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Intra-Action, Emergence, and Community-Making in the Industrial Far West: Archaeological Investigations at a Santa Cruz County Lime Kiln, 1858-1909

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Intra-Action, Emergence, and Community-Making in the Industrial Far West: Archaeological Investigations at a Santa Cruz County Lime Kiln, 1858-1909

By

David G. Hyde

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Committee in charge:

Professor Laurie A. Wilkie, Chair
Professor Kent G. Lightfoot
Professor David M. Henkin

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Abstract

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This dissertation explores the ways in which a diverse workforce negotiated differences and formed novel labor communities within the strictures of nineteenth century industrial quicklime production in Santa Cruz County, California. These issues are examined through archaeological and historical research at the Samuel Adams Lime Kiln complex, a small pluralistic company town in operation between 1858 and 1909 in the western foothills of the Santa Cruz Mountains. The history of the Samuel Adams site is one marked by transformations in ownership, management practices, and workforce demography. As such, it was a dynamic landscape where notions of ethnicity, class, gender, and labor were constantly being negotiated and (re)defined.

The archaeological findings of this work indicate that the particularities of early industrial work-life in the American Far West facilitated intimate and sustained encounters between diverse groups of laborers. These pluralistic encounters necessitated negotiations and collaborations across differences, which resulted in the emergence of new ways of doing and being. Rather than seeing social groups as fixed and pre-defined, I explore the ways in which novel labor communities were co-constituted and emergent through intra-action. I argue that it was in the processes of negotiating alterity and the resulting co-creation of new social-material practices that novel connections were created between workers and community boundaries were reconfigured and reimagined. Instead of being impeded by pluralism, I contend that cultural diversity actively promoted the construction of novel labor communities at early industrial sites. Moreover, these emergent relations and nascent communities of practice forged the necessary connections for later union formation and collective action in the Santa Cruz lime industry.

To explore these ideas, I engage with new materialist theories that position materials as vibrant and agentive in the constitution of the social-material world. As such, archaeological materials are examined not as static reflections or products of culture change, but as active participants in the dynamic processes of social entanglement that worked to reshape social practices, relations, connections, and meanings at the Samuel Adams site. This work illustrates that industrial sites, which have long been recognized as places of control and exploitation, were also important pluralistic spaces of social-material encounter, negotiation, entanglement, and emergence. These sites, therefore, were spaces of creativity, collaboration, and community-making.

Table of Contents

Dedication

To Nicole,

For everything, my everything.

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This research project would never have been possible without an amazing community of people around me providing help, support, labor, advice, and love along the way. I have been incredibly fortunate to have been surrounded by such wonderful people, this work is unquestioningly better for all your involvement.

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CHAPTER 1. INTRODUCTION

In 1904, the year that quicklime production peaked in Santa Cruz County, the industry was rattled by the mobilization of manual labor and a series of local strikes against the two major lime companies (Santa Cruz Sentinel 1904; Santa Cruz Surf 1904). While labor organization was gaining momentum in California throughout the late-nineteenth and early-twentieth centuries, these moments of collective action mark a significant shift in relations of power in an industry that was long known for a diverse, transient, immigrant manual workforce and a domineering industrial capitalist ownership. While much is known about how the company owners and their prominent agents worked to monopolize the regional industry through the consolidation of resources, land, infrastructure, and political influence, relatively little is known about how the lime workers themselves were impacted and responded. At the core of this work is an exploration of these lime workers – their various lived experiences, strategies of negotiation, and emergence as a novel labor community willing and able to confront the exploitative policies of powerful capitalist corporations.

This research investigates these issues through the archaeological and historical exploration of life and labor at one prominent Santa Cruz quicklime production operation – the Samuel Adams Lime Kilns, a nineteenth and early-twentieth century industrial company townsite located in the western foothills of the Santa Cruz Mountains on the coast of Central California. Like many work sites across the American West during this period, the Samuel Adams Lime Kilns were a demographically diverse operation comprised of workers that had come from across the globe, spoke different languages, and brought with them different experiences, lifeways, practices, and worldviews. At different points in time the Samuel Adams workforce of roughly 30 was comprised of men from the East Coast of the United States and Canada, Scotland, Sweden, Ireland, Italy, the Azorean Islands of Portugal, and China.

Coming together at an industrial operation in the nineteenth century American Far West, these diverse workers were thrust into a system of wage labor and a hierarchical corporate structure of labor and power. In the Santa Cruz lime industry, one's occupation and standing within the company was often prescribed by one's country of origin and perceived ethnicity as much as one's experience or skill in a particular industry or craft. This approach to organizing labor meant that while the workforce was diverse it was also segmented and structured. At the same time, however, the diverse lime laborers lived and worked in close, intimate, and sustained ways. Situated in a semi-rural area, the various labor groups would have spent months in close proximity, rotating through long shifts in work spaces, sharing meals in the company mess hall, and in many cases living together in small one-room cabins. In these intimate encounters of daily life workers would have been forced to negotiate alterity, overcome differences, and make a life together, necessarily building novel connections, relations, and communities that cut across and reconfigured traditional axes of social difference. Furthermore, the broader dynamics of immigration and local labor economies insured that these entanglements were never static. As subsequent waves of immigrants from a new area of the world took on the hardest, most dangerous, and lowest paid positions within the operation, existing relations and communities would have been reshuffled, creating a dynamic landscape where relations, identities, materials, and meanings were constantly being contested, reconfigured, and transformed – emerging anew with lasting implications for understandings of labor, power, ethnicity, class, gender, and community.

Historical Context

A more detailed presentation of the history of the Samuel Adams operation and the Santa Cruz lime industry is presented Chapter 3, but a brief discussion is necessary to provide context for the proposed goals, questions, and approaches of this research project. While lime production began in California during the Mission Period (1769-1833) for use in masonry, mortar, plaster, and whitewash, the rise of industrial quicklime production coincided with developments associated with the California Gold Rush (Perry et al. 2007; Wheeler 1998). Around 1853, spurred by rapid population increase and a large demand for local and affordable building materials, a quicklime industry took root in Santa Cruz County where it could take advantage of high-quality limestone, sufficient timber fuel stands, and maritime transportation networks that facilitated access to the central market in San Francisco. Lime production soon became an important local industry that provided significant employment opportunities in a wide range of occupations. As successive waves of immigrants made their way to California throughout the mid- to late-nineteenth century, many were attracted to the readily available wage labor positions offered throughout the lime industry. As a result, the Santa Cruz lime operations quickly became pluralistic sites, where diverse groups of laborers lived and worked together in company controlled townsites.

Lime processing activity began at the project location in 1858 by 27-year-old Samuel Adams, continuing (although later under different ownership) until 1909 (Perry et al. 2007; Wheeler 1998). Located roughly two miles north from the coast, Adams established what Garner (1992:3) has categorized as a “single-enterprise town” focused on limestone extraction and processing using two intermittent pot-style kilns. Also at the site were residential/domestic and communal dining spaces for the lime workers. At peak production, Adams’ operation produced roughly 30,000 barrels per year, which were loaded on his schooner at Powder Mill wharf in Santa Cruz and sold in San Francisco (Perry et al. 2007).

The high quality of local lime and ready access to markets led to the quick establishment of a number of lime producers in Santa Cruz County. By 1868 the competing companies were providing the majority of lime cement used throughout the state and upwards of 75% of all lime being sold in the San Francisco market (Perry et al. 2007; Wheeler 1998). Davis and Cowell, the largest producer at the time, reportedly produced 1000 barrels of lime per week during this period (Jensen 1976; Wheeler 1998).

In October of 1868 a major earthquake struck the San Francisco Bay Area. The resulting damage highlighted the limitations of masonry construction and this, in turn, led to a depression in the California lime market (Wheeler 1998). This economic downturn spurred Samuel Adams to sell his operation in 1869 to the larger Davis and Cowell company for $10,000. At the Samuel Adams site, Davis and Cowell increased production through the addition of a third kiln pot, a foreman’s office, and a second workers’ cabin. Henry Cowell would later gain full ownership of the lime company and build a local lime empire that owned thousands of acres of land and multiple kiln sites and employed close to 200 laborers (Perry et al. 2007).

From Cowell's entry into the lime industry in 1857 he worked tirelessly toward his goal of monopolizing the Santa Cruz and Pacific Coast lime industry. Cowell proved to be a ruthless businessman, often at odds with the laborers he employed and the community within which he worked. Following a business strategy of vertical integration wherein he owned all aspects of the lime production supply chain, Cowell sought to control all inputs, labor, and manufacturing equipment associated with the extraction, processing, packaging, and transportation of quicklime. Towards this end, he spent the latter decades of the nineteenth century consolidating control over large quantities of land, resources, labor, and industry within his business empire.

After lime production peaked in Santa Cruz County in 1904, a number of factors led to its decline over the following decades. The most significant issues were the increased fuel costs associated with the depletion of local timber stands, the invention and introduction of new and more efficient kiln technology, competition from the Pacific Northwest, and the introduction of Portland cement, which provided several advantages over lime mortar and cement and quickly became the preferred building material (Perry et al. 2007; Wheeler 1998). In 1909, operations ceased at the Samuel Adams Lime Kilns and equipment was removed to be used at Cowell's new oil burning continuous pots at Rincon (Jensen 1976; Wheeler 1998). By the 1920s lime production was down significantly throughout the county, and in 1946 the last Santa Cruz County lime production operation (one owned by the Henry Cowell Lime and Cement Co.) ceased production (Perry et al. 2007).

Although lime production stopped in 1909 at the Samuel Adams Lime Kilns, the broader area, and possibly some of the buildings and structures at the site, were not immediately abandoned. Cowell's son, Samuel Henry (Harry), took control of the business empire in 1911 and began investing more heavily in ranching and agriculture. In association with this shift, dairy, ranching, and agricultural activities persisted throughout the Samuel Adams operation area until 1965 (Wheeler 1998).

