1. Proveniences for pollen and phytolith samples

Lab #	Sample #	Feature #	Provenience
1	281	2	73N/100E, 60-70 cmbs
2	282	2	73N/100E, 70-80 cmbs
3	283	2	73N/100E, 80-90 cmbs
4	278	2	73N/100E, 90-100 cmbs
5	279	1	85N/99E, 40-50 cmbs Above Lime
6	290	1	85N/99E, 40-50 cmbs Below Lime
7	293	1	85N/99E, 80-90 cmbs
8	297	1	85N/99E, 120-130 cmbs
9	349	8	Zone C
10	370	8	Zone J

Concentration values were calculated for all samples. Hall (1981) and Bryant and Hall (1993) note that concentration values below 2,500 grains/ml of sediment may not be well-reflective of past conditions, and usually record a differentially-preserved assemblage. As a result, counts with low concentration values should be viewed with caution.

Phytoliths

The samples were processed using techniques developed at the Texas A&M University Palynology Laboratory. Sediment samples were initially quantified (10 grams), and were placed in beakers for chemical treatment.

First, carbonates were removed with 10% HCl. The samples were next rinsed, screened through 150 micron mesh and a series of "short spins" was initiated to remove residual hydrochloric acid and to facilitate the removal of clay particles and the smallest of phytoliths. This step is necessary as phytoliths smaller than 2-3 microns are rarely identifiable or valuable. Following this step, the samples were sonicated in a Delta D-5 ultrasonic generator for a period of 30 seconds, and several additional short spins were performed. These steps removed most of the remaining fine clays.

The residues were next transferred to glass 100 ml tubes, and Schulze's solution (42% nitric acid and potassium chlorate) was added to the samples. The samples were placed in a boiling water bath for about three hours or until all organic traces had been removed. Next, the samples were centrifuged and rinsed until neutral. Following this treatment, 5% KOH was added to the residues to remove any additional humates. After additional rinsing in distilled water, the residue was transferred to a 300 ml glass beaker, and the samples were fractionated in a water column. Here, samples were separated into two size categories: 3-25 micron and 25-150 micron ranges. After fractionation, the residues were transferred to 15 ml tubes, and the remaining water was removed in preparation for heavy density separation. Here, zinc bromide (Sp.G. 2.38) was added to the samples, which were then spun at high speeds for about 10 minutes. The lighter phytolith fraction was collected, and the heavy density separation step was repeated, again collecting the lighter phytoliths. Abundant phytolith remains were noted in all samples.

The phytoliths were next rinsed and transferred to absolute ethanol for curation. A single drop containing phytoliths was added to a cover slip, and it was then allowed to dry. A drop of Meltmount adhesive (refractive index 1.539) was added to the cover slip, and a permanent slide was then made for each fraction of each sample.

Slides were examined at high magnification (1000-1250x) using oil immersion and differential interference contrast settings on a Jenaval compound stereomicroscope. Identifications were confirmed through the use of reference materials and published keys and descriptions.

Among phytolith researchers, there is no established procedure as to how many phytoliths should be counted to establish a representative record of past conditions. In the case of pollen analysis, most researchers count a minimum

Table F-2. Pollen counts from the Mission Refugio samples

Taxa	**Common Name**	**Sample Number**							
		281	282	278	290	293	297	249	370
Apiaceae	Celery fam.			1 (0.5)		2 (1.0)			
Artemisia	Sage		1 (0.5)					1 (0.5)	
Asteraceae Lig.	Dandelion, Chicory	1 (0.5)			1 (0.5)			2 (1.0)	1 (0.5)
Asteraceae HS	Sunflower	4 (2.0)		7 (3.5)	1 (0.5)	1 (0.5)			
Asteraceae LS	Ragweed	57 (28.5)	49 (24.5)	71 (35.5)	64 (32.0)	75 (37.5)	79 (39.5)	49 (24.5)	66 (33.0)
Boerhaavia	Spiderling			1 (0.5)					
Cheno-Am	Pigweed, Goosefoot	20 (10.0)	8 (4.0)	11 (5.5)	30 (15.0)	31 (15.5)	16 (8.0)	56 (28.0)	41 (20.5)
Cirsium	Thistle	3 (1.5)	1 (0.5)	1 (0.5)	1 (0.5)	3 (1.5)	2 (1.0)		
Convolvulaceae	Morning Glory fam.	1 (0.5)							
Cucurbita	Squash							1 (0.5)	
Cyperaceae	Sedge fam.	4 (2.0)	2 (1.0)	1 (0.5)	4 (2.0)	2 (1.0)	1 (0.5)	8 (4.0)	4 (2.0)
Eriogonum	Wild Buckwheat	1 (0.5)	1 (0.5)	2 (1.0)	1 (0.5)		3 (1.5)	3 (1.5)	1 (0.5)
Euphorbiaceae	Spurge fam.							1 (0.5)	
Fabaceae	Legume fam.	1 (0.5)	2 (1.0)	1 (0.5)	3 (1.5)	1 (0.5)	1 (0.5)		1 (0.5)
Gentianaceae	Gentian fam.		1 (0.5)				1 (0.5)		1 (0.5)
Lamiaceae	Mint fam.	1 (0.5)							
Liliaceae	Lily fam.		1 (0.5)	2 (1.0)					
Poaceae	Grass fam.	53 (26.5)	69 (34.5)	18 (9.0)	39 (19.5)	22 (11.0)	25 (12.5)	18 (9.0)	21 (10.5)
Polygonaceae	Knotweed fam.	1 (0.5)	2 (1.0)		1 (0.5)	2 (1.0)			
Cerealea	Dom. Old World Grains		1 (0.5)	3 (1.5)			2 (1.0)		
Solanaceae	Nightshade Fam.					1 (0.5)			
Vicia	Vetch			1 (0.5)					
Zea mays	Maize	1 (0.5)							
Carya	Hickory, Pecan	3 (1.5)	1 (0.5)						
Celtis	Hackberry	1 (0.5)					1 (0.5)		
Cephalanthus	Bottombush			1 (0.5)		1 (0.5)		2 (1.0)	
TCT	Juniper, Bald Cypress	27 (13.5)	28 (14.0)	7 (3.5)	27 (13.5)	20 (10.0)	15 (7.5)	18 (9.0)	20 (10.0)
Pinus	Pine		1 (0.5)	1 (0.5)	1 (0.5)		1 (0.5)		4 (2.0)
Platanus	Sycamore		1 (0.5)		1 (0.5)		2 (1.0)	2 (1.0)	
Prosopis	Mesquite				2 (1.0)	1 (0.5)			
Quercus	Oak	8 (4.0)	16 (8.0)	45 (22.5)	11 (5.5)	14 (7.0)	26 (13.0)	19 (9.5)	21 (10.5)
Rhus	Sumac		1 (0.5)						
Salix	Willow	1 (0.5)	1 (0.5)			1 (0.5)	3 (1.5)	2 (1.0)	1 (0.5)
Ulmus	Elm		1 (0.5)	7 (3.5)		6 (3.0)	10 (5.0)	2 (1.0)	5 (2.5)
Viburnum	Viburnum, Arrow-wood			1 (0.5)					
Indeterminate		12 (6.0)	12 (6.0)	18 (9.0)	13 (6.5)	17 (8.5)	12 (6.0)	16 (8.0)	13 (6.5)
Total Pollen		**200 (100)**	**200 (100)**	**200 (100)**	**200 (100)**	**200 (100)**	**200 (100)**	**200 (100)**	**200 (100)**
Concentration Value (grains/ml)		**2081**	**2081**	**2500**	**3214**	**2813**	**2069**	**2707**	**2571**

of 200 grains as suggested by Barkley (1934). Many phytolith researchers will count a specified number of slide scans, however, with this technique significant variations in phytolith numbers are frequently obtained. Rather, I decided to count a minimum of 300 phytoliths from each fraction. As each size fraction contains different phytolith types (bulliform cells, elongates, rods and hair cells in the coarse fraction; diagnostic grass short cells in the fine fraction), I considered it important to quantify each fraction separately. For graphic purposes, both the coarse and fine fraction assemblages have been included in the graphs. Percentages were calculated based on the total number of phytoliths identified within each size fraction.

Results

Fairly well preserved pollen was noted in all of the samples, and at least 35 different taxa were identified in the Mission Refugio samples (Table F-2). Two samples, however (Sample #283 and 279), contained very large quantities of charcoal which obscured the fossil pollen grains making the slides uncountable. Pollen grains identified in the samples are presented in Table F-2 and Figure F-1. Despite the highly oxidizing environment of Refugio County, a surprising array of fossil grains were identified in the samples. Pollen concentration values ranged from 2,069 to 3,214 fossil grains/ml of sediment. These values are fairly low, but are probably acceptable for gross interpretations. Among the identified pollen grains are several taxa which are generally thought to be fairly fragile and are infrequently found, including *Cucurbita*, Cyperaceae, Lamiaceae, Solanaceae, and *Vicia*. The presence of these pollen taxa confirms that preservation at 41RF1, although imperfect, is at least such that some interpretations from the pollen are possible. Still, it is important to realize that the pollen that was identified in the Mission Refugio sediments is probably quite different from those grains which were originally present, and that some taxa have been selectively lost through degradation.

Phytoliths from 41RF1, were very well preserved (Table F-3). While most phytoliths identified represent various grasses, a number of additional taxa were also noted, including *Cucurbita* cf. *foetidissima* (buffalo gourd), Arecaceae (palm family), *Celtis* (hackberry), and Cyperaceae (sedge family, including *Cyperus* and *Carex* types). Cultigens are represented in the assemblage by Cerealea-type Festucoid forms, and large diagnostic cross shaped phytoliths from *Zea mays*. Phytolith data is presented graphically in Figure F-2.

Discussion

Most of the pollen recovered from the Mission Refugio sediment samples is from wind-pollinated taxa representing local native plant communities. The arboreal taxa make up most of this category including *Carya* (hickory or pecan), *Celtis* (hackberry), *Cephalanthus* (buttonbush), *Pinus* (pine), *Platanus* (sycamore), *Prosopis* (mesquite), *Quercus* (oak), *Rhus* (sumac), *Salix* (willow), Taxodiaceae/Cupressaceae (Bald Cypress/Juniper), *Ulmus* (elm), and *Viburnum* (viburnum), and indicate that environmental conditions in the site area are similar to those found in the region today. The assemblages are dominated by oaks, junipers, composites, and grasses suggesting the region was a grassland with scattered mottes of trees. All arboreal taxa identified in the Mission Refugio samples are species likely to be found in this type of setting.

Human caused disturbance, however, is also apparent in the pollen record. Cultigens (Cerealea-type Poaceae grains, *Zea mays,* and *Cucurbita*) and field weeds (Cheno-Ams and Asteraceae) were common in the sediments signaling that the region was heavily modified by human activity.

Feature 2 is a trash deposit thought to be contemporaneous with the period of mission activity. Three samples from this feature yielded pollen present in sufficient quantities to warrant counting: Samples from 100, 80, and 70 cms bs. These samples are all dominated by LS Asteraceae, Poaceae, *Quercus* and *Juniperus* pollen, all species known to produce large quantities of durable pollen. The lowermost sample from Feature 2 exhibits a slightly greater amount of *Quercus* pollen which may indicate that more oak trees were in the area at that time. Cultigens were represented in the feature by the presence of Cerealea-type grass grains, and by *Zea mays*.

Feature 1 is also a trash pit that is thought to date to the period of mission use. Three samples from this feature yielded countable pollen; 50, 90, and 130 cm bs. Again, the pollen assemblages are dominated by LS Asteraceae, Poaceae, *Quercus* and *Juniperus* grains. As with Feature 2, there is a slightly larger quantity of *Quercus* pollen in the lowermost sample suggesting that oak trees may have been more common at an earlier time. Cultigens were represented in Feature 1 only by two Cerealea grains. It is interesting that Cerealea (wheat, oats, rye or barley) grains are slightly more common at the lower levels than in the upper zones of Features 1 and 2. Prior to the establishment of a local rail system, it would have been necessary to produce these grains

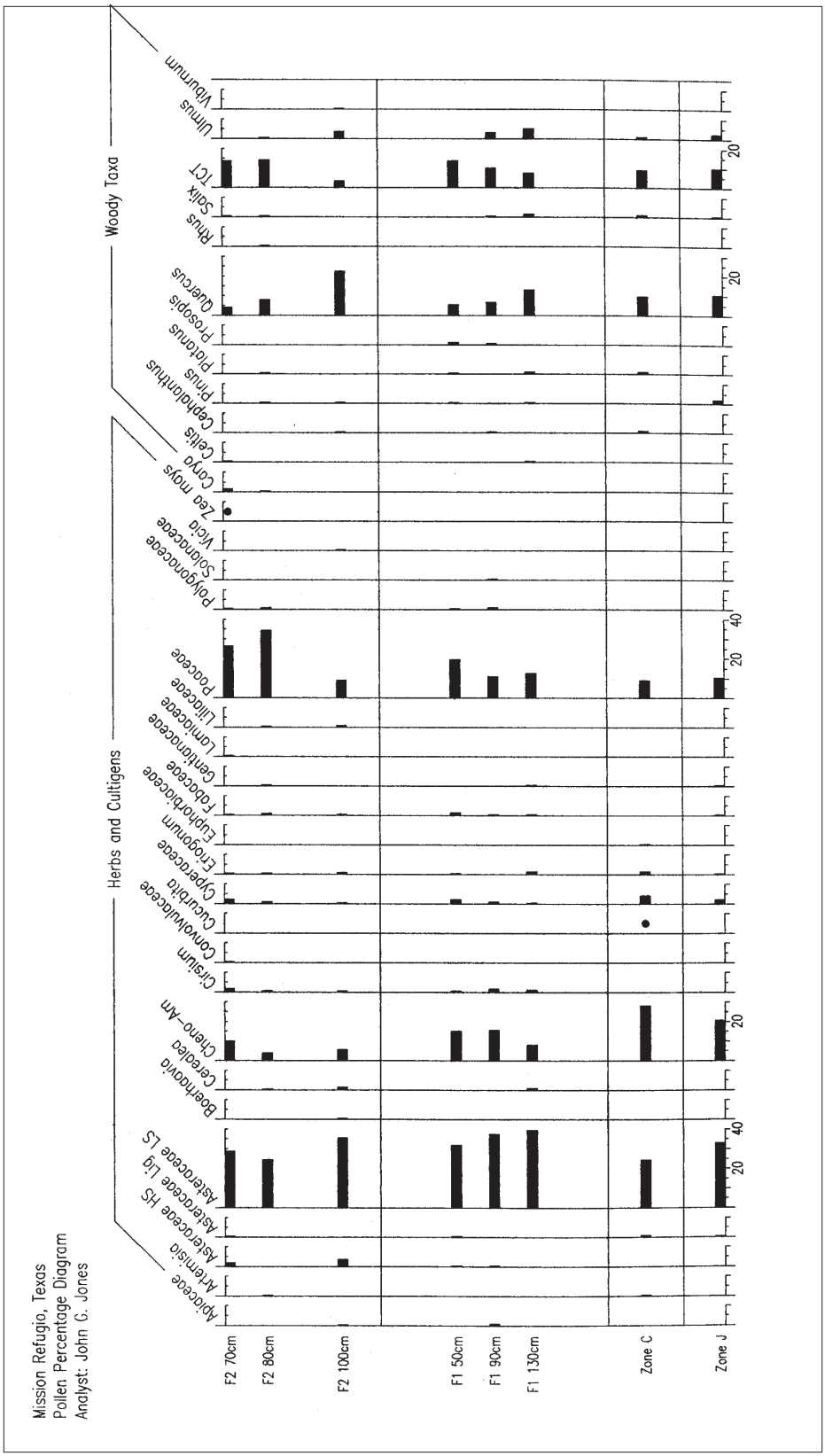

Figure F-1. *Pollen grains identified in the samples (percentage).*

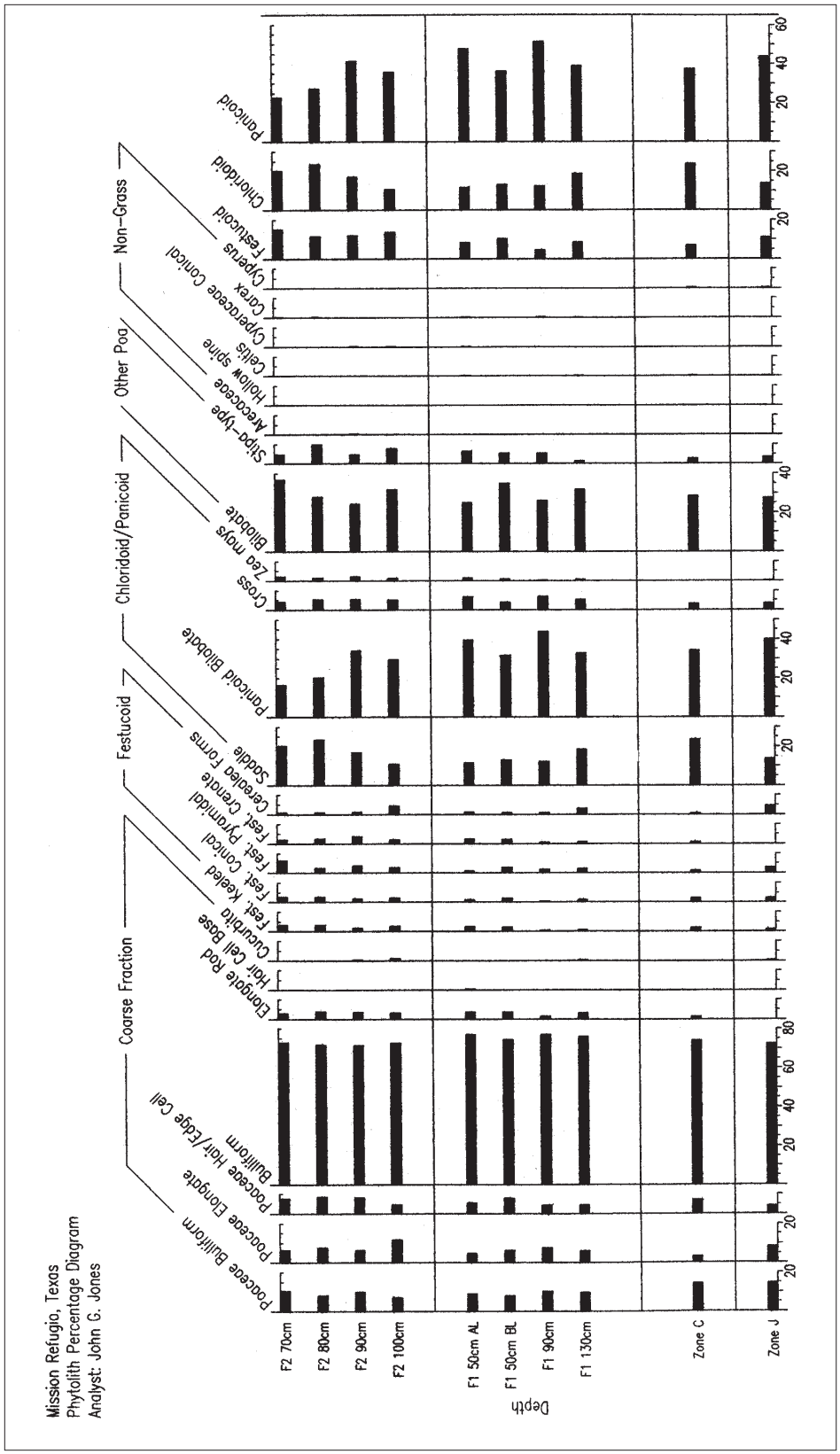

Figure F-2. *Phytoliths identified in the samples (percentage).*

Table F-3. Taxa identified in phytolith samples from Mission Refugio

Taxa	Sample Number									
	281	**282**	**283**	**278**	**279**	**290**	**293**	**297**	**349**	**370**
Coarse Fraction										
Poaceae Bulliform	33 (10.4)	25 (8.0)	30 (9.9)	21 (7.0)	28 (9.0)	25 (7.9)	31 (10.1)	31 (9.7)	44 (14.3)	45 (14.6)
Poaceae Elongate	20 (6.3)	24 (7.7)	19 (6.3)	35 (11.7)	15 (4.8)	20 (6.3)	23 (7.5)	20 (6.2)	10 (3.2)	26 (8.4)
Poaceae Hair/Edge	24 (7.6)	27 (8.7)	25 (8.3)	14 (4.7)	17 (5.4)	25 (7.9)	13 (4.2)	15 (4.7)	22 (7.1)	13 (4.2)
Cucurbita			1 (0.3)	3 (1.0)				1 (0.3)	1 (0.3)	
Bulliform	230 (72.8)	223 (71.7)	216 (71.5)	218 (72.2)	240 (76.9)	235 (74.4)	236 (76.9)	244 (76.0)	228 (74.0)	224 (72.5)
Elongated Rod	9 (2.8)	12 (3.9)	11 (3.6)	9 (3.0)	11 (3.5)	11 (3.5)	4 (1.3)	10 (3.1)	4 (1.3)	
Hair Cell Base					1 (0.3)					
Total Coarse	**316 (100)**	**311 (100)**	**302 (100)**	**300 (100)**	**312 (100)**	**316 (100)**	**307 (100)**	**321 (100)**	**308 (100)**	**309 (100)**
Fine Fraction										
Keeled	10 (3.1)	11 (3.3)	6 (1.8)	9 (2.8)	8 (2.4)	7 (2.2)	2 (0.6)	3 (0.9)	6 (1.9)	4 (1.2)
Conical	9 (2.8)	9 (2.7)	6 (1.8)	7 (2.1)	4 (1.2)	6 (1.9)	2 (0.6)	4 (1.3)	7 (2.2)	7 (2.2)
Pyramidal	20 (6.3)	8 (2.4)	12 (3.6)	9 (2.8)	3 (0.9)	9 (2.9)	5 (1.6)	7 (2.2)	4 (1.3)	9 (2.8)
Crenate	6 (1.9)	8 (2.4)	12 (3.6)	6 (1.8)	8 (2.4)	7 (2.2)	2 (0.6)	3 (0.9)	3 (1.0)	
Cerealea-typ	3 (0.9)	3 (0.9)	4 (1.2)	14 (4.3)	4 (1.2)	3 (1.0)	3 (1.0)	10 (3.2)	2 (0.6)	15 (4.7)
Saddle	64 (20.1)	79 (23.4)	56 (16.8)	35 (10.7)	38 (11.6)	41 (13.1)	38 (12.3)	59 (18.6)	74 (23.6)	44 (13.8)
Stipa-type	15 (4.7)	33 (9.8)	16 (4.8)	26 (8.0)	21 (6.4)	17 (5.4)	17 (5.5)	5 (1.6)	9 (2.9)	11 (3.4)
Bilobate	117 (36.8)	94 (27.9)	81 (24.3)	103 (31.5)	82 (25.1)	110 (35.0)	80 (26.0)	101 (31.9)	89 (28.4)	88 (27.5)
Panicoid Bilobate	52 (16.4)	68 (20.2)	113 (33.9)	96 (29.4)	129 (39.4)	99 (31.5)	135 (43.8)	104 (32.8)	107 (34.2)	128 (40.0)
Cross	13 (4.1)	18 (5.3)	18 (5.4)	17 (5.2)	22 (6.7)	12 (3.8)	22 (7.1)	17 (5.4)	10 (3.2)	11 (3.4)
Zea mays	7 (2.2)	5 (1.5)	7 (2.1)	4 (1.2)	5 (1.5)	3 (1.0)	1 (0.3)	2 (0.6)		1 (0.3)
Arecaceae			1 (0.3)							
Hollow Spine	1 (0.3)									
Cyperaceae Conical			1 (0.3)	1 (0.3)	1 (0.3)					
Carex	1 (0.3)	1 (0.3)			1 (0.3)		1 (0.3)	1 (0.3)		
Cyperus									1 (0.3)	1 (0.3)
Celtis Fruit					1 (0.3)			1 (0.3)	1 (0.3)	1 (0.3)
Total Fine	**318 (100)**	**337 (100)**	**333 (100)**	**327 (100)**	**327 (100)**	**314 (100)**	**308 (100)**	**317 (100)**	**313 (100)**	**320 (100)**
Total	**634**	**648**	**635**	**627**	**639**	**630**	**615**	**638**	**621**	**629**

locally. Later on, with better systems of transport, local farmers would have switched to more lucrative crops (such as maize) while abandoning less productive grains. A similar trend of this nature was noted at Mission San Juan Capistrano in San Antonio (Jones 2001), where Old World cereal grain phytoliths were most common in the earlier zones, while maize became more important in the later deposits.

While the Cerealea pollen in Features 1 and 2 may represent grains blown into the features from nearby agricultural activities, alternative explanations are possible. The grains may also have been introduced into the sediments through the disposal of manure or hay.

Two additional pollen samples from Feature 8 were also examined. Feature 8 is a large excavated pit of unknown function, somewhat removed from the mission area. Two samples were examined from Zone C and Zone J. The pollen assemblages from these samples are similar to those from Features 1 and 2, although here there are slightly more Cheno-Ams and no Cerealea or maize grains. Pollen from *Cucurbita* sp. (buffalo gourd or domesticated squash) was identified in the Zone C sample. Analysis of fossil pollen offers no real clues as to this feature's function.

Phytoliths

Well-preserved fossil phytoliths were identified in all of the samples from Mission Refugio. Not surprisingly, the assemblages are dominated by grasses, as these plants are both abundant in the site area, and are among the heaviest phytolith producers. Of the identifiable types, Chloridoid and Panicoid types are the most commonly encountered forms in the samples. Chloridoid phytoliths are from the C_4 bunch grasses (buffalo grass or grama grass). These plants are best represented in a warm and dry climate. Panicoids are mostly tropical and subtropical C_4 grasses favoring a warmer climate with more available moisture. Maize is a member of the Panicoid group of grasses. Both groups of grasses are well-represented in south and central Texas. Festucoid or Pooid grasses, on the other hand, are cool climate C_3 grasses, members of which are generally poorly represented in the Mission Refugio region. This group makes up the domesticated Old World grasses, including oats, rye, barley, and wheat. I suspect that many of the Mission Refugio phytoliths of this group were introduced into the sediments through the processing or disposal of domesticated grains. One particular form (Cerealea type) is an irregular body frequently encountered in, but not exclusive to, domesticate Cerealea plants. These distinctive phytolith forms exhibit the same general pattern shown by Cerealea pollen, where there is a slightly greater number found in the deeper sediments of both Features 1 and 2. This too may support the hypothesis that domesticated grains were more commonly grown in earlier times, later to be replaced by more prolific taxa.

In the Mission Refugio samples, maize is better represented by phytoliths than pollen. Maize produces a distinctive and large cross shaped phytolith body. These forms were identified in nearly all samples attesting to the importance of this plant. A single maize phytolith was also noted in the sediment sample from Zone J of Feature 8.

Cucurbita cf. *foetidissima* (buffalo gourd) phytoliths were noted in samples from the lower portions of Features 1 and 2, and from Zone J of Feature 8. This plant is fairly common throughout much of Texas, and thrives in waste places and disturbed environments. The seeds of buffalo gourd are rich in oils and high in protein (Jacks et al. 1972) and it may have been encouraged or even cultivated in the Mission Refugio area.

Several other phytolith types were noted, including a single *Sabal*-type Arecaceae phytolith, *Celtis* fruit phytoliths, and several Cyperaceae (*Carex* and *Cyperus*) phytoliths. The presence of a single palm phytolith is curious, as palms are not known to occur in the site area. It is possible that ornamental palms may have been planted in the area in the past, or alternatively, the phytolith may have been reworked from Tertiary age sediments cropping out in the site vicinity. *Celtis* and Cyperaceae phytoliths are to be expected as normal background taxa.

Summary

A total of 10 sediment samples from Mission Refugio were examined for fossil pollen and phytoliths. These samples were selected from significant strata and represent fill from two trash pits and a pit of unknown function. It was anticipated that information on past plant use might be gained from this type of study.

Environmental pollen and phytoliths indicate that conditions during mission use were similar to those of today. The area was probably a grassland environment with scattered mottes of trees, including oaks, junipers, elms, hickory or pecans, and hackberry. Cultigens at the site are represented by pollen and phytoliths of maize and domesticated Old World Cerealea grains (wheat, barley, rye, or oats). There is an interesting trend towards the reduction of Cerealea pollen and phytoliths from earlier to later deposits, suggesting that these grains became less important to the local agricultural economy. With better means of transport and shipping, it likely became more profitable to import less productive Cerealea grains and concentrate agricultural efforts on maize and those plants better adapted to a Texas climate.

Buffalo gourd phytoliths and probable pollen were also noted in all of the features. It is not inconceivable that this plant was encouraged or even cultivated in the site area for its valuable protein and oil rich seeds.

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Appendix G

Mission Refugio

Petrographic Ceramic Analyses

Bone Tempered and Mexican Glazed Ceramics

Appendix G: Petrographic Ceramic Analyses

Bone Tempered Ceramics

David V. Hill

Introduction

A sample of 107 ceramic sherds from the Spanish Colonial site of Mission Refugio, 41RF1, were examined through petrographic analysis. Several compositional groups were identified based on the variation in the relative amount of sand and bone present in the sherds.

Methodology

The ceramics were analyzed using a Nikon Optiphot-2 petrographic microscope. The sizes of natural inclusions and tempering agents were described in terms of the Wentworth Scale, a standard method for characterizing particle sizes in sedimentology. These sizes were derived from measuring a series of grains using a graduated reticle built into one of the microscopes optics. The percentages of inclusions in untempered ceramics were estimated using comparative charts (Matthew et al. 1991; Terry and Chilingar 1955). Studies have been conducted regarding the reproducibility of determinations using these charts (Mason 1995). Given the limited amount of inclusions that may be present in ceramics and the small size of many of the sherds in the sample, the comparative method for assessing the amount and size of materials found in ceramics has been found useful for archaeological ceramic petrography as point counting (Mason 1995).

Analysis was conducted by first going through the total ceramic collection and generating a brief description of each of the sherds. A second phase identified groups based on the similarity of the paste and temper between sherds. The five classifications based on paste and temper composition are: 0 = high sand, no bone; 1 = 20-40 percent sand, 15 percent or less bone; 2 = very low sand, 10-15 Percent bone; 2A = low sand, abundant bone; and 2B = 15 percent or less sand, 10 percent or more bone (Table G-1).

A third check of the ceramics was made to identify patterns of similarities within, or differences between, the three analytical units identified in Chapter 8A, Volume I of this report. Additional comments about the composition of individual sherds were made at this time. A description of each analyzed sherd is given in the following section, arranged by analytical unit.

Description of Sample Sherds

Analytical Unit 1: Feature 1 Sherds

RFT-032

The paste of this sherd is light grayish brown in color and has a distinctive sandy texture resulting from the presence of 20 percent silt-sized to fine sub-rounded sand grains. Quartz makes up about 80 percent of the sand grains. Some of the quartz grains display undulose extinction. Also present are sparse potassium feldspar grains and a single fine microcline grain was also observed. Most of these grains display alteration to sericite and clay minerals. Bone makes up only about one percent of the ceramic matrix. The bone fragments are translucent under cross-polarized light. The bone fragments range in size from fine to medium. This is a Class 1 sherd.