Research Questions and Goals

Historic documents show that the lime laborers of the Samuel Adams operation came together in 1904 to strike against the Cowell Lime and Cement Co. These union efforts were an overt and publicized moment of direct conflict between lime laborers and company owners, but this punctuated unrest did not emerge spontaneously. This conflict was a result of decades of social negotiation and power struggles within and between labor groups and company owners. In historical documents laborers are referred to broadly by their occupational and union affiliations as lime burners, teamsters, and coopers. These labor designations, however, work to obscure the internal diversity of each of these working groups, which were comprised of individuals of various ethnicity, experience, immigration status, age, and religion, among other factors of identification.

This situation, then, presents us with a challenging question: How did it come to a point where a highly diverse workforce of laborers could come together, across meaningful axes of difference, and unite as a collective, organized, and mobilized labor community? In short, I argue that it was the social and historical particularities of life and work in the lime kiln company town – the sustained and intimate encounters, intra-actions, entanglements, and material-discursive practices – that afforded the emergence of new connections and relations that cut across perceived ethnic, class, and gendered differences to create novel labor communities, subjectivities, and identities. It was diversity itself, and the shared experiences and processes of negotiating these differences in everyday encounters that resulted in new ways of doing and being – a reconfiguring, reimagining, and re-entangling of social-material practices that were co-constituted and shared. I will illustrate that these emergent practices, in their communal production and shared enactment, worked to create and forge novel connections between workers that reshaped community boundaries, relations, and identities. Unionization, therefore, did not produce such labor groups. Rather, unionization was itself a product of the formation and development of novel labor communities through the emergence of shared practices. Connected through the materialities of these emergent labor communities, manual laborers could mobilize, in their collectivity, to address exploitative company policies and work towards a better life in the California industrial frontier.

Framed by this overarching question and argument, this research has a number of nested goals. The first is to gain a better understanding of the experiences of manual, domestic, and managerial lime workers as agentive laborers living and working in Coastal California during the early industrial period. While the presence and economic importance of the lime industry in Santa Cruz County is well known, details about life at these operations – how labor was divided, how the workers lived, how they negotiated cultural differences, and how their lives changed along with broader transformations throughout the industry, county, and state – remain relatively unknown and unexplored. In in examining the details of everyday life, I challenge the idea of industrial laborers as passive victims of exploitation and instead seek to explore workers as active agents who used and manipulated the material world to negotiate power hierarchies, social boundaries, and company control in a dynamic industrial landscape.

Work is not simply the expenditure of energy toward the completion of a task, it is “a social phenomenon carried on by human beings bonded to one another in society” (Silliman 2001a; Wolf 1982:74). As a result, this research aims to investigate the Samuel Adams Lime Kiln laborers as “social workers” that actively shaped and constructed the dynamic and transformative social world that emerged in nineteenth century California (Casella 2005:9). In doing this, I hope to position industrial work sites as arenas of social struggle where the very conceptions and understandings of labor, ethnicity, class, gender, and community were actively negotiated and transformed through daily material encounters, interactions, and practices (Cronon 1991; Dixon 2014; Hardesty 1991, 1994; Limerick 1987; McGuire and Reckner 2002:44; Purser 1999; Robbins 1994; White 1991, 2011; Wylie 1993).

Situating Labor

Labor and labor relations provide the suite of material practices by which I attempt to explore the shifting and transformative relationships between industry and community – between hegemonic structures and the various lived experiences, practices, and social negotiations. Labor is at once an individual agentive practice and a socially contextualized set of social-material configurations

(Silliman 2001a). As such, labor and labor relations are inextricably entwined with other social categories and phenomena, such as ethnicity, gender, class, and power. Labor cannot be decoupled from one or any of these social relations, and, therefore, provides a starting point for the tracing of these social connections – a thread to follow through the variously entangled social webs, or a configuration from which to explore re-configurations. Labor, then, as an embodied practice, becomes an intimate, personal, and socially contextual position from which to explore the material realities of a dynamic social world (Joyce 2004; Silliman 2001a).

Labor is conceptualized broadly here as "the social and material relations" involved in the production, distribution, or manipulation of items for personal use or use by others (Silliman 2001a:380). Labor, then, is not limited to work spaces (Casella 2005). Labor relations "are not separate from household ones," and they are "about work and home, about men and women… (they) encompass all social groups that lived within a particular historic context" (Wurst 1999:331). When we consider industrial laborers as social workers we can begin to explore the ways in which labor was "structured, accommodated, made use of, and lived through" (Casella 2005; Silliman 2006:149). This approach also provides room for the examination of how labor was exploited, rewarded, and/or experienced differently for various groups of people. What is highlighted, however, is that laborers are not only victims of global structures and historical processes, but also active agents in the construction of their communities and emerging industrial modes of work and life (Beaudry et al. 1991; Beaudry and Mrozowski 2001; Metheny 2007; McGuire and Reckner 2002; Mrozowski et al. 1996; Paynter 1988; Paynter and McGuire 1991; Shackel 1996, 2000, 2004, 2009; Silliman 2001a, 2006; Wurst 2006).

By approaching labor in this way, I hope to illustrate that the work of making lime was not mindless manual labor undertaken by a passive and inexperienced workforce, but an interconnected assemblage of craft labor, organized and implemented by strategic agents as they attempted to make a life for themselves in the American Far West. From quarrying the stone, to burning the lime, to constructing the barrels, workers needed to be experienced and skilled, working in coordination to create a volatile and finicky product in a rigid system of hierarchical wage labor. For these reasons, worker groups in this dissertation will not be referred to as "skilled" or "unskilled," which implies a measure of value and experience that is not accurate to the realities of lime work. Does the act of removing stone in specific specialized sizes using drills and dynamite, or building lime-load arches out of nothing but roughly hewn raw material actually require any less "skill" than balancing an account book or organizing a workforce? Or, perhaps, was skill a malleable concept rooted in capitalist value, and were some tasks instead simply constructed and positioned as unskilled by hegemonic forces so that wages could be kept low and that labor could be exploited, allowing for greater profit maximization? It is my belief that the language of "skill" in industrial labor contexts reflects capitalistic designations meant to strip workers of their knowledge, experience, agency, creativity, and value. In an effort to address these perceived issues, I will instead refer to labor groups in the Santa Cruz lime industry based on the nature of their work – as manual, domestic, and managerial laborers, which highlights their active, performative, and agentive roles as diverse makers and producers.

Capitalism and the American West

These investigations of labor, social negotiation, cultural emergence, and community building will necessarily be considered within their broader social and historical context of increasing industrial capitalism in the American West throughout the nineteenth and early-twentieth centuries. Once conceptualized as an open space of endless opportunity and freedom that embodied and reproduced the democratic and nationalistic ideals of America, the Western Frontier has more recently been situated within a larger context of global capitalism and has been critically analyzed as an "arena of struggle" (McGuire and Reckner 2002:44). This critical approach recognizes the American West as both a physical and imagined space of contestation. The realities of life in the American West during the nineteenth century posed real limitations and hardships, but they also afforded opportunities for the intimate confrontation of alterity and dislocation from the strictures of convention and tradition. In many ways, the American West became a place where the very constructions and understandings of things like ethnicity, race, gender, and class were confronted, negotiated, transgressed, transformed, and redefined, with lasting implications (Cronon 1991; Dixon 2014; Hardesty 1991, 1994; Limerick 1987; Purser 1999; Robbins 1994; Wylie 1993; White 1991, 2011). This understanding presents the American West as a diverse, fluid, and contested space, whereby the individuals living and working there were not simply pawns shaped by broader macro-historical processes, but intimately involved in its transformation.

The second half of the nineteenth century in California was a particularly dynamic and tumultuous period. The discovery of gold in 1848 spurred mass migration to the area from across the world. This global influx of diverse people was largely united by a single characteristic – a desire to enrich oneself economically through the exploitation of natural resources and the opportunities this afforded. This was attempted either directly, as fortune seekers tried their luck in the gold fields, or indirectly, as the more entrepreneurial-minded supplied supporting goods and services. Together, however, these various efforts worked to spread and entrench a capitalist ethos that differed substantively from prior Indigenous lifeways and even Spanish and Mexican-period economic efforts.

As Igler (2000:183) notes, "on a most basic level, industrial capitalism transformed the relationship between people, work, and their communities" reshuffling the "social bonds and tensions in nineteenth century America." This shift towards industrial capitalism in California following the Gold Rush fundamentally changed the physical and social landscape of the American Far West and reconfigured the way people lived, worked, and made sense of the world and their place within it. Characterized by the further marginalization of native peoples, land seizures by private parties, widespread industrialization, increased urbanization, and the establishment of extensive railroad and shipping networks, these changes had far reaching implications (Igler 2000; Laurie 1989; Madley 2016; Robbins 1994; White 2011, 1991). By the late-nineteenth century, California had been transformed from an isolated rural outpost to a central and important component of an emerging global economy (Kim 2005). And yet, these structuring principles of industrial capitalism were not formed separately from the laboring populous and imposed on them from the outside (van Bueren 2002). These broader processes were themselves partly a product of laborers' daily tactics and routine practices that were continuously negotiated and transformed as different groups of people came into contact and engaged in new relations while trying to make a life for themselves amidst the emerging industrial California landscape (de Certeau 1984; Miller 1987; Orser 1996). At question here is how these broad but substantive changes sweeping California after the Gold Rush worked to reshuffle social bonds, create new connections, build new boundaries, and reconfigure emerging communities at pluralistic works site like the Samuel Adams Lime Kilns?

A Pluralist Orientation in Archaeological Investigation

Archaeological investigations of industrial worksites have tended to focus on a narrow set of questions surrounding labor exploitation, management strategies, technological development, laborer resistance, and power and class relations. This relatively narrow research scope and top-down framing has often served to reify the assumed power of historical capitalists and strip laborers of their agency, power, and creativity. The work presented here attempts to address these issues by situating industrial sites in the post-Gold Rush American West as dynamic and pluralistic spaces of encounter, negotiation, entanglement, and emergence – sites of creativity and community building (as much as control and exploitation) that reconfigured boundaries of difference along multiple axes in important and lasting ways. By examining the material traces of life across various spaces of the Samuel Adams complex, I explore the ways in which diverse groups of laborers engaged with a range of materials in their daily lives to build novel and strategic connections, relations, and meanings within the strictures of industrial life.

Minimal historical documentation exists for much of the Santa Cruz lime workforce. What documentation there is, outside of census documents and the odd citizenship and naturalization or marriage record, are newspaper articles that, in referring to the lime laborers *en masse*, mask the internal diversity of the workforce. This lack of documentation means we cannot turn to historical texts alone to explore the dynamics of workforce relations that, over time, led to community-making and unionization. These process of socialization and negotiation, however, are preserved in material traces – the sites, features, and artifacts assembled through past social-material practices and relations. Archaeological recovery and analysis of these traces, then, provides an entry point and additional lines of evidence for exploring the central questions of this work.

In essence, this dissertation work aims to explore the active processes of social intra-action, negotiation, transformation, and community-building through an analysis of material remains and historical texts. Towards this end, I engage with a cluster of entangled ideas from new materialist, practice/performance, and frontier/borderlands theories. Discussed in greater detail in Chapter 2, new materialist orientations are concerned with matter and materials as active, agentive, and entangled in the meaning-making practices of everyday life (Agbe-Davies 2018; Beaudoin 2013; Bhabha 2004; Barad 2003, 2007; Bennett 2004; Bourdieu 1977; Chen 2012; Deleuze and Guattari 1987; Fahlander 2007; Ingold 2001; Joyce 2004; Latour 2005, 2014; Lave 1991; Naum 2012; Silliman 2010; Tsing 2015; Whitmore 2014). Matter in this way is lively, it has capacities, it "remembers" (Barad 2012:15), and it is entangled in the ongoing emergence of the world. Bridging new materialism with post-colonial frontier/borderlands theories, we can begin to explore how materials were active in the reshaping of social boundaries, communities, subjectivities, and identities within a pluralistic and dynamic landscape of industrial production, and how this changed over time. Framed through an archaeological lens, this orientation allows us to approach static (but contextualized) material remains as vibrant material assemblages. Archaeological remains, then, are the traces of past material-discursive practices – the practices and performances of self-making, the negotiations of alterity, and the drawing of boundaries through which the social world was made material. Re-tracing material connections through archaeological analysis allows us to step back in time and follow the social-material process through which a broad range of transformations unfolded.

Approaching archaeological materials in this way necessitates the embracing of ambiguity and multiplicity as the material realties of, and evidence for, past social negotiation, transformation, emergence, and change. In explicitly embracing ambiguity and multiplicity, it becomes impossible to present a single authoritative narrative regarding the past. Rather, materials must be explored in their capabilities, from multiple positionalities and subjectivities. This means that in this work discussions and interpretations are almost always presented in a series of possibilities, as multiple, nested, entangled, overlapping, paralleling, or sometimes contradicting narratives.

This also means that objects, data sets, assemblages, and materialities will be returned to repeatedly throughout this dissertation to be re-framed, re-contextualized, and re-interpreted (Wilkie 2014). A goal of this research is to explore how some objects can be parts of multiple assemblages and are connected in various different ways through the particularities of their (re)assembly. As a result, recovered objects may be described and contextualized in the "Data Presentation" chapter, situated within social and historical particularities of use and consumption in the "Life and Labor as a 'Lime Worker'" chapter, only to be revisited again in the final discussion chapter, "The Power of Plurality," as active, performative, and transformative matter. In structing the presentation and discussion of materials in this way, different implications and multiple narratives emerge in relation to subjects of labor, power, ethnicity, class, and gender. By assembling the same materials in different social, temporal, and material relations, I hope to highlight the fluid, multiple, and emergent nature of entangled relations at the Samuel Adams Lime Kilns.

The 2017 Samuel Adams Lime Kiln Archaeological Project (SALK)

The Samuel Adams Lime Kiln Archaeological Project (SALK) was a collaborative research project implemented by the University of California, Berkeley and California State Parks between 2016 and 2019. The Samuel Adams Lime Kiln site (CA-SCR-339H) is located on present-day Wilder Ranch State Park in Santa Cruz County, California. The site includes 20 discrete structures and archaeological features, identified as 'loci,' that were integral to the boarding of laborers and the quarrying, processing, and storage of quicklime. SALK excavations were conducted at 10 different loci: the kiln fronts, the cooperage, the shared mess hall, the cookhouse, a cold room, two shared workers' cabins, the foreman's residence, the foreman's office, and an intermediary domestic/work space. In total, 12 units totaling 13 square meters were excavated across these 10 loci (Figure 1.1). In short, field efforts recovered a diverse collection of materials from across manual, domestic, and managerial work, leisure, and domestic spaces, which allows for comparative analysis across spaces and periods of time. A more detailed discussion of field, lab, and material analysis methods are presented in Chapter 4.

Previous archaeological research at the site consists of a number of pedestrian surveys beginning in 1988 and excavations that took place inconsistently between 2006 and 2009 (Kindon 2017). SALK was designed to both compliment and build upon this prior archaeological research undertaken at the site. Organized as a field school, the SALK research project provided hands on archaeological training and experience for 13 undergraduate or recently graduated students from three different institutions of higher education – UC Berkeley, UC Santa Cruz, and West Valley College.

A Note on Site Names

Due to changes in kiln ownership and changes in the name and ownership stake of the companies that owned the kilns, the historic industrial complex at the center of this study has been referred to by a number of different names over time. These names include the Samuel Adams Lime Kilns, the Adams Creek Lime Kilns, Cowell's Upper Lime Kilns, Davis and Cowell's Lime Kilns, and the Gray Whale Ranch Lime Kilns (Perry et al. 2007). In this dissertation, the kilns and the project site will be referred to as the Samuel Adams Lime Kilns. This nomenclature was preferred because it appears to be the most common name used in historical references to the site. In addition, the Samuel Adams name indexes both the historical and the geographical particularities of the site (*e.g.,* the founder Samuel Adams for which Adam's Creek was named), while limiting possible confusion by referencing Cowell, who owned a number of kilns and properties throughout Santa Cruz by the early-twentieth century. Furthermore, the 2017 archaeological project was named the "Samuel Adams Lime Kiln Archaeological Project" (SALK) to differentiate it from previous archaeological work completed at the site – the Foothill/West Valley Archaeological Survey (FWVAS). It is worth noting that despite his name being attached to the kiln complex, Samuel Adams owned the operation for only about 11 years, whereas Cowell (under various company names) owned and operated the kilns for forty years. The Samuel Adams name, therefore, should not mask or overshadow the role Cowell and his company had in shaping the physical and social composition of the operation, an idea that I will return to throughout this dissertation.

Chapter Discussion

In Chapter 2, "Theorizing Labor Relations in the Nineteenth Century American Far West," I present the theoretical frameworks that orient my approach to studying emergent relations at pluralistic sites. I begin with a discussion of practice and performance theories that link the material traces of everyday life to socially meaningful actions. I then link these theories to a broad collection of ideas identified as new materialism. New materialism, while diverse in its focus, is fundamentally concerned with the active and lively nature of materials – the ways in which objects do things in effective ways. I draw strongly on Karen Barad's concept of material-discursive practice to outline an approach to studying people in contact and culture change that attempts to move beyond traditionally linear or bounded understandings. In this way, I present a framework of encounter that is focused on *intra*-action (or the co-constitution of social-material phenomena) rather than inter-action. This, in turn, highlights a focus on emergence, whereby intra-actions provide spaces and agentive opportunities for the creative reimagining of practices, identities, social categories, and communities. I argue that this approach contributes to existing post-colonial frontier/borderlands theories, presenting a new way of understanding global connections, influences, and intra-actions in the emerging modern industrial world.

Chapter 3, "Historical Background" presents the historical context of the Samuel Adams Lime Kiln site and the broader Santa Cruz lime industry. A nuanced understanding of the broader social and historical context is necessary to explore and better understand the various ways in which labor relations unfolded, communities were shaped, and life was experienced by lime workers. Primary historical documents related to the Samuel Adams Lime Kilns are extremely limited, but newspaper articles, photographs, oral histories, and census and other institutional data are interrogated to provide insights into life as a lime worker. By focusing on both company owners and broader economic histories as well as the demography of the labor force and the different struggles and opportunities they were afforded, we can begin to explore the ways in which different laborers worked to make a life for themselves within the emerging landscape of industrial capitalism in the nineteenth century American Far West. Critically, this section will outline the details of changing ownership at the Samuel Adams kilns, the subsequent efforts at regional monopolization by owner Henry Cowell, and the implications this might have had on the lives of the various lime laborers.

Chapter 4, "Digging into Life and Labor: Archaeological Testing at the Samuel Adams Lime Kiln Complex," introduces the reader to archaeological work undertaken between 2017 and 2018 at CA-SCR-339H, the Samuel Adams Lime Kiln site. This chapter summarizes both field and lab methods while outline the nature and scope of work completed. This chapter provides the necessary methodological context for the following data presentation and interpretation chapters.

Chapter 5, "Data Presentation: The Materials of Life and Labor at the Samuel Adams Lime Kiln Complex," details the materials recovered and analytical findings of the field and lab work. In this chapter, data is presented by functional site areas. Recovered materials are listed and summarized within areas by functional-material classifications. Stratigraphic sequences and depositional histories are also discussed, presenting chronologies for both units and loci. This organization allows for subsequent comparative analysis, both across space and between different periods of ownership (*i.e.*, across time).