RFT-040

The paste of this sherd is a medium to dark brown. The paste contains about 15 percent fine-sized, rounded sands. The composition of the sand is dominated by quartz with a trace amount of potassium feldspar, and plagioclase. Also present in the sherd are fine- to medium-sized fragments of bone. Bone makes up about an additional 10 percent of the ceramic body. The bone fragments appear to be translucent with slightly brownish edges under cross-polarized light. This is a Class 2B sherd.

RFT-042

The paste of this sherd is very dark brown and opaque. The paste contains about 35 percent silt-sized to fine, sub-rounded grains of sand dominated by quartz. Sparse potassium feldspar and microcline are also present, but in trace amounts. The feldspars are slightly altered to sericite and clay minerals. One microcline grain contains quartz poikilitically. Also present were two coarse-sized, rounded grains of fine-grained sandstone. A clay cement supports the sandstone. The paste also contains fine- to medium-sized fragments of bone. The bone fragments make up about one percent of the ceramic paste. The bone fragments appear to be translucent with slightly brownish edges under cross-polarized light. This is a Class 1 sherd.

Table G-1. Paste and temper composition of unglazed Native American ceramic sherds from Mission Refugio

Sample #	Provenience	AU #	Sand Size	Sand %	Bone Size	Bone %	Paste Group
RFT002	75N/99E 30-40cmbs	1	F	35	M-VC	15	1
RFT006	75N/99E 30-40cmbs	1	VF-F	35	F-M	15	1
RFT010	76N/100E 10-20cmbs	1	VF-F	20	F-C	15	1
RFT014	74N/100E 30-35cmbs	1	VF-F	20	F-C	15	1
RFT015	73N/99E 40-50cmbs	1	St-F	5	F-C	15	2
RFT019	75N/100E 50-55cmbs	1	VF-F	5	C	15	2
RFT021	74N/100E 50-55	1	St-F	25	F-C	7	1
RFT041	86N/100E 40-50cmbs	1	F	3	F-C	15	2
RFT044	84N/100E 20-30cmbs	1	St-F	35	F-C	3	1
RFT049	86N/100E 20-30cmbs	1	St-F	25	M	3	1
RFT059	87N/100E 20-30cmbs	1	St-F	10	F-C	10	2B
RFT062	85N/99E 20-30cmbs	1	F	1	F-C	10	2
RFT063	87N/100E 0-20cmbs	1	VF-M	35	C-VC	5	1
RFT064	86N/99E 0-20cmbs	1	St-F	25	F-C	15	1
RFT074	85N/100E 20-30cmbs	1	St-F	25	F-C	7	1
RFT075	83N/100E 0-20cmbs	1	St-F	40	0	0	0
RFT076	83N/100E 0-20cmbs	1	St-F	30	F-C	10	1
RFT077	86N/100E 40-50cmbs	1	St-F	35	F-C	3	1
RFT081	85N/99E 0-20cmbs	1	F-M	1	C	10	2
RFT090	87N/100E 20-30cmbs	1	VF-F	35	F-C	10	1
RFT094	85N/99E 30-40cmbs AL	1	St-F	25	F-C	10	1
RFT095	86N/100E 40-50cmbs AL	1	VF-F	10	F-VC	15	1
RFT098	71N/100E 0-20cmbs	1	St-F	30	F-C	10	1
RFT099	86N/99E 40-50cmbs AL	1	St-F	30	F-C	10	1
RFT102	TxDOT TP1 0-10cmbs	1	St-F	30	F-C	10	1
RFT103	TxDOT TP1 10-20cmbs	1	St-F	25	M-VC	10	1
RFT106	TxDOT Gradall Tr. # 1	1	St-F	20	F-C	10	1
RFT108	95N/100E 20-30cmbs	1	St-F	15	F-C	3	2B
RFT111	78N/100E 20-30cmbs	1	St-F	35	C-VC	5	1
RFT119	71N/100E 0-20cmbs	1	St-F	25	F-C	10	1
RFT120	90N/100E 0-11cmbs BL	1	St-F	15	F-C	10	1
RFT123	79N/100E 20-30cmbs	1	St-F	40	M	1	1
RFT126	60N/100E 20-30cmbs	1	St-M	15	F-C	5	1
RFT127	95N/100E 0-20cmbs	1	M	1	F-C	10	2
RFT130	71N/100E 0-20cmbs	1	St-F	30	F-C	10	1
RFT131	81N/100E 0-15cmbs AL	1	VF-F	20	F-C	15	1
RFT136	95N/100E 30-40cmbs	1	St-F	25	F-C	10	1
RFT138	71N/100E 20-30cmbs	1	VF-F	20	F-C	10	1
RFT140	78N/100E 0-20cmbs	1	F	10	F-C	20	2B
RFT141	71N/100E 0-20cmbs	1	St-F	15	F-M	10	1
RFT032	75N/100E 50-60cmbs	2	St-F	20	F-M	1	1
RFT040	86N/100E 65-70cmbs	2	F	15	F-M	10	2B
RFT042	85N/99E 100-110cmbs	2	St-F	35	F-M	1	1
RFT043	85N/100E 100-110cmbs	2	St-F	30	M-VC	7	1
RFT045	86N/99E 100-110cmbs	2	St-F	30	M-VC	7	1
RFT047	85N/100E 90-100cmbs	2	VF	1	M	15	2
RFT048	86N/99E 100-110cmbs	2	St-F	15	F-M	10	2B
RFT050	85N/100E 100-110cmbs	2	St-F	25	F-M	10	1
RFT051	85N/100E 120-130cmbs	2	F	1	M-VC	20	2A
RFT055	85N/99E 70-80cmbs	2	F-M	3	F-C	15	2
RFT056	83N/100E 20-30cmbs	2	St-F	25	F-C	10	1
RFT060	86N/99E 60-70cmbs	2	St-F	35	F-M	1	1
RFT061	86N/100E 70-75cmbs	2	VF	25	F-C	3	1
RFT067	85N/99E 90-100cmbs	2	F	1	F-C	15	2

Table G-1. Continued…

Sample #	Provenience	AU #	Sand Size	Sand %	Bone Size	Bone %	Paste Group
RFT068	85N/99E 50-60cmbs	2	F	1	M-VC	15	2
RFT070	84N/100E 90-100cmbs	2	St-F	3	F-C	15	2
RFT073	86N/100E 75-80cmbs	2	St-F	15	F-M	10	2B
RFT078	85N/100E 80-9-cmbs	2	F	1	F-VC	10	2
RFT079	83N/100E 60-70cmbs	2	F	1	F-VC	10	2
RFT085	84N/100E 60-70cmbs	2	F	1	M	10	2
RFT087	85N/100E 70-80cmbs	2	St-F	35	F-M	1	1
RFT088	86N/99E 50-60cmbs	2	F	10	F-VC	15	2B
RFT096	85N/99E 20-30cmbs	2	F-M	5	F-M	15	2B
RFT097	85N/99E 50-60cmbs	2	St-F	1	F-C	15	2
RFT109	81N/100E 30-40cmbs	2	F	1	F-C	10	2
RFT110	81N/100E 20-30 cmbs BL	2	F	1	F-C	15	2
RFT112	81N/100E 30-40cmbs	2	F-M	3	F-C	15	2
RFT113	81N/100E 20-30 cmbs BL	2	F	1	M	15	2
RFT114	81N/100E 30-40cmbs	2	St-F	1	F-C	15	2
RFT116	82N/100E 30-40cmbs	2	St-F	30	F-C	10	1
RFT124	82N/100E 40-50cmbs	2	VF-F	35	F-M	1	1
RFT125	80N/100E 20-30cmbs	2	St-F	1	F-C	15	2
RFT132	82N/100E 30-40cmbs	2	VF	25	F-C	10	1
RFT133	82N/100E 30-40cmbs	2	VF	25	F-C	3	1
RFT135	82N/100E 20-30cmbs	2	VF-F	35	F-M	3	1
RFT137	90N/100E 20-30cmbs BL	2	St-F	20	F-M	5	1
RFT144	82N/100E 30-40cmbs	2	VF-F	25	F-C	5	1
RFT145	80N/100E 30-40cmbs	2	St-F	3	F-C	15	2
RFT146	80N/100E 20-30cmbs	2	St-F	25	F-C	10	1
RFT001	75N/99E 60-70cmbs	3	St-F	25	F-M	1	1
RFT003	73N/100E 60-70cmbs	3	St-F	25	F-M	3	1
RFT008	76N/100E wall cleaning	3	M	1	F-C	10	2
RFT009	76N/100E 50-55cmbs	3	St-F	20	F-C	3	1
RFT011	75N/99E 50-60cmbs	3	M	1	F-C	10	2
RFT012	75N/99E 40-50cmbs	3	St-F	20	F-M	1	1
RFT013	75N/99E 80-90cmbs	3	F-M	1	F-C	10	2
RFT016	76N/100E 40-45cmbs	3	F-M	1	F-C	10	2
RFT017	75N/100E 70-80cmbs	3	St-F	25	F-M	3	1
RFT018	75N/99E 80-90cmbs	3	VF-F	10	F-C	15	1
RFT020	75N/99E 80-90cmbs	3	F-M	1	F-C	10	2
RFT022	74N/100E 65-70cmbs	3	F-M	1	F-C	10	2
RFT023	73N/99E 70-80cmbs	3	F-M	1	F-C	10	2
RFT024	75N/99E 40-50cmbs	3	F-M	1	F-C	10	2
RFT025	75N/99E 60-70cmbs	3	St-F	30	F-C	7	1
RFT027	74N/100E 70-75cmbs	3	F-M	1	F-C	10	2
RFT028	74N/100E 65-70cmbs	3	St-F	20	F-M	1	1
RFT029	75N/100E 60-70cmbs	3	F-M	20	F-M	1	1
RFT030	73N/100E 80-90cmbs	3	F-M	1	F-C	10	2
RFT031	76N/100E 70-75cmbs	3	F-M	1	F-C	10	2
RFT033	75N/100E 70-80cmbs	3	F-M	1	F-C	10	2
RFT034	76N/100E 30-35cmbs	3	St-F	20	F-M	1	1
RFT035	75N/99E 40-50cmbs	3	F-M	1	F-C	10	2
RFT036	74N/100E 80-85cmbs	3	F-M	1	F-C	10	2
RFT037	73N/100E 50-60cmbs	3	St-F	20	F-M	1	1
RFT038	72N/100E 70-80cmbs	3	St-F	20	F-M	1	1
RFT039	74N/100E 70-75cmbs	3	St-F	20	F-M	1	1
RFT053	85N/100E 90-100cmbs	3	St-M	35	F-M	7	1

RFT-043

This sherd has a sandy, dark brown paste. The paste contains moderately well sorted, silt-sized to fine, rounded quartz sands, which make up 30 percent of the ceramic matrix. Two light tan siltstone grains, one very coarse and one coarse were present. Bone was the added tempering agent. Bone temper ranges in size from medium to very coarse and makes up about seven percent of the ceramic body. The bone fragments are dark brown. This is a Class 1 sherd.

RFT-045

The paste of this sherd is dark yellowish-brown, mottled with very dark brown. The paste contains moderately well sorted silt-sized to fine round quartz sands. These quartz sands make up 30 percent of the ceramic matrix. Also present in the paste were coarse-sized, rounded, very-fine grained sandstone grains. A coarse-sized soil pisolite was also present. Bone was the added tempering agent. Bone temper ranges in size from medium to very coarse and makes up about seven percent of the ceramic body. The bone fragments display abundant yellow calcite crystals around the gray margins of the bone. This is a Class 1 sherd.

RFT-047

The paste of this sherd is a light yellowish brown color with very sparse, very fine, rounded quartz sands present. The paste also contains fine- to medium-sized fragments of bone that make up about 15 percent of the ceramic matrix. The bone is dark brown and slightly birefringent. This is a Class 2 sherd.

RFT-048

The paste of this sherd is a dark brown color. The paste has about 15 percent moderately well sorted, silt-sized to fine sands predominantly composed of quartz. Sparse potassium feldspar and plagioclase are also present. The feldspars are slightly altered to sericite and clay minerals. Fine- to medium-sized fragments of bone are also present, making up about 10 percent of the ceramic matrix. The bone is translucent with little alteration. The sherd is similar to sample RFT-073. This is a Class 2B sherd.

RFT-050

The paste of this sherd is very dark brown and opaque. The paste contains about 25 percent silt-sized to fine, sub-rounded grains of sand dominated by quartz. Sparse potassium feldspar and microcline are also present, but in trace amounts. The feldspars are slightly altered to sericite and clay minerals. A single fine-grained rounded tan sandstone grain was observed in the current specimen. A clay cement supports the sandstone. The paste also contains fine- to medium-sized fragments of bone. The bone fragments make up about 10 percent of the ceramic paste. This is a Class 1 sherd.

RFT-051

The paste of this sherd is a medium brown color. The paste contains fine, sparse, rounded quartz sand grains, making up about one percent of the ceramic body. The paste contains bone fragments that are transparent with gray opaque cores under cross-polarized light. The bone fragments also display considerable calcic alteration. The bone fragments make up about 20 percent of the ceramic body and range in size from medium to very coarse. This is the only sherd in the sample classified as Class 2A.

RFT-055

The paste of this sherd is a light yellowish brown with a distinctive silty texture. The paste contains about 3 percent fine- to medium-sized rounded quartz grains. A few weathered potassium feldspar grains were also observed. The bone temper ranges in size from fine to coarse and makes up about 15 percent of the ceramic body. The bone fragments are dark brown and slightly birefringent. This is a Class 2 sherd.

RFT-056

The paste of this sherd has a medium brown color and a particularly sandy texture. The paste contains about 25 percent silt-sized to fine sand dominated by quartz. Sparse potassium feldspar and microcline are also present in the sand. The feldspars are slightly altered to sericite and clay minerals. Bone temper is also present. The bone fragments range in size from fine to coarse and make up about 10 percent of the ceramic paste. The bone fragments are translucent with slightly gray cores under cross-polarized light. This is a Class 1 sherd.

RFT-060

The paste of this sherd is a light yellowish brown color and has a particularly sandy texture. The paste contains about 35 percent sub-rounded grains of sand dominated by quartz. Sparse potassium feldspar and microcline are also present, but in trace amounts. The feldspars are slightly altered to sericite and clay minerals. The paste also contains fine- to medium-sized fragments of bone. The bone fragments make up about one percent of the ceramic paste. The bone fragments range in size from coarse to very coarse and are translucent with gray centers. This is a Class 1 sherd.

RFT-061

The paste is a dark brown color and contains about 25 percent very fine rounded quartz sand. Bone fragments make up about three percent of the ceramic matrix and range in size from coarse to fine. The bone fragments are a dark brown to opaque gray color. This is a Class 1 sherd.

RFT-067

The paste of this sherd is a light tannish color and has a silty texture. Less than one percent of the ceramic matrix contains fine rounded quartz sands. The paste contains about 15 percent fine to coarse bone temper that is translucent. This is a Class 2 sherd.

RFT-068

The paste of this sherd is a light yellowish brown mottled with a light reddish brown. The ceramic body contains about one percent round, fine quartz sand. Also present in the sherd is about 15 percent medium to very coarse sided angular fragments of bone that are a light gray color. This is a Class 2 sherd.

RFT-070

The paste of the sherd is a medium brown color and has a silty texture. The paste contains about three percent silt-sized to fine, rounded quartz sand. Sparse weathered potassium feldspar is also present and is altered to sericite and clay minerals. One fine-sized microcline grain was observed. The paste contains about 15 percent bone fragments, which range in size from fine to coarse. The bone is light gray color to dark brown and is slightly birefringent. Calcite is present surrounding and in-filling some of the bone fragments. This is a Class 2 sherd.

RFT-073

The paste of this sherd is a medium brown color. The paste has a sandy texture resulting from the abundance of silt-sized to very fine quartz sands. These sand grains, that range in size from silt-sized to medium, make up only about 15 percent of the ceramic body, but the concentration of the finer particles in the paste makes the sample appear to have more sands than are actually present. Also present are bone fragments. The bone fragments make up about 10 percent of the ceramic body. Bone fragments in the ceramic paste range from fine- to medium-sized. The bone is black and opaque or very dark brown in color under cross-polarized light. This is a Class 2B sherd.

RFT-078

The paste of this sherd is virtually identical to sample RFT-109. The paste of this sherd is medium brown color, and has a silty texture. Less than one percent of the paste contains subangular, fine quartz sand. Bone fragments make up about 10 percent of the paste that range in size from fine to very coarse. The bone fragments are dark brown and slightly birefringent. This is a Class 2 sherd.

RFT-079

Due to the small size of sample number RFT-079, only a limited amount of material is available for description. The paste is a light yellowish-brown color and contains about one percent fine, rounded quartz sand. Also present in the paste are about 10 percent fine- to medium-sized fragments of bone. The bone is translucent or slightly gray in color. This is a Class 2 sherd.

RFT-085

The paste of this sherd is medium yellowish-brown and has a distinctive silty texture. About one percent of the ceramic matrix is made up of fine- to medium-sized quartz sand. Fine- to very coarse-sized bone temper constitutes 15 percent of the ceramic matrix. The bone is either translucent or a light gray color. This is a Class 2 sherd.

RFT-087

The paste of this sherd is very dark brown and opaque. The paste contains about 35 percent sub-rounded grains of sand dominated by quartz. Sparse potassium feldspar and microcline are also present, but in trace amounts. The feldspars are slightly altered to sericite and clay minerals. The paste also contains fine- to medium-sized fragments of bone. The bone fragments make up about one percent of the ceramic paste. The bone is translucent with brownish edges. This is a Class 1 sherd.

RFT-088

The paste of this sherd is a dark brown color and is almost opaque. The paste contains about 10 percent rounded, fine sand grains. The sands consist of about 90 percent quartz with additional weathered potassium feldspar grains. The paste also contains about 15 percent bone fragments that range in size from fine to coarse. The bone fragments are optically opaque and were surrounded by rims of recrystallized calcite. Calcite also fills voids in the bone fragments. This is a Class 2B sherd.

RFT-096

The paste of this sherd is a moderate brown color and has a distinctive silty texture. The paste contains about five percent fine- to medium-sized, rounded quartz sands. The quartz grains display an undulose extinction. Also present are fragments of bone. The bone fragments make up about 15 percent of the paste and range in size from fine to medium. The bone is gray with rims of calcite crystals on some of the bone fragments. This is a Class 2B sherd.

RFT-097

The paste of this sherd is a light yellowish-brown with a distinctive silty texture. The paste contains less than one percent rounded quartz grains. The paste contains about 15 percent fine to coarse bone fragments that are dark brown to black and opaque. The paste of this sherd resembles RFT-145. This is a Class 2 sherd.

RFT-109

The paste of this sherd is medium brown color, and has a silty texture. Less than one percent of the paste contains subangular, fine quartz sand. Bone fragments make up about 10 percent of the paste. The bone fragments range in size from fine to very coarse. The bone fragments are light gray to dark brown and the dark brown bone fragments are slightly birefringent. This is a Class 2 sherd.

RFT-110

The paste of this sherd is a moderate brown color and has a distinctive silty texture. The paste contains about one percent fine- to medium-sized rounded quartz sands. The quartz grains display an undulose extinction. Also present are fragments of bone. The bone fragments make up about 15 percent of the paste and range in size from fine- to coarse-sized. The bone is dark brown and slightly birefringent. This is a Class 2 sherd.

RFT-112

The paste of this sherd is a light yellowish-brown with a distinctive silty texture. The paste contains about three percent fine- to medium-sized rounded quartz grains. Two medium sized chert grains were also observed. Also present were two very coarse areas where the clay did not appear to have been well wedged, as these areas were lighter in color and lacked the added bone temper. The bone temper ranges in size from fine to coarse and makes up about 15 percent of the ceramic body. This is a Class 2 sherd.

RFT-113

The paste of this sherd is light yellowish-brown color with a distinctive silty texture. The paste contains about one percent rounded, fine to medium quartz sand grains. Also present in the sherd are about 15 percent fine- to medium-sized fragments of bone. The bone fragments are dark brown or opaque and birefringent. This is a Class 2 sherd.

RFT-114

The paste of this sherd is a medium brown color and has a silty texture. The paste contains about one percent silt-sized to fine, rounded quartz sand. The bone present makes up about 15 percent of the ceramic matrix. Bone fragments range in size from fine to coarse. The bone is a light yellow color under plain polarized light. A single coarse-sized rounded fragment of poorly wedged clay containing sparse quartz sand grains is also present. This is a Class 2 sherd.

RFT-116

The paste of this sherd is a dark brown mottled with an opaque black. The paste contains about 30 percent silt-sized to fine sand grains, predominately quartz. Sparse potassium feldspar is also present, but has been altered partly to sericite and clay minerals. Also present in the ceramic body are fine- to coarse-sized fragments of bone. The bone makes up about 10 percent of the ceramic body. The bone is a light brown color under plain polarized light. This is a Class 1 sherd.

RFT-124

The paste of this sherd is dark brown in color. The paste contains 35 percent moderately well sorted sub-rounded sands, dominated by quartz. A few of the quartz grains display undulose extinction or occur as multi-grain aggregates. Sparse grains of potassium feldspar with a fresh appearance and three grains of chert are also present. The sand grains are moderately well sorted and range form very fine- to fine-sized. Bone is present in a sparse amount making up about one percent of the total ceramic body. The bone fragments range from fine- to medium-sized and are a light yellow color under plain polarized light. This is a Class 1 sherd.

RFT-125

The paste of this sherd is almost identical to that observed in RFT-114. The paste is a medium brown color with a silty texture and contains about one percent rounded quartz sand. Bone temper makes up about 15 percent of the paste and ranges in size from fine to coarse. The bone is a light yellow color under plain polarized light. This is a Class 2 sherd.

RFT-132

The paste of this sherd is black and opaque. The paste contains about 25 percent very fine, rounded quartz sand. Bone fragments make up about 10 percent of the ceramic matrix and range in size from coarse to fine. The bone is a light gray color under cross-polarized light. This is a Class 1 sherd.

RFT-133

The paste of this sherd is black and opaque and contains about 25 percent very fine, rounded quartz sand. Bone fragments make up about three percent of the ceramic matrix and range in size from coarse to fine. It is likely that the parent vessel of this sherd utilized the same paste as RFT-132. The bone is a dark gray color under cross-polarized light. This is a Class 1 sherd.

RFT-135

The paste of this sherd is an opaque black color. The paste contains 35 percent moderately well sorted, sub-rounded sands, dominated by quartz. A few of the quartz grains display undulose extinction or occur as multi-grain aggregates. Sparse grains of potassium feldspar with a fresh appearance are also present. The sand grains are moderately well sorted and range form very fine to fine in size. Bone is present in a sparse amount making up about three percent of the total ceramic body. The bone fragments range from fine to medium in size and are a light grayish-brown in color. This is a Class 1 sherd.

RFT-137

The paste of this sherd is a light yellowish-brown color and has a silty texture. The paste contains 20 percent rounded, silt-sized to fine sands. The predominate mineral in the sands is quartz. Potassium feldspar and one fragment of microcline are also present in the sands. The sands are moderately well sorted. A single fragment of a banded agate is also present in the paste. Also present in the paste of this sherd are fragments of bone. The bone fragments range in size from fine to medium and account of about five percent of the ceramic paste. The bone is a light gray or yellow color under plain polarized light. This is a Class 1 sherd.

RFT-144

The paste of this sherd is a dark brown color that contains 25 percent moderately well sorted, sub-rounded sands, dominated by quartz. A few of the quartz grains display undulose extinction or occur as multi-grain aggregates. Sparse grains of potassium feldspar with a fresh appearance are also present. The sand grains range form very fine to fine in size. Bone is present in a sparse amount making up about five percent of the total ceramic body. The bone fragments range from fine to coarse in size and are either dark brown or translucent. This is a Class 1 sherd.

RFT-145

The paste of this sherd is a light yellowish-brown with a distinctive silty texture. The paste contains less than three percent rounded quartz grains. The paste does contain about 15 percent fine to coarse bone fragments. The yellow color is likely the result of the vessel having been fired at a higher temperature than the other sherds from this assemblage rather than from the use of a different clay body. This is a Class 2 sherd.

RFT-146

The paste of this sherd is a medium brown color and contains about 25 percent silt-sized to fine, rounded, quartz rich sand. Potassium feldspar is also present in trace amounts. The potassium feldspar is usually altered to sericite and clay minerals. Also present in the paste are angular bone fragments. The bone is a light gray color under cross-polarized light. The bone fragments range in size from fine to coarse and make up about 10 percent of the ceramic body. This is a Class 1 sherd.

Analytical Unit 2: Feature 2 Sherds

RFT-001

The paste of this sherd is a medium brown color. The paste contains about 25 percent sub-rounded to rounded sand grains dominated by quartz. Sparse weathered potassium feldspar and plagioclase are also present but in trace amounts. Fine- to medium-sized fragments of bone temper are also present. The bone temper fragments make up less than one percent of the ceramic matrix and are translucent. This is a Class 1 sherd.

RFT-003

The paste of this sherd is light yellowish-brown color and has a distinctive sandy texture resulting from the presence of 25 percent silt-sized to fine, sub-rounded sand grains. Quartz makes up about 80 percent of the sand grains. Some of the quartz grains display undulose extinction. Also present are potassium feldspar grains. Most of these feldspar grains display alteration to sericite and clay minerals. Bone fragments are present in the paste as well. Bone makes up only about three percent of the ceramic matrix. The bone

fragments range in size from fine to medium. The bone fragments are dark brown and slightly birefringent. One coarse-sized bone fragment was also present. This is a Class 1 sherd.

RFT-008

The paste of this sherd is medium brown in color and slightly birefringent. The paste also has a silty texture. Medium sized rounded quartz sand is present, but makes up less than one percent of the ceramic matrix. Fine- to coarse-sized bone temper makes up about 10 percent of the ceramic matrix. The bone is dark brown and birefringent. The paste and inclusions observed in this sherd are quite similar to samples, RFT-011, RFT-020, RFT-022, RFT-024, and RFT-036. This is a Class 2 sherd.

RFT-009

The paste of this sherd is quite similar to sample RFT-003 in terms of color, the occurrence of quartz sands and the sparse amount of bone temper present in this specimen. The paste of this sherd is light yellowish-brown color and has a distinctive sandy texture resulting from the presence of 20 percent silt-sized to fine, sub-rounded sand grains. Quartz makes up about 80 percent of the sand grains. Some of the quartz grains display undulose extinction. Also present are potassium feldspar grains. Most of these grains display alteration to sericite and clay minerals. Bone fragments are present in the paste as well. Bone makes up only about three percent of the ceramic matrix. The bone fragments range in size from fine to medium. One coarse-sized bone fragment was also present. The bone fragments are opaque with gray cores. This is a Class 1 sherd.

RFT-011

The paste of this sherd is medium brown in color and slightly birefringent. The paste also has a silty texture. Medium sized rounded quartz sand is present, but makes up less than one percent of the ceramic matrix. Fine- to coarse-sized bone temper makes up about 10 percent of the ceramic matrix. The bone is opaque and light gray in color with abundant calcite rhombs surrounding the particles under cross-polarized light. This is a Class 2 sherd.

RFT-012

The paste of this sherd is quite similar to sample RFT-003 and RFT-009 in terms of color, the occurrence of quartz sands, and the sparse amount of bone temper present in this specimen. The paste is light grayish-brown in color and has a distinctive sandy texture resulting from the presence of 20 percent silt-sized to fine, sub-rounded sand grains. Quartz makes up about 80 percent of the sand grains. Some of the quartz grains display undulose extinction. Also present are potassium feldspar grains. Most of the feldspar grains display alteration to sericite and clay minerals. Bone makes up only about one percent of the ceramic matrix. The bone fragments range in size from fine to medium. The bone fragments are a light gray color and surrounded by rhombs of calcite. One coarse-sized bone fragment was also observed. This is a Class 1 sherd.

RFT-013

The paste of this sherd is dark brown and has a distinctive silty texture. Fine to medium sized rounded quartz sand is present, but makes up less than one percent of the ceramic matrix. Fine- to coarse-sized bone temper makes up about 10 percent of the ceramic matrix. The bone fragments are dark and opaque under cross-polarized light. The paste and inclusions observed in this sherd are quite similar to samples RFT-016, RFT-022, RFT-024, and RFT-036. This is a Class 2 sherd.

RFT-016

The paste of this sherd is medium brown in color and slightly birefringent. The paste also has a silty texture. Fine- to medium-sized rounded quartz sand is present, but makes up less than one percent of the ceramic matrix. Fine- to coarse-sized bone temper makes up about 10 percent of the ceramic matrix. The bone fragments are dark and opaque under cross-polarized light. The paste and inclusions observed in this sherd are quite similar to samples RFT-013, RFT-020, RFT-022, RFT-024, and RFT-036. This is a Class 2 sherd.

RFT-017

The paste of this sherd is quite similar to that of RFT-003 and RFT-009 in terms of color, abundance of quartz sands and sparse bone fragments. The paste of this sherd is light yellowish-brown color and has a distinctive sandy texture resulting from the presence of 25 percent silt-sized to fine sub-rounded sand grains. Quartz makes up about 80 percent of the sand grains. Some of the quartz grains display undulose extinction. Also present are potassium feldspar grains. Most of these grains display alteration to sericite and clay minerals. Bone makes up about three percent of the ceramic matrix. The bone fragments range in size from fine to medium. One coarse-sized bone fragment was also present. This is a Class 1 sherd.

RFT-018

The paste of this sherd is a medium brown color. The paste contains 10 percent well-sorted, very fine to fine quartz sands. These sands are likely natural inclusions in the ceramic paste. Three rounded coarse- to very coarse-sized pellets of calcium carbonate were also observed in the paste of this sherd. Also present in the paste are about 15 percent fine- to coarse-sized angular fragments of bone temper. The bone temper fragments are a very dark brown color. This is a Class 1 sherd.

RFT-020

The paste of this sherd is medium brown in color and slightly birefringent. The paste also has a silty texture. Fine- to medium-sized rounded quartz sand is present, but makes up less than one percent of the ceramic matrix. Fine- to coarse-sized bone temper makes up about 10 percent of the ceramic matrix. The bone fragments are dark gray under cross-polarized light. The paste and inclusions observed in this sherd are quite similar to samples RFT-022, RFT-024, and RFT-036. This is a Class 2 sherd.

RFT-022

The paste of this sherd is quite similar to sample RFT-036 in terms of the amount of quartz sand present and percentage of fine- to coarse-sized bone temper. The paste of this sherd is medium brown in color and slightly birefringent. The paste also has a silty texture. Fine- to medium-sized rounded quartz sand is present, but makes up less than one percent of the ceramic matrix. The bone fragments are very dark brown and slightly birefringent. Fine- to very coarse-sized bone temper makes up about 10 percent of the ceramic matrix. This is a Class 2 sherd.