Chapter 6, "Life and Labor as a 'Lime Worker,'" attempts to link information provided in the historical context with the material remains recovered by providing a detailed look into the individuals who lived and worked at the kilns, what the materiality of their daily lives were like, and how this might have changed through time. The goal of this chapter is to humanize the recovered archeological objects, showing the material as active in the social world of the workers and entangled in emergent understandings of community and identity. Drawing on oral histories, historic documents, and the materials presented in Chapter 5, I hope to present a series of nested narratives that shed light on a range of material-discursive practices that were pursued across the Samuel Adams site. In doing this, I hope to highlight the active lives of materials, their multivalences, and their entangled uses and meanings. This discussion is organized based on site areas and distinctions are made between periods of Samuel Adams and Henry Cowell ownership when possible.

Chapter 7, "Cultivating Lime; Creating Community," outlines the process and overlapping tasks necessary to produce quicklime. Rather than present this process as a series of distinct steps, I situate the discussion in conversations of new materialism and entanglement. The goals of this approach are to highlight the materiality of quicklime, and to highlight the cyclical and intra-connected nature and experience of quicklime production and use. In doing this, I hope to present quicklime production as craft labor, rather than rote manual work. So, while this chapter is fundamentally about lime production, it is also about the social experiences and implications of doing that work. In the end, I hope that in presenting the labor of quicklime in this way I will highlight it as a volatile, sensual, and collaborative practice – work that built bodies, identities, and communities of laborers.

Chapter 8, "The Power of Plurality: Intra-Actions and Emergence in the Industrial Frontier," serves as the interpretive core of this work. In this chapter I engage with select artifacts and assemblages to attempt to trace the complex entanglements, affective qualities, and social implications of various material-discursive practices uncovered archaeologically at the Samuel Adams Lime Kiln site. In doing this, I hope to build upon and integrate prior discussions to provide detailed examples of the dynamic processes of social-material intra-action and emergence at pluralistic sites, tracing the possibilities for the creation of novel materialities, meanings, identities, and communities – all entangled in complex ways. This chapter is purposely disorganized, as the goal of tracing entanglement and emergence assumes a fluidity and boundlessness that is at odds with most organizational approaches to archaeological texts, which are traditionally based on material type or social category (*e.g.,* ethnicity, class, and gender). With this in mind, I have chosen to organize presentations and discussions of various material examples by "social phenomenon" (*e.g.,* "The Materiality of Encounter, Intra-Action, and Cultural Emergence"). Presenting the materials in this way, I believe, will highlight the entangled and emergent nature of social-material relations and avoid reifying the assumed natural- or inherent-ness of analytical categories. In doing this – by forcing the reader to follow topical threads that weave through various material examples – it is hoped that the reader experiences first-hand (and thus better understands) the central idea that social-material relations are entangled, inseparable, ambiguous, creative, and emergent.

Chapter 9, "Conclusions," aims to summarize and tie together the various ideas, arguments, and goals with which this work is concerned. In doing this, I revisit my argument that pluralistic industrial sites creates opportunities for social intra-action and emergence that afforded the creation of novel communities and other collectives. In the end, I argue, it is the very negotiation of alterity and the co-constitution of emergent practices that created commonalities and connected workers together as a heterogenous collaborative community.

CHAPTER 2. THEORIZING LABOR RELATIONS IN THE NINETEENTH CENTURY AMERICAN FAR WEST

The American Far West during the mid- to late-nineteenth century was a socially dynamic and pluralistic place. During this period, multiple overlapping waves of immigrant communities from across the globe flocked to California, being both pushed and pulled to the state by various factors (Starr 1973). As a result, *from their origin*, many places, communities, and industries in nineteenth century California were extremely diverse, with internal social and labor divisions being based on complex, fluid, and historically situated understandings of ethnicity, nationality, race, class, gender, and labor.

Day-to-day interactions in nineteenth century California, therefore, were not simply between two culture groups, but were between many immigrant communities, each with its own complex history and context that framed encounters and relations. Scholars studying people in contact and culture change in nineteenth century California are thus faced with the challenge of exploring how various communities negotiated each other – interacting, overlapping, sharing, and changing amidst the emerging modern industrial California landscape. The realities of this diverse and dynamic social context, therefore, necessitate an archaeological analysis of encounter, interaction, and change that moves beyond traditional post-colonial frameworks that are rooted in simplified dichotomies of colonizer/colonized, native/immigrant, and self/other (Fahlander 2007; Rice 1998).

Considering the particular social and historical context of nineteenth century California, this research proposes a novel conception of the early industrial company town, not as a physical place or pre-existing entity, but as a network of relations enacted through practices within a structured space, where traditional social identities were brought into relief and transformed through the continued mediation and (re)enactment of routine practices (Delle 1998; Lefebvre 1991; Ortner 1984). Historical and material analysis, therefore, is theoretically framed by an assertion that the Samuel Adams Lime Kiln complex, and other industrial sites like it, were dynamic frontiers of social encounter and transformation. Conceptualizing these sites as "heterogenous intersecting collectives" (Fahlander 2007:29) allows for a recognition that these places would have promoted social entanglements that created ambiguity, multiplicity, and fluidities of meaning in social relations and material culture that would have provided opportunities for translation, creation, and transformation. This understanding and approach to pluralistic sites provides an opportunity for the examination of material objects as active and agentive in the formation of emergent practices that continually contested and transformed notions of labor, power, ethnicity, gender, class, and community. Framing material analysis in this way, I employ a theoretical approach that draws upon and attempts to integrate ideas from practice and performance theories, post-colonial and frontier/borderlands theories, and new materialism.

Identities in Practice

At its core, this work is concerned with identity, or the ways that individuals and communities understand, present, and define themselves in the social world (Barth 1969; Jones 1997; Wilkie

2000). Individuals construct their identities in the day-to-day practices of social life, building understandings of themselves and others through intimate routine encounters and negotiations. These constructions of self, however, are not unconstrained, they are framed by the broader social context and structures of power in which they are expressed. Identities are also imposed on people by others, framing the way the self is understood and materialized (Jones 1999; Wilkie 2000).

Archaeologists concerned with identity have traditionally turned to practice theory, particularly the ideas of Pierre Bourdieu (1977, 1990), to theorize how the material traces of the everyday – the artifacts we recover – might allow us to speak to these dynamic social phenomena of identity and identification. Moving beyond structural understandings that see humans as reactionary and confined to social norms and behaviors, practice theory conceptualizes structure and agency as existing in a dialectic, with the actions of social entities being both framed and working to frame one's *habitus*, defined variously as a "system of durable, transposable dispositions," the "conditionings associated with a particular class of conditions of existence," and as the broader organizational structures, worldviews, conventions, and traditions of one's cultural environment (Bourdieu 1977, 1990:53; Dornan 2002; de Certeau 1984; Giddens 1993; Hodder 2004; Joyce and Lopiparo 2005; Lightfoot et al. 1998; McCall 1999; Ortner 1984; Sewell 1992). Practice, therefore, is the agentive undertaking of action that simultaneously (re)produces and transforms the society/social structures in which that agent is a part (Joyce and Lopiparo 2005). It is within this tension between agency and social constraint in everyday activities and interactions that individuals "constantly create images of self" (Conkey and Gero 1991; Jones 1997; Thomas 1996; Wilkie 2000:4).

Theories of performativity provide a framework for conceptualizing the relationships between identity construction and practices, meanings, and materials. Rooted in the feminist ideas of Judith Butler (1990, 1993), performativity asserts that practice becomes imbued with meaning and integral to identity through its social performance and engagement with "culturally situated precedents" (Joyce 2004:84). Drawing on Foucault's notions of power (1977, 1978), Butler's performativity asserts that subjects and identities are not mapped on to preexisting bodies, but are themselves constituted and emerge within a "matrix" of relations (Butler 1993:7). In this way, bodies participate in discourses as "practices of self signification" (Whitehead 2002:207). Whether through attempted mimicry or the inversion of an idealized mode of practice and performance, a subject is actively identified (*e.g.,* gendered, classed, or racialized) and becomes situated in a culturally defined system of knowledge and power (Butler 1993, 1999).

From a performative standpoint, then, one's identity is not something one "is," but emerges through the repetitive act of doing (Joyce 2000). Subjects and objects are not simply constructed by external social forces, but come to "matter" through "a process of materialization that stabilizes over time to produce the effect of boundary, fixity, and surface" (Butler 1993:9). As Joyce (2004:83) argues, these performative actions materialize as bodies (material assemblages) in complex ways that necessitate a "shift from analysis of an objectified 'body' to active 'embodiment.'" Performance can be thought of, then, as the "repeated citation" of a cultural "mode of being" that in turn shapes new performances. The act of embodiment becomes a material and discursive action that shapes "the physical person at the site of the experience of subjectivity" (Joyce 2004:84).

Analyses exploring practice, performance, and identity in archaeology have also recognized the contributions of intersectionality theories. Coined by Kimberle Crenshaw (1989) and emerging out of Black feminist scholarship, intersectionality is concerned with the relationships and interdependencies of different power structures, and the contextual, relational, and multilayered nature of human experience and identity. While originally focused on the relationship between gender and race, intersectionality theories have developed a broader concern with the exploration of any subject position or aspect of identity as being formed through the complex intersection of multiple social categories and systems of power (Baron 1990; Bederman 1995; Blewett 1990; Connell 1987, 1995, 2000; Fesler 2004; Wilkie 2000). By focusing on the interconnections of social positions, rather than their isolation, one can trace the ways in which fluid and shifting conceptions of things like race, ethnicity, class, and gender are mutually (and continually) framed, informed, and constituted. In highlighting the way aspects of identity are entangled in complex, overlapping, and intersecting social fabrics, studies of intersectionality highlight the ways in which shifting sets of relations, social contexts, and/or materials lead to new enactments or understandings of one's position in a community or configuration of power. This framework makes it impossible then, to talk about class without a consideration of the practices and performance of other overlapping spheres of life – things such as labor, language, ethnicity, family history, and marriage status. How, and in what "form" one's identity is assembled, then, is dependent on the nature of the social situation (interaction) and the goals/desired outcomes of the agent. Understanding the social and historical context of any performative action, then, is critical to understanding its potential meanings and implications for identity and identification.