RFT-023

The paste of this sherd is medium brown in color and slightly birefringent. The paste also has a silty texture. Fine- to medium-sized rounded quartz sand is present, but makes up less than one percent of the ceramic matrix. Fine- to coarse-sized bone temper makes up about 10 percent of the ceramic matrix. The bone fragments are dark and slightly birefringent or opaque under cross-polarized light. The paste and inclusions observed in this sherd are quite similar to samples RFT-020, RFT-022, RFT-024, RFT-030, RFT-031, and RFT-036. This is a Class 2 sherd.

RFT-024

The paste of this sherd is medium brown in color and slightly birefringent. The paste also has a silty texture. Fine- to medium-sized rounded quartz sand is present, but makes up less than one percent of the ceramic matrix. Fine- to coarse-sized bone temper makes up about 10 percent of the ceramic matrix. The bone fragments are dark brown and slightly birefringent. The paste and inclusions observed in this sherd are quite similar to samples RFT-036 and RFT-022. This is a Class 2 sherd.

RFT-025

The paste of this sherd is a dark brown mottled color with an opaque black. The paste contains about 30 silt-sized to fine sand grains, predominately quartz. Sparse potassium feldspar is also present, but has been altered partly to sericite and clay minerals. Also present in the ceramic body are fine- to coarse-sized fragments of bone. The bone makes up about seven percent of the ceramic body. The bone fragments display a light gray color and contain some calcite rhombs. This is a Class 1 sherd.

RFT-027

The paste of this sherd is medium brown in color and slightly birefringent. The paste also has a silty texture. Fine- to medium-sized rounded quartz sand is present, but makes up less than one percent of the ceramic matrix. Fine- to coarse-sized bone temper makes up about 10 percent of the ceramic matrix. The bone fragments are bright yellow in plain polarized light. This is a Class 2 sherd.

RFT-028

The paste of this sherd is quite similar to samples RFT-003, RFT-009, and RFT-017 in terms of color, the occurrence of quartz sands, and the sparse amount of bone temper present. The paste of this sherd is a light grayish-brown color and has a distinctive sandy texture resulting from the presence of 20 percent silt-sized to fine sub-rounded sand grains. Quartz makes up about 80 percent of the sand grains. Some of the quartz grains display undulose extinction. Also present are potassium feldspar grains. Most of these grains display alteration to sericite and clay minerals. Bone makes up only about one percent of the ceramic matrix. The bone fragments range in size from fine to medium. One coarse-sized bone fragment was also present. The bone fragments are light yellow under plain polarized light. This is a Class 1 sherd.

RFT-029

The paste of this sherd is quite similar to samples RFT-003, RFT-009, and RFT-028 in terms of color, the occurrence of quartz sands, and the sparse amount of bone temper present. The paste of this sherd is a light grayish-brown color and has a distinctive sandy texture resulting from the presence of 20 percent silt-sized to fine sub-rounded sand grains.

Quartz makes up about 80 percent of the sand grains. Some of the quartz grains display undulose extinction. Also present are sparse potassium feldspar grains. Most of these grains display alteration to sericite and clay minerals. Bone makes up only about one percent of the ceramic matrix. The bone fragments range in size from fine to medium and are light yellow under plain polarized light. This is a Class 1 sherd.

RFT-030

The paste of this sherd is medium brown in color and slightly birefringent. The paste also has a silty texture. Fine- to medium-sized rounded quartz sand is present, but makes up less than one percent of the ceramic matrix. Fine- to coarse-sized bone temper makes up about 10 percent of the ceramic matrix. The bone is dark brown and birefringent under cross-polarized light. The paste and inclusions observed in this sherd are quite similar to samples RFT-020, RFT-022, RFT-024, and RFT-036. This is a Class 2 sherd.

RFT-031

The paste of this sherd is medium brown in color and slightly birefringent. The paste also has a silty texture. Fine- to medium-sized rounded quartz sand is present, but makes up less than one percent of the ceramic matrix. Fine- to coarse-sized bone temper makes up about 10 percent of the ceramic matrix. The bone is dark brown and birefringent under cross-polarized light. The paste and inclusions observed are quite similar to samples, RFT-020, RFT-022, RFT-024, RFT-030, and RFT-036. This is a Class 2 sherd.

RFT-033

The paste of this sherd is medium brown and slightly birefringent. The paste also has a silty texture. Fine- to medium-sized rounded quartz sand is present, but makes up less than one percent of the ceramic matrix. Fine- to coarse-sized bone temper makes up about 10 percent of the ceramic matrix. The bone fragments are translucent under cross-polarized light. The paste and inclusions observed in this sherd are quite similar to samples RFT-020, RFT-022, RFT-024, RFT-030, and RFT-036. This is a Class 2 sherd.

RFT-034

The paste of this sherd is medium brown and has a distinctive sandy texture resulting from the presence of 20 percent silt-sized to fine sub-rounded sand grains. Quartz makes up about 80 percent of the sand grains. Some of the quartz grains display undulose extinction. Also present are sparse potassium feldspar grains. Most of these grains display alteration to sericite and clay minerals. Bone makes up only about one percent of the ceramic matrix. The bone fragments range in size from fine to medium and are translucent with gray cores. This is a Class 1 sherd.

RFT-035

The paste of this sherd is medium brown and slightly birefringent. The paste also has a silty texture. Fine- to medium-sized rounded quartz sand is present, but makes up less than one percent of the ceramic matrix. One very coarse-sized quartz grain is present as is a medium-sized rounded grain of chert. A weathered, coarse-sized potassium feldspar is also present. Fine- to coarse-sized bone temper makes up about 10 percent of the ceramic matrix. The bone fragments are translucent under cross-polarized light with gray cores. This is a Class 2 sherd.

RFT-036

The paste of this sherd is medium brown in color and slightly birefringent. The paste also has a silty texture. Fine- to medium-sized rounded quartz sand is present, but makes up less than one percent of the ceramic matrix. Fine- to coarse-sized bone temper makes up about 10 percent of the ceramic matrix. The bone fragments are dark brown and slightly birefringent. This is a Class 2 sherd.

RFT-037

The paste of this sherd is light grayish brown in color and has a distinctive sandy texture resulting from the presence of 20 percent silt-sized to fine sub-rounded sand grains. Quartz makes up about 80 percent of the sand grains. Some of the quartz grains display undulose extinction. Also present are sparse potassium feldspar grains and a single fine microcline grain. Most of these grains display alteration to sericite and clay minerals. Bone makes up only about one percent of the ceramic matrix. The bone fragments range in size from fine to medium and are translucent under cross-polarized light. This is a Class 1 sherd.

RFT-038

The paste of this sherd is light brown color and has a distinctive sandy texture resulting from the presence of 20 percent silt-sized to fine sub-rounded sand grains. Quartz makes up about 80 percent of the sand grains. Some of the quartz grains display undulose extinction. Also present are sparse potassium feldspar and plagioclase grains. Most of the feldspar grains display alteration to sericite and clay minerals. Bone makes up only about one percent of the ceramic matrix. The bone fragments range in size from fine to medium and are translucent with gray cores under cross-polarized light. This is a Class 1 sherd.

RFT-039

The paste of this sherd is a light grayish brown color and has a distinctive sandy texture resulting from the presence of 20 percent silt-sized to fine sub-rounded sand grains. Quartz makes up about 80 percent of the sand grains. Some of the quartz grains display undulose extinction. Also present are sparse potassium feldspar grains. Most of the feldspar grains display alteration to sericite and clay minerals. Bone makes up only about one percent of the ceramic matrix. The bone fragments range in size from fine to medium. The bone fragments were either opaque or transparent under cross-polarized light or, very light yellow with opaque centers under plain polarized light. This is a Class 1 sherd.

RFT-053

The paste of this sherd is a very dark brown and opaque and contains about 35 percent sub-rounded grains of sand dominated by quartz. Sparse potassium feldspar and microcline are also present, but in trace amounts. The feldspars are slightly altered to sericite and clay minerals. One microcline grain contains quartz poikilitically. Also present were two coarse-sized rounded grains of fine-grained sandstone. A clay cement supports the sandstone. The paste also contains fine- to medium-sized fragments of bone. The bone fragments make up about seven percent of the ceramic paste. The bone fragments are a dark gray with calcareous rims around the bone particles. This is a Class 1 sherd.

Analytical Unit 3: Non-Feature Sherds

RFT-002

The paste of this sherd is dark brown in color. The paste contains 35 percent sub-rounded sands, dominated by quartz. A few of the quartz grains display undulose extinction or occur as multi-grain aggregates. Sparse grains of potassium feldspar with a fresh appearance are also present, as well as three grains of chert. The sand grains are moderately well sorted and range form very fine- to fine-sized. Bone is present in a sparse amount making up about one percent of the total ceramic body. The bone fragments are a dark brown color. The bone fragments range for fine- to medium-sized. This is a Class 1 sherd.

RFT-006

The paste of this sherd is dark brown in color. The paste contains 35 percent sub-rounded sands, dominated by quartz. A few of the quartz grains display undulose extinction or occur as multi-grain aggregates. Sparse grains of potassium feldspar with a fresh appearance are also present. The sand grains are moderately well sorted and range form very fine- to fine-sized. Bone is present in a sparse amount making up about five percent of the total ceramic body. The bone fragments range from fine- to coarse-sized. The bone fragments are a light gray color and contain abundant calcite. With the exception of the slightly greater percentage of bone in this specimen, RFT-006 strongly resembles the paste of RFT-002. This is a Class 1 sherd.

RFT-010

The paste of this sherd is a medium brown color. The paste contains 20 percent well-sorted, very fine to fine quartz sands. These sands are likely natural inclusions in the ceramic paste. Also present in the paste are five medium-sized rounded grains of calcium carbonate and about 15 percent fine- to coarse-sized angular fragments of bone temper. The bone fragments are a dark brown color, although a few light gray bone fragments are also present. This is a Class 1 sherd.

RFT-014

The paste of this sherd is a medium brown color. The paste contains 20 percent well-sorted, very fine to fine quartz sands. These sands are likely natural inclusions in the ceramic paste. Also present in the paste is about 15 percent fine- to coarse-sized angular fragments of light gray bone temper. With the exception of the lower amount of bone temper in the present specimen, the paste is quite similar that of samples RFT-131 and RFT-138 in terms of paste color and the size and amount of rounded quartz sand grains present. This is a Class 1 sherd.

RFT-015

The paste of this sherd is a medium brown color. The paste contains about five percent silt-sized fine quartz grains. Also present in the paste is about 15 percent fine- to coarse-sized bone fragments. The bone fragments range from translucent to very light gray in color. Calcareous inclusions rim the bone fragments. This is a Class 2 sherd.

RFT-019

The paste of this sherd is a medium yellowish-brown color and has a distinctive silty texture. The paste contains about five percent silt-sized to medium rounded quartz sand grains. Also present are about 15 percent fine- to coarse-sized angular pieces of bone temper. The bone ranges in color from translucent to a light yellow. This is a Class 2 sherd.

RFT-021

The paste of this sherd is a medium brown color and contains 25 percent natural sand. The sand is moderately well sorted ranging continuously from silt-sized to fine. The majority of the grains are quartz, occasionally displaying undulose extinction. About 10 percent of the sands are potassium feldspar and sparse plagioclase and microcline. The feldspars are often so altered to sericite clay minerals that their optical characteristics are obscured. Bone temper is present, making up about seven percent of the ceramic body. The bone fragments range from fine to coarse in size. The bone fragments are mostly light gray or are slightly translucent. This is a Class 1 sherd.

RFT-041

The paste of this sherd is a dark yellowish-brown with a distinctive silty texture. The paste contains about three percent fine rounded grains of quartz sand. Also present is 15 percent fine- to coarse-sized fragments of bone temper. The bone fragments are mostly a dark brown and slightly birefringent. A few light gray bone fragments are also present. This is a Class 2 sherd.

RFT-044

The paste of this sherd is a dark brown color. The paste contains about 35 percent well sorted silt-sized to fine sub-rounded sands, dominated by quartz. A few of the quartz grains display undulose extinction and occur as multi-grained aggregates. Sparse grains of potassium feldspar with a fresh appearance are also present, as well as two fragments of chert. Bone fragments make up only about three percent of the total ceramic fabric. Bone fragments range from fine to coarse in size. The bone fragments appear pale yellow in plain polarized light and light gray to translucent in cross-polarized light. This is a Class 1 sherd.

RFT-049

The paste of this sherd is a medium brown color. The paste contains 25 percent well sorted quartz sand. The sand grains range from silt-sized to fine. Also present are two coarse-sized rounded grains of calcium carbonate or very fine-grained limestone. Medium-sized bone temper is present but makes up only about three percent of the ceramic body. The bone fragments are a dark brown color. This is a Class 1 sherd.

RFT-059

The paste of this sherd is very dark brown colored. The paste contains about 10 percent silt-sized to fine quartz sand. A fine-sized fragment of siltstone is also present. The paste also contains about 10 percent fine- to coarse-sized bone temper. The bone is a dark brown in color. This one of only three Class 2B sherds in Analytical Unit 3.

RFT-062

The paste of this sherd is medium brown colored, and has a silty texture. Less than one percent of the paste contains subangular fine quartz sand. Bone fragments make up about 10 percent of the paste. The bone fragments range in size from fine to coarse. The bone fragments are dark brown and opaque or display faint birefringence. This is a Class 2 sherd.

RFT-063

The paste of this sherd is light yellowish-brown. The paste contains about 35 percent moderately well sorted sand, predominately quartz. The sand grains range in size from very fine- to medium-sized. Bone temper is also present and accounts for about three percent of the ceramic matrix. The bone fragments are all very coarse in size. The bone fragments are dark brown and birefringent. This is a Class 1 sherd.

RFT-064

The paste of this sherd is a medium brown color and has a sandy texture resulting from the 25 percent silt-sized to fine sands that are natural constituents of the ceramic body. The majority of the sand grains are quartz. Sparse, highly weathered feldspars are also present. The bone temper ranges from fine to coarse and makes up about 15 percent of the ceramic paste. The bone fragments are light gray and contain very fine calcite rhombs. This is a Class 1 sherd.

RFT-074

The paste of this sherd is a medium brown color and contains abundant natural sand. The paste of this sherd is quite similar to sample RFT-021. The sand is moderately well sorted, ranging continuously from silt-sized to fine, making up 25 percent of the ceramic matrix. The majority of the grains are quartz, occasionally displaying undulose extinction. About 10 percent of the sands are potassium feldspar and sparse plagioclase and microcline. The feldspars are often so altered to sericite and clay minerals so as to obscure their optical characteristics. Bone temper is present. The bone makes up about seven percent of the ceramic body. The bone fragments range from fine to coarse in size and are a light gray color. This is a Class 1 sherd.

RFT-075

The paste of this sherd is a medium brown color. The paste has a distinctive sandy texture resulting from the presence of 40 percent silt-sized to fine sands. The composition of the sand is predominately quartz with about 10 percent potassium feldspar. The potassium feldspar grains are usually weathered to clay minerals and sericite obscuring their optical characteristics. Two rectangular coarse-sized voids are present in the paste. Based on the carbonaceous halos surrounding the voids, it is likely that their contents were organic and combusted during firing. No bone was observed in the paste of this sherd. This sherd could be a product of the local ceramic industry, but lacked bone. This is the single Class 0 sherd in the sample.

RFT-076

The paste of this sherd is medium brown in color. The paste contains about 30 percent silt-sized to fine quartz sand. The sand consists predominately of quartz with about one third of the grains slightly weathered potassium feldspar. Bone temper makes up an additional five percent of the ceramic paste. The bone fragments range in size from fine to coarse. An equal amount of dark brown and light gray bone fragments are present. This is a Class 1 sherd.

RFT-077

The paste of this sherd is a dark brown color. The paste contains about 35 percent silt-sized to fine well-sorted sub-rounded sands, dominated by quartz. A few of the quartz grains display undulose extinction and occur as multi-grained aggregates. Sparse grains of potassium feldspar with a fresh appearance are also present. Two fragments of chert are present. Bone makes up only about three percent of the total ceramic fabric. Bone fragments, light gray in color, range from fine to coarse in size. This is a Class 1 sherd.

RFT-081

The paste of this sherd is a light yellowish-brown in color. The paste contains less than one percent fine- to medium-sized rounded quartz sands. Also present in the paste is about 10 percent fine- to coarse-sized angular fragments of bone. The bone fragments appear to be translucent or slightly opaque under cross-polarized light. This is a Class 2 sherd.

RFT-090

The paste of this sherd is an opaque black with a sandy texture. Sand makes up about 35 percent of the ceramic body. The sands are arkosic with about one third of the grains made up of potassium feldspar. Most of the feldspars have been altered to sericite and clay minerals. A few grains of plagioclase and microcline were also observed, but in trace amounts. The major constituent of the sands is quartz. Most of the quartz grains display undulose extinction. Bone represents an added material in the ceramic body. Fine- to coarse-sized bone fragments make up about 10 percent of the paste of this sherd. The bone fragments range from light gray to transparent. This is a Class 1 sherd.

RFT-094

The paste of this sherd is a medium brown color and contains about 25 percent moderately well sorted quartz sands. The sands range in size continuously from silt-sized to fine. The sands also contain about 10 percent potassium feldspar. Many of the feldspar grains have altered to sericite and clay minerals. Sparse plagioclase and microcline were also observed. A single coarse-sized subangular fragment of a very fine-grained, calcareous silty sandstone is present in the paste. The paste was tempered using fine to coarse angular bone fragments. The bone fragments make up about 10 percent of the ceramic paste. The bone fragments are mostly dark brown with few light gray fragments that are calcite rich. This is a Class 1 sherd.

RFT-095

The paste of this sherd is a medium brown color. The paste contains about 10 percent rounded very fine- to fine-sized quartz sand. The paste also contains about 15 percent fine- to very coarse-sized fragments of bone temper. The bone fragments are medium gray and contain abundant calcite rhombs. This is a Class 1 sherd.

RFT-098

The paste of this sherd is medium brown in color. The paste contains about 30 percent silt-sized to fine quartz sand. The sand consists predominately of quartz with about one-third of the grains slightly weathered potassium feldspar. Bone temper makes up an additional 10 percent of the ceramic paste. The bone fragments range in size from fine to coarse and are a uniform brown color. This is a Class 1 sherd.

RFT-099

The paste of this sherd is a medium brown color. The paste contains about 30 percent silt-sized to fine quartz sand. The sand consists predominately of quartz with about one-third of the grains slightly weathered potassium feldspar. A single medium polycrystalline quartz grain, derived from a plutonic or metamorphic source, is present in the specimen. Also present in the paste are five medium sized rounded grains

of very fine-grained calcium carbonate. Bone temper makes up an additional 10 percent of the ceramic paste. The bone fragments range in size from medium to very coarse. Many of the bone fragments are unusually highly birefringent. This is a Class 1 sherd.

RFT-102

The paste of this sherd is medium brown in color. The paste contains about 30 percent silt-sized to fine quartz sand. The sand consists predominately of quartz with about one-third of the grains slightly weathered potassium feldspar. Four rounded, medium sized grains of calcium carbonate were also observed in the paste of this sherd. Bone temper makes up an additional 10 percent of the ceramic paste. The bone fragments range in size from medium to very coarse. This is a Class 1 sherd.

RFT-103

The paste of this sherd is a medium brown color. The paste contains about 25 percent silt-sized to fine quartz sand. The sand consists predominately of quartz with about one-third of the grains slightly weathered potassium feldspar. Bone temper makes up an additional 10 percent of the ceramic paste. The bone fragments range in size from medium to very coarse. The bone fragments range in color from light brown to gray with a translucent example. This is a Class 1 sherd.

RFT-106

The paste of this sherd is a medium brown color. The paste contains about 20 percent silt-sized to fine quartz sand. The sand consists predominately of quartz with about one-third composed of grains of slightly weathered potassium feldspar. A single medium polycrystalline quartz grain, derived from a plutonic or metamorphic source is present in the specimen. Also present in the paste are five medium sized rounded grains of very fine-grained calcium carbonate. Bone temper makes up an additional 10 percent of the ceramic paste. The bone fragments are either dark brown or dark brownish-gray. The bone fragments range in size from fine to coarse. One bone fragment ranges into the very coarse fraction. This is a Class 1 sherd.

RTF-108

The paste of this sherd is a light yellowish-brown color. The paste contains moderately well sorted sands consisting of predominately quartz with sparse potassium feldspar. The potassium feldspar grains are slightly altered to sericite and clay minerals, somewhat clouding their optical characteristics. The sands range in size from silt-sized to fine and constitute 15 percent of the paste. Also present in the paste are five coarse-sized rounded silty pellets. Bone temper is present but constitutes only about three percent of the ceramic matrix. The bone fragments are either translucent or dark brownish-gray in color. The angular bone fragments fall in the medium to very coarse size range. This is one of three Class 2B sherds in Analytical Unit 3.

RFT-111

The paste of this sherd is dark brown mottled with opaque black. The paste contains about 35 percent silt-sized to fine sands. The major constituent of the sand is quartz. Sparse weathered grains of potassium feldspar are also present. Bone temper makes up only about five percent of the ceramic matrix. The bone fragments range in size from coarse to very coarse. The bone fragments are dark brown and slightly birefringent. This is a Class 1 sherd.

RFT-119

The paste of this sherd is medium brown in color and contains about 25 percent moderately well sorted quartz sands. The sands range in size continuously from silt-sized to fine. The sands also contain about 10 percent potassium feldspar. Many of the feldspar grains have altered to sericite and clay minerals. Sparse plagioclase and microcline were also observed. A single very coarse-sized subangular fragment of a very-fine grained calcareous silty sandstone was present in the paste. The paste was tempered using fine to coarse angular bone fragments. The bone fragments have a light gray to slightly yellow color and make up about 10 percent of the ceramic paste. This is a Class 1 sherd.

RFT-120

The paste of this sherd is medium brown in color. The paste contains about 15 percent rounded sand grains. The sands range from silt-sized to fine. Sparse weathered potassium feldspars are present in the paste. Also present in the paste are about 10 percent fine- to coarse-sized bone fragments. The bone fragments are mostly light gray in color. Only about five percent of the bone fragments are dark brown. This is a Class 1 sherd.

RFT-123

The paste of this sherd is a light yellowish-brown color. The paste contains moderately well sorted quartz sand. The sand ranges in size from silt-sized to fine. This sand makes up about 40 percent of the ceramic paste. Medium-sized bone temper is also present in the current specimen but

accounts for only about one percent of the ceramic body. The bone is a mottled gray with light yellow under cross-polarized light. This is a Class 1 sherd.

RFT-126

The paste of this sherd is a medium brown color. The paste contains about 15 percent silt- to medium-sized moderately sorted quartz sand. One very coarse-sized and two coarse-sized rounded calcium carbonate grains are present in the paste. The paste also contains about five percent fine- to coarse-sized bone. The bone fragments are predominately dark brown with sparse gray fragments. This is a Class 1 sherd.

RFT-127

The paste of this sherd is a medium brown color with a silty texture. Sparse medium-sized sands are present but make up less than one percent of the ceramic matrix. Two very coarse-sized, rounded, silty inclusions are also present in the ceramic body. Bone temper makes up about 10 percent of the ceramic body. The bone fragments range in size from fine to coarse and are dark brown in color. This is a Class 2 sherd.

RFT-130

The paste of this sherd is medium brown in color. The paste contains about 30 percent silt-sized to fine quartz sand. The sand consists predominately of quartz with about one-third of the sand grains slightly weathered potassium feldspar. Also present in the paste is a single medium sized rounded fragment of fine-grained calcareous sandstone. Bone temper makes up an additional 10 percent of the ceramic paste. The bone fragments range in size from medium to very coarse and are a medium yellow color with gray cores. This is a Class 1 sherd.

RFT-131

The paste of this sherd is a medium brown color. The paste contains 20 percent well-sorted, very fine to fine quartz sands. These sands are likely natural inclusions in the ceramic paste. Also present in the paste is about 15 percent fine- to coarse-sized angular fragments of bone temper. The bone fragments are a dark grayish-brown and are slightly birefringent. This is a Class 1 sherd.

RFT-136

The paste of this sherd is a medium brown color and contains about 25 percent moderately well sorted quartz sands. The sands range in size continuously from silt-sized to fine. The sands also contain about 10 percent potassium feldspar. Many of the feldspar grains have altered to sericite and clay minerals. Sparse plagioclase and microcline were also observed. A single very coarse-sized subangular fragment and two coarse-sized fragments of a very fine-grained calcareous silty sandstone are present in the paste. The paste was tempered using fine to coarse angular bone fragments. The bone fragments make up about 10 percent of the ceramic paste. The bone fragments are rimmed with abundant calcite rhombs and possess dark gray cores. This is a Class 1 sherd.

RFT-138

The paste of this sherd is a medium brown color. The paste contains 20 percent well-sorted, very fine to fine quartz sands. These sands are likely natural inclusions in the ceramic paste. Also present in the paste are about 10 percent fine- to coarse-sized angular fragments of bone temper. With the exception of the lower amount of bone temper in the present specimen, the paste of sample RFT-138 is quite similar to the paste of RFT-131 in terms of the color of the paste and the size and amount of rounded quartz sand grains present. The bone fragments are a dark brownish-gray color. This is a Class 1 sherd.

RFT-140

The paste of this sherd is very dark brown. The paste contains moderately well sorted fine-sized quartz-rich sands. Sparse weathered feldspars are also present. The sands make up about 15 percent of the ceramic body. Bone was intentionally added to the ceramic body making up about 20 percent of the observed inclusions with the fragments ranging in size from fine to coarse. The bone fragments are very dark brown and are rimmed with calcite rhombs. This is one of three Class 2B sherds in Analytical Unit 3.

RFT-141

The paste of this sherd is a light yellowish-brown color. The paste contains about 15 percent silt-sized to fine sand grains. While quartz is the predominate mineral present in the sands, about 10 percent of the grains consist of highly weathered potassium feldspar grains. The bone temper accounts for about 10 percent of the ceramic body. The bone is a dark brown color and ranges from fine to coarse in size. This is a Class 1 sherd.

Discussion and Conclusions

Compositional groups were identified primarily by the amount of bone relative to the amount of sand present in the sherds. Sand represents a natural constituent of the sources of clay used in making all of the ceramics examined during the project. Bone represents an added material to the ceramic body.

The most commonly observed paste group consisted of ceramics that contained 20–40 percent silt-sized to fine sands, usually with a potassium feldspar component. These are listed as Class 1 in Table G-1. These sands are likely to represent natural inclusions in the ceramic clay. The percentage of bone temper is low, 15 percent or less. The paste color is variable. Fifty-seven percent (n=61) of the sherds in this sample fell into this category.

Thirty-four percent (n=36) of the sherds contained only a very limited amount of quartz sand. These sherds are listed as Class 2 in Table G-1. These sherds also contained 10–15 percent bone temper. The paste of these sherds was a dark brown and the bone fragments were a dark brown color and often slightly birefringent.

A third group, Class 2B, was distinguished based on the limited amount of sand present and abundant bone temper in the paste. This group accounts for seven percent (n=8) of the total sample. These sherds contained 15 percent or less quartz sand and 10 percent or more bone. The bone fragments in the paste are rimmed with calcite rhombs. All of these sherds have a dark brown paste except for RFT-011, which has a light brown paste. The difference in the color of the pastes is likely to represent differences in firing rather than in composition of the clay body. It is likely that these sherds represents variability within the class above. These sherds are listed as Class 2B on Table G-1.

A single sherd was placed in Class 2A in Table G-1 based on the very limited amount of sand present and abundant bone temper in the paste. This sherd is similar to those in Class 2B but has only one percent sand and 20 percent bone in the paste.

The final group, Class 0, is also represented by single sherd. This sherd has a very high sand content and no bone.

Sands present in sherds examined during the current project represent natural inclusions present in the source of the ceramic clay. The bone fragments are an added aplastic selected to control shrinkage of the ceramic clay. The amount of bone varies inversely to the amount of sand present in the ceramic paste. If a ceramic body has a sandy paste, them little bone will be present. Conversely ceramics containing a sparse amount of sand will contain a greater percentage of bone temper. This patterned variation within the sand and bone fragments demonstrates the knowledge that native potters had regarding the properties of the clays they used in producing their ceramics.

Mexican Glazed Ceramics

Introduction

Twenty sherds of late eighteenth/early nineteenth century lead-glazed pottery recovered from Mission Refugio (41RF1) were examined using petrographic analysis. The analysis was oriented toward identifying the range of compositional variability within the collection and for the purposes of comparison with the Instrumental Neutron Activation Analysis (INAA) by Neff and Glascock (Appendix H).

Methodology

The ceramics were analyzed by the author using a Nikon Optiphot-2 petrographic microscope. The sizes of natural inclusions and tempering agents were described in terms of the Wentworth Scale, a standard method for characterizing particle sizes in sedimentology. These sizes were derived from measuring a series of grains using a graduated reticle built into one of the microscope's optics. The percentages of inclusions in untempered ceramics were estimated using comparative charts (Matthew et al. 1991; Terry and Chilingar 1955). Given the limited amount of inclusions that may be present in ceramics and studies conducted regarding the reproducibility of determinations using these charts, the comparative method has been found to be useful for archaeological ceramic petrography as point counting (Mason 1995).

Analysis was conducted by first going through the total ceramic collection and generating a brief description of each of the sherds. A second phase created classification groups based on the similarity of the paste and temper between sherds. This process also allowed for the examination of the variability within each grouping. Additional comments about the composition of individual sherds were made at this time.

Analysis of the Ceramic Samples

LG 1

The paste of this sample is a light brown color and has a distinctive silty texture. Two types of inclusions are present in the paste, soil pisolites and mineral grains. The soil pisolites are a bright brownish-red and have distinct boundaries between the pisolite and the ceramic body. These pisolites make up about 10 percent of the matrix and range continuously in size from fine to coarse. The pisolites are rounded.

The inclusions consist of isolated mineral grains and rock fragments. The rock fragments and mineral grains observed indicate a volcanic origin for the sediments. Isolated medium- to coarse-sized fragments of welded glassy pumice are present. One coarse fragment of tuff was stained by iddingsite. These pumice fragments make up only a trace amount of the overall inclusions. However, the grains range in size from medium to very coarse. Two coarse-sized fragments of volcanic chalcedony were observed as well.

In terms of isolated grains, very fine to fine glass shards make up about three percent of the total paste. A single medium-sized grain of trachytic basalt is present. This basalt grain contains ophitic augite. Also present are isolated grains of quartz and sanidine. These isolated grains make up about five percent of the matrix. Some brown biotite, often altered to hematite was also observed. All of the types of isolated grains and glass shards are present in the matrix of the ceramic and in the soil pisolites.

LG 2

The paste of this sherd is a light grayish-brown. The past contains 30 percent well-sorted sub-arkosic sands. These sands are medium-sized and rounded to sub-rounded. Quartz predominates over the potassium feldspar in about a 3:1 ratio. The quartz grains often display an undulose extinction. The potassium feldspar appears fresh and unweathered. Sparse grains of plagioclase are also present among the sands.

LG 3

The paste of this sherd is a medium brown color and contains about 25 percent silt-sized mineral grains giving the sample a sandy texture. The silt-sized particles are too small for identification by optical means. The inclusions form a continuous size distribution from these silt-sized grains up to a few coarse-sized rock fragments. These larger grains make up about 20 percent of the total ceramic matrix. The major identifiable inclusions in the paste are potassium feldspar grains. These grains range in appearance from fresh to slightly altered to sericite and clay minerals. Plagioclase is also present, making up about five percent of the grains. Quartz is sparse and is present only in trace amounts as is microcline, green-brown hornblende, and brown biotite. Most of the biotite has altered to clay minerals and hematite.

LG 4

The paste of this sherd is a light brown color. The silty texture of the paste and the types and amounts of inclusions present in this specimen are very similar to those observed in sample LG 1. The current specimen contains about 10 percent reddish soil pisolites along with fragments of glassy pumice, and isolated grains of quartz and sanidine.

LG 5

The paste of this sherd is a light grayish-brown and contains about 30 percent sub-rounded to rounded sands. The paste of this sherd is like that of sample LG 2 in terms of texture and types of inclusions and their amounts present.

LG 6

The paste of this sherd is very similar to that of LG 1 and LG 4. The present specimen contains 10 percent reddish soil pisolites. Also present are very fine glass shards and larger glassy pumice fragments. Trace amounts of isolated grains of sanidine and quartz are present as well, and a medium-sized grain of volcanic chalcedony.

LG 7

The paste of this specimen is quite similar to that of LG 1, LG 4, and LG 6. The paste contains 10 percent reddish soil pisolites. The paste of the present specimen lacks chalcedony and basalt fragments but does possess fragments of light grayish glassy pumice and fine glass shards.

LG 8

The paste of this sherd is a light grayish-brown color and contains about 30 percent sub-rounded to rounded sub-arkosic sands. The paste of this sherd is very much like samples LG 2 and LG 5. Very sparse brown biotite is also present in this specimen.

LG 9

The paste of this sherd is a medium brown with a silty texture. The paste of this sherd is quite similar to samples LG 1, LG 4, LG 6, and LG 7. This sherd contains only pisolites, pumice fragments, glass shards, biotite, quartz, and sanidine, but no basalt or chalcedony.

LG 10

The paste of this sherd is a dark brown color. The paste has a sandy texture due to the abundance of silt-sized grains. The particle size distribution is continuous from silt-sized to coarse. The paste of this sherd is quite similar to sample LG 3. The most common inclusion is potassium feldspar. The feldspars appear slightly more weathered in the current specimen than in LG 3. The inclusions make up about 20 percent of the ceramic matrix. Sparse plagioclase and microcline are also present. A coarse-sized highly weathered grain of andesite porphyry is also present in this specimen. The groundmass was composed of weathered plagioclase and opaque minerals. Biotite is present replacing hornblende laths. Other rock fragments include two fine-grained aggregates of potassium feldspar and sparse plagioclase and two coarse-sized rock fragments that consisted of a few large potassium feldspar grains.

LG 11

The paste of this sherd is a light yellowish-brown and has a distinctive silty texture. Some areas of the paste are slightly more birefringent than others, possibly as the result of incipient vitrification of the ceramic body. The paste contains only about five percent inclusions. These inclusions consist of silt-sized to very fine isolated mineral grains and glass shards. Medium- to coarse-sized rock fragments are present but uncommon. The most common rock type is a welded glassy pumice. The pumice is clear to light gray in color. Vesicular texture is visible in some of the pumice grains.

The paste of this sherd, in terms of inclusions and silty texture, resembles that of LG 1, LG 4, LG 6, LG 7, and LG 9. However, the current specimen lacks the abundant brownish-red soil pisolites present in the other sherds.

LG 12

The paste of this sherd is a light yellowish-brown and has a silty texture. The ceramic matrix resembles that of LG 11. This sherd lacks the vitrified areas of the previous sherd. The paste contains about five percent inclusions consisting mostly of glass shards and isolated mineral grains. A few glassy pumice fragments are present. Two fragments of chalcedony are also present. One coarse-sized red birefringent soil pisolite was observed.

LG 13

The paste of this sherd is a light yellowish-brown color. The ceramic matrix resembles that of LG 12 and LG 13. The paste contains five percent inclusions ranging from silt-sized to a few medium- and coarse-sized grains. The most common coarse inclusions were reddish soil pisolites. These pisolites are a brownish-red, but otherwise resemble the matrix of the ceramic body. A distinctive boundary exists between the pisolite and the ceramic matrix. Sparse fine brown biotite is also present. Also present in the paste of this sherd are sparse fragments of glassy pumice. A single medium-sized chert fragment was also observed.

LG 14

The paste of this sherd is a light yellowish-brown color. The ceramic matrix resembles that of LG 12 as it lacks the brownish red soil pisolites but does contain silt-sized to medium-sized grains of quartz or sanidine and fine glass shards. Sparse fragments of glassy pumice or tuff are also present. One tuff grain contains porphyritic sanidine. A few black, coarse inclusions which could represent pisolites were observed. Their opaque nature and dark color suggests a different composition than the reddish pisolites.

LG 15

The paste of this sherd is a light orange brown color. The paste contains about 20 percent shards of glassy pumice. The pumice shards range from silt-sited to fine. A few medium- and one coarse-sized pumice grain were also present. Sparse fine-sized flakes of brown biotite were also observed.

LG 16

The paste of this sherd is dark opaque brown. The paste contains about 40 percent silt-sized to very fine glass shards. There are two coarse and several smaller sized fragments of tuff present in the sample. A coarse-sized soil pisolite is also present.

LG 17

The paste of this sherd is a light yellowish-brown and has a silty texture. The paste is similar to LG 1, LG 4, LG 6, LG 7, LG 9, and LG 11. The paste contains about five percent silt-sized to coarse inclusions, including glass shards, quartz, and sanidine. A very coarse-sized fragment of scoria is present as well as a few medium- to coarse-sized fragments of tuff.

LG 18

The paste of this sherd is a light brown and has a silty texture. The paste contains about 10 percent silt-sized to fine glass shards. A trace amount of brownish-red soil pisolites are present. The pisolites are all of medium size. Sparse fine brown biotite is also present.

LG 19

The paste of this sherd is a light yellowish-brown color and has a silty texture. The paste contains about 10 percent silt-sized to fine glassy pumice. Sparse fine to medium-sized rounded grains of quartz and sanidine were observed. Also present is a single very coarse-sized fragment of welded tuff. The paste is similar to LG 18 in terms of the color and texture of the paste, and the presence of glass shards.

LG 20

The paste of this sherd is a light gray. Areas of the paste have become birefringent, possibly due to incipient vitrification of the clay body. The paste contains five percent silt-sized to fine quartz and sanidine grains, glass shards, and black opaque inclusions. These black opaques could represent alteration of soil pisolites during firing of the vessel. A trace amount of isolated potassium feldspar laths are present in the paste.

Discussion

Two types of inclusions were observed in the lead-glazed ceramics from 41RF1 representing two different sources of glazeware production. The most common inclusions were derived from sediments from an extrusive volcanic source. These fifteen sherds share a silty light yellowish-brown paste that contains sparse glass sherds. These sherds also contain larger grains of quartz and sanidine. Within this group of sherds, considerable variation exists in the amount of distinctive reddish soil pisolites, a reflection of localized differences in the makeup of the source clay. There is variation in trace rock types, including the presence or absence of fragments of glassy pumice, or other extrusive volcanic rock. Volcanic chalcedony is also occasionally present among these rock fragments.

Some variation in the types and sizes of the volcanic inclusions was observed within this composition group. Samples LG 15 and LG 16 contained coarse-sized fragments

of tuff. Sample LG 19 has a silty paste similar to the paste of the previously described fifteen sherds. It also contains silt-sized to fine glass shards, sparse larger quartz and sanidine grains, and fine brown biotite. With the exception of one large soil pisolite, the sherd is remarkably free from other larger inclusions. These three sherds probably represent variation for the above grouping of ceramics and thus compositional differences in the sources of ceramic clay.

Five samples contain sediments derived from a plutonic rock source. Samples LG 2, LG 3, LG 5, LG 8, and LG 10 contain sands dominated by quartz grains that display an undulose extinction indicative of a plutonic or subsequent metamorphic history. The feldspars consist primarily of potassium feldspar with less plagioclase and microcline. Patch perthites were occasionally observed within some of the potassium feldspar grains.

Samples LG 3 and LG 10 have very sandy pastes that contain abundant potassium feldspar. Plagioclase, quartz, biotite, and green-brown hornblende are present in trace amounts in these sherds. Like the variation within the volcanic specimens, the compositional differences and the amount of mineral grains present in these five sherds represent the use of multiple procurement locations within a single source of ceramic clay.

Few petrographic studies of Spanish Colonial ceramics have been conducted, so little comparative data are available either for production centers in Mexico or from other eighteenth century sites in the Spanish borderland. A single petrographic study of sixteen glazeware sherds from four Spanish Mission sites in Texas has been conducted. This study includes the location under our present study along with 41BX5, 41GD2, and 41SA25 (Malicse 1994). Previous analysis of a brown lead-glazed ceramic from 41RF1 resembles that of samples LG 3 and LG 10. Without comparative analysis of ceramics from known sources of lead-glazed ceramics such as Guanajuato and Michocan, the origins of lead-glazed ceramics recovered from Spanish Colonial sites will remain speculative.

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Appendix H

Mission Refugio

Instrumental Neutron Activation Analysis of Ceramics

Appendix H: Instrumental Neutron Activation Analysis

Ceramics

Hector Neff and Michael D. Glascock

Introduction

Instrumental neutron activation analysis (INAA) was recently completed on a sample of 126 ceramics and a single raw clay sample from southern Texas. Samples were selected by researchers at the Center for Archaeological Research, University of Texas, San Antonio from collections produced by archaeological research at Mission Refugio (41RF1). The analyses were undertaken at the University of Missouri Research Reactor Center (MURR). Here, we describe sample preparation and analytical techniques used at MURR and report the subgroup structure identified through quantitative analysis of the complete ceramic compositional data set.

Background

Two basic kinds of ceramics were analyzed for this study, unglazed Native American pottery and lead glazed pottery from Mission Refugio. The question being addressed, therefore, is whether there was any overlap in the raw materials used for the two types of pottery. The Native American pottery is assumed to be local, and, if glazed pottery matches the Native American pottery, it too must be local. Glazed pottery that falls outside the range of variation of south Texas Native American pottery may be assumed to have been imported.

The present report focuses on the Mission Refugio sample, although data from 41KA26 are included in the presentation of data. Additional comparative data come from an in-progress project from a Colonial site in eastern Texas that will be reported elsewhere.

Sample Preparation

The ceramics were prepared for INAA using standard MURR procedures. The clay sample was fired to 700 degrees for one hour in air before being prepared for analysis. Pieces of each sherd were burred with a silicon carbide burr to remove painted or slipped surfaces and adhering soil. The burred sherd samples and the clay test tile were then washed with deionized water and allowed to dry in air. These were then crushed in an agate mortar to yield a fine powder. Part of each specimen was retained, unpowdered, for the MURR archive of analyzed ceramic fabrics.

The powder samples were oven-dried at 100 degrees C for 24 hours. Portions of approximately 150 mg were weighed and placed in small polyvials used for short irradiations. At the same time, 200 mg of each sample were weighed into high-purity quartz vials used for long irradiations. Along with the unknown samples, reference standards of SRM-1633a (coal fly ash) and SRM-688 (basalt rock) were similarly prepared, as were quality control samples (i.e., standards treated as unknowns) of SRM-278 (obsidian rock) and Ohio Red Clay.

Irradiation and Gamma-Ray Spectroscopy

Neutron activation analysis of ceramics at MURR, which consists of two irradiations and a total of three gamma counts, constitutes a superset of the procedures used at most other laboratories (Glascock 1992; Neff 1992). As discussed in detail by Glascock (1992), a short irradiation is carried out through the pneumatic tube irradiation system. Samples in the polyvials are sequentially irradiated, two at a time, for five seconds at a neutron flux of 8×10^{13} n/cm^2/s. The 720-second count yields gamma spectra containing peaks for the short-lived elements aluminum (Al), barium (Ba), calcium (Ca), dysprosium (Dy), potassium (K), manganese (Mn), sodium (Na), titanium (Ti), and vanadium (V). The samples encapsulated in quartz vials are subjected to a 24-hour irradiation at a neutron flux of 5×10^{13} n/cm^2/s. This long irradiation is analogous to the single irradiation utilized at most other laboratories. After the long irradiation, samples decay for seven days, then are counted for 2,000 seconds (the “middle count”) on a high-resolution germanium detector coupled to an automatic sample changer. The middle count yields determinations of seven medium half-life elements, namely arsenic (As), lanthanum (La), lutetium (Lu), neodymium (Nd), samarium (Sm), uranium (U), and ytterbium (Yb). After an additional three- or four-week decay, a final count of 9,000 seconds is carried out on each sample. The latter measurement yields the following 17 long half-life elements: cerium (Ce), cobalt (Co), chromium (Cr), cesium (Cs), europium (Eu), iron (Fe), hafnium (Hf), nickel (Ni), rubidium (Rb), antimony (Sb), scandium (Sc), strontium (Sr), tantalum (Ta), terbium (Tb), thorium (Th), zinc (Zn), and zirconium (Zr).

Elemental concentration data from the two irradiations and three counts (a total of 33 elements) are assembled into a single tabulation and stored in a Excel file (Volume I - CD: 00H2-Ref App H2.xls) along with descriptive information available for each sample.

Quantitative Analysis of the Chemical Data

The analyses at MURR described previously produced elemental concentration values for 32 or 33 elements in most of the analyzed samples. (Some elements, especially nickel, were below detection in some samples.) Quantitative analysis was subsequently carried out on base 10 logarithms of concentrations for these data. Use of log concentrations instead of raw data compensates for differences in magnitude between major elements, such as iron, on one hand and trace elements, such as the rare earth or lanthanide elements, on the other hand. Transformation to base 10 logarithms also yields a more nearly normal distribution for many trace elements.

In the present case, an additional transformation was necessary because of the presence of large amounts of bone temper in many of the analyzed specimens, especially the Native American pottery from Refugio Mission. Assuming that bone is composed largely of calcium carbonate, a correction developed for shell-tempered pottery by Blackman (Steponaitis, Blackman, and Neff 1996; Cogswell, Neff, and Glascock 1998) removes the effect of bone temper from heavily tempered specimens. The correction is:

$$e' = (10^6 e)/(10^6 - 2.5c)$$

where e' is the corrected concentration of any element in ppm, e is the measured concentration of that element in ppm, and c is the amount of calcium in ppm. This correction obviously does not apply to elements that are present in high concentrations in calcium carbonates, including strontium and barium. In the present case, calcium, strontium, and barium were excluded from the quantitative data analysis after correcting the other data for addition of temper. It is also worth noting that this transformation will always over-correct because some calcium is naturally present in all clay. Nonetheless, experiments by Cogswell, Neff, and Glascock (1998) demonstrate that the true clay chemical similarities of calcium carbonate tempered ceramics can be recovered very confidently after applying this correction.

The goal of quantitative analysis of the chemical data is to recognize compositionally homogeneous groups within the analytical database. Based on the "provenance postulate" (Weigand, Harbottle, and Sayre 1977), such groups are assumed to represent geographically restricted sources or source zones. The location of sources or source zones may be inferred by comparing the unknown groups to known (source raw materials) or by indirect means. Such indirect means include the "criterion of abundance" (Bishop, Rands, and Holley 1982) arguments based on geological and sedimentological characteristics (e.g., Steponaitis, Blackman, and Neff 1996) and identifying similarities to other ceramics whose sources may be inferred with some confidence.

Initial hypotheses about source-related subgroups in the compositional data can be derived from non-compositional information (e.g., archaeological context, decorative attributes, etc.) or from application of pattern-recognition techniques to the chemical data. In the present case, for instance, a reasonable starting hypothesis is that the glazed and unglazed ceramics form compositionally distinct groups. The hypothetical groups can be evaluated by several means, the most intuitively accessible of which is to inspect bivariate plots on which the specimens are identified as to presumed group affiliation. Failure to find projections of the data that differentiate the hypothetical groups casts doubt on their validity.

Principal components analysis (PCA) is one technique that can be used to recognize patterns (i.e., subgroups) in compositional data. PCA provides new reference axes that are arranged in decreasing order of variance subsumed. The data can be displayed on combinations of these new axes, just as they can be displayed relative to the original elemental concentration axes. PCA can be used in a pure pattern-recognition mode, i.e., to search for subgroups in an undifferentiated data set, or in a more evaluative mode, i.e., to assess the coherence of hypothetical groups suggested by other criteria (archaeological context, decoration, etc.). Generally, compositional differences between specimens can be expected to be larger for specimens in different groups than for specimens in the same group, and this implies that groups should be detectable as distinct areas of high point density on plots of the first few components.

One seldom exploited strength of PCA discussed by Baxter (1992) and Neff (1994) is that it can be applied as a simultaneous R- and Q-mode technique, with both variables (elements) and objects (individual analyzed samples)

displayed on the same set of principal component reference axes. The two-dimensional plot of element coordinates on the first two principal components is the best possible two-dimensional representation of the correlation or variance-covariance structure in the data: Small angles between vectors from the origin to variable coordinates indicate strong positive correlation; angles close to 90° indicate no correlation; and angles close to 180° indicate negative correlation. Likewise, the plot of object coordinates is the best two-dimensional representation of Euclidean relations among the objects in log-concentration space (if the PCA was based on the variance-covariance matrix) or standardized log-concentration space (if the PCA was based on the correlation matrix). Displaying objects and variables on the same plots makes it possible to observe the contributions of specific elements to group separation and to the distinctive shapes of the various groups. Such a plot is called a "biplot" in reference to the simultaneous plotting of objects and variables. The variable interrelationships inferred from a biplot can be verified directly by inspection of bivariate elemental concentration plots.

As discussed above, source-related compositional groups are expected to be discernible on the first several principal components. Although visual inspection of data is limited to two dimensions (principal components or elemental concentrations) at a time, calculation of Mahalanobis distance (or generalized distance) makes it possible to describe how well-separated the groups are on multiple dimensions. The Mahalanobis distance of a specimen from a group centroid (Bieber et al. 1976; Bishop and Neff 1989; Harbottle 1976; Sayre 1975) is:

$$D^2_{y,X} = [y - \overline{X}]^t I_X [y - \overline{X}]$$

where y is 1 x m array of logged elemental concentrations for the individual point of interest, X is the n x m data matrix of logged concentrations for the group to which the point is being compared with being its 1 x m centroid, and I_X is the inverse of the m x m variance-covariance matrix of group X. Because Mahalanobis distance takes into account variances and covariances in the multivariate group it is analogous to expressing distance from a univariate mean in standard deviation units. Like standard deviation units, Mahalanobis distances can be converted into probabilities of group membership for each individual specimen (e.g., Bieber et al. 1976; Bishop and Neff 1989; Harbottle 1976). For relatively small sample sizes, it is appropriate to base probabilities on Hotelling's T^2, which is a multivariate extension of the univariate Student's t.

With small groups, Mahalanobis distance-based probabilities of group membership may fluctuate dramatically depending on whether or not each specimen is assumed to be a member of the group to which it is being compared. Harbottle (1976) calls this phenomenon "stretchability" in reference to the tendency of an included specimen to stretch the group in the direction of its own location in the elemental concentration space. This problem can be circumvented by cross-validation (or "jackknifing"), that is, by removing each specimen from its presumed group before calculating its own probability of membership (Baxter 1994; Leese and Main 1994). This is a conservative approach to group evaluation that may sometimes exclude true group members. All probabilities discussed below are cross validated.

Results

The southern Texas sample is dominated by Native American ceramics assigned to the "Refugio Mission Reference Group" (Table H-1). This group is recognizable as a compact cluster of data points on virtually every projection of the data e.g., Figures H-1–H-4). Specimens assigned to the group also form a coherent cluster in the full, 29-dimension compositional space as well, as indicated by the Mahalanobis distance-based probabilities of group membership shown in the last column of Table H-1. Specimens assigned to the group all have greater than 1% jackknifed probability of membership in the group, while those not assigned to the group have less than 1% probability. In fact, specimens assigned to other groups (Galera and Lead Glaze-1) all have less than 0.0005% probability of membership in the Refugio Mission Group. The southern Texas data also include 24 unassigned Native American Specimens and five unassigned lead glazed specimens. Group assignments for all of the analyzed specimens are listed in Table H-1.

The inference that the Refugio Mission Reference Group consists at least partly of ceramics made at or near Mission Refugio is justified both by the dominance in the group of Mission Refugio Native American ceramics and by the presence of one raw clay sample collected at Mission Refugio (Table H-1). The resulting 83-specimen reference group probably represents the range of compositions produced by Native American potters working within the Mission Refugio region.

The chemical basis of separation among the three southern Texas groups is indicated by a biplot of the first two principal components of the data (Figure H-1). Principal Component 1 expresses enrichment of a large number of elements,

Table H-1. Group assignments and descriptive information for Mission Refugio ceramic samples

Chemical Group	Analytical I.D.	Site	Provenience	Context	Description	Ref. Group Probability*
Refugio Ref. Group	KAT202	41KA26-B	52-E		Unglazed Native American	15.406
Refugio Ref. Group	KAT203	41KA26-B	29-B		Unglazed Native American	92.795
Refugio Ref. Group	KAT204	41KA26-B	29-E		Unglazed Native American	98.584
Refugio Ref. Group	KAT205	41KA26-B	13-D		Unglazed Native American	97.647
Refugio Ref. Group	KAT207	41KA26-B	13-D		Unglazed Native American	87.476
Refugio Ref. Group	KAT208	41KA26-B	31-D		Unglazed Native American	36.040
Refugio Ref. Group	KAT209	41KA26-B	51-C		Unglazed Native American	1.716
Refugio Ref. Group	KAT210	41KA26-B	43-F		Unglazed Native American	80.519
Refugio Ref. Group	KAT211	41KA26-B	VIII-3		Unglazed Native American	94.480
Refugio Ref. Group	KAT212	41KA26-B	50-C		Unglazed Native American	93.673
Refugio Ref. Group	KAT214	41KA26-B	3B-B		Unglazed Native American	83.547
Refugio Ref. Group	KAT215	41KA26-B	57-C		Unglazed Native American	46.238
Refugio Ref. Group	KAT216	41KA26-B	56-E		Unglazed Native American	28.328
Refugio Ref. Group	KAT217	41KA26-B	47-B		Unglazed Native American	9.373
Refugio Ref. Group	KAT218	41KA26-B	47-B		Unglazed Native American	71.387
Refugio Ref. Group	KAT219	41KA26-B	47-B		Unglazed Native American	99.416
Refugio Ref. Group	KAT220	41KA26-B	44-C		Unglazed Native American	20.422
Refugio Ref. Group	KAT221	41KA26-B	35-C		Unglazed Native American	11.970
Refugio Ref. Group	RFT001	Mission Refugio, 41RF1	75N/99E	Feature 2	Unglazed Native American	35.446
Refugio Ref. Group	RFT002	Mission Refugio, 41RF1	75N/99E	Non-feature	Unglazed Native American	1.940
Refugio Ref. Group	RFT006	Mission Refugio, 41RF1	75N/99E	Non-feature	Unglazed Native American	63.349
Refugio Ref. Group	RFT008	Mission Refugio, 41RF1	76N/100E	Feature 2	Unglazed Native American	89.703
Refugio Ref. Group	RFT010	Mission Refugio, 41RF1	76N/100E	Non-feature	Unglazed Native American	52.063
Refugio Ref. Group	RFT011	Mission Refugio, 41RF1	75N/99E	Feature 2	Unglazed Native American	43.324
Refugio Ref. Group	RFT012	Mission Refugio, 41RF1	75N/99E	Feature 2	Unglazed Native American	25.491
Refugio Ref. Group	RFT013	Mission Refugio, 41RF1	75N/99E	Feature 2	Unglazed Native American	23.889
Refugio Ref. Group	RFT015	Mission Refugio, 41RF1	73N/99E	Non-feature	Unglazed Native American	36.747
Refugio Ref. Group	RFT016	Mission Refugio, 41RF1	76N/100E	Feature 2	Unglazed Native American	22.444
Refugio Ref. Group	RFT017	Mission Refugio, 41RF1	75N/100E	Feature 2	Unglazed Native American	95.971
Refugio Ref. Group	RFT018	Mission Refugio, 41RF1	75N/99E	Feature 2	Unglazed Native American	97.222
Refugio Ref. Group	RFT019	Mission Refugio, 41RF1	75N/100E	Non-feature	Unglazed Native American	34.846
Refugio Ref. Group	RFT020	Mission Refugio, 41RF1	75N/99E	Feature 2	Unglazed Native American	95.355
Refugio Ref. Group	RFT021	Mission Refugio, 41RF1	74N/100E	Non-feature	Unglazed Native American	95.428
Refugio Ref. Group	RFT022	Mission Refugio, 41RF1	74N/100E	Feature 2	Unglazed Native American	85.274
Refugio Ref. Group	RFT023	Mission Refugio, 41RF1	73N/99E	Feature 2	Unglazed Native American	58.860
Refugio Ref. Group	RFT024	Mission Refugio, 41RF1	75N/99E	Feature 2	Unglazed Native American	51.488
Refugio Ref. Group	RFT025	Mission Refugio, 41RF1	75N/99E	Feature 2	Unglazed Native American	92.904
Refugio Ref. Group	RFT027	Mission Refugio, 41RF1	74N/100E	Feature 2	Unglazed Native American	10.210
Refugio Ref. Group	RFT028	Mission Refugio, 41RF1	74N/100E	Feature 2	Unglazed Native American	65.241
Refugio Ref. Group	RFT029	Mission Refugio, 41RF1	75N/100E	Feature 2	Unglazed Native American	36.597
Refugio Ref. Group	RFT030	Mission Refugio, 41RF1	73N/100E	Feature 2	Unglazed Native American	99.139
Refugio Ref. Group	RFT031	Mission Refugio, 41RF1	76N/100E	Feature 2	Unglazed Native American	42.891
Refugio Ref. Group	RFT032	Mission Refugio, 41RF1	75N/100E	Feature 2	Unglazed Native American	99.545
Refugio Ref. Group	RFT034	Mission Refugio, 41RF1	76N/100E	Feature 2	Unglazed Native American	99.761
Refugio Ref. Group	RFT035	Mission Refugio, 41RF1	75N/99E	Feature 2	Unglazed Native American	72.969
Refugio Ref. Group	RFT036	Mission Refugio, 41RF1	74N/100E	Feature 2	Unglazed Native American	66.891
Refugio Ref. Group	RFT037	Mission Refugio, 41RF1	73N/100E	Feature 2	Unglazed Native American	87.415
Refugio Ref. Group	RFT039	Mission Refugio, 41RF1	74N/100E	Feature 2	Unglazed Native American	79.194
Refugio Ref. Group	RFT040	Mission Refugio, 41RF1	86N/100E	Feature 1	Unglazed Native American	92.471
Refugio Ref. Group	RFT041	Mission Refugio, 41RF1	86N/100E	Non-feature	Unglazed Native American	53.463
Refugio Ref. Group	RFT042	Mission Refugio, 41RF1	85N/99E	Feature 1	Unglazed Native American	83.795
Refugio Ref. Group	RFT043	Mission Refugio, 41RF1	85N/100E	Feature 1	Unglazed Native American	35.351
Refugio Ref. Group	RFT045	Mission Refugio, 41RF1	86N/99E	Feature 1	Unglazed Native American	85.303
Refugio Ref. Group	RFT047	Mission Refugio, 41RF1	85N/100E	Feature 1	Unglazed Native American	66.651
Refugio Ref. Group	RFT048	Mission Refugio, 41RF1	86N/99E	Feature 1	Unglazed Native American	21.773
Refugio Ref. Group	RFT049	Mission Refugio, 41RF1	86N/100E	Non-feature	Unglazed Native American	28.270
Refugio Ref. Group	RFT050	Mission Refugio, 41RF1	85N/100E	Feature 1	Unglazed Native American	43.074
Refugio Ref. Group	RFT051	Mission Refugio, 41RF1	85N/100E	Feature 1	Unglazed Native American	52.942
Refugio Ref. Group	RFT053	Mission Refugio, 41RF1	85N/100E	Feature 1	Unglazed Native American	58.104
Refugio Ref. Group	RFT055	Mission Refugio, 41RF1	85N/99E	Feature 1	Unglazed Native American	14.820