Conceptually, practice, performance, and intersectionality theories provide a lens for examining the ways in which people do things that considers the power of precedence, self-reflexive agentive action, and social and historical context, with the opportunity for transformation emerging out of intimate and routine social interactions and the unfolding of everyday life. This conceptualization challenges any fixed, bounded, or singular notion of identity or subjectivity. Instead, these ideas open up the possibility for change, highlighting subjects and identities as being in a constant and dynamic state of becoming through social-material encounter, negotiation, contestation, and action. This is true for both individual and community or group identities. Individuals must create various identities as they navigate the realities of everyday life, with notions of ethnicity, gender, class, and labor being just some of the organizational categories by which one understands themselves in different social situations (Wilkie 2000). An individual lime worker, back home in Azorean Islands of Portugal, may have been a farmer, living with his family where he was at once a son, a husband, a father, a Terceiran, a bullfighter, and a Catholic. At an industrial quicklime site on the California Coast this same individual may have at first taken on the role of immigrant wage worker, transient laborer, and overseas Portuguese. Later he may have seen himself, and been seen by others, as a lime burner, a craftsman, a union member, and/or a brother in a community of laborers. At that same moment, depending on the particulars of the social interaction he may have been someone's superior in the company, later an inferior, at other moments an equal. After the collapse of the lime industry, with some money saved, his family may have joined him as they bought and settled on a dairy farm, where he came to see himself again as a husband and father, as a farmer, a business owner, a Portuguese-American, or maybe just an American. Likewise, the boundaries of communities are fluid and relational. Who and what constituted a Portuguese ethnicity, a labor group, whiteness, masculinity, or the working-class, would have been continuously defined through the everyday practices, negotiations, and social-material relations of life.

A critical implication of these overlapping understandings of practice and performance is that material objects are fundamentally entangled in the social world, and it is through these entanglements that materials and practices come to have meanings. Because these meanings exist in the very cultural and social context of their assemblage and doing, these meanings can be multiple and varied. As Wilkie (2000: 12) argues, however, "such an approach also removes the need to pinpoint whether an artifact explicitly represents ethnicity, gender, race, class, or other experiences, for a single artifact can have multiple levels of meaning to the user… Instead, artifact assemblages can be studied contextually for an understanding of how those materials may have enforced different senses of self."

Active and Lively Matter: Engagements with New Materialism

Karen Barad (2007:3) begins her book *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* by asserting that "Matter and meaning are not separate elements. They are inextricably fused together." My theoretical positioning works from this central new materialist proposition to explore the entangled nature of humans, objects, and meanings as situated "(re)configurings" of the material world (Barad 2003:818, 2007; Bennett 2004, 2010; Braidotti 2002; Chen 2012; Connolly 2013; Coole 2013; DeLanda 1997; Parikka 2012; Dolphijn and van der Tuin 2012). Critically, these reconfigurations of relations are seen as emerging through *intra*-action, or the co-constitution of material bodies in encounter.

Intra-action, in this perspective, is fundamentally different than inter-action. Whereas inter-action assumes two fixed, pre-defined and independent bodies coming into a relationship, intra-action is concerned with the mutual constitution of entangle agencies – where entities materialize in co-constitutive ways – emerging *through* the relationship of intra-acting. As Barad (2007:376) argues, "The ongoing reconfigurings of… bodily boundaries and connectivity are products of iterative causal intra-actions – material-discursive practices – through which the agential cut between 'self' and 'other' is differentially enacted." Bodies of matter that come to be seen as entities in particular spaces and time, therefore, are emergent phenomena – the product of "ongoing intra-activity, its dynamic and contingent differentiation into specific relationalities" (Barad 2007:353).

Barad's (2007:66) work builds on Butler's performance theory by calling for a "posthumanist elaboration of the notion of performativity." For Barad (2007:64), Butler's performativity is beneficial in highlighting the significance of "matter's historicity," but it falls short in identifying matter as being derived solely from language or culture – in being a "purely cultural phenomenon, the end result of human activity." In doing this, Barad (2007:64) argues, Butler's performativity fails to acknowledge "matter's dynamism" or recognize the "significant ways in which matter matters to the very process of materialization." A posthumanist elaboration of performativity instead provides space for the consideration of the "materialization of all bodies – 'human' and 'nonhuman' – including the agential contributions of all material forces (both 'social' and 'natural')" (Barad 2007:66). To do this, Barad (2007) argues, requires a consideration of both human and nonhuman forms of agency and performativity, a recognition of matter as lively, and an understanding that performativity is a material-discursive practice.

For Barad (2007:375), material-discursive practices (or relations) are the "boundary-drawing practices" by which a body of matter "differentiates itself from the environment in which it intra-acts and by which it makes sense of the world." A new materialist orientation, then, sees the bounding and emergence of all things (objects, bodies, communities) as an active, agential, performative, and effective relation of "material-discursive practices" (Barad 2007:375; Kohn 2013). Critically, this "bodily material is not a passive, blank surface… its very substance is morphologically active and generative and plays an agentive role in its differential production, its ongoing materialization" (Barad 2007:375-376).

Bodies, as Barad discusses them, are not limited to human or even biological entities. Rooted in posthumanist philosophies and a monist ontology, a new materialist perspective complicates the perceived distinction between humans and nonhumans (Barad 2003:822; Bennett 2004; Braidotti 2013). From this orientation, all matter is capable of doing – it is lively, vibrant, animate, and forceful (Bennet 2004; Chen 2012). In this conceptualization of the world there are no subjects or objects, agents or non-agents, just actants – bodies of matter that have the capacity to do, to "perform actions… and alter situations" (Bennett 2004:355; Chen 2012; Latour 2005, 2014; Whitmore 2014). Matter in this way is capable. Matter has the "ability to animate, to act, to produce effects," it has a "force" and a "power" (Bennett 2004:351).

Matter, then, can work with or alongside humans, but it can also contradict and/or exceed human intentions (Chen 2012). In Webb Keane's (2003) words matter can bundle and in Latour's (2005) it can obstruct. But matter in this light is not about bounded things acting on or against each other, it is about the ability to be effective. A new materialist perspective rejects the privileged position of language and culture of traditional materiality that positions matter as fixed, passive, and inert (Appadurai 1986, DeLanda 1997; Deleuze 1988; Deleuze and Guattari 1987; Gell 1988, Hunt 2013; Miller 1987; Tallbear 2017). Instead, matter is seen as fluid, multiple, and emergent in action. A new materialist orientation is less concerned with what something is, than its becoming – the ongoing instances of intra-action, entanglement, and assembly within the "immanent enfolding of matter and meaning" (Coole 2013; Dolphijn and van der Tuin 2012:49).

New Materialism and Meaning

Simply put, a new materialist ontology posits that mattering and meaning are emergent and inseparable. Just as the connections, properties, and boundaries of materials are continuously (re)drawn through the performative intra-activity of mattering, so too are the meanings of those emergent phenomena (Barad 2012). Meaning, from this perspective, is not just representation, it is "mattering created through doing" (Joyce, personal communication 2018).

This understanding of meaning is fundamentally rooted in Peircean semiotics. The understanding of signs proposed by Charles Sanders Peirce exists in marked contrast to traditional Saussurean semiotics in that it rejects the notion of a fully formed and preexisting code structure and dyadic sign-meaning (signifier-signified) relationship in communication (Peirce 1998). Instead, Peirce is concerned with practice – how do actants do things so that they can relate to each other? This process is seen as active and diachronic, with meaning and understanding emerging through action, intra-relation, interpretation, and effects – through the processes of signification (Agbe-Davies 2018). Critically, these processes of signification are not limited to humans, and fields such as biosemiotics engage with Peirce to explore questions surrounding the transmission of information more generally, between organisms and other biotic and abiotic phenomena (Deacon 2012, 2015). These engagements present orientations for considering information sharing and meaning making through actant intra-action in the broadest sense, providing opportunities to explore the ways in which phenomena come to mean different things based on their differential use, entanglement, and assemblage. Meaning-making, then, is a material-discursive process, emergent in time, practice, and intra-action.

For Peirce, the focus is on semiosis, on the way meaning is *made* rather than what the meaning *is* (Peirce 1998; Agbe-Davies 2018). In Peircean semiotics, the emergence of meaning happens through an inextricable triadic relationship between the sign, interpretant, and object, called the sign relation. For Peirce (1998), the sign (representamen) is the aspect that represents something (the representation), the object is the material body that the sign represents, and the interpretant is the feature or quality of mind by which the sign represents the object. The sign determines the interpretant, but the interpretant itself is another sign that exists in a relationship with a sign and object. This is not a static relationship, either, and the interpretant is not a human (in the Saussurean sense). The interpretant is an understanding, an interpretation (Maran 2006). Furthermore, because the sign is inextricably tied to the representamen, the signified object, and the condition produced in the mind, it is thus "the nature of the sign to bind the object and the subject into an inseparable unit of meaning" (Maran 2006:465-466).

This understanding positions meaning as existing in constantly forming but historically sedimented chains of meaning-making. Meaning through intra-relations and interpretation happens through signaling, and Pierce argues that signs have three aspects; iconic, indexical, and symbolic. An iconic signifier is one that physically resembles the object (a picture of the object), an indexical signifier is one that implies or points to the object (dark clouds as a sign of rain), and a symbolic signifier has no resemblance to the object, but its connection is culturally created and historically defined/understood (words) (Kohn 2013; Peirce 2013; Maran 2006). For Peirce, signs can be objects, events, features, and qualities, but their significance emerges only through relationships and processes of interpretation, which are socially and historically contextual.