Table H-1. Continued…

Chemical Group	Analytical I.D.	Site	Provenience	Context	Description	Ref. Group Probability*
Refugio Ref. Group	RFT056	Mission Refugio, 41RF1	83N/100E	Feature 1	Unglazed Native American	73.056
Refugio Ref. Group	RFT059	Mission Refugio, 41RF1	87N/100E	Non-feature	Unglazed Native American	76.889
Refugio Ref. Group	RFT062	Mission Refugio, 41RF1	85N/99E	Non-feature	Unglazed Native American	8.122
Refugio Ref. Group	RFT063	Mission Refugio, 41RF1	87N/100E	Non-feature	Unglazed Native American	8.348
Refugio Ref. Group	RFT064	Mission Refugio, 41RF1	86N/99E	Non-feature	Unglazed Native American	7.220
Refugio Ref. Group	RFT067	Mission Refugio, 41RF1	85N/99E	Feature 1	Unglazed Native American	4.795
Refugio Ref. Group	RFT068	Mission Refugio, 41RF1	85N/99E	Feature 1	Unglazed Native American	3.349
Refugio Ref. Group	RFT074	Mission Refugio, 41RF1	85N/100E	Non-feature	Unglazed Native American	2.732
Refugio Ref. Group	RFT075	Mission Refugio, 41RF1	83N/100E	Non-feature	Unglazed Native American	17.835
Refugio Ref. Group	RFT078	Mission Refugio, 41RF1	85N/100E	Feature 1	Unglazed Native American	92.441
Refugio Ref. Group	RFT085	Mission Refugio, 41RF1	84N/100E	Feature 1	Unglazed Native American	39.453
Refugio Ref. Group	RFT087	Mission Refugio, 41RF1	85N/100E	Feature 1	Unglazed Native American	11.801
Refugio Ref. Group	RFT088	Mission Refugio, 41RF1	86N/99E	Feature 1	Unglazed Native American	4.306
Refugio Ref. Group	RFT094	Mission Refugio, 41RF1	85N/99E	Non-feature	Unglazed Native American	49.774
Refugio Ref. Group	RFT095	Mission Refugio, 41RF1	86N/100E	Non-feature	Unglazed Native American	83.155
Refugio Ref. Group	RFT096	Mission Refugio, 41RF1	83N/99E	Feature 1	Unglazed Native American	3.282
Refugio Ref. Group	RFT099	Mission Refugio, 41RF1	86N/99E	Non-feature	Unglazed Native American	1.945
Refugio Ref. Group	RFT102	Mission Refugio, 41RF1	TxDOT TP1	Non-feature	Unglazed Native American	56.788
Refugio Ref. Group	RFT103	Mission Refugio, 41RF1	TxDOT TP1	Non-feature	Unglazed Native American	95.941
Refugio Ref. Group	RFT108	Mission Refugio, 41RF1	95N/100E	Non-feature	Unglazed Native American	2.062
Refugio Ref. Group	RFT109	Mission Refugio, 41RF1	81N/100E	Feature 1	Unglazed Native American	44.402
Refugio Ref. Group	RFT110	Mission Refugio, 41RF1	81N/100E	Feature 1	Unglazed Native American	2.111
Refugio Ref. Group	RFT113	Mission Refugio, 41RF1	81N/100E	Feature 1	Unglazed Native American	7.759
Refugio Ref. Group	RFT114	Mission Refugio, 41RF1	81N/100E	Feature 1	Unglazed Native American	24.083
Refugio Ref. Group	RFT116	Mission Refugio, 41RF1	82N/100E	Feature 1	Unglazed Native American	84.553
Refugio Ref. Group	RFT120	Mission Refugio, 41RF1	90N/100E	Non-feature	Unglazed Native American	52.427
Refugio Ref. Group	RFT125	Mission Refugio, 41RF1	80N/100E	Feature 1	Unglazed Native American	27.159
Refugio Ref. Group	RFT126	Mission Refugio, 41RF1	60N/100E	Non-feature	Unglazed Native American	3.101
Refugio Ref. Group	RFT127	Mission Refugio, 41RF1	95N/100E	Non-feature	Unglazed Native American	28.122
Refugio Ref. Group	RFT131	Mission Refugio, 41RF1	81N/100E	Non-feature	Unglazed Native American	72.650
Refugio Ref. Group	RFT132	Mission Refugio, 41RF1	82N/100E	Feature 1	Unglazed Native American	16.222
Refugio Ref. Group	RFT133	Mission Refugio, 41RF1	82N/100E	Feature 1	Unglazed Native American	44.788
Refugio Ref. Group	RFT135	Mission Refugio, 41RF1	82N/100E	Feature 1	Unglazed Native American	87.081
Refugio Ref. Group	RFT137	Mission Refugio, 41RF1	90N/100E	Feature 1	Unglazed Native American	71.867
Refugio Ref. Group	RFT138	Mission Refugio, 41RF1	71N/100E	Non-feature	Unglazed Native American	65.402
Refugio Ref. Group	RFT140	Mission Refugio, 41RF1	78N/100E	Non-feature	Unglazed Native American	40.909
Refugio Ref. Group	RFT141	Mission Refugio, 41RF1	71N/100E	Non-feature	Unglazed Native American	5.843
Refugio Ref. Group	RFT144	Mission Refugio, 41RF1	82N/100E	Feature 1	Unglazed Native American	34.127
Refugio Ref. Group	RFT145	Mission Refugio, 41RF1	80N/100E	Feature 1	Unglazed Native American	14.733
Refugio Ref. Group	RFT146	Mission Refugio, 41RF1	80N/100E	Feature 1	Unglazed Native American	82.501
Refugio Ref. Group	RFT147	Mission Refugio, 41RF1	Feature 2	Feature 2	Clay	23.282
Galera	LGS311	Mission Refugio, 41RF1	84N/100E		Lead glazed, galera	0.000
Galera	LGS312	Mission Refugio, 41RF1	79N/100E		Lead glazed, galera	0.000
Galera	LGS313	Mission Refugio, 41RF1	75N/100E		Lead glazed, galera	0.000
Galera	LGS314	Mission Refugio, 41RF1	73N/100E		Lead glazed, galera	0.000
Galera	LGS315	Mission Refugio, 41RF1	86N/100E		Lead glazed, galera	0.000
Galera	LGS316	Mission Refugio, 41RF1	86N/100E		Lead glazed, galera	0.000
Galera	LGS317	Mission Refugio, 41RF1	78N/100E		Lead glazed, galera	0.000
Galera	LGS318	Mission Refugio, 41RF1	87N/100E		Lead glazed, galera	0.000
Galera	LGS319	Mission Refugio, 41RF1	87N/100E		Lead glazed, galera	0.000
Galera	LGS320	Mission Refugio, 41RF1	72N/100E		Lead glazed, galera	0.000
Lead Glaze-1	LGS301	Mission Refugio, 41RF1	75N/100E		Lead glazed, sandy paste	0.000
Lead Glaze-1	LGS304	Mission Refugio, 41RF1	75N/100E		Lead glazed, sandy paste	0.000
Lead Glaze-1	LGS306	Mission Refugio, 41RF1	73N/100E		Lead glazed, sandy paste	0.000
Lead Glaze-1	LGS307	Mission Refugio, 41RF1	75N/100E		Lead glazed, sandy paste	0.000
Lead Glaze-1	LGS309	Mission Refugio, 41RF1	75N/100E		Lead glazed, sandy paste	0.000

Table H-1. Continued…

Unassigned	KAT201	41KA26-B	52-E		Unglazed Native American	0.000
Unassigned	KAT206	41KA26-B	13-D		Unglazed Native American	0.000
Unassigned	KAT213	41KA26-B	14-D		Unglazed Native American	0.000
Unassigned	LGS302	Mission Refugio, 41RF1	74N/100E		Lead glazed, sandy paste	0.000
Unassigned	LGS303	Mission Refugio, 41RF1	85N/100E		Lead glazed, sandy paste	0.000
Unassigned	LGS305	Mission Refugio, 41RF1	75N/100E		Lead glazed, sandy paste	0.000
Unassigned	LGS308	Mission Refugio, 41RF1	75N/99E		Lead glazed, sandy paste	0.000
Unassigned	LGS310	Mission Refugio, 41RF1	86N/100E		Lead glazed, sandy paste	0.000
Unassigned	RFT003	Mission Refugio, 41RF1	73N/100E	Feature 2	Unglazed Native American	0.000
Unassigned	RFT009	Mission Refugio, 41RF1	76N/100E	Feature 2	Unglazed Native American	0.027
Unassigned	RFT014	Mission Refugio, 41RF1	74N/100E	Non-feature	Unglazed Native American	0.000
Unassigned	RFT033	Mission Refugio, 41RF1	75N/100E	Feature 2	Unglazed Native American	0.000
Unassigned	RFT038	Mission Refugio, 41RF1	72N/100E	Feature 2	Unglazed Native American	0.000
Unassigned	RFT044	Mission Refugio, 41RF1	84N/100E	Non-feature	Unglazed Native American	0.000
Unassigned	RFT060	Mission Refugio, 41RF1	86N/99E	Feature 1	Unglazed Native American	0.000
Unassigned	RFT061	Mission Refugio, 41RF1	86N/100E	Feature 1	Unglazed Native American	0.025
Unassigned	RFT070	Mission Refugio, 41RF1	84N/100E	Feature 1	Unglazed Native American	0.375
Unassigned	RFT073	Mission Refugio, 41RF1	86N/100E	Feature 1	Unglazed Native American	0.000
Unassigned	RFT076	Mission Refugio, 41RF1	83N/100E	Non-feature	Unglazed Native American	0.018
Unassigned	RFT077	Mission Refugio, 41RF1	86N/100E	Non-feature	Unglazed Native American	0.004
Unassigned	RFT079	Mission Refugio, 41RF1	83N/100E	Feature 1	Unglazed Native American	0.001
Unassigned	RFT081	Mission Refugio, 41RF1	85N/99E	Non-feature	Unglazed Native American	0.002
Unassigned	RFT090	Mission Refugio, 41RF1	87N/100E	Non-feature	Unglazed Native American	0.002
Unassigned	RFT097	Mission Refugio, 41RF1	85N/99E	Feature 1	Unglazed Native American	0.026
Unassigned	RFT098	Mission Refugio, 41RF1	71N/100E	Non-feature	Unglazed Native American	0.125
Unassigned	RFT106	Mission Refugio, 41RF1	TxDOT Gradall Tr. #1	Non-feature	Unglazed Native American	0.179
Unassigned	RFT111	Mission Refugio, 41RF1	78N/100E	Non-feature	Unglazed Native American	0.001
Unassigned	RFT112	Mission Refugio, 41RF1	81N/100E	Feature 1	Unglazed Native American	0.000
Unassigned	RFT119	Mission Refugio, 41RF1	71N/100E	Non-feature	Unglazed Native American	0.000
Unassigned	RFT123	Mission Refugio, 41RF1	79N/100E	Non-feature	Unglazed Native American	0.000
Unassigned	RFT124	Mission Refugio, 41RF1	82N/100E	Feature 1	Unglazed Native American	0.005
Unassigned	RFT136	Mission Refugio, 41RF1	95N/100E	Non-feature	Unglazed Native American	0.000

* Probabilities of membership in the Refugio Mission Reference Group, based on 29 elements retained for quantitative analysis.

including rare earth elements (REEs or lanthanide) and many transition metals. The Refugio Mission Reference Group is elongated along Component 1, reflecting the variable but correlated concentrations of many of these elements. Most of the rare earth elements (REEs) together with tantalum, uranium, and thorium pull the two main glazed ware groups, Galera and Lead Glaze-1, toward the high end of Component 1 and toward the low end of Component 2. The alkali elements (sodium, potassium, cesium, and rubidium), meanwhile, together with europium, vanadium, and manganese tend to be enriched in the Refugio Mission sample.

Another aspect of structure in the southern Texas data is evident on a biplot of the first and third principal components (Figure H-2). Although the glazed and Native American groups overlap completely on Component 3, two unassigned glazed specimens have anomalously high scores on this component. High concentrations of sodium, potassium, and manganese are especially important in creating this separation.

Bivariate plots (Figures H-3 and H-4) confirm that the Galera and Lead Glaze-1 groups fall well outside the range of compositional variation of southern Texas Native American ceramics. As inferred from the biplot (Figure H-1), Galera and Lead Glaze-1 are relatively enriched in REEs (Figure H-3) as well as tantalum (Figure H-4). The fact that they lie along different REE correlation lines compared to the Refugio Mission Reference group reinforces the inference

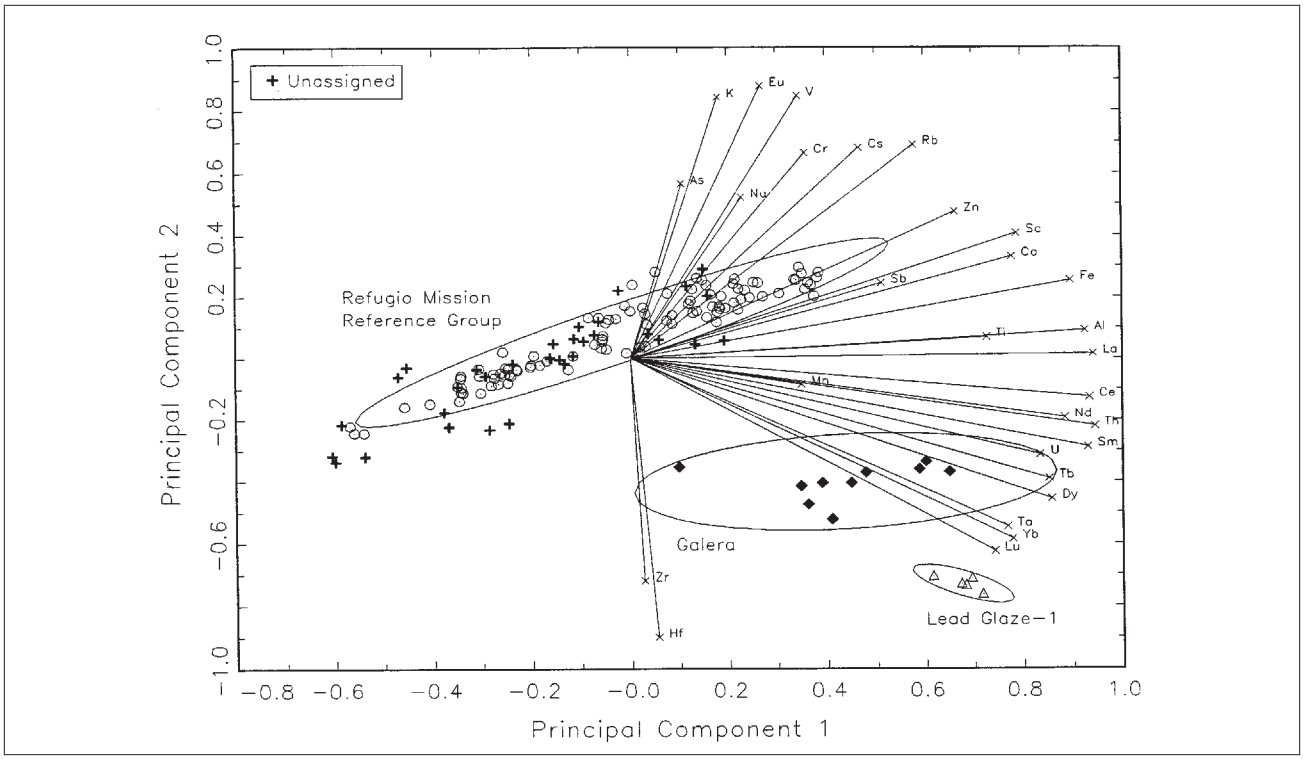

Figure H-1. *PCA biplot of Principal Components 1 and 2 of the correlation matrix for 29 elements determined in the Mission Refugio samples.* Ellipses represent 90% confidence level for membership in the groups.

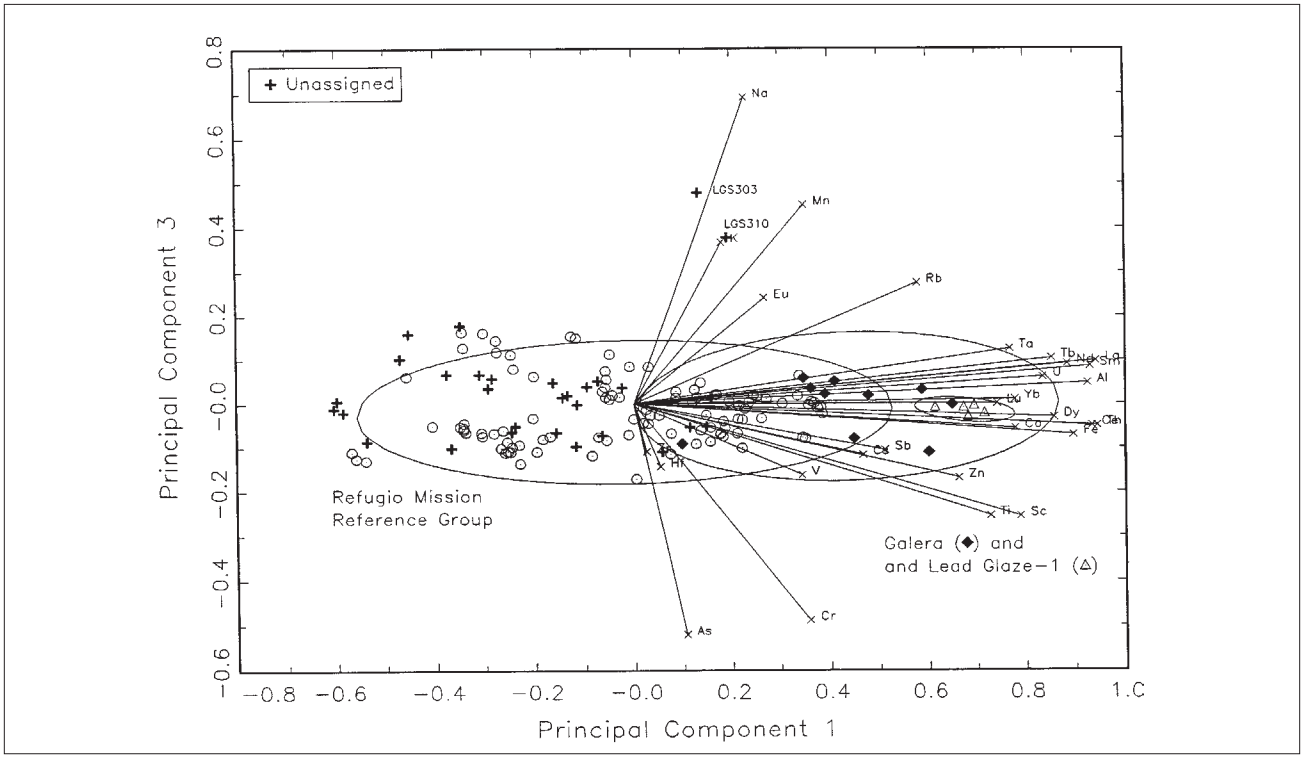

Figure H-2. *PCA biplot of Principal Components 1 and 3 of the correlation matrix for 29 elements determined in the Mission Refugio samples.* Ellipses represent 90% confidence level for membership in the groups.

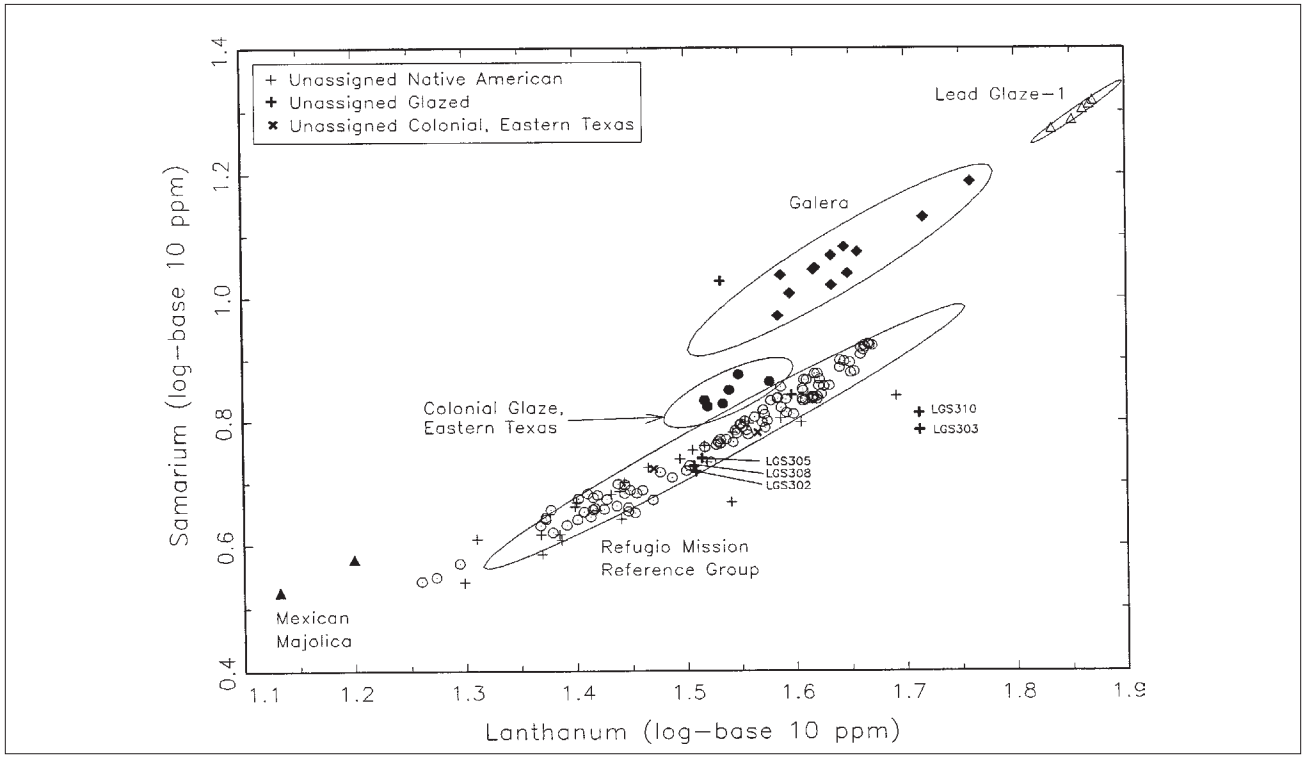

Figure H-3. *Bivariate plot of lanthanum and samarium concentrations in the Mission Refugio samples and other Colonial pottery from Texas.* Ellipses represent 90% confidence level for membership in the groups.

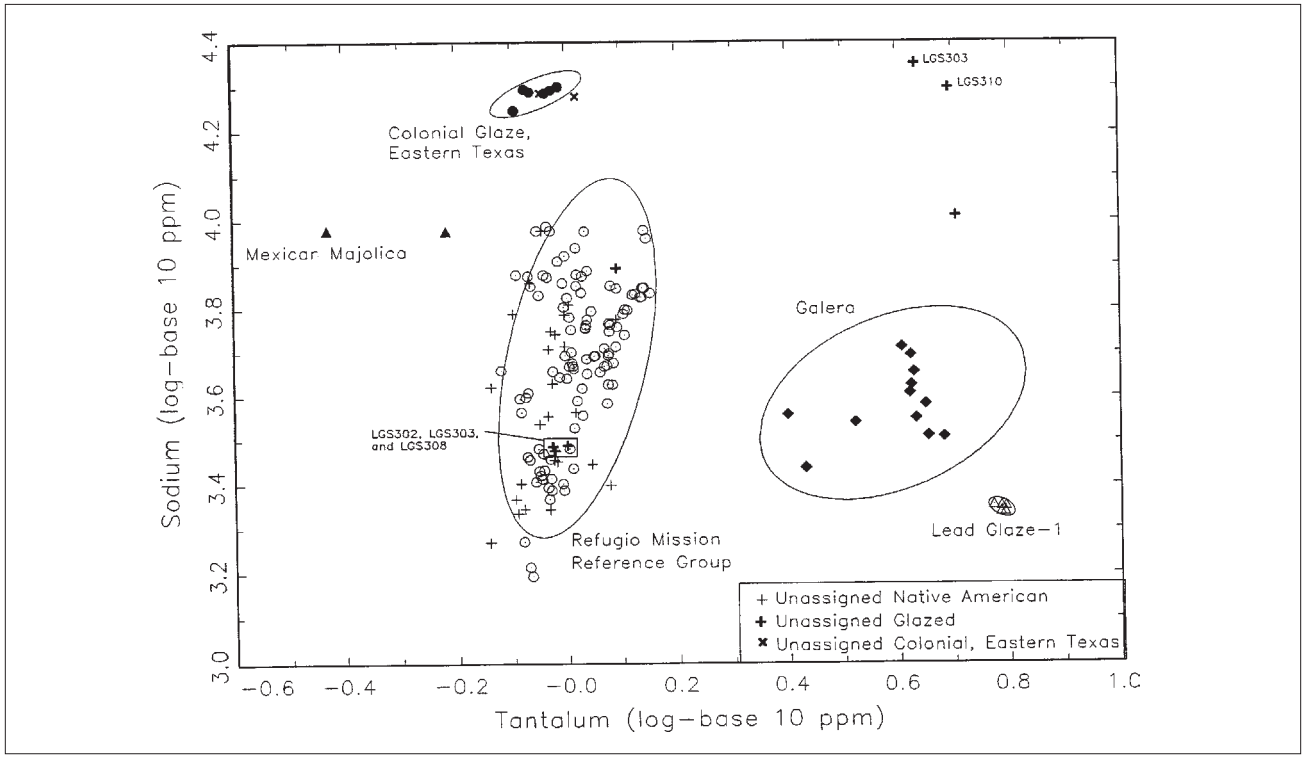

Figure H-4. *Bivariate plot of tantalum and sodium concentrations in the Mission Refugio samples and other Colonial pottery from Texas.* Ellipses represent 90% confidence level for membership in the groups.

that different ceramic resource bases are represented. Two unassigned glazed specimens, LGS303 and LGS310, are identified as quite divergent from the local southern Texas compositional profile on both the lanthanum-samarium plot (Figure H-3) and the tantalum-sodium plot (Figure H-4). The other unassigned lead glazed specimens, LGS302, LGS305, and LGS308, together with the remaining unassigned Native American specimens group with the Refugio Mission Reference Group on Figures H-3 and H-4 and many other projections of the data, so a non-local source would seem less probable for them.

Also plotted in Figures H-3 and H-4 are the data from fourteen specimens from a Colonial site in eastern Texas. Including these additional analyses adds two members to the Galera Group and defines another compositional group that is not present in the southern Texas sample. In addition, two different varieties of Mexican Majolica are present in the eastern Texas sample.

Discussion

The results presented above imply that there was little if any overlap between the ceramic resources bases of Native American and glazed ware potters who made the ceramics consumed at Refugio Mission. All but three of the glazed specimens clearly fall outside the range of chemical variation of southern Texas Native American pottery on numerous projections of the data. The most plausible interpretation of this evidence is that these glazed sherds originate outside of southern Texas. The three remaining glazed sherds fall within the Refugio Mission Reference Group on most projections of the data but cannot be assigned to the group statistically. Thus, the latter specimens may have been produced in southern Texas, but their producers evidently did not perceive and exploit the southern Texas ceramic environment in the same way as did Native American potters.

Currently there is no direct evidence available that might indicate where the imported glazed pottery at Refugio Mission might have come from. Euclidean searches of the entire MURR databank did not reveal any very closely matching specimens, although prehistoric ceramics from the southwest tended to be best represented in the case of unassigned specimens LGS303 and LGS310. The Galera and Lead Glaze-1 groups show some similarities to the elemental concentration means of a group designated "Cluster 1" by Carlson and James (1995:Table 1) in another INAA study of Texas Mission pottery. Carlson and James suggest that their Cluster 1 group derives from Mexico. However, as shown in Figure H-5, the Refugio Mission glazed specimens fall well outside the range of variation of Mexican pottery and raw materials in the MURR databank. The MURR databank is heavily biased in favor of the Mexico City region, the specific source zone named by Carlson and James; the MURR database also includes Colonial as well as Prehispanic pottery. The high tantalum values in the Texas glazed samples (Figure H-5) differentiate them not only from the Mexican material, but also from most other data in the MURR databank.

More definitive comparisons between the data reported here and the Texas A&M Texas database amassed by Carlson and James (1995) would certainly be useful. The published data (Carlson and James 1995) consist of elemental concentration means, and these are inadequate for determining whether any of the groups defined here represent the same ranges of compositional variation as those identified in the Texas A&M study.

The authors wish to acknowledge the assistance of Jeff Speakman and Jim Cogswell for carrying out most of the laboratory work on this project. Funding for the project was provided by the Texas Department of Transportation.

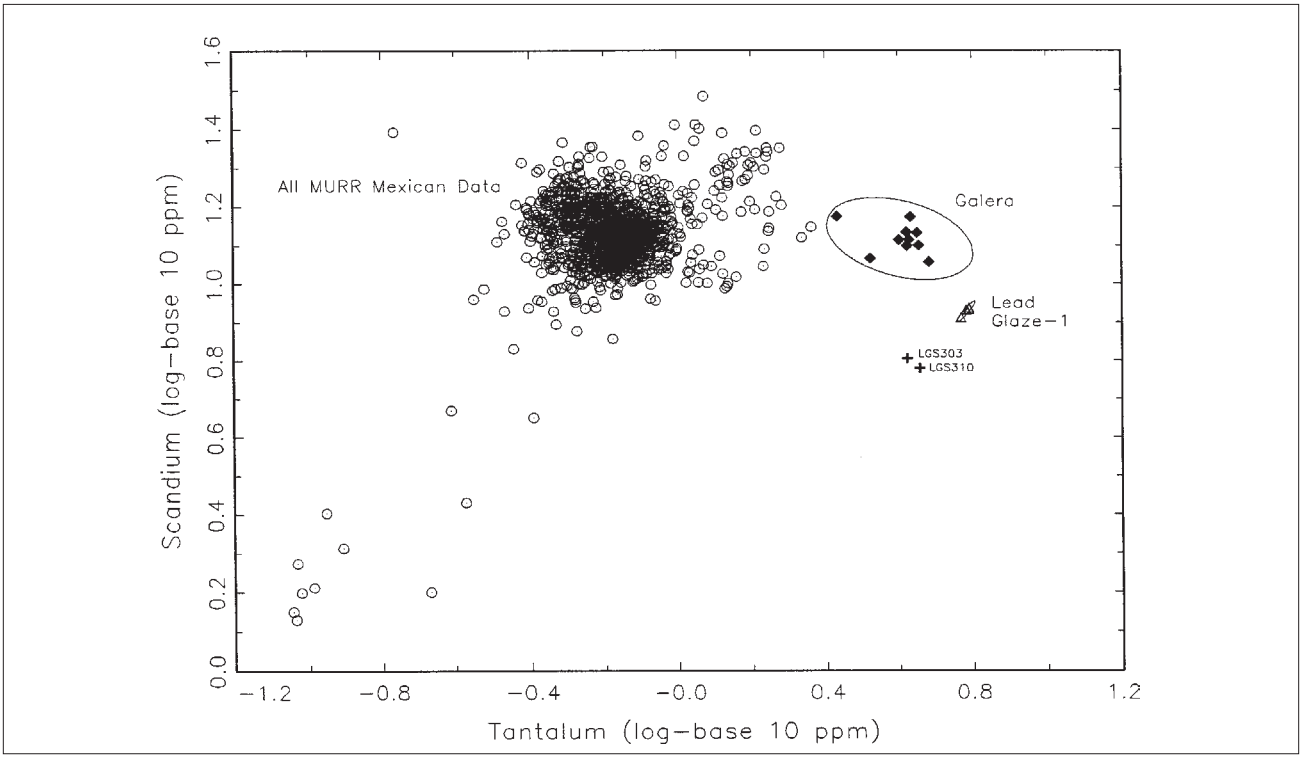

Figure H-5. *Bivariate plot of tantalum and scandium concentrations in all MURR Mexican samples together with the Galera and Lead Glaze-1 groups from Refugio Mission.* Ellipses represent 90% confidence level for membership in the two glazed ware groups.

Note: Chemical component table is contained on Volume I - CD as 00H2-Ref App H2.xls.