Donna Haraway's "material-semiotics" also works to make these connections between meaning, objects, and practice. For Haraway (1988:595), meaning and knowledge are active and situated, generated in "bodily production." Haraway (1988:595) argues that "bodies as objects of knowledge are material-semiotic generative nodes. Their boundaries materialize in social interaction. Boundaries are drawn by mapping practices; 'objects' do not pre-exist as such. Objects are boundary projects. But boundaries shift from within; boundaries are very tricky. What boundaries provisionally contain remains generative, productive meanings and bodies." These boundaries, however, can become sedimented, creating lines that are followed (Ingold 2007). For Ahmed (2006) these are "orientations"– the constant impressing and co-creation of interiorities and exteriorities.

For the purposes of this research, this understanding of meaning making is critical because it is consistent with a new materialist understanding of the relationship between meaning, bodies/objects (phenomena), and boundaries as fluid, multiple, emergent through practice and intra-action, and differential intelligible (Agbe-Davies 2018). From this perspective, meaning making "manifests matter as habits," habits that are intimately tied to identity, subjectivity, personhood, and community (Lele 2006:54). This understanding provides a powerful theoretical standpoint for the exploration of social relations and meaning-making in pluralistic settings that puts material culture (objects/phenomena) at the center of analysis, with contextual information allowing us to attempt to trace the complex entanglements that made objects central to social negotiation, community formation, and socio-cultural emergence in the past. A new materialist engagement with Peirce allows us to explore connections between practices, materials, and identity that accounts for the vibrant and agential nature of matter. As Lele (2006:56) notes, "by arguing for the semeiosic composition of people and matter we can develop our understandings of how material objects, past and present, represent socially formed human identities, their social conditions and effects."

Emergence

Critical to both a new materialist ontology and Peircean semiotics is the notion of emergence (Barad 2007; Deacon 2015). Emergence recognizes that any phenomena, be it a ceramic plate, an edge modified shard of glass, or an ethnic identity, are in a constant state of becoming through entangled intra-action. As such, their meaning and social effects are also ever changing and socially contextual. Emergence recognizes that history matters in the shaping of possibilities, but each intra-action is co-constitutive, and thus there is always the potential for creativity, for newness, for a novel emergence of something that is neither one nor the other – a sum greater than its parts. As Barad argues (2003:821) "meaning is not a property of individual words or groups of words but an ongoing performance of the world in its differential intelligibility." Differentiation, then, is not about "othering," or separating, but about boundary-making through (re)configuration, connection, and entanglement (Barad 2012; Descola 2013). Differentiation is about diffraction – "the entangled nature of differences that matter," or the "relational nature of difference" (Barad 2007: 381, 72). New materialism, therefore, gives us the perspectives and vocabulary to attempt to talk about alterity through an examination of archaeological materials without slipping into dualisms (*e.g.*, self/other, human/object, nature/culture), and instead think about the ways in which particular phenomena – object-bodies (human and nonhuman), assemblages, and sites, but also social groups, identities, and subjectivities – emerge through active processes of intra-action and diffraction.

To recognize the co-mingle and intra-active nature of emergence, Anna Tsing (2015:3) presents the notion of "contaminated diversity." In this idea she is recognizing that collaboration is a fundamental aspect of life, but collaboration means "working across difference, which leads to contamination" (Tsing 2015:28). Like other new materialist theorists, Tsing (2015:28) is concerned with emergence, which she discusses as "transformation through encounter." Recognizing the fragility and instability of social categories and boundaries of interiority and exteriority, she argues that we must watch how things (object-bodies), categories, groupings, connections, and collaborations emerge through encounter (Barad's intra-action). Tsing

(2015:29) argues that "we must look for histories that develop through contamination" to explore how a "gathering became a happening." In doing this, she highlights, we must think about the "multiple temporal rhythms and trajectories of the assemblage," and consider assemblages as an emergent and "open-ended entanglement of ways of being" (Tsing 2015:24, 83).

New Materialist Implications for Culture Contact Studies

In an effort to engage with new materialist orientations in the exploration of relations at a pluralistic historical site, it is necessary to situate new materialism within the overlapping (and equally diverse) bodies of post-colonial and frontier/borderlands theories. While the objectives and focus of intellectual projects engaging with post-colonial theories are diverse and multifaceted, they tend to be connected through a shared interest in the variable processes, experiences, relations, and legacies of colonial endeavors and colonial subjects. In the American West, these investigations have resulted in a reconceptualization of the frontier as a borderland. Challenging the traditional Turnerian model of the frontier as a physical space that marched westward across the North American continent, these post-colonial frontier theories have reframed the American West (and frontiers more generally) as overlapping zones of interaction, negotiation, and "remaking" (Naum 2010:101; Turner 1894).

In this sense, frontiers (as borderlands) are "areas between" (Parker 2006), and zones of "cultural interfaces in which cross-cutting and overlapping social units can be defined and recombined" (Lightfoot and Martinez 1995). The frontier/borderland, therefore, is any space that affords encounter, and the subsequent interaction and negotiation of ideas, practices, and materials, leading to various degrees of exchange, interpretation, translation, negotiation, collaboration, and transformation (Parker 2006). Conceptualized in this way, frontiers are both liminal spaces and social situations where culture contact takes place. They are "spaces in process," centers of innovation constantly in a state of becoming at the social and spatial peripheries (Eichner 2017:32). If we shift our understanding of frontiers/borderlands as physical spaces, as these authors suggest, and instead define them as porous and contested "zones of interpenetration," then nineteenth century industrial sites in the American West – comprised of diverse laborers living and working together in close proximity for sustained periods – are best conceptualized as a frontier setting (Parker 2006; Thompson and Lamar 1981:7).

Historically, archaeological engagements with frontier/borderlands theories and/or question of encounter in the American West have worked through frameworks of practice and performance. Routine everyday activities were seen as rooted in particular cultural conventions and worldviews – the *habitus* of a community. In non-pluralistic contexts, the cultural basis for these ways of doing, it is believed, would have been largely unconscious and unrecognized. The "collision, convergence, cooperation, and cohabitation" of life in pluralistic places, however, would have brought one's ideologies, practices, and structuring principles into stark relief as they were contrasted in relation to an "Other" (Hendon 2004; Loren 2001; Naum 2012; Silliman 2010; Sunseri 2015) This encounter, therefore, would have prompted the recognition, renegotiation, and redefinition of social identities and boundaries, the impacts of which would be recognized in changes to the practices of everyday life (Lightfoot and Martinez 1995; Lightfoot et al. 1998; Said 1978; Schneider et al. 2012; Thomas 1991; Voss 2003:64).

Situated within the broader field of culture contact studies, post-colonial and frontier/borderlands theories challenge simplistic models of diffusion, acculturation, and creolization that tend to promote a binary and unidirectional model of culture change (Beaudoin 2013; Deagan 1983, 2003; Fahlander 2007; Gosden 2012; Jordan 2018; Lightfoot 2005; Lightfoot and Martinez 1995; Lightfoot et al. 1998; Phillippi 2018a, 2018b; Rice 1998; Roller 2018; Silliman 2005, 2010; Voss 2005a). Instead, social encounters are seen as complex relations "enmeshed in negotiation" that result in a constant recontextualization, reconstruction, and manipulation of practices and identities (Naum 2010:105; Nassaney 2008). These studies situate pluralistic contexts – as the spaces and experiences of a diverse group of people brought together by broad processes and forces of the modern world – as areas of both struggle and negotiation, but also of transformation and novel creation (Phillippi 2018a). Encounters and interactions in pluralistic contexts are not undertaken by two pure homogenous groups, but are instead enacted and experienced by agents of heterogeneous communities that are themselves internally diverse and a product of particular colonial histories (Adelman and Aron 1999; Naum 2010). These sustained interactions do not result simply in the integration of new lifeways or materials, they result in entirely new re-imagined practices that, because they are situated within new and ever shifting entanglements, result in those practices and materials having similarly novel, fluid, and ambiguous meanings.

Much of this thinking is informed by Homi Bhabha's (2004) notion of hybridity and "Third Space." Third Space is the "ambiguous zones of politically, socially, ideologically and culturally charged" intra-actions (Naum 2010:102). Third Space is not a physical space but a "metaphor for the ambiguous virtual field that emerges when two or more individuals interact," the "contradictory and ambivalent spaces in which social identities and ideologies are questioned and negotiated" (Fahlander 2007:22-23). Bhabha (2004:37) describes Third Space as spaces of "enunciation," by which it seems he means they are spaces of engagement, performance, entanglement, and diffraction. Importantly, Bhabha (2004:55) notes that these are "discursive conditions of enunciation that ensure that the meanings and symbols of culture have no primordial unity or fixity; that even the same signs can be appropriated, translated, rehistoricized, and read anew." These enunciations, or intra-actions (which can take the form of what Bhabha calls mimicry and Butler might call performativity), result in ambiguity and novel reimaginings that necessitate interpretation, negotiation, and transformation. In these situations change is not simply an alteration, a conglomeration, or a blending of ideas or practices, it is the construction of something substantively new – an emergent phenomenon (Bhabha 2004; Fahlander 2007).

While recent scholarship into pluralistic encounters has challenged assumptions of group homogeneity that underlie models of acculturation, most archaeological studies of culture contact and change still focus on colonial contexts that necessarily position encounters as being between two identifiable (albeit internally diverse) culture groups (*e.g.,* European colonials/Native Americans, enslaved African peoples/white Euro-Americans). So, while culture change is seen as being multi-directional and the opportunity for the formation of hybrid practices and identities are allowed for, these approaches are still rooted in positivist dichotomies of colonizer/colonized, native/immigrant, and self/other which tend to break down under the scale and complexities of the sustained global migrations that were experienced in California beginning in the nineteenth century (Fahlander 2007; Loren 2000; Palmié 2006; Upton 1996).

Post-colonial and frontier/borderlands theories are valuable ways of conceptualizing pluralistic communities and can be compatible with new materialist thought in their focus on enunciation (performativity), discursivity, and emergence (*i.e.*, hybridity, reconfiguration, or reimagination). Too often, however, archaeological engagements with post-colonial and frontier/borderlands theories focus on the production of a monolithic identity, an ethnogenesis that results in something that is new, but is just as bounded, fixed, and "apart" from the processes of negotiation in which it emerged (Beaudoin 2013; Voss 2008a). This is a fundamentally flawed conclusion, as it suggests a final, real, objective, and positivist result to social encounter, contestation, and negotiation, rather than a momentary emergence of on-going and dynamic assemblage through intra-action.

The people coming to California during the mid- to late-nineteenth century did not arrive in California from a socially homogenous context devoid of prior contact, encounters, and transformation. Each immigrant group had its own long and complex history of engagements and entanglements with other communities (members of which they often encountered anew in California), which framed their subjectivities, identities, and subsequent relations. In these novel (but entangled) encounters, axes of difference and patterns of diffraction upon which traditional understandings of self and other were traditionally constructed were subsequently challenged, necessarily reoriented, and reconfigured in relation to the complex and shifting social landscape of a foreign and emergent land.

Daily interactions in the California frontier were between many diasporic communities, each one itself being heterogeneous and having its own complex history, structures, and practices through which those daily cultural encounters were framed, interpreted, translated, and changed. The particularities of this social-historical context necessitate a new understanding of the relationship between pluralism, encounter, material, meaning, and change that goes beyond traditional post-colonial and frontier/borderlands approaches that only attempt to trace identifiable material changes to discrete culture groups as a directional product or response to encounters of difference. People came to places like the Samuel Adams Lime Kilns already "contaminated" through histories of encounter (Tsing 2015:37). Their subsequent engagements and entanglements, then, as both individuals and communities, were not just responses, alterations, or additions, they were continued reconfigurations, an "immanent enfolding," and an ongoing process of becoming through intra-action (Dolphijn and van der Tuin 2012:49).

New materialism, through its orientations, vocabulary, and explicit considerations of vibrant matter and agential realism, provides powerful new ways for archaeologists to think about these pluralistic encounters that move beyond the dialectical limitations of post-colonial and frontier/borderlands theories. Post-colonial theory emerged primarily out of literature, and as a result often privileges language and focuses on representation. Additionally, the concept of hybridity and its use in archaeology has been criticized for its presumption of the existence of pure homogeneous "donor identities," and for its framing of colonial subjects as unable to change without threatening their political identity (Beaudoin 2013:47; Palmié 2006). Working from a new materialist notion of emergence to explore the pluralistic encounters and the processes of transformation, however, can begin to address these concerns.

As discussed above, new materialism tenets are concerned with matter, emergence, and material-discursive practices. So, while post-colonial thought is a valuable paradigm for conceptualizing the broad social contexts and nature of encounters in a pluralistic arrangement, new materialism provides interesting new ways for archaeologists to think about the ways in which social negotiations and intra-actions led to novel emergences in material ways of doing and being. An engagement with new materialist thought provides new ways of thinking about encounters by framing all material bodies as active and agentive, with meaning, identity, and subjectivity being fluid, multiple, and contingent – and change being co-constituted and emerging through intra-action. This provides a powerful position for the archaeological re-consideration of the nature and processes of how material-discursive phenomena (in this case communities, object-bodies, and identities) come to be, come to be understood, and come to understand themselves in moments of social encounter and entanglement.

From a new materialist perspective, communities, individuals, and material bodies "are not merely differentially situated in the world; 'each of us' is part of the intra-active ongoing articulation of the world in its differential mattering" (Barad 2007:381). Differentiation, then, is not about separating or creating divisions, it is about boundary-making through connection and entanglement (Barad 2012). Differentiation through encounter is about diffraction – material-discursive practices that mark the "limits of the determinacy and permanency of boundaries" (Barad 2007:381). In contrast to notions of "reflection" which suggest mirroring, mimicry, and sameness, "diffraction" is concerned with the emergence of "patterns of difference" (Barad 2007:71; Haraway 1997). Diffraction is how "differentially intelligible" material performances come to be (emerge) within the world (Barad 2007: 379). Following Barad's (2007) definition, "diffraction is a matter of differential entanglements. Diffraction is not merely about differences, and certainly not differences in any absolute sense, but about the entangled nature of differences that matter… Diffraction is a material practice for making a difference, for topologically reconfiguring connections" (Barad 2007:381). The ongoing reconfiguration of these entanglements, connections, and boundaries "are products of iterative causal intra-actions – material-discursive practices – through which the agential cut between 'self' and 'other' is differentially enacted" (Barad 2007:376). By extension, diffraction as a methodology is a way to explore how the meanings of practice emerge in particular contexts (Barad 2012).

With this new materialist positioning in mind, I believe that traditional post-colonial frameworks are inadequate approaches to studying culture change and social relations at complex pluralistic sites such as the Samuel Adams Lime Kilns. They are inadequate because, historically, archaeological studies of culture change have been concerned with the mutual impacts of group interaction. In almost all cases, however, this presupposes the existence of bounded, fixed, and definable interacting entities. In this way, culture change is discussed as multi-directional, but it is directional, nonetheless. I advocate instead for an exploration of the emergence of differential intelligibility through intra-action and diffraction – through the active social-material reconfiguring of entanglements and the building of novel connections in ways that social-material boundaries and properties are (continuously) re-drawn and re-understood in creative, generative, and productive ways (Figure 2.1). In this way, conceptions of "self" and "other" are not seen as bounded, pre-fixed, and conscribed entities or positions existing in a duality. Rather, the material-discursive practices of encounter encourage novel connections and entanglements, resulting in the diffractive assemblage of differentiation – the emergence of new ways of doing, being, and understanding oneself in a dynamic social-material world.

A new materialist orientation in archaeology suggests that while tracing changes to traditional practices may be a necessary starting point, we also need to embrace spaces, material culture, and practices that may have promoted social entanglements and created ambiguity, multiplicity, and fluidity of meanings and provided opportunities for translation, novel creation, and emergent change in historic-period California. This change is not a linear addition or subtraction model of change, but a fundamental reshuffling and reconfiguration of entanglements that reshaped understandings and connections between co-constitutive and emergent social categories, communities, and identities. It is within the interstices of practice and meaning in pluralistic daily relations, within the very ambiguity and confusion that those experiences foster, that conceptions of culture, identity, and community actively emerge. Instead of looking for material outcomes of change, we instead should be looking for the material traces of the active processes of boundary-making, of negotiation and becoming, or, in the language of Barad (2007), of the material-discursive practices of emergence and diffraction. By framing culture contact as intra-action and change as emergence (rather than hybridity or ethnogenesis) we can acknowledge that encounters of difference do not simply lead to newness through aggregation or addition, but foster the connection, entanglement, and co-creation of novel materialities and assemblages that are themselves active in the reconfiguration and reimagining of the social-material world.

Investigations of cultural emergence such as this do not limit themselves to considerations of how one group or another changed, but instead embrace the ambiguity of material culture and attempt to trace the potential entanglements that would have led to novel conceptions about the world and one's place within it. The ambiguity of material in pluralistic contexts would have provided opportunities for agentive action, contestation, and negotiation in hierarchies of power that may have been designed to suppress these very opportunities (Silliman 2010). So, while ambiguity creates challenges for archaeologists hoping to classify material culture into classes and types, it also forces us to move beyond pre-determined meaning-object relations and the prioritization of things and space. Instead, it forces us to consider "the interpretation of uses, lived experiences, and social relations" through the exploration of the "the practices and social relations that take form in and challenge (pluralistic) spatialities and materialities" (Silliman 2010:49; van Dommelen 2002). Archaeological attention to these spaces, materials, relations, and processes, therefore, returns "their experiences to a rightful place in multi-vocal historical narratives" (Silliman 2010:50). Approached in these ways, pluralistic sites become important spaces for the examination of the particular ways in which people, relations, and materials become entangled, and the ways in which these novel entanglements reconfigure group boundaries, challenge the definition of social categories, reshape identities, and work to build communities rooted in shared practice (Phillippi 2018a:10).

In this way, things are not either/or, the material culture recovered are not "pure" entities of "Chinese-ness" or "working class-ness" or "male-ness" or even "hybrid-ness," they are all emergent assemblages – materializations of long, complicated, and overlapping histories of intra-action and material-discursive practices. This work, therefore, does not ask questions such as "how did Chinese laborers change when working with Portuguese laborers," but instead explores what it meant to be "Chinese" at a largely Irish and Portuguese industrial work site, how a material body understood as "Chinese" emerged and transformed through intra-actions in nineteenth century California, and what the implications were of this boundary definition for the lived experiences of these individuals (Beaudoin 2013; Sunseri 2015)? As a result, each artifact and each assemblage of artifacts has multiple stories to tell. This dissertation is an attempt to tell some of these potential stories.

Communities of Practice

This research is fundamentally concerned with how a diverse population of workers actively built connections and relations that continually (re)constructed notions of group affiliation and identity. Framed in this way, group ties are seen as emerging and "congealing"[1] through the material-discursive practices of everyday life – differentiating through diffraction. As such, I am focused on the ways in which community relations emerged through the co-construction and co-enactment of novel (but shared) practices. In other words, I am concerned with shifting labor connections and relations as emergent communities of practice.