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Table H-2. Chemical components - Mission Refugio

anid	prov	context	cer_type	chem99_1	chem99_2	as	la	lu	nd	sm	u	yb	ce	co	cr	cs	eu	fe	hf	ni	rb	sb	sc	sr	ta	tb	th	zn	zr	al	ba	ca	dy	k	mn	na	ti	v
LGS301	75N/100E		Lead glazed, sandy paste	Lead Glaze-1	Lead Glaze-1	7.6869	74.3255	1.6947	109.786	20.6841	16.044	12.7679	162.7702	10.4467	35.5127	3.8989	0.6011	41317.7	20.7525	0	67.6167	0.8852	8.6034	0	6.1682	3.4077	28.6528	102.5323	527.9248	114244.4	288.83	5416.9	20.5676	6465	505.22	2167.4	4529.15	41.7551
LGS302	74N/100E		Lead glazed, sandy paste	4TKA26-B Group	Unassigned	4.7597	30.9759	0.321	27.3399	5.0182	3.686	2.2159	60.8596	7.694	42.2369	3.5883	1.0597	18710.8	6.6949	0	72.6893	0.7922	8.758	128.1	0.9588	0.6133	9.9611	47.4898	199.6323	74273.5	429.78	15602.2	3.3963	15538.7	271.42	3018.7	4042.02	69.9689
LGS303	85N/100E		Lead glazed, sandy paste	Unassigned	Unassigned	6.397	50.0464	0.3713	30.9215	5.9188	5.839	2.5566	89.0769	8.7776	30.5763	5.2019	1.4918	32140.4	8.3897	0	148.7418	0.9626	6.3752	337.1	4.1808	0.7403	14.0504	62.3544	285.9141	95885.3	713.3	11527.1	4.1466	32955.7	1094.17	21817.4	2243.3	71.7782
LGS304	85N/100E		Lead glazed, sandy paste	Lead Glaze-1	Lead Glaze-1	10.1319	68.0608	1.5586	72.7876	18.6537	14.847	11.4856	151.9222	9.8021	31.6413	3.5445	0.5595	36066.1	18.7272	0	59.5619	0.8558	8.1229	39.1	5.8736	3.0007	26.7315	101.5844	451.0034	119974.6	255.39	6080.9	18.7181	8770.9	451.22	2245	3999.33	49.8462
LGS305	85N/100E		Lead glazed, sandy paste	4TKA26-B Group	Unassigned	6.151	31.526	0.3267	27.16	5.2949	3.354	2.6109	62.8475	14.2925	43.1009	5.747	1.1248	18791.6	6.4668	0	77.918	0.7509	9.3299	124.5	0.9044	0.6564	10.094	61.0413	194.8925	74931.6	380.79	13976.4	3.4194	16290.3	352.97	3007.5	4028.85	75.8695
LGS306	73N/100E		Lead glazed, sandy paste	Lead Glaze-1	Lead Glaze-1	7.3031	73.7595	1.6397	98.7322	20.3819	15.046	12.3191	161.0015	10.6019	31.2425	3.8146	0.5963	38024.5	20.5649	0	55.9679	0.8094	8.5202	0	6.1849	3.2722	28.5328	103.3394	461.9195	121818.3	250.09	3822.1	19.7256	8791.6	482.17	2229.1	4436.06	68.0606
LGS307	75N/100E		Lead glazed, sandy paste	Lead Glaze-1	Lead Glaze-1	9.0355	72.6962	1.6742	75.889	20.0466	15.335	12.1443	159.2361	9.9108	31.8735	3.8494	0.5966	40408	20.2065	0	63.3032	0.7979	8.5263	56.6	6.0719	3.3382	28.2229	103.4728	470.5045	121180.4	199.52	4900.9	19.8971	6736.7	500.02	2235.5	4986.52	48.9612
LGS308	75N/99E		Lead glazed, sandy paste	4TKA26-B Group	Unassigned	6.0246	32.1179	0.3773	28.6753	5.3289	3.552	2.7188	62.4325	8.0259	44.3961	5.5582	1.0882	20711.2	7.5628	0	75.2529	0.827	9.2354	67.5	0.9455	0.6417	10.2102	48.3502	204.3735	76727.6	540.36	6427.8	3.8055	16359.6	209.84	2998.3	4354.65	79.3799
LGS309	75N/100E		Lead glazed, sandy paste	Lead Glaze-1	Lead Glaze-1	8.4402	71.0385	1.6096	99.7955	19.2589	15.227	11.8887	159.0688	9.9434	32.5941	3.7372	0.5902	40648.7	19.7201	0	57.9902	0.8878	8.4905	54.9	6.0571	3.232	27.8092	100.8583	482.5385	119536.6	308.4	5536.6	19.1509	8379.9	481.56	2163.9	4236.36	47.2324
LGS310	86N/100E		Lead glazed, sandy paste	Unassigned	Unassigned	6.6518	47.0758	0.3517	35.1033	5.9425	5.328	2.4564	86.9464	8.5725	37.2031	3.3449	1.4919	32024.6	7.576	0	118.2875	0.7766	6.0061	434.7	4.5171	0.6654	12.009	58.1544	291.2869	84774.8	1139.72	34172.6	3.5187	34492.8	1030.08	18210.9	4892.61	80.8662
LGS311	84N/100E		Lead glazed, galena	Galena	Galena	4.6438	56.6876	1.0373	35.3977	10.8625	11.787	7.726	115.5491	13.2524	59.7691	2.995	0.7007	45339.6	16.1188	35.6	70.9148	0.6994	13.5487	0	4.447	1.8393	17.4774	109.9583	260.8184	106911.8	1447.1	7873	39.2143	7473	2942.43	3810.4	5322.77	70.9161
LGS312	79N/100E		Lead glazed, galena	Galena	Galena	4.3441	52.0163	1.1205	53.1621	13.4897	9.107	8.5173	113.903	22.7411	55.9925	3.855	0.8836	43674.1	15.276	0	83.0268	1.1299	12.5339	46.2	4.1847	2.2796	17.9273	78.2086	370.8965	100528.2	349.43	5720.1	13.0441	11271.5	678.48	4934.2	5377.42	78.3942
LGS313	79N/100E		Lead glazed, galena	Galena	Galena	3.9206	39.3999	0.8721	40.0771	10.1522	8.875	6.8015	118.0497	9.643	31.1753	3.9321	0.6267	38921.7	15.6027	0	73.4364	0.5568	12.5692	87.1	4.4935	1.5744	19.2961	128.27	280.1972	116832.7	217.17	4284.8	9.5913	8089.6	428.92	3231.3	4372.64	55.3689
LGS314	73N/100E		Lead glazed, galena	Galena	Galena	4.7066	41.3738	0.9261	42.2448	11.0936	8.73	6.8633	114.7622	14.1469	41.2097	3.7494	0.8675	41359.5	14.3861	52.6	71.2042	0.6832	13.6096	48.7	4.1705	1.8003	17.6103	84.1923	328.3656	62252.2	249.96	5024.7	10.6743	8796.3	584.48	4039.7	3078.46	62.7251
LGS315	86N/100E		Lead glazed, galena	Galena	Galena	9.4729	38.4121	0.7126	38.6276	9.3326	6.196	5.6718	64.9643	8.5432	53.5935	1.9256	0.7591	31841	9.7278	0	49.0603	0.7075	14.9248	0	2.6977	1.3473	11.4705	81.3195	179.801	77667.3	221.53	5017	8.8704	6997.3	192	2732.3	3059.87	46.8315
LGS316	86N/100E		Lead glazed, galena	Galena	Galena	5.2263	45.3293	0.9121	45.7834	11.8619	8.147	6.7478	96.491	18.6339	47.2859	2.4733	0.692	45138.5	12.8958	58	3.3186	11.9606	11.6167	58	3.3186	1.9066	17.7883	461.58	7935.5	11.5404	11309.1	806.25	3467.6	54.12	04.76	5412.04	76.0159
LGS317	78N/100E		Lead glazed, galena	Galena	Galena	7.1469	42.917	1.0505	44.775	11.6981	9.151	7.6588	111.4112	20.7067	61.0517	3.3267	0.8078	47183.5	15.201	44.6	76.9936	4.8713	14.6945	62.3	4.2733	2.0267	16.8855	93.2196	328.5517	114630.8	468.53	5886.7	12.26	7980.9	638.57	3540.5	5087.54	58.0524
LGS318	87N/100E		Lead glazed, galena	Galena	Galena	4.1868	44.0991	0.9478	42.3683	12.0867	10.195	6.9013	115.9737	11.7064	33.9446	4.0471	0.6782	37091.1	16.2995	0	78.4968	0.6487	11.3748	0	4.7952	2.0059	22.6311	85.7112	390.2382	95026.6	204.37	4823.4	11.7058	7504.6	803.84	3213.7	3942.03	60.735
LGS319	87N/100E		Lead glazed, galena	Galena	Galena	5.7722	57.4009	1.262	64.3785	15.3858	9.73	10.2886	128.4516	12.3833	46.1994	4.0391	1.0121	42984	14.9416	0	79.4539	2.2465	13.0026	0	4.2374	2.5844	18.1549	133.9323	289.7189	109473.9	403.99	7432.1	16.0404	10216.5	313.13	4509	4658.12	67.1384
LGS320	74N/100E		Lead glazed, galena	Galena	Galena	4.367	39.4291	0.9207	40.1338	10.6042	8.573	6.4895	114.82	13.9687	39.119	3.3628	0.821	39449.1	13.6257	0	71.5725	0.9202	12.9701	83.2	3.9853	1.7287	16.8024	86.1206	312.6417	111408.5	283.94	20058.1	10.9983	8109.6	623.89	4077.1	4659.15	83.4752
RFT040	86N/99E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	9.5963	21.6194	0.2429	18.7281	3.6046	2.967	1.9167	59.6872	6.4111	34.0623	4.2329	0.7736	15221.4	5.5269	0	60.2937	0.5123	6.4689	353.3	0.6136	0.3848	6.8983	11.9268	276.1961	48511.7	499.79	15223.2	2.4472	10161.7	418.06	3625	1167.9	70.8734
RFT042	85N/99E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	1.1385	21.2046	0.2129	19.5693	3.8868	2.262	2.3574	59.5148	8.1716	39.0436	4.3474	0.7833	21555.5	9.8544	0	59.3396	0.6467	6.5233	127	0.7742	0.4429	7.289	50.8588	296.5836	50589.2	606.05	36284.3	2.0945	8594.4	285.87	2736.8	2247.01	69.9758
RFT043	85N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	11.392	19.4004	0.2929	18.2464	3.6244	1.626	2.0607	68.0058	9.6156	39.047	3.221	0.7532	22645.8	8.3363	0	52.5232	0.6009	6.6391	252	0.7416	0.3728	7.3565	60.5018	286.3796	49464.7	1118.35	70849.2	7.2327	9607.8	357.27	2690.5	2571.81	73.1255
RFT045	86N/99E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	15.2315	26.6888	0.3196	23.5452	4.3347	1.767	2.4352	59.3937	7.4954	46.4302	4.8505	0.8783	25755.3	7.9214	0	66.5356	0.6874	7.8467	213.3	0.8555	0.4424	9.09	68.1686	210.7566	58316.2	1109.01	79346.9	3.0981	11129.7	411.44	3186.9	2374.84	98.3152
RFT047	85N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	9.6233	21.1088	0.2167	19.2304	3.5544	1.628	1.6121	45.1969	6.8848	31.4962	2.949	0.7741	16599.7	3.5995	0	53.7556	0.4783	5.9442	546.8	0.5934	0.3781	6.473	106.4148	100.002	39884.2	828.83	202370.1	3.1212	9772.8	626.49	3615.9	1837.4	61.8
RFT048	85N/99E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	13.7258	25.781	0.2877	24.9575	4.2709	2.065	1.9167	59.6872	7.6707	46.0158	3.8012	0.802	26828.8	7.3521	0	66.5465	0.6291	8.0716	258.4	0.8388	0.5645	9.1989	64.8411	250.4272	54983.5	1255.46	75023.3	3.3396	12199.3	424.17	3029.3	3029	87.4552
RFT050	85N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	12.6218	19.4574	0.297	17.7482	3.6104	1.734	2.2081	57.8111	10.0619	38.1205	2.8611	0.7586	21927.2	8.8006	0	49.7033	0.6248	6.5398	293.4	0.7303	0.3924	7.4071	57.8971	270.6527	48992.3	1111.16	70029.3	3.1596	8757.4	306.1	2483	2407.16	76.1564
RFT051	85N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	15.6375	24.6422	0.264	22.4777	4.1569	2.818	1.9584	55.6756	6.7007	39.7632	4.4889	0.9341	23735.1	4.6873	0	65.0044	0.5765	7.5785	310.9	0.7463	0.4377	8.121	124.7511	130.1913	53741.5	962.09	180912.1	3.1439	11368.5	431.3	4342.6	2159.36	95.8242
RFT053	85N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	9.5731	23.0411	0.304	22.6487	3.898	1.755	2.1577	47.9785	6.317	39.8004	4.2066	0.807	22611.9	8.7884	0	58.1713	0.6404	6.697	236.3	0.8264	0.4115	7.8764	79.3415	266.1707	50971.9	1876.39	76404	2.9009	9702.4	445.09	2494.2	2615.1	93.6043
RFT055	85N/99E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	15.0006	19.8464	0.1768	18.281	3.2377	2.067	1.5578	42.1274	5.9486	31.6574	3.4058	0.7193	18489.2	3.5299	0	47.5106	0.475	5.6311	361.1	0.5345	0.371	5.986	110.1514	119.9597	42315.6	818.23	199833.1	1.8733	8409.8	55.12	4490	1544.06	74.6679
RFT056	85N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	4.4696	19.6753	0.2433	19.2878	3.359	1.441	1.7939	41.5214	5.0038	27.7121	2.6268	0.7265	16353.9	3.0433	0	49.7948	0.4453	4.882	289.1	0.628	0.3853	6.1538	76.9133	210.0036	39792.4	1665.71	104219.4	2.6536	10912.3	344.31	5925	2070.25	48.9563
RFT060	86N/99E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	9.1771	19.5204	0.4258	18.4602	3.8893	1.526	3.0306	49.2447	5.543	32.3058	2.1504	0.7652	17002.1	11.8049	0	43.7511	0.5658	5.4049	275.4	0.6862	0.4756	6.5595	60.4405	348.6148	44936.6	664.74	17629.6	3.2302	7731.6	157.21	1845.2	2383.86	51.526
RFT061	86N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	5.3757	24.1729	0.3172	27.2197	4.3737	2.469	2.3906	63.8092	8.2363	35.5923	3.4429	0.8701	20686.8	10.6012	0	49.2812	0.656	6.2115	192.3	0.7138	0.7187	7.2418	57.7132	324.7016	47099.4	508.6	51435	3.5119	7441.6	306.24	2392.2	2672.19	59.5683
RFT067	85N/99E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	24.635	21.2239	0.2123	21.7622	3.5898	1.758	1.5682	46.0614	7.3555	33.2123	3.0479	0.79	21137	3.1748	0	51.0493	0.5449	6.3777	417.9	0.6064	0.4827	6.9572	90.1927	122.4903	43729.3	793.71	209906.3	2.3665	9548.6	770.17	3395.8	1944.52	94.0637
RFT068	85N/99E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	13.0076	23.5198	0.2247	20.7344	3.923	3.064	1.6611	48.1761	6.933	36.6298	2.8752	0.834	21922.8	3.5757	0	57.7156	0.4521	6.9408	485.8	0.6429	0.6095	7.1468	68.6232	110.3885	52528.9	998.21	172075.5	2.7142	10876.1	377.51	3445.2	2543.29	66.8683
RFT070	84N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	15.8755	20.5377	0.2426	21.9791	3.3851	2.112	1.7224	43.0273	6.6183	32.4875	2.6244	0.7282	18077.4	4.1575	0	59.6725	0.547	5.6498	562.5	0.5258	0.3547	6.1021	86.4288	141.1788	38147.2	797.39	167242.9	2.5882	15642.8	764.84	3453.9	2138.62	61.6172
RFT073	86N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	5.38	21.4374	0.3203	16.9551	3.7515	2.181	2.3685	42.3408	3.8495	32.3895	1.3772	0.7555	10894.8	4.4138	0	42.9824	0.4842	3.9213	369	0.601	0.4874	5.9976	41.9353	228.2633	28072.2	506.3	138925.7	3.0067	8835	396.13	2864.7	1567.73	44.9757
RFT074	81N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	11.2818	21.8115	0.2313	18.1465	3.8394	1.996	1.721	43.1094	6.0568	33.9416	3.1925	0.7463	18957.7	3.7424	0	54.6105	0.527	6.3389	406.3	0.605	0.4181	6.4491	73.1156	82.8721	45568.6	558.62	204359.2	2.5719	11709	446.1	3566.9	1950.81	59.7637
RFT079	83N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	10.9006	19.7098	0.2096	19.0127	3.4644	1.391	1.3936	39.1092	5.5225	28.4137	2.2256	0.6698	14973.3	3.1251	0	49.9568	0.6809	5.342	487.1	0.5238	0.3952	5.6983	69.0932	65.4418	40571.6	852.8	179807.6	2.2914	11249.6	428.41	3709	1673.47	56.5643
RFT085	84N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	21.2901	20.5421	0.2108	15.9853	3.5226	1.734	1.4031	40.5005	5.629	30.7699	2.9903	0.7011	17404.9	3.316	0	50.8001	0.5596	5.4351	541.1	0.5536	0.2887	5.9203	72.9379	72.7808	40560.2	848.24	187440.2	2.5211	11370.4	431.35	4476.1	1720.08	69.4678
RFT087	85N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	13.2028	21.1131	0.2261	19.1131	3.5149	1.159	1.4273	2.4898	51.9934	6.3574	3.4149	4.2703	0.8423	20744.4	11.2947	0	57.5769	0.7416	6.2623	173.7	0.7138	0.6263	7.2777	51.0276	270.0823	46640.2	1179.64	32785.5	3.3037	8596.1	249.05	3489	3476.52	75.24
RFT088	86N/99E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	10.636	22.3885	0.2887	15.5296	3.9317	1.752	1.7809	46.7816	6.2529	34.6495	4.1892	0.8077	21015.6	4.7676	0	62.1448	0.5185	6.6485	305.1	0.6479	0.5062	6.9301	66.9106	118.8563	45536.8	531.69	74763.5	2.4704	8940	383.47	3455.5	1984.15	75.2354
RFT096	83N/99E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	13.3561	18.0009	0.2521	10.8242	3.1046	1.331	1.3824	36.099	5.5116	28.7957	2.4713	0.6331	16215.4	4.7364	0	39.0441	0.5444	4.7858	410.7	0.5785	0.301	5.3957	57.0479	102.6246	34307	729.42	187029.4	2.2227	10427.9	315.59	3275.2	2056.02	55.4727
RFT097	85N/99E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	13.2537	19.7879	0.2251	19.2456	3.4226	1.739	1.5524	39.2696	5.2361	29.3237	2.4145	0.6798	16287	4.6177	0	47.3629	0.7993	4.9724	422.5	0.5239	0.3164	5.7702	63.0856	103.6386	37714.7	559.42	173102.5	2.5106	8932.7	305.77	3535.2	1708.94	52.3063
RFT099	81N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	20.8833	22.0144	0.203	18.441	3.6839	2.801	1.4287	43.4146	5.2873	30.3669	3.6036	0.7242	18332.5	3.3156	0	53.7419	0.4858	5.7506	415.2	0.5829	0.4295	6.3847	70.6173	92.6888	44336	737.55	186516.6	2.7267	10172.5	250.9	4798.6	2211.98	73.6596
RFT110	81N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	18.9295	19.7296	0.2133	13.9576	3.507	1.752	1.47	34.364	4.6239	29.9229	2.3648	0.6799	17174.6	3.1513	0	44.4454	0.5748	5.4199	396.4	0.5353	0.3547	5.827	71.6357	74.1114	38184.8	869.57	186516.6	2.5802	10683.4	279.26	3711.2	2239.96	54.143
RFT112	81N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	24.4111	26.7334	0.2468	16.0471	3.7708	2.821	1.4188	54.0898	6.1031	31.023	3.2218	0.7465	17914.1	3.616	0	50.0444	0.5908	5.6957	464.3	0.6704	0.3582	6.1484	71.2006	78.5548	41304.4	1016.8	182184.2	2.5578	10652.6	260.16	3926.7	1844.7	62.7648
RFT113	81N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	21.3575	21.5003	0.2182	13.9797	3.7512	2.54	1.7318	42.3265	6.0423	31.4579	2.8845	0.7189	18711.8	3.9775	0	46.8435	0.7307	5.7075	410.3	0.5898	0.5277	6.1298	73.5265	90.0743	41389.5	905.95	187471.9	2.599	10668.3	344.85	4008.1	1782.05	71.0753
RFT114	81N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	12.0322	20.2271	0.2088	19.6272	3.6206	3.169	1.4865	40.9634	5.8165	30.4607	2.4153	0.704	16703.4	3.2366	0	46.8517	0.5392	5.4436	410.7	0.5319	0.2817	5.9359	70.6646	85.7419	40254.7	1239.93	189342.2	2.6014	9908.2	324.74	3882.8	2067.83	63.8249
RFT116	82N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	6.8892	26.4003	0.3353	24.4588	4.6273	2.05	2.4981	54.9127	7.1788	36.5027	4.4492	0.896	20693.2	7.4005	0	65.7168	0.5563	6.8453	238.3	0.7761	0.7075	8.1637	66.4025	177.5258	49967.7	541.05	101816.8	3.4747	12194.5	357.15	6843.2	2676.61	59.2039
RFT124	80N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	5.6536	23.5898	0.3717	20.0426	3.924	1.454	2.6082	45.9231	3.869	32.8987	2.4307	0.7973	15221.2	12.276	0	48.2168	0.5756	5.5793	199.9	0.8862	0.4918	7.115	71.4114	305.3715	41119.7	1164.3	9422.8	155.92	2184.6	269.8	4653.7	2455.6	68.1134
RFT125	80N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	13.9121	21.8665	0.2012	17.522	3.8462	2.58	1.601	44.7302	5.3546	30.8757	3.7127	0.7528	18467.6	3.8242	29.9	56.1102	0.9776	5.9202	404.7	0.5447	0.3226	6.3049	74.1089	101.3821	43311.3	673.58	191135.5	2.877	9452.8	269.8	4653.7	2455.6	68.1134
RFT128	80N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	14.4582	25.5059	0.3507	22.8182	4.1084	1.942	2.4528	49.6344	6.2063	41.6677	3.9839	0.8277	20374.7	10.7166	0	53.5015	0.6639	6.3038	143.6	0.7446	0.5407	6.9971	51.0679	261.7627	48728	578.56	35330.9	3.3266	10924	233.1	3726.7	2292.47	73.8844
RFT133	82N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	14.0106	24.8716	0.3479	21.3794	4.0658	0.819	2.2641	49.1301	6.0579	36.1145	3.8866	0.7976	19889.1	10.2984	0	56.688	0.6576	6.1122	203.5	0.7457	0.5383	7.1134	49.1195	254.0321	48924	561.37	44387.1	3.3453	10317.4	222.87	3689.2	2845.87	66.0874
RFT135	82N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	17.5358	27.1025	0.3471	21.4926	4.3263	1.323	2.3321	53.0954	6.4063	37.8884	4.2796	0.8501	20760.2	10.3319	0	62.0275	0.7473	6.2723	140	0.7796	0.4239	7.589	54.1932	251.5038	46772.7	456.15	31888	3.2767	10791.3	203.34	3855.8	2573.2	71.9871
RFT137	90N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	6.8859	23.3236	0.3271	19.4472	2.06	2.3332	43.8519	6.0662	30.2679	3.2459	0.6409	16341.2	8.6814	25.4	56.2167	0.6171	5.3946	208.7	0.7664	0.5077	7.1115	57.5172	213.1342	41325.5	603.74	126475.6	3.0319	9901.1	475.99	6315.6	2372.16	48.5425
RFT144	82N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	0	20.9092	0.2851	18.4556	3.5195	2.811	2.0988	47.0402	7.3822	32.0491	3.174	0.7088	17352.6	7.7877	0	53.521	0.5782	5.8279	261.8	0.6801	0.571	6.6227	47.5554	185.6901	42432.4	764.46	93772.8	2.7282	10494.1	432.76	5539.8	2230.69	57.9276
RFT145	80N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	18.9306	20.9727	0.2205	15.0503	3.6078	3.22	1.5998	43.5419	7.2675	30.274	2.4307	0.7409	17858.3	3.3146	21	49.7605	0.515	5.6137	617.5	0.5882	0.4763	6.2973	83.2513	89.9501	39635.3	854.06	199251.5	2.3974	9981.6	673.94	3313.8	2299.09	65.1033
RFT146	80N/100E	Feature 1	Unglazed Native American	Refugio Ref. Group	Refugio Ref. Group	0	25.4723	0.2858	17.2	4.3163	1.483	2.1193	45.6708	7.2947	32.7423	3.5286	0.

Appendix I

Mission Refugio

Burial Artifacts

Appendix I: Burial Artifacts

Table I-1. Inventory list of Burial-associated Items

41RF1 - Mission Refugio
Inventory List of Items Associated with Burials

BF #	Burial #	Item Description
2	15	1 metal cross
2	15	1 wooden bead
2	15	1 metal medallion
4	8	1 metal button
4	8	1 unidentified metal object
4	14	copper button fragments
5	17	1 copper button & fragments of another
5	27	small copper fragment
5	39	2 metal arrow points
5	----	copper fragments
5	----	1 small blue glass bead
8	20	1 possible coffin nail
9	42	10 coffin nails & 2 large spikes
10	43	wood fragments
11	44	4 clear glass beads
11	44	5 dark blue glass beads
12	46	18 clear glass beads & 2 black glass bead
13	57	possible coffin nail
14	56	fiber or root?
14	56	2 small blue glass beads
14	56	2 unidentified metal fragments
14	56	1 black glass bead
14	56	1 square nail
14	56	2 medium sized white glass beads
15	48	cloth covered metal object
15	81	small fragment of cloth from proximal end of ulna
16	60,67,72	large, clear glass bead
19	65	red stain in soil, possibly ochre
20	2	cloth with brass or copper sequins
20	2	wood fragment
20	2	possible coffin nail
22	4	red ochre
22	28	1 lead shot, 1 lead piece
22	77	large unidentified flat metal object
22	82	3 metal buttons - 2.6 cm (1 inch) in diameter
22	97	wood fragments
22	97	289 med. sized white glass beads

Table I-1. Continued…

41RF1 - Mission Refugio
Inventory List of Items Associated with Burials

BF #	Burial #	Item Description
22	97	8 small blue glass beads
22	107	5 cloth covered metal buttons
22	129	2 small copper beads, 2 small lapis beads, 2 red glass beads
22	107 & 109	worked shell
24	68	1 copper or brass bell
24	68	1 metal ring
24	68	3 long, cylindrical bone beads
24	68	1 shell pendant
24	68	1 bone bead with metal object
24	80, 85, & 37	shell pendant
26	92	5 flat bone beads or buttons
26	92	copper fragment
26	95	1 bone bead
26	125	1 marine shell
26	125	1 animal tooth pendant
26	113 & 114	3 large pieces of gypsum
27	98	red ochre
28	99	red pigment (ochre?)
30	102	7 small white glass beads
30	102	2 unidentified metal objects
30	102	1 metal arrow point
30	24 & 102	15 forged nails (coffin?)
34	134	10 small brass buttons, 8 medium brass button, 3 large iron buttons, cylindrical lead bullet, cloth from shoulders

Appendix J

Mission Refugio

Paste and Temper

Key for abbreviations used in the Appendix J:

NA=not analyzed, sherdlet;
Bs=sparse bone temper;
Bm=moderate bone temper;
Bp=profuse bone temper;
Ss-sparse sandy paste;
Sm=moderate sandy paste;
Sp=profuse sandy paste;
Ss-Bs=sparse bone temper in a sparse sandy paste;
Sp-Bs=sparse bone temper in a profuse sandy paste;
Sm-Bs=sparse bone temper in a moderate sandy paste;
Sm-Bm=moderate bone temper in a moderate sandy paste;
Sp-Bm=moderate bone temper in a profuse sandy paste;
None=no apparent temper;
Ss-Bm=moderate bone temper in a sparse sandy paste.
+ 1/1=number of sherds; sherds with asphaltum

Note: Paste and temper data located on Volume I - CD as 00J2-Ref App J2.pdf.

Paste and Temper, Analysis Unit 1, Feature 1 Units

Lot #	NA	Bs	Bm	Bp	Ss	Sm	Sp	Ss-Bs	Sp-Bs	Sm-Bs	Sm-Bm	Sp-Bm	None	N
24	1	1	1		1/1+	2				1/1				7
29	3		3								1			7
30	2	3	3	4		1/1	2			1				16
35	3	2	3			1		1						10
40	1	1	2	1										5
89	4	2	2		1/1	1								10
94	1	1	7	1		2/1								12
98	1		2		1									4
102	2		6			3								11
104	1	1	2											4
105	3	1	1			1								6
110		1		1				1						3
118	3	1								1/1				5
120						1								1
121			1											1
124	9	7	3		1	5	1		1	1				28
129		1				1		1						3
130	4	4	2			3	3							16

Paste and Temper, Analysis Unit 1, Feature 1 Units

Lot #	NA	Bs	Bm	Bp	Ss	Sm	Sp	Ss-Bs	Sp-Bs	Sm-Bs	Sm-Bm	Sp-Bm	None	N
133	10	6/1	9	2	3/1				1	3				34
139	3	4	5	2	2/2	2/1								18
141	8	53	2	1/1	1									65
147		1	1											2
154	2	3/1	5											10
155		4/1	2	1										7
158	6	5	15	2	1/1	3								32
159		3	7	4										14
160	1	3	9			4/3				1				18
161	1	4			1									6
163			1											1
170		8	3					2				1		14
171	1	1	2		1		1							6
172			1											1
182	2	5												7
184	4	10	2	1	1	4/1			1/1					23
187		1												1
188	8	8	20	2		3/3	1/1				1/1			43

Paste and Temper, Analysis Unit 1, Feature 1 Units

Lot #	NA	Bs	Bm	Bp	Ss	Sm	Sp	Ss-Bs	Sp-Bs	Sm-Bs	Sm-Bm	Sp-Bm	None	N
189	11	18/2	25		1									55
195	1													1
197	1	1								1				3
198	4		2			1								7
200		2												2
201	3		1			1								5
202	4	6/1	10	1/1	2	5	1							29
206	11	3	11		1/1	2/1	5	2		5				40
211	4	5	1			1/1	1		2	2				16
212	4	4	10		1				1	1				21
216	2	1	1											4
217			1											1
222	1													1
223	3		4	1		2/2								10
227	1	1	5	2/1										9
229	1		2			2/2								5
230			1											1
231	2	2												4

Paste and Temper, Analysis Unit 1, Feature 1 Units

Lot #	NA	Bs	Bm	Bp	Ss	Sm	Sp	Ss-Bs	Sp-Bs	Sm-Bs	Sm-Bm	Sp-Bm	None	N
232	1	2	4				2	1						10
235		2	7		1/1	1								11
236	1													1
237							1/1							1
238	2		4								1			7
239			2			1								3
242	2					1/1				1				4
244	2		1			1								4
245	2					1/1								3
253	9		1		1	3		3/1		3				20
254	6	3	8/2	9		3	2		1			1		33
255		1	2			4/1	1							8
256		4	4			2	1							11
257			4											4
258			1			1/1								2
259		2/1						2						4
261							1							1
264	3	4	4					1/1						12

Paste and Temper, Analysis Unit 1, Feature 1 Units

Lot #	NA	Bs	Bm	Bp	Ss	Sm	Sp	Ss-Bs	Sp-Bs	Sm-Bs	Sm-Bm	Sp-Bm	None	N
265	2	5/2	2			1			1	1				12
266			1			1								2
267	1	2	4		1	1								9
268	5		3				1							9
269	3	1												4
270	1						1			1				3
271		1				1/1					1			3
272	1		2											3
273	1		1							1				3
274	1		1											2
275	1	1	9							1/1				12
276			1											1
AU 1 Totals	181	216/9	262/2	35/3	22/8	73/21	25/2	14/1	8/1	25/3	4/1	0	2	867

Paste and Temper, Analysis Unit 2, Feature 2 Units

Lot #	NA	Bs	Bm	Bp	Ss	Sm	Sp	Ss-Bs	Sp-Bs	Sm-Bs	N
10	12	2	2			1					17
13	6	1			1/1+						8
20	16	4	11	1/1	1	2	2		2	1/1	40

Paste and Temper, Analysis Unit 2, Feature 2 Units

Lot #	NA	Bs	Bm	Bp	Ss	Sm	Sp	Ss-Bs	Sp-Bs	Sm-Bs	N
26	3	6	27			3	3			1/1	43
32	4	2	8/1			1/1				2/1	17
36		1	2								3
37			7				1				8
63	13	1	12/1	4	1/1	1/1	1			1/1	34
91	1		7								8
92	1		1								2
99	11	5	4/1			1	1				22
103	2		5	3	1/1	2/1					13
106	11	3	7		1	2/1		1		1	26
107	1		3						2		6
111			5	2							7
112	2	2	5			1					10
116			6								6
119		5/1	9/2	1			1		1		17
123			1								1
125	6	1			1/1						8
126	4		4	3	2/2						13

Paste and Temper, Analysis Unit 2, Feature 2 Units

Lot #	NA	Bs	Bm	Bp	Ss	Sm	Sp	Ss-Bs	Sp-Bs	Sm-Bs	N
127	3	1	7/1	4/1	2/2	3/3				1/1	21
128	6	1	2		2/2	2/1					13
131	3		2		1	1					7
132	4		4	2/1	1/1	5/2	2/1				18
135	2	1	2	1	1/1						7
136	4	2	8	1			1				16
137			1								1
138	3	2	3				1/1				9
140	3		3	1							7
143	7	4	4			1/1					16
145								1			1
157	8		6								14
162	2	1	2								5
164	1	1	4								6
165						2/1					2
166		1	1	1							3
169	3		1								4
173			8/1		2/1						10

Paste and Temper, Analysis Unit 2, Feature 2 Units

Lot #	NA	Bs	Bm	Bp	Ss	Sm	Sp	Ss-Bs	Sp-Bs	Sm-Bs	N
175				1							1
177		1	1								2
181			1	1		1/1					3
208	3	2	7	2		1	1/1				16
213		1	2		2	1					6
220	5	2	10	1	1/1		2/1		1	1	23
228		2	1	1				1/1		1	6
233		1	6	1	1					1	10
234			6	2		1	1/1				10
240	1	5	12	5							23
246			3							2	5
260		1	3		1/1						5
262			2								2
AU2 Totals	151	62/1	238/7	38/3	22/15	32/13	17/5	3/1	6	12/5	581

Paste and Temper, Analysis Unit 3, Non-feature Units

Lot #	NA	Bs	Bm	Bp	Ss	Sm	Sp	Ss-Bs	Sp-Bs	Sm-Bs	Sp-Bm	None	Sm-Bm	Ss-Bm	N
1	5	2	15	1											23

Paste and Temper, Analysis Unit 3, Non-feature Units

Lot #	NA	Bs	Bm	Bp	Ss	Sm	Sp	Ss-Bs	Sp-Bs	Sm-Bs	Sp-Bm	None	Sm-Bm	Ss-Bm	N
2	3	2	1												6
3	5		2												7
4	12	7	6												25
5	6	6/1+	7		1/1	1									21
6	23	15/1	1			3/1				1					43
7	8	3/1	7/2		1	1				2					22
8		1	1												2
9	12	4/1	7												23
11	7	11	13	2/1	1/1	1									35
12	28	8	10			4	1					1	1		53
14	4	3	7/1		2/1										16
15	5	4	4/1	2											15
16	21	11	8	1	4	8/1		1		1					55
17	1	2	4												7
18	8	10	15	2	1	3/1	1	1		2					43
19	2	3	1												6
21			2												2
22	8	6/1	13			5	3								35
23	5	5	7/1		1	2				1					21

Paste and Temper, Analysis Unit 3, Non-feature Units

Lot #	NA	Bs	Bm	Bp	Ss	Sm	Sp	Ss-Bs	Sp-Bs	Sm-Bs	Sp-Bm	None	Sm-Bm	Ss-Bm	N
27		3/1	4												7
28	3	1	5/1			2		1							12
33		2/1		1											3
34	3	4	2			1	1								11
42	1			1						1					3
45	1		2	2			1								6
47	19	11	12	5	1	10/1	6/1								64
49	15	7	9/1		1/1	3	1		1						37
51	6		1	1								1			9
52		3	2					1/1							6
53	11	4	6												21
54	11	4	7			2/1	1			1/1					26
55	3	1				1									5
56		1	1												2
57	3	1	7	1	1	3/3	2								18
58		2													2
59	18	10	14				2		1	2					47
60	10	4	9/1	9		2									34
61	3		2	1		1/1									7

Paste and Temper, Analysis Unit 3, Non-feature Units

Lot #	NA	Bs	Bm	Bp	Ss	Sm	Sp	Ss-Bs	Sp-Bs	Sm-Bs	Sp-Bm	None	Sm-Bm	Ss-Bm	N
62	3		1	2											6
64	11	20/1	12		1/1	5/1	1			1					51
65	28	19	7	1		2/1	1			4					62
66	2	1	3		2	1									9
69	11	9	12	3		2/1	1								38
70				1/1		1									2
72	13	17/1	17			2	4/1								53
73	6	5				1									12
74	6	8	10			2	1								27
75	8	4	1												13
76	1	6	17	1	1	1/1									27
77	15	14/1	9	1/1	1	2/1	1/1	1		3					47
78	20	10	27	2	1	4/2	2			3/1					69
79		1	4	2	1/1										8
80	5		5/1												10
81	4	3	4			1									12
82	2		5							1					8
83	5		8			1									14
84	57	26	18	1	2/1	2		1		3			1		111

Paste and Temper, Analysis Unit 3, Non-feature Units

Lot #	NA	Bs	Bm	Bp	Ss	Sm	Sp	Ss-Bs	Sp-Bs	Sm-Bs	Sp-Bm	None	Sm-Bm	Ss-Bm	N
86	3			1		1/1									5
87		1													1
88			2												2
90	28	15/1	16		3	4	3		1	1			1		72
93	9	6	5			2									22
95	6	12/1	13	1	4/3	4/2	5	5/3	1	2					53
96	6	6/1	12/2	1/1						1					26
97	3	2	2/1			2									9
100	4	1				5/1		4/4	1	3					18
101	5	4	4	1	1/1	1/1									16
115	5		5	1											11
117	7	7	3			1/1	3/1								21
134	2	4	2	1								1			10
149	1	3	3			1				1					9
150		1			1/1	1	1								4
152			3		1	5/3									9
156				1											1
179		1	2												3
180	4		11	2		2/1	1		1						21

Paste and Temper, Analysis Unit 3, Non-feature Units

Lot #	NA	Bs	Bm	Bp	Ss	Sm	Sp	Ss-Bs	Sp-Bs	Sm-Bs	Sp-Bm	None	Sm-Bm	Ss-Bm	N
185	2		2												4
190	1	6	5		1	2	1								16
191	9	5	1	1	1	3/1									20
193	12	7	6			1/1									26
194	11	5/1	8/1			6/1	1		1						32
196	2		5							1/1					8
199	1		1				1/1								3
203	48	69/3	25/1	2	1/1	4/2	2/1		1	2		1		1	156
204	2	1/1	10	1	2	1/1									17
205	8	3	7	2											20
207	6		5			2/2	2		1	1					17
209	19	16/1	16/1			9/6	13/3			1					74
210	2	1	3		1/1	1/1	3/3								11
214	11	7	8		4/1	4/1		2		1			1		38
215			2												2
218		2	3		1										6
219	2	1	2	1/1	1	1									8
221	7	6/1	16	3		2		2							36
224	1	1	3	1	1/1										7

Paste and Temper, Analysis Unit 3, Non-feature Units

Lot #	NA	Bs	Bm	Bp	Ss	Sm	Sp	Ss-Bs	Sp-Bs	Sm-Bs	Sp-Bm	None	Sm-Bm	Ss-Bm	N
226	1	1	2	1											5
250	9	20	11/1		4	3				1			2		50
251	24	18	19	1	2/1	4	1								69
252	13	14/2	19/1	1	4/2	5/1	2	1		1				1	61
AU 3 Totals	741	550/22	636/17	66/5	56/19	157/43	69/12	20/8	9	42/3	0	4	6	2	2358

Paste and Temper, TxDOT Excavations

Lot #	NA	Bs	Bm	Bp	Ss	Sm	Sp	Ss-Bs	Sp-Bs	Sm-Bs	N
1	1	3		1							5
2	28	10	8	1		2					49
3	48	15	33	5	1	2/1+				1	105
4	15	4	9	1	1					1	31
5	11	3	8	1		1/1					24
8	7	4	14	2	1	1	1				30
9	25	9/1	23/1	1		3/1	1				62
10	18	5	8	1		7/2					39
11	34	19	9	2	1	5/2	4/1		1		75
12	5	3	2	1	2			1			14

Paste and Temper, TxDOT Excavations

Lot #	NA	Bs	Bm	Bp	Ss	Sm	Sp	Ss-Bs	Sp-Bs	Sm-Bs	N
13	1	3	2								6
14					2/2	2					4
16	2				2						4
17	12	1	8	1	2	1/1				1	26
18	12	3	4		1/1					1/1	21
19	28	3	11	1			1/1		1		45
20			2								2
22		1/1		1							2
TxDOT Totals	247	86/2	141/1	19	13/3	24/8	7/2	1	2	4/1	544

Paste and Temper, Miscellaneous Gradall Scraping

Lot #	NA	Bs	Bm	Bp	Ss	Sm	Sp	Ss-Bs	Sp-Bs	Sm-Bs	Sm-Bm	N
109	10	6							1			17

Appendix K

Mission Refugio

Rim Sherds and Decorated Sherds

* Rim and/or decorated sherds submitted for Instrumental Neutron Activation Analysis, see Appendix L
** Oxidation conditions follow Teltser (1993:Figure 2)
+Bs=sparse bone temper, Bm=moderate bone temper; Bp=profuse bone temper
Note: I=interior sherd surface; E=exterior sherd surface

Note: Rim sherds and decorated sherds located on Volume I - CD as 00K2-Ref App K2.pdf.

Lot #	Decoration	Rim profile	Lip	Oxidation Conditions**	Temper +	Paste	Surface Treatment	Thickness (mm)	Vessel Form
Analytical Unit 3, Non-Features Deposits									
lot 1	-	?	Rounded	F	Bs	Clay	E Wiped	5.4	
lot 4	-	?	Rounded	B	Bm	Clay	-	6.9	
lot 4	-	?	Rounded	B	Bs	Clay	I Burnished	4.9	
lot 4	-	?	Flat	B	-	Sandy	-	5.4	
lot 4	-	?	Rounded	B	Bm	Clay	-	5.9	
lot 4	-	?	Rounded	F	Bm	Clay	E Wiped	3.6	
lot 5	-	?	Rounded	F	Bs	Clay	-	6.1	
lot 6	Interior red-painted band	?	Rounded	F	Bs	Clay	-	6.1	
lot 6	Interior red-painted band	-	-	F	Bs	Clay	-	4.9	
lot 6	-	?	Pointed	F	Bs	Clay	-	5.6	
lot 6	Rockport Black on Gray II	Direct	Flat	E	-	Sandy	-	6.7	Jar or Olla
lot 6	Rockport Bla ck on Gray I	Inverted	Flat	C	Bs	Sandy	-	5.9	Jar or Olla
lot 6/77	-	Inverted	Rounded	G	Bs	Clay	E Burnished	6.1	Bowl or Olla?
lot 9	Exterior red-painted band	-	-	F	Bs	Clay	-	5.4	Bowl

Lot #	Decoration	Rim profile	Lip	Oxidation Conditions**	Temper +	Paste	Surface Treatment	Thickness (mm)	Vessel Form
lot 10	Asphaltum on Lip	Direct	Flat	F	-	Sandy	I Asphaltum	6.1	
lot 11	-	?	Rounded	F	Bs	Clay	I/E Wiped	4.4	
lot 12	Interior red-painted band	Direct	Rounded	F	Bs	Clay	-	3.3	
lot 12	Rockport Black on Gray II	-	-	A	Bm	Clay	-	7.7	Jar
lot 12	ceramic disk	-	-	F	Bm	Clay	-	5.6	
lot 12	-	Direct	Flat	E	Bm	Clay	-	4.6	Bottle
lot 12	-	?	Rounded	F	Bm	Clay	-	5.9	
lot 15	Interior red-painted band	-	-	F	Bs	Clay	-	8.2	
lot 16	-	Direct	Rounded and Thickened	A	Bs	Clay	I/E Smoothed	7.4	Bowl
lot 16	-	Inverted	Rounded	G	Bm	Clay	-	6.1	Bowl
lot 16	-	Direct	Rounded	C	Bm	Clay	-	4.2	
lot 17	-	Everted	Rounded	C	Bs	Clay	I/E Smoothed	4.6	Bowl
lot 17	-	Direct	Rounded	C	-	Sandy	E Wiped	6.7	Bottle
lot 18	-	Inverted	Rounded	F	Bm	Clay	I/E Smoothed	4.9	Bowl
lot 18	-	?	Rounded-	B	Bs	Clay	I Wiped	7.4	

Lot #	Decoration	Rim profile	Lip	Oxidation Conditions**	Temper +	Paste	Surface Treatment	Thickness (mm)	Vessel Form
			E Beveled						
lot 18	-	?	Rounded	F	Bs	Clay	-	5.4	
lot 18	possible loop handle fragment	-	-	F	Bs	Clay	-	6.7	
lot 22	-	Direct	Flat	C	Bs	Sandy	-	6.7	Bowl
lot 22	-	?	Rounded	F	Bs	Clay	I Wiped	5.6	
lot 22	-	Direct	Rounded	C	Bs	Sandy	-	6.1	
lot 23	-	Inverted	Flat	F	Bs	Clay	-	5.6	Bowl
lot 27	-	?	Rounded	A	Bs	Sandy	-	5.4	
lot 28	Rockport Black on Gray I	Direct	Flat	B	-	Sandy	-	4.2	Jar or Olla
lot 28	-	Direct	Rounded	B	-	Sandy	-	6.9	
lot 34	-	?	Flat	B	Bm	Clay	E Burnished	4.4	
lot 42	-	?	Rounded	F	Bs	Clay	I Wiped	6.1	
lot 47	E sphaltum blob	-	-	C	-	Sandy	-	6.7	
lot 47	-	Direct	Rounded	B	Bs	Clay	E Smoothed	4.1	Bowl
lot 49	-	?	Flat	B	-	Sandy	-	4.1	
lot 51	-	?	Flat	B	-	Sandy	E Burnished	5.6	
lot 52	-	Everted	Flat	F	Bs	Clay	I/E	5.1	Bowl

Lot #	Decoration	Rim profile	Lip	Oxidation Conditions**	Temper +	Paste	Surface Treatment	Thickness (mm)	Vessel Form
							Smoothed		
lot 53	-	?	Rounded	B	Bs	Clay	I Burnished	5.4	
lot 54	Rockport Black on Gray I	Direct	Flat	F	Bs	Sandy	E Wiped	6.4	Jar/Olla
lot 54	loop handle	-	-	F	Bm	Clay	-	28 x 22 x 14	Jar
lot 54	-	Direct	Flat	G	Bs	Clay	E Wiped	7.1	Bowl
lot 57	loop handle	-	-	F	Bs	Clay	-	23 x 25 x 19	Jar
lot 57	-	?	Pointed	B	-	Sandy	-	5.9	
lot 59	Rockport Black on Gray I	Direct	Flat	C	Bs	Sandy	E Wiped	6.4	Jar Olla
lot 59	-	?	Rounded	B	Bs	Sandy	-	5.9	Bowl
lot 59	loop handle	-	-	F	Bm	Clay	-	26 x 20 x 10	Jar
lot 60	E asphaltum line	-	-	F	Bs	Sandy	I Asphaltum	6.7	
lot 64	-	?	Rounded	F	Bm	Clay	I/E Burnished	5.6	
lot 64	-	Everted	Rounded	E	-	Sandy	I Smoothed	3.6	Bowl
lot 64	-	?	Rounded	F	Bs	Clay	I Wiped;	5.6	
							E Burnished		
lot 65	Brown painted band	-	-	C	Bs	Sandy	-	4.6	

Lot #	Decoration	Rim profile	Lip	Oxidation Conditions**	Temper +	Paste	Surface Treatment	Thickness (mm)	Vessel Form
lot 65	-	?	Rounded		Bm	Clay	I Smoothed	5.6	
lot 69	-	Direct	Rounded		-	Sandy	-	7.1	
lot 69	-	Direct	Flat	H	Bs	Clay	I Smoothed	5.6	Bowl
lot 72*	E asphaltum blob	-	-	A	Bs	Sandy	-	8.4	Jar
lot 72	-	Direct	Flat	A	Bs	Sandy	-	7.4	Bottle
lot 73	E asphaltum line	-	-	C	Bs	Clay	-	5.6	
lot 74	E asphaltum line	-	-	F	-	Sandy	-	4.6	
lot 74	E asphaltum line	-	-	G	Bs	Sandy	-	5.6	
lot 74	-	Everted	Rounded	F	Bm	Clay	-	7.7	Jar
lot 74	-	Direct	Rounded	B	Bp	Clay	-	7.4	Bowl
lot 74	-	?	Flat	B	Bs	Sandy	-	5.1	
lot 77	-	?	Rounded	F	Bm	Clay	-	4.1	
lot 77	-	?	Rounded	A	Bp	Clay	-	3.8	
lot 78	-	Inverted	Rounded	F	Bm	Clay	E Smoothed	7.4	Bowl
lot 82	E asphaltum line	-	-	F	-	Sandy	-	5.4	
lot 84	ceramic foot	-	-	A	Bs	Sandy	-	24 x 14 x 12	
	Rockport								

Lot #	Decoration	Rim profile	Lip	Oxidation Conditions**	Temper +	Paste	Surface Treatment	Thickness (mm)	Vessel Form
lot 84	Blac k on Gray I	Direct	Flat	F	Bs	Sandy	-	5.6	Jar/Olla
lot 84	Interior red-painted band	Direct	Rounded	F	Bm	Clay	-	4.1	
lot 84	Interior red-painted band	Direct	Flat	F	Bs	Clay	-	4.9	Bowl
lot 84	Interior red-painted band	Direct	Flat	F	Bm	Clay	I/E Smoothed	4.6	Bowl
lot 84	-	Direct	Rounded	B	Bs	Sandy	-	5.4	
lot 84	-	Inverted	Rounded	A	Bm	Clay	-	9.2	Bowl or Olla?
lot 84	-	?	Rounded	F	Bm	Clay	E Burnished	4.4	
lot 84	-	?	Rounded	B	Bm	Clay	I Wiped	4.1	
lot 84	-	Direct	Rounded	G	Bm	Clay	I/E Smoothed	5.6	
lot 84	-	?	Flat	F	Bm	Clay	E Wiped	6.1	
lot 84	-	?	Flat	C	Bs	Clay	E Smoothed	4.9	
lot 86	-	?	Rounded	C	Bs	Sandy	-	3.8	
lot 90	E sphaltum line	-	-	G	-	Sandy	-	6.4	
lot 90	-	Direct	Flat	F	-	Sandy	E Burnished	6.4	Bowl
lot 95	E sphaltum line	-	-	G	-	Sandy	E Burnished	5.6	
lot 95	Brown	-	-	E	Bs	Sandy	-	5.6	

Lot #	Decoration	Rim profile	Lip	Oxidation Conditions**	Temper +	Paste	Surface Treatment	Thickness (mm)	Vessel Form
	painted band								
lot 95	-	Direct	Flat	F	Bm	Clay	E Smoothed	6.9	Deep bowl
lot 95	-	?	Rounded	G	Bm	Clay	-	4.6	
lot 95	-	Inverted	Flat	C	Bs	Sandy	I/E Wiped	5.6	Bowl
lot 96	-	?	Rounded	B	Bm	Clay	-	5.6	
lot 97	Brown painted squiggles	-	-	E	Bs	Sandy	-	5.1	
lot 97	-	?	Rounded	C	Bm	Sandy	-	5.4	
lot 101	Parallel brushed	-	-	A	Bs	Clay	-	7.1	Jar
lot 101	-	Direct	Rounded	B	Bp	Clay	I/E Smoothed	5.9	Bowl
lot 109	-	?	Rounded	F	Bs	Clay	E Smoothed	6.1	
lot 115	-	Direct	Rounded	G	Bp	Clay	E Smoothed	4.4	
lot 117	E asphaltum line	-	-	F	Bs	Clay	E Scraped	7.4	Jar
lot 117	-	Everted	Flat	G	Bm	Clay	-	5.1	Bowl
lot 150	-	Direct	Rounded	E	Bs	Clay	-	7.7	
lot 151	-	Direct	Flat	F	Bs	Clay	E Burnished	4.4	Bowl
lot 176	E asphaltum line	-	-	F	Bs	Clay	-	5.6	

Lot #	Decoration	Rim profile	Lip	Oxidation Conditions**	Temper +	Paste	Surface Treatment	Thickness (mm)	Vessel Form
lot 176	E asphaltum line	-	-	F	Bs	Clay	-	6.7	
lot 180	-	Direct	Flat	A	-	Sandy	-	7.4	Bottle
lot 189	-	Direct	Flat	B	-	Sandy	-	4.6	
lot 191	E asphaltum line	-	-	F	Bs	Sandy	-	6.7	
lot 194	E asphaltum line	-	-	H	Bm	Clay	I/E Smoothed	4.6	
lot 194	E asphaltum line	-	-	C	-	Sandy	-	4.6	
lot 194	-	Direct	Flat	B	-	Sandy	-	5.4	Bowl
lot 199	-	Everted	Rounded	H	Bs	Clay	-	6.7	Jar
lot 203	E asphaltum line	-	-	G	Bs	Clay	-	7.9	Jar?
lot 203	E asphaltum line	-	-	F	Bs	Clay	I Asphaltum band	8.2	Jar
lot 203	I Asphaltum line?	-	-	G	Bs	Clay	-	7.4	
lot 203	Broad horizontal Incised lines	-	-	H	Bs	Clay	-	5.9	
lot 203	-	Direct	Rounded	H	Bs	Clay	-	6.1	Bowl
lot 203	-	Direct	Flat	G	Bs	Clay	E Burnished	5.9	Bowl

Lot #	Decoration	Rim profile	Lip	Oxidation Conditions**	Temper +	Paste	Surface Treatment	Thickness (mm)	Vessel Form
lot 203	-	?	Rounded	F	Bs	Sandy	I Asphaltum	5.1	
lot 203	-	?	Flat	E	Bs	Sandy	-	5.9	
lot 204	E asphaltum lines	-	-	G	Bs	Clay	I Asphaltum blob	6.1	
lot 204	Overlapping brushed	-	-	F	Bs	Clay	-	6.9	Jar?
lot 204	Parallel Incised lines	-	-	F	Bs	Sandy	-	5.6	
lot 204	loop handle	-	-	F	Bs	Clay	-	23 x 17 x 16	Jar
lot 204	-	?	Flat	A	-	Sandy	-	4.9	
lot 209	-	Inverted	Flat	F	Bs	Clay	E Burnished	6.1	Bowl
lot 209	-	?	Flat	F	Bs	Clay	E Burnished	4.1	
lot 215	I Asphaltum line?	-	-	F	Bs	Clay	E Burnished	6.1	
lot 221	-	Direct	Flat	F	Bs	Clay	-	5.4	Bowl
lot 221	-	Direct	Expanding	G	Bs	Clay	I Smoothed	3.8	
lot 250	Rockport Black on Gray I	Direct	Flat	F	Bs	Sandy	E Wiped	6.9	Jar/
lot 250	Rockport Black on Gray I	Direct	Flat	C	Bs	Sandy	-	6.1	Jar or Olla
lot 250	-	Direct	Rounded	A	Bs	Clay	-	4.9	Bowl

Lot #	Decoration	Rim profile	Lip	Oxidation Conditions**	Temper +	Paste	Surface Treatment	Thickness (mm)	Vessel Form
lot 250	-	Direct	Rounded	G	Bs	Clay	I/E Burnished	5.4	Bowl
lot 250	-	?	Rounded	F	Bs	Clay	-	5.4	
lot 251	E asphaltum line	-	-	F	Bs	Clay	E Scraped	7.2	
lot 251	-	Direct	Pointed	G	Bs	Clay	-	5.6	
lot 251	-	Inverted	Rounded	B	Bm	Clay	I/E Burnished	5.6	Bowl
lot 251	-	Direct	Rounded	F	Bs	Clay	-	7.7	Bowl
lot 251	-	Direct	Rounded	D	Bm	Clay	I Smoothed	5.1	Bowl
lot 251	-	Inverted	Rounded	G	Bs	Clay	E Smoothed	4.1	
lot 251	-	?	Rounded	G	Bs	Clay	-	4.4	
lot 252	-	Direct	Rounded	E	Bs	Clay	-	6.9	Bowl
lot 252	-	Everted	Rounded	G	Bs	Clay	E Smoothed	4.9	Bowl
lot 252	-	?	Pointed	A	Bm	Sandy	-	5.1	
lot 252*	E asphaltum line	-	-	G	Bs	Sandy	-	7.4	Jar?
Analytical Unit 1, Feature 1									
lot 30	E asphaltum line	-	-	F	Bs	Clay	-	6.4	

Lot #	Decoration	Rim profile	Lip	Oxidation Conditions**	Temper +	Paste	Surface Treatment	Thickness (mm)	Vessel Form
lot 30	-	Inverted	Rounded		Bs	Clay	-	5.9	
lot 35	-	?	Flat	A	-	Sandy	-	4.9	
lot 89	E darkbrown painted line	-	-	F	Bm	Clay	E Smoothed	7.7	
lot 89	-	Everted	Rounded	G	Bs	Clay	-	5.6	
lot 102	-	Direct	Rounded	F	Bs	Clay	-	6.7	
lot 105	Rockport Black on Gray II	Inverted	Flat	F	-	Sandy	-	4.9	Bottle
lot 108	-	Direct	Flat	H	Bp	Clay	E Smoothed	7.1	Bowl
lot 130	E asphaltum squiggle	-	-	F	-	Sandy	E Burnished	3.8	Bowl
lot 130	-	?	Flat	F	-	Sandy	-	3.8	
lot 133	-	Inverted	Rounded	F	Bs	Sandy	-	6.9	
lot 134	E asphaltum line	-	-	E	Bs	Sandy	I Asphaltum	5.6	
lot 134	-	Direct	Rounded	F	Bs	Clay	-	3.8	Bowl
lot 140	-	Everted	Rounded	G	-	Sandy	I Scraped	6.9	Jar
lot 141	-	Everted	Rounded	F	Bs	Clay	-	5.6	Jar
lot 141	-	Everted	Rounded	F	Bs	Clay	E Smoothed	7.7	Jar
lot 141	I brown paint?	Everted	Rounded	F	Bs	Clay	E Burnished	6.4	Jar

Lot #	Decoration	Rim profile	Lip	Oxidation Conditions**	Temper +	Paste	Surface Treatment	Thickness (mm)	Vessel Form
lot 141	-	Everted	Flat	F	Bm	Clay	E Smoothed	7.1	Jar
lot 141	-	Direct	Rounded	H	Bm	Clay	-	7.9	Jar
lot 141	-	Everted	Rounded	F	Bs	Clay	E Burnished	6.7	Jar
lot 147	E asphaltum line	-	-	F	-	Sandy	E Burnished	4.1	Bowl
lot 158	-	?	Rounded	F	Bm	Clay	E Burnished	6.9	
lot 159	-	Inverted	Rounded	B	Bs	Sandy	-	4.1	
lot 160	-	?	Rounded	B	-	Sandy	-	4.6	
lot 160	-	Direct	Rounded	D	Bm	Clay	-	5.6	Jar
lot 171	-	Everted	Rounded	H	Bs	Clay	-	4.6	
lot 171	-	Direct	Flat	F	-	Sandy	-	5.6	
lot 184	-	Inverted	Rounded	H	Bs	Clay	E Burnished	5.6	
lot 188	-	?	Rounded	F	Bs	Clay	-	7.1	
lot 188	-	?	Rounded	F	Bm	Clay	I Smoothed	4.4	
lot 188	-	Direct	Rounded	B	Bs	Sandy	-	5.4	Bowl
lot 188	-	Everted	Rounded	F	Bs	Clay	-	6.4	Jar
lot 189	E asphaltum line	-	-	C	-	Sandy	-	3.8	
lot 189	-	Everted	Rounded	G	Bm	Clay	E Smoothed	6.7	Jar
lot 189	-	Direct	Flat	G	Bs	Sandy	-	4.6	
lot 189	Rockport	-	-	F	Bs	Clay	-	6.9	

Lot #	Decoration	Rim profile	Lip	Oxidation Conditions**	Temper +	Paste	Surface Treatment	Thickness (mm)	Vessel Form
	Black on Gray II								
lot 202	-	Everted	Rounded	F	-	Sandy	-	6.9	
lot 202	-	Direct	Flat	F	Bs	Sandy	-	3.8	
lot 206	-	Direct	Rounded	B	-	Sandy	-	7.1	Jar
lot 206	-	Inverted	Flat	C	Bs	Sandy	-	6.7	Bowl?
lot 206	-	Direct	Flat	E	-	Sandy	-	3.8	
lot 207	-	Direct	Flat/Beveled	B	Bs	Clay	I/E Burnished	4.6	Bowl
lot 207	-	Direct	Rounded	F	Bs	Clay	-	6.1	Bowl
lot 211	-	Direct	Rounded	B	Bs	Clay	I Scraped	7.4	
lot 212	Rockport Black on Gray II	Direct	Flat	F	-	Sandy	-	4.1	
lot 223	Rockport Black on Gray II	Direct	Flat	B	-	Sandy	-	3.8	Olla
lot 229	E asphaltum line	-	-	C	Bs	Sandy	I Aspahltum	3.8	
lot 231	-	?	Rounded	H	Bm	Clay	E Burnished	6.1	
lot 235	Rockport Black on Gray II	?	Flat	B	-	Sandy	-	3.6	
lot 235	-	Inverted	Flat	G	Bm	Clay	E Smoothed	6.1	Bowl

Lot #	Decoration	Rim profile	Lip	Oxidation Conditions**	Temper +	Paste	Surface Treatment	Thickness (mm)	Vessel Form
lot 235	-	Inverted	Flat	F	Bs	Clay	I/E Burnished	4.2	Bowl
lot 235	-	Direct	Rounded	F	Bm	Clay	E Smoothed	6.7	Bowl
lot 235	-	Direct	Rounded	H	Bs	Clay	E Smoothed	7.1	Bowl
lot 235	E asphaltum lines	-	-	B	Bm	Sandy	-	6.1	
lot 242	loop handle	-	-	F	Bm	Clay	-	-	
lot 245	-	Everted	Rounded	F	Bs	Clay	-	7.4	Jar
lot 253	-	?	Rounded, beveled	F	Bs	Clay	E Smoothed	6.4	
lot 254	-	?	Flat	G	Bs	Clay	-	3.6	
lot 254	-	Everted	Rounded	F	Bm	Clay	-	4.8	Jar
lot 254	-	Everted	Rounded	B	Bm	Clay	I Smoothed	7.1	Jar
lot 254	-	Everted	Rounded	F	Bm	Clay	-	7.1	Jar
lot 254	-	?	Rounded	H	Bp	Clay	-	6.7	
lot 255	-	?	Rounded	F	Bs	Clay	E Smoothed	5.6	Bowl?
lot 255	-	Direct	Flat	F	Bs	Clay	E Smoothed	8.7	Bowl
lot 257	E asphaltum line	-	-	G	Bs	Sandy	I Asphaltum	5.6	
lot 257	-	?	Rounded	F	Bs	Clay	-	5.1	
lot 258	Rockport Black on	-	-	B	Bs	Clay	I Asphaltum	6.9	

Lot #	Decoration	Rim profile	Lip	Oxidation Conditions**	Temper +	Paste	Surface Treatment	Thickness (mm)	Vessel Form
	Gray II								
lot 258	-	Direct	Flat	B	Bs	Clay	-	4.9	Bowl
lot 259	disk	-	-	F	Bp	Clay	I Smoothed	5.9	
lot 259	-	Direct	Rounded	G	Bs	Clay	-	4.4	Bowl
lot 259	-	Direct	Rounded	B	Bs	Clay	I/E Smoothed	4.1	Bowl
lot 259	I Asphaltum blob	Direct	Rounded	B	Bs	Clay	E Burnished,I Scraped	3.3	Bowl
lot 259	E asphaltum squiggles	Direct	Rounded	B	Bs	Clay	I Scraped	4.1	Bowl
lot 264	E asphaltum line	-	-	B	Bm	Clay	-	4.9	
lot 264	-	Direct	Rounded	C	Bs	Sandy	-	4.1	
lot 270	-	Direct	Flat, exterior folded	F	Bs	Clay	E Burnished	4.9	Bowl
Analytical Unit 2, Feature 2									
lot 10	-	?	Flat and Beveled	B	Bm	Clay	-	6.4	
lot 20	-	Direct	Rounded	B	Bm	Clay	I Smoothed	4.6	Bowl
lot 26	-	Everted	Rounded	F	Bm	Clay	E Smoothed	5.6	

Lot #	Decoration	Rim profile	Lip	Oxidation Conditions**	Temper +	Paste	Surface Treatment	Thickness (mm)	Vessel Form
lot 63	-	Direct	Flat	F	Bs	Clay	-	6.7	
lot 63	-	Everted	Rounded	F	Bm	Clay	E Burnished,I Smoothed	6.7	
lot 110	loop handle	-	-	F	Bm	Clay	-	-	Jar
lot 119	foot	-	-	B	-	Sandy	-	-	Jar
lot 119	E asphaltum blobs	Direct	Rounded	B	Bm	Sandy	E Burnished	6.9-7.9	Jar
lot 119	-	Everted	Rounded	F	Bm	Clay	I/E Burnished	7.9	Jar
lot 127	-	Everted	Flat	A	Bp	Clay	E Smoothed	6.9	Jar
lot 127	-	?	Rounded	G	Bm	Clay	-	3.6	Bowl
lot 127	-	?	Rounded	B	Bm	Clay	-	5.4	
lot 132	-	?	Flat	F	-	Sandy	E Smoothed	3.6	
lot 143	-	Everted	Rounded	F	Bp	Clay	-	8.4	Jar
lot 143	-	Direct	Flat	F	Bs	Sandy	I Burnished	4.6	Bowl
lot 157	-	Direct	Rounded	B	-	Sandy	-	2.3	Pipe?
lot 169	-	-	Flat	B	Bm	Clay	E Smoothed	6.9	
lot 173	-	Direct	Rounded	G	Bm	Clay	I/E Smoothed	7.1	Jar?
lot 213	-	?	Flat	F	Bs	Clay	E Burnished	6.1	
lot 213	-	Inverted	Rounded	F	Bm	Clay	E Smoothed	3.3	Bowl

Lot #	Decoration	Rim profile	Lip	Oxidation Conditions**	Temper +	Paste	Surface Treatment	Thickness (mm)	Vessel Form
lot 220	-	?	Rounded	G	Bs	Clay	-	7.4	
lot 233	-	Everted	Rounded	F	Bs	Clay	-	6.4	Jar
lot 234	-	Direct	Flat	C	Bs	Clay	E Smoothed	4.4	Bowl
TxDOT Excavations									
2	E asphaltum line	-	-	A	-	-	E Burnished	5.1	
2	I red-painted or slipped?	Direct	Rounded	F	Bs	Clay	-	4.1	
2	-	Everted	Flat	F	Bm	Clay	I Burnished	7.7	Jar
2	-	Direct	Rounded	F	Bs	Clay	E Smoothed	4.6	Bowl
2	-	Everted	Rounded	H	Bs	Clay	E Smoothed	5.1	
3	E asphaltum lines and red painted lines	-	-	G	Bm	Clay	I Scraped	4.4	Bottle?
3	-	?	Rounded	F	-	Sandy	-	5.6	
3	-	?	Flat	F	Bm	Clay	-	5.6	Bowl
3	--	Direct	Rounded	F	Bs	Clay	I/E Smoothed	6.9	Bowl
3	-	Inverted	Pointed	F	Bs	Clay	E Burnished	6.4	Bowl
3	-	Everted	Rounded	F	Bs	Clay	E Burnished	5.6	Jar

Lot #	Decoration	Rim profile	Lip	Oxidation Conditions**	Temper +	Paste	Surface Treatment	Thickness (mm)	Vessel Form
8	-	?	Rounded	B	Bs	Clay	I/E Burnished	5.4	Bowl
8	-	?	Rounded	F	Bm	Clay	I/E Burnished	4.9	Bowl
8	-	?	Pointed	B	Bs	Clay	I Smoothed	3.8	
9	-	?	Rounded	E	Bm	Clay	-	5.6	
9	-	?	Flat and E Folded	G	Bs	Sandy	-	4.4	
9	-	Inverted	Flat	F	Bs	Clay	I/E Smoothed	4.6	Bowl
9	-	?	Flat	F	Bs	Clay	-	5.1	
9	-	?	Flat	G	Bs	Clay	I Burnished	5.6	
9	E asphaltum line	-	-	G	Bs	Sandy	-	5.4	
9	E asphaltum line	-	-	?	Bm	Sandy	-	?	
10	-	?	Flat	F	Bs	Clay	E Smoothed	5.9	
10	-	Direct	Flat	F	Bs	Clay	I/E Smoothed	8.4	Bowl
10	E asphaltum line	-	-	C	-	Sandy	-	5.4	
10	E asphaltum line	-	-	F	-	Sandy	-	4.6	
11	-	Everted	Flat	C	Bs	Sandy	-	6.7	Jar

Lot #	Decoration	Rim profile	Lip	Oxidation Conditions**	Temper +	Paste	Surface Treatment	Thickness (mm)	Vessel Form
17	-	?	Flat	B	Bs	Sandy	-	4.6	
18	-	Direct	Flat	B	Bs	Clay	I Smoothed	6.7	

Appendix L

Mission Refugio

Sherds for INAA

(Instrumental Neutron Activation Analysis)

Key for abbreviations used in Appendix L:

* Oxidation conditions follow Teltser (1993:Figure 2)
** Bs=sparse bone temper;
** Bm=moderate bone temper;
** Bp=profuse bone temper;
+I=interior; E=exterior

Note: Sherds for INAA data located on Volume I - CD as 00L2-Ref App L2.pdf.

Provenience	NAA #	Sherd Type	Oxidation Conditions*	Temper**	Paste	Surface Treatment+	Thickness (mm)
Lot 111	1	body	D	Bp	Clay	-	9.2
Lot 101	2	body	F	Bs	Sandy	E Asphaltum	6.7
Lot 126	3	body	B	-	Sandy	I/E Asphaltum	5.4
Lot 86	4	body	F	Bp	Clay	-	4.9
Lot 140	5	body	F	Bp	Clay	I/E Smoothed	5.9
Lot 101	6	body	C	Bs	Clay	I/E Smoothed	5.9
Lot 131	7	body	B	-	-	Black glaze (Mexican)	6.7
Lot 181	8	body	G	Bp	Clay	Burnished E	7.9
Lot 143	9	body	C	Bs	Clay	I/E Smoothed	4.6
Lot 96	10	body	F	Bp	Clay	I/E Asphaltum	8.4
Lot 111	11	body	F	Bp	Clay	-	7.4
Lot 103	12	body	D	Bp	Clay	-	8.2
Lot 119	13	body	G	Bs	Clay	-	8.2
Lot 193	14	body	F	Bs	Clay	-	6.1
Lot 45	15	body	F	Bp	Clay	E Scraped; E Asphaltum	4.4
Lot 136	16	body	G	Bp	Clay	E Burnished	6.9
Lot 32	17	body	C	Bm	Clay	-	6.1
Lot 119	18	body	B	Bs	Clay	I/E Smoothed; I Asphaltum	6.1
Lot 208	19	body	F	Bp	Clay	-	7.9
Lot 119	20	body	B	Bs	Clay	I/E Smoothed, I/E Asphaltum	5.6
Lot 208	21	body	C	Bs	Clay	I/E Smoothed	5.6
Lot 228	22	body	F	Bp	Clay	I Burnished	6.9
Lot 166	23	body	F	Bp	Clay	I Wiped	6.7
Lot 103	24	body	F	Bp	Clay	-	6.7
Lot 26	25	body	C	Bs	Clay	E Smoothed	5.4
Lot 260	26	body	B	-	Sandy	I/E glaze4.4 (Mexican)	
Lot 234	27	body	G	Bp	Clay	I/E Smoothed	6.1

Provenience	NAA #	Sherd Type	Oxidation Conditions	Temper	Paste	Surface Treatment	Thickness (mm)
Lot 228	28	body	C	Bs	Sandy	E Asphaltum	6.4
Lot 26	29	body	C	Bs	Sandy	-	5.9
Lot 132	30	body	G	Bp	Clay	I/E Asphaltum	7.7
Lot 173	31	body	G	Bm	Clay	-	7.4
Lot 20	32	base	C	Bs	Clay	-	13.3
Lot 32	33	body	F	Bs	Clay	E Smoothed	4.6
Lot 112	34	body	C	Bp	Clay	I/E Smoothed	5.4
Lot 103	35	body	F	Bp	Clay	-	7.2
Lot 240	36	body	G	Bp	Clay	I/E Smoothed	5.6
Lot 63	37	body	C	Bp	Clay	-	5.6
Lot 145	38	body	E	Bs	Sandy	-	6.9
Lot 233	39	body	D	Bs	Clay	-	8.9
Lot 264	40	body	G	Bs	Sandy	E Smoothed, I Asphaltum	7.4
Lot 95	41	body	F	Bp	Clay	-	8.2
Lot 229	42	body	B	-	Sandy	E Asphaltum	6.7
Lot 160	43	body	D	Bs	Sandy	I Burnished	7.2
Lot 78	44	body	G	Bs	Sandy	E Scraped, I Asphaltum	6.1
Lot 259	45	body	C	Bs	Clay	I Wiped	4.1
Lot 250	46	body	F	Bs	Clay	E Burnished	7.4
Lot 154	47	body	F	Bs	Clay	I/E Smoothed	7.2
Lot 259	48	body	F	Bs	Clay	E Asphaltum	4.1
Lot 84	49	body	F	Bs	Clay	I/E Smoothed	7.9
Lot 160	50	body	B	-	Sandy	I/E Asphaltum	4.9
Lot 184	51	body	F	Bp	Clay	E Burnished	6.7
Lot 69	52	body	F	Bs	Clay	E Burnished	5.9
Lot 154	53	body	G	Bs	Clay	I/E Asphaltum	6.1
Lot 12	54	body	B	-	Sandy	-	6.9
Lot 212	55	body	F	Bm	Clay	I/E Smoothed	8.7
Lot 94	56	body	C	Bp	Clay	E Wiped, I Smoothed	7.4

Provenience	NAA #	Sherd Type	Oxidation Conditions	Temper	Paste	Surface Treatment	Thickness (mm)
Lot 76	57	body	A	Bp	Clay	E Smoothed	7.6
Lot 77	58	body	F	Bm	Clay	I Smoothed	6.4
Lot 209	59	body	G	Bs	Sandy	-	7.7
Lot 255	60	body	A	-	Sandy	-	6.7
Lot 265	61	body	B	Bs	Clay	I/E Asphaltum	7.7
Lot 59	62	body	F	Bm	Clay	E Smoothed, I Wiped	6.7
Lot 203	63	body	F	Bm	Clay	E Smoothed, I Asphaltum	5.9
Lot 250	64	body	G	Bs	Clay	-	8.9
Lot 72	65	body	A	Bs	Clay	E Asphaltum	8.4
Lot 203	66	body	F	Bp	Clay	-	6.7
Lot 223	67	body	F	Bp	Clay	-	6.1
Lot 202	68	body	H	Bs	Clay	E Burnished	6.7
Lot 74	69	body	F	Bs	Clay	I/E Burnished	5.9
Lot 155	70	body/base	F	Bp	Clay	-	6.7-9.9
Lot 251	71	base	G	Bp	Clay	-	11.5
Lot 203	72	body	F	Bs	Clay	I Smoothed	5.9
Lot 266	73	body	B	-	Sandy	-	6.1
Lot 12	74	body	G	Bs	Clay	-	6.1
Lot 76	75	body	H	-	Sandy	-	4.6
Lot 90	76	body	C	Bs	Clay	E Smoothed, E Asphaltum	7.4
Lot 95	77	body	F	Bs	Sandy	E Asphaltum	5.1
Lot 141	78	body	F	Bp	Clay	E Smoothed, E Asphaltum	7.9
Lot 110	79	body	F	Bp	Clay	E Smoothed	8.7
Lot 64	80	body	F	Bm	Clay	I Smoothed	5.1
Lot 54	81	body	H	Bs	Clay	-	6.4
Lot 221	82	body	B	Bm	Clay	I Scraped	7.2
Lot 252	83	body	G	Bs	Sandy	E Asphaltum	7.5
Lot 221	84	body	B	Bs	Clay	I/E Asphaltum	7.7

Provenience	NAA #	Sherd Type	Oxidation Conditions	Temper	Paste	Surface Treatment	Thickness (mm)
Lot 134	85	body	F	Bp	Clay	I/E Burnished	8.4
Lot 224	86	body	F	Bp	Clay	-	7.6
Lot 133	87	body	B	Bs	Clay	E Asphaltum	8.4
Lot 254	88	body	B	Bs	Clay	E Smoothed	7.4
Unknown	89	body	B	-	Sandy	-	7.9
Lot 209	90	body	H	Bm	Clay	I Asphaltum	4.9
Lot 18	91	body	H	Bp	Clay	I/E Smoothed	7.2
Lot 203	92	body	F	Bs	Clay	E Burnished	6.4
Lot 77	93	body	G	Bp	Clay	E Burnished, E Asphaltum	6.4
Lot 65	94	body	B	Bs	Clay	I/E Smoothed	9.7
Lot 219	95	body	G	Bp	Clay	E Smoothed, I Asphaltum	7.9
Lot 227	96	body	B	Bp	Clay	I Asphaltum	6.4
Lot 202	97	body	B	Bp	Clay	I/E Smoothed	7.9
Lot 204	98	body	G	Bs	Clay	I Asphaltum	5.4
Lot 252	99	body	F	Bp	Clay	-	6.9
TxDOT, Lot 12	100	body	H	Bs	Sandy	-	7.6
TxDOT, Lot 3	101	body	H	Bs	Clay	Burnished E, I Smoothed	5.6
TxDOT, Lot 3	102	body	F	Bp	Clay	E Smoothed, I Burnished	6.9
TxDOT, Lot 2	103	body	F	Bs	Clay	I/E Burnished	5.9
TxDOT, Lot 11	104	body	G	-	Sandy	-	7.4
TxDOT, Lot 5	105	body	F	Bs	Clay	-	4.6
TxDOT, Lot 22	106	body	H	Bs	Clay	E Asphaltum, I wiped	4.9
TxDOT, Lot 1	107	body	B	Bp	Clay	-	8.4
Lot 5	108	body	C	Bs	Clay	E Smoothed, I Asphaltum	5.4
Lot 159	109	body	F	Bp	Clay	E Burnished	7.9

Provenience	NAA #	Sherd Type	Oxidation Conditions	Temper	Paste	Surface Treatment	Thickness (mm)
Lot 158	110	body	F	Bs	Clay	I Smoothed	8.2
Lot 49	111	body	F	Bm	Clay	E Burnished, I Asphaltum	5.9
Lot 159	112	body	F	Bp	Clay	I/E Smoothed	7.9
Lot 158	113	body	F	Bp	Clay	I Burnished	9.2
Lot 159	114	body	F	Bs	Clay	-	6.7
Lot 47	115	body	F	-	Sandy	-	5.9
Lot 189	116	body	F	Bs	Clay	E Scraped	5.9
Lot 149	117	body	C	-	Sandy	I/E Scraped	6.9
Lot 5	118	body	C	Bm	Clay	E Scraped	5.4
Lot 204	119	body	F	Bp	Clay	-	7.9
Lot 23	120	body	F	Bs	Clay	I Scraped	9.4
Lot 17	121	body	F	Bm	Clay	-	7.1
Lot 40	122	body	F	Bp	Clay	-	7.7
Lot 152	123	body	C	-	Sandy	-	7.1
Lot 194	124	body	C	-	Sandy	I/E Smoothed	4.1
Lot 30	125	base	F	Bs	Clay	I Burnished	9.9
Lot 8	126	body	F	Bs	Clay	I/E Smoothed	5.4
Lot 4	127	body	F	Bs	Clay	E Smoothed, I Wiped	6.9
Lot 33	128	body	H	Bs	Clay	-	6.9
Lot 52	129	body	C	Bs	Sandy	-	6.7
Lot 204	130	body	E	Bs	Clay	E Asphaltum	6.1
Lot 149	131	body	G	Bs	Clay	I/E Burnished	7.4
Lot 189	132	body	B	Bs	Clay	E Asphaltum	6.9
Lot 189	133	body	B	Bm	Clay	-	5.9
Lot 11	134	body	C	Bp	Clay	I/E Smoothed, I Asphaltum	4.9
Lot 188	135	body	G	Bm	Clay	-	6.7
Lot 15	136	body	G	Bs	Clay	-	6.9
Lot 24	137	rim	F	-	Sandy	I Asphaltum, Lip Asphaltum	6.1

Provenience	NAA #	Sherd Type	Oxidation Conditions	Temper	Paste	Surface Treatment	Thickness (mm)
Lot 210	138	body	B	Bs	Clay	E Scraped	7.9
Lot 194	139	body	H	Bm	Clay	I/E Smoothed, E Asphaltum	4.6
Lot 47	140	body	B	Bp	Clay	-	8.4
Lot 204	141	body	F	-	Sandy	E Smoothed, I Wiped	5.9
Lot 23	142	body	F	Bs	Sandy	-	5.9
Lot 188	143	body	B	Bm	Sandy	E Asphaltum	6.1
Lot 189	144	body	F	Bs	Clay	E Burnished, I Asphaltum	6.1
Lot 35	145	body	G	Bs	Clay	E Smoothed	8.2
Lot 30	146	body	G	Bp	Clay	-	8.2

* Oxidation conditions follow Teltser (1993:Figure 2)
** Bs=sparse bone temper
** Bm=moderate bone temper
** Bp=profuse bone temper
+I=interior; E=exterior

Appendix M

Mission Refugio

Faunal Proveniences and Summary of Measurements

Appendix M: Faunal Provenience and Summary of Measurements

Table M-1. Mission Refugio, faunal provenience

ANALYTICAL UNIT 3, NON-FEATURE – Late-Colonial Period:

1	21	56	74	95	191	224
2	22	57	75	96	193	226
3	23	58	76	97	194	250
4	27	59	77	100	196	251
5	28	60	78	101	199	252
6	33	61	79	115	203	
7	34	62	80	117	204	
8	41	64	81	149	205	
9	42	65	82	150	207	
11	45	66	83	151	208	
12	47	67	84	152	209	
14	49	68	85	156	210	
15	51	69	86	176	214	
16	52	70	87	179	215	
17	53	71	88	180	218	
18	54	72	90	185	219	
19	55	73	93	190	221	

ANALYTICAL UNIT 1, FEATURE 1 AND NON-FEATURE BELOW LIME:

24	114	159	198	232	256	275
25	118	160	200	235	257	276
29	120	161	201	236	258	
30	121	163	202	237	259	
35	124	170	206	238	261	
40	129	171	211	239	264	
48	130	172	212	241	265	
89	133	182	216	242	266	
94	134	184	217	243	267	
98	139	185	222	244	268	
102	141	186	223	245	269	
104	142	187	225	247	270	
105	147	188	227	248	271	
108	154	189	229	253	272	
110	155	192	230	254	273	
113	158	197	231	255	274	

ANALYTICAL UNIT 2, FEATURE 2:

10	106	138	175
13	107	140	177
20	111	143	178
26	112	144	181
32	116	145	183
36	119	146	213
37	122	148	220
38	123	153	228
39	125	157	233
44	126	162	234
46	127	164	240
50	128	165	246
63	131	166	260
91	132	167	262
92	135	168	263
99	136	169	
103	137	173	

Table M-2. Mission Refugio, summary of measurements for large bovids
(Bovinae, *Bison* cf. *bison, Bos* cf. *taurus).*

Element, dimension	**Range**	**x**	**NISP**	**Archaeological Context**
Astragalus, Bd	40.25-44.88	42.97	4	Refugio, AU 3
	40.47-48.81	44.03	8	Refugio, AU 1
	41.65-49.08	44.52	6	Refugio, AU 2
	49.10	49.10	1	Spanish Florida
	41.30-54.20	48.98	24	Puerto Real
Astragalus, GLl	68.37-70.53	69.72	4	Refugio, AU 3
	67.69-79.02	70.98	7	Refugio, AU 1
	65.69-78.07	70.44	6	Refugio, AU 2
	61.9-75.3	70.5	9	Espíritu Santo, Goliad
	73.2-75.0	74.1	4	Mission Rosario
	68.00-70.50	69.25	2	Spanish Florida
	67.60-89.80	74.90	26	Puerto Real
Metacarpus, Bp	56.14-60.48	58.31	2	Refugio, AU 3
	48.27-71.08	58.60	7	Refugio, AU 1
	50.48-69.67	60.16	10	Refugio, AU 2
	55.3-56.4	55.9	2	Espíritu Santo, Goliad
	55.0-66.5	58.2	4	Mission Rosario
	60.20-65.70	62.95	2	Spanish Florida
	58.80-71.80	66.20	3	Puerto Real
Metacarpus, Bd	58.05	58.05	1	Refugio, AU 3
	58.19-73.32	62.65	5	Refugio, AU 1
	55.80-66.64	61.43	7	Refugio, AU 2
	71.1	71.1	1	Mission Rosario
	57.00-60.60	58.80	2	Spanish Florida
	58.00-64.60	60.90	3	Puerto Real

Note: Spanish Florida and Puerto Real data are from Reitz and Ruff (1994). Data from Espíritu Santo de Zuñiga at Goliad (41GD1) and Mission Nuestra Señora del Rosario (41GD2) are from deFrance (1999).

Appendix N

Mission Refugio

Sample Archaeological Forms

Appendix N: Forms

Sample Archaeological Forms

Feature Recording Form

Site #:_____ Feature #: _____ Location:_____ _____

Dimension: _____ Depth below surface: _____

Description:

_____

_____

_____

Artifacts Collected:

_____

_____

_____

Artifacts Noted but Not Collected:

_____

_____

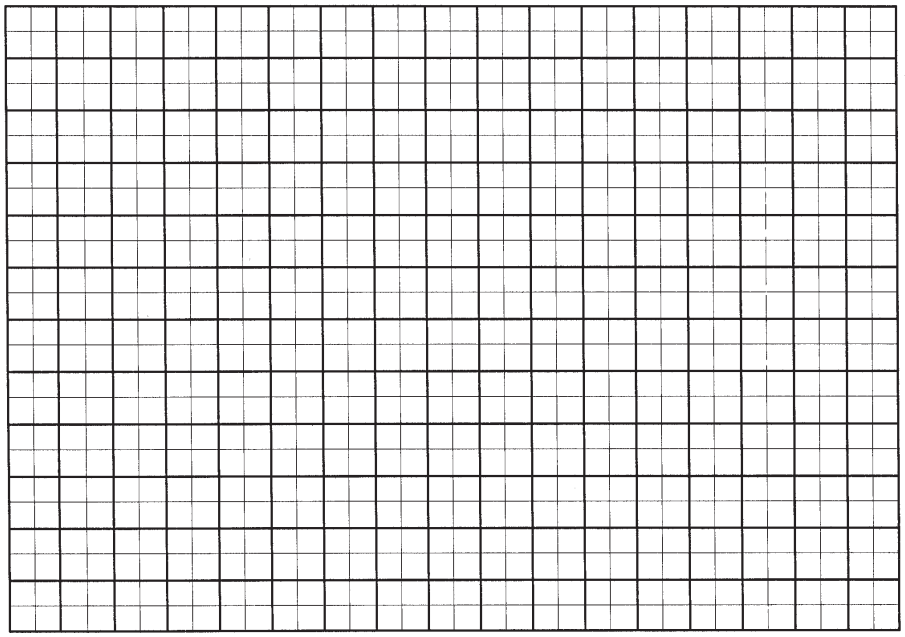


Figure N-1. *Sample feature recording form.*

PROJECT: _____ SITE NO.: _____

FS #	Grid North	Grid East	Level and Depth (cm)	Feature	LITHICS	BURNED ROCK	BONE	SHELL	CERAMICS	HISTORICS	C14	FLOTATION	OTHER (specify)	DATE	RECORDER (1st initial, last name)	Ck'ed into Lab

The University of Texas at San Antonio - Center for Archaeological Research

BURIAL RECORD

Site _____
Record No. _____

Subject: _____

Horizontal location: _____

Skull elev.: _____ **From surface:** _____ **Pelvis elev.:** _____ **From surface:** _____

Stratigraphic relationships: _____

Evidence of being intrusive: _____

Grave fill: _____

Fill into which grave was dug: _____

Grave dimensions: _____

Type of burial: _____ **Preservation:** _____

Position of skeleton: _____

Orientation: _____ **Direction of skull:** _____ **Facing:** _____

Posthumous shifting of bones: _____

Bones absent (or present): _____

Age: _____ **Sex:** _____ **Pathology:** _____

Associated objects (itemize): _____

Remarks: _____

Exposed by: _____

Disposal of specimens: _____

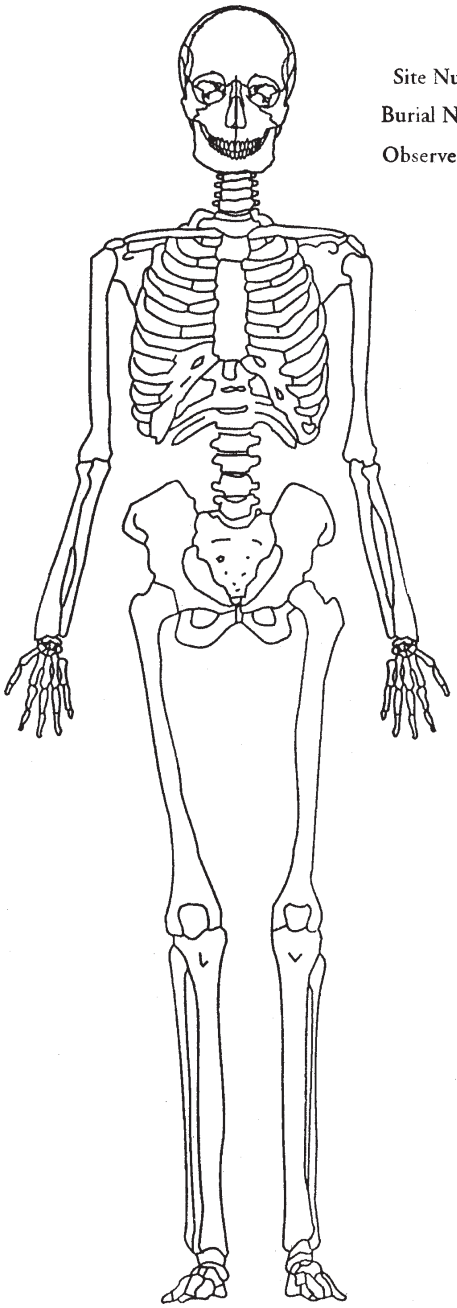
Cat. nos.: _____

Reference: _____

Photo ref.: _____ **Recorded by:** _____ **Date:** _____

Figure N-3. *Sample burial record form.*

ADULT SKELETON RECORDING FORM: ANTERIOR VIEW



Site Number _____

Burial Number _____

Observer/Date _____

Figure N-4. *Sample adult skeleton recording form.*

Burial Number Log

Mission Refugio

Burial #	Location	Depth	Complete ?	Adult/Child/Infant	Commingled with	Excavator	Date

Figure N-5. *Sample burial log form.*

BAG LOG

Page____ of ____

PROJECT NAME: _____

SITE NAME: _____ 41_____

Bag No.	Unit/Feature	Level	Depth	Excavator(s)	Date

Figure N-6. *Sample bag log form.*

41RF1 Mission Refugio Bag#_____
Provenience _____
AL BL Feature _____
Item _____
Count _____

Mission Refugio
Refugio County, Texas

PHOTOGRAPHIC LOG

Color [ ] Black/ White [ ] Print [ ] Slide [ ] Film Type _____ Roll #____
Camera:_____

Frame#	Description	Facing	Name	Date

Figure N-8. *Sample photographic log form.*

Center for Archaeological Research
The University of Texas at San Antonio
Mission Refugio Project (41RF1)
Catalog Sheet

Bag # ☐ **Unit: North** ☐ **East** ☐ **Depth (BD)** ☐ **Feature** ☐

Other Provenience ☐ **Lime?** ☐ Above ☐ Below

Date Excavated ☐ **Excavated by** ☐

Date Cataloged ☐ **Cataloged by** ☐

Ceramics

Unglazed Native ☐
Tin Glazed ☐
Lead Glazed ☐
Whiteware ☐
Stoneware ☐
Other Ceramics ☐
Describe Other ☐

Glass

Clear ☐
Brown ☐
Green ☐
"Black" ☐
Other Glass ☐
Describe Other ☐

Lithics

Debitage ☐
Tools ☐

Ornaments

Buttons ☐
Beads ☐
Shell ☐

Organics

Total Bone ☐ **Bone Weight (g)** ☐ **Burned Bone** ☐

Marine/Riverine Shell ☐
Other Organics ☐
Describe Other ☐

Metal

Identifable Metal Items ☐
Describe ☐

Square Nails ☐
Round Nails ☐
Copper alloy scrap ☐
Iron scrap ☐
Other metal ☐

Miscellaneous

BrickTile ☐
Mortar ☐
Slag ☐

In computer ☐

Figure N-9. *Sample catalog sheet.*

The following information is provided in accordance with the General Rules of Practice and Procedure, Chapter 41.11 (Investigative Reports), Texas Antiquities Committee:

1. Type of investigation: Mitigation, data recovery, exhumation, analysis, and interpretation

2. Project name: Refugio Burials II

3. County: Refugio

4. Principal investigators: Raymond P. Mauldin and Cynthia L. Tennis

5. Name and location of sponsoring agency: Texas Department of Transportation, 125 East 11th Street, Austin, TX 78701-2483

6. Texas Antiquities Permit No.: 2025

7. Published by the Center for Archaeological Research, The University of Texas at San Antonio, 6900 N. Loop 1604 W., San Antonio, Texas 78249-0658, 2002

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