Unlike many traditional archaeological studies, the lime kiln community was not defined by an overarching suite of shared cultural practices, an understanding of ethnicity, or even a shared language. Instead, the workforce was connected loosely as wage workers, selling their labor individually in the collaborative production of an industrial commodity. It was the practices of producing lime, which included non-work social and household activities, that defined this community as a social unit in the broadest sense. Within this overarching community, however, there would have been other shifting and overlapping social groups rooted in commonalities of ethnicity, language, work tasks, living arrangements, marriage status, class, and even religion – communities whose affiliations and boundaries were fluid but defined by shared practices and their situated meanings (Dietler and Herbich 1998; Dobres and Hoffman 1994; Hegmon 1998; Ingold 2001; Lave 1991; Lechtman 1977; Minar and Crown 2001; Sassaman and Rudolphi 2001; Wallaert 2013). This understanding of group relations moves away from static and bounded notions of group identity and affiliation to one that explore communities as fluid, multiple, and contextualized sets of intra-relations (Hegmon 1998; Knapp 2003). From a new materialist perspective, (overlapping and mutually constituting) communities emerged through entanglements, as material-discursive intra-actions reconfigured differences that mattered. This is not to say that one community replaced another, just that new ones were assembled as new connections took shape, novel practices were created, and boundaries of differentiation were redrawn. These emergent lime labor communities would have existed contemporaneously, but intra-acted in new ways with existing communities of practice at the lime kilns site, those traditionally defined as ethnic, class, and occupational groups. This work is an attempt to trace the social material relations through which these novel labor communities emerged, their articulation with other contemporaneous communities of practice, and their implications for later moments of unionization and collective action.

Communities of practice also serve as learning networks that serve to transmit the skills and social relations entwined in particular way of doing (Minar 2001). Communities of practice, in

[1] I am indebted to Rosemary Joyce for the notion and vocabulary of "congealment" as it relates to the materiality of entangled assemblages.

creating the social context for the (re)production of a suite of learned techniques and social relations, serve to produce both material traditions and embodied experiences through which social actors form an aspect of their identity (Russell 2001). Likewise, culture change is also understood as stemming from communities of practice and the learning processes (Miller 2007; Wendrich 2013). Regardless of the model of learning employed, the necessary experimentation with newly encountered ways of doing allows for the possibility of innovation (Kenoyer et al. 1991; Sassaman and Rudolphi 2001). New practices are seen as emerging from shifts or alterations to some aspect of the web of social relations in which a particular practice or technology is entangled (Minar 2001; Russell 2001). Consistent with new materialist perspectives and Peircean semiotics, it is through the continual (re)enactment of material-discursive practices that social meaning(s) emerge and members of a community learn to interpret the social world and their place within it (McGhee 1977; Nowell 2015; Russell 2001). In pluralistic communities like the Samuel Adams Lime Kilns, explorations of the ways in which some practices and the corresponding materials persisted while others changed and still others were created anew, has the potential to shed light on the processes by which fluid, overlapping, competing, and intra-dependent communities emerged in nineteenth century California.

Ethnicity, Class, and Gender in the Context of Emergence

Archaeologists concerned with exploring ethnicity, class, and gender in the past have begun to move beyond searching for and identifying material markers for group affiliation – artifacts that exists in a fixed one-to-one relationship between material and identity. Instead, these social identity categories are understood as being fluid and ambiguous, being subjectively and self-reflexively defined through practice in relation to perceived and constructed differences (Alberti 2006; Barth 1969; Bledstein 1976; Butler 1990; Jones 1997, 1999; Shennan 1994; Wurst 1999). The focus of analysis, then, shifts from the category itself to the processes in which that category is defined and the ways in which identities are constructed in relation to that category, in particular spaces and time. Critically, as intersectionality studies have highlighted, fluid categories such as ethnicity, class, and gender, are not simply shaped as isolated features of one's identity, but are intra-related and mutually constitutive (Crenshaw 1989).

Ethnicity

Once seen as the fixed and bounded features that defined one distinct culture group in relation to another, ethnicity is now understood as a "dynamic, contested and multilayered phenomenon" that involves the drawing of group boundaries and identities based on "real or assumed shared cultural and/or common descent" (Barth 1969; Jones 1999:221, 224; Shennan 1994). Ethnic identity, then, is "that aspect of a person's self-conceptualization which results from identification with a broader group in opposition to others on the basis of perceived cultural differentiation" (Jones 1997:xiii). Scholars concerned with the processes in which ethnicity and ethnic identity are constructed – ethnic identification or the "praxis of ethnicity" – have recognized that the defining features take shape in relational ways, through "social interaction between peoples of differing cultural traditions" (Barth 1969; Jones 1999:228, 226; Roosens 1989).

Situating discussions of ethnicity and ethnic identity in terms of *inter*-action, however, actually works to reinforce the ideas of boundedness that these studies are purporting to avoid. In discussions of ethnic identity as inter-relational there is a gap – a space between encounters of difference that situates redefinition and change in the context of otherness. As such, this approach presents the re-definition of ethnicity as the reframing of perception – an internal (or emic) response or result from within the boundaries of one's ethnic group. Reorienting discussions of ethnicity around understandings of *intra*-action and emergence, however, highlights the co-constitution of ethnicities and draws attention to the ways in which ethnic identities are always in a process of "immanent enfolding" – taking shape through re-entanglement and diffraction rather than othering and reflection (Dolphijn and van der Tuin 2012:49). Encounters of difference, therefore, do not simply result in mutual changes in perceptions or representations of ethnicities. Encounters entangle material configurations of difference in ways that the very relations and connections that underpin particular conceptions of ethnicity are re-imagined and transformed. Ethnicity itself, as a social-material identity category, must be seen as emergent in material-discursive practices and intra-action.

Class

Entangled in the social, technological, and economic transformations of nineteenth century industrial capitalism was the emergence of wage workers as a distinct labor group (Laurie 1989; Orser 1996; Robbins 1994; Ware 1990; Wolf 1982). While the social impacts associated with the changes of industrial capitalism occurred at different rates and took different forms across space and time, industrialization and the growth of wage labor was associated with widespread shifts from craft-based and other independent forms of production to ones in which workers did not, themselves, own the means of production, and instead sold their labor for wages in an increasingly global market (Marx 1978; Wolf 1982). During early periods of industrialization, wage work and an open economy were seen by some as offering an opportunity for upward mobility and relative stability through diligent work – an escape from the perceived limits and uncertainty of the yeoman class.

As mechanization and labor consolidation worked its way into various industries, laborers become more and more alienated from their work, segmentation increased, efficiencies and economies of scale began to dominate approaches to labor management, and workers became more entangled in the machinery of industrialization (Ware 1990). By the mid-nineteenth century, wage-work had transformed labor into a component of mechanized industrial production. By the mid- to late-nineteenth century, wage-work was seen by many as a mechanism of disenfranchisement and de-humanization – stripping the manual laborer of their independence and autonomy, creating greater uncertainty through inter-dependencies in production, and limiting social and economic advancements through systematic exploitation (Laurie 1989; Ware 1990). As the mechanisms of industrialization promoted the growth of wage labor and the shrinking of craft labor, shared experiences and responses across labor groups fostered the creation of various socio-economic classes and corresponding class ideologies (Bledstein 1976; Laurie 1989; McGuire and Reckner 2002; Saitta 2004; Ware 1990; Wurst 2006).

Like archaeologists exploring ethnicity, those investigating class have moved away from attempting to identify material markers, which reify class categories as bounded, fixed, and objective hierarchical taxa, and have instead begun to explore class as relational, with various socio-economic identities being continuously framed and shaped though intra-actions with one another in particular social and historical contexts (McGuire 1999; McGuire and Paytner 1991; Saitta 1994, 2004; Wurst 1999, 2006; Wurst and Fitts 1999). A relational approach has allowed for the investigation of the ways in which people actively created, navigated, and negotiated classed relations through material-discursive practices, and performed class identities and ideologies that may or may not have aligned with their socio-economic standing. Framing class as emergent through intra-action works to highlight the diverse ways in which class is entangled with overlapping relations of labor, ethnicity/race, and gender in emergent boundary-making processes. These approaches also work to illustrate that the materiality of class could be, and often was, manipulated and negotiated towards strategic ends – blurring the boundaries between classes and working to reconfigure their defining relations and social-material entanglements, providing opportunities for the emergence of novel or liminal social positions and identities.

Gender

Like class and ethnicity, gender is also argued to be a culturally constructed performative and material-discursive configuration of practice with multiple, fluid, and emergent meanings and subject positions becoming sedimented in structured practice (Alberti 2006; Barad 2007; Connell 1994:44; Marshall and Alberti 2014). This understanding of gender positions it not as a static category, but as a subjectivity, a way of doing that is performative and citational – a way of mattering in the world that has social implications (Barad 2007; Butler 1990, 1993). Due to the demographic nature of the Samuel Adams Lime Kiln operation, of particular interest here are the material discursive practices of masculinity.

The American West has long been a test site for archaeologists exploring gendered materialities. The particularities of settlement, life, and labor in the nineteenth century American West led to the emergence of new spaces and practices that forced the routine contestation, negotiation, and transformation of traditional lifeways and notions of appropriate gender (as well as class and ethnic) behaviors (Hardesty 1994, 1998; Kimmel 1996; Robbins 1994; Wang 2004; Wilkie 2010; Williams 2008). In many ways, this confrontation and change was fueled by a dramatic gender disparity throughout the American West. In the early years of the California Gold Rush, estimates place men as outnumbering women 12.2 to 1, shifting to 2.4 to 1 by 1860 (Hurtado 1999). These realities necessitated transgressions in gender ideologies surrounding everyday activities which worked to challenge hegemonic masculine ideologies and resulted in the emergence of alternative and/or contradicting forms of masculine identity and practice that reconfigured the complex entanglements between gender, class, ethnicity, and labor (Alberti 2006; Wang 2004; Wilkie 2010; Williams 2008; Wright 1999). Archaeological studies of gender in the American West, therefore, are well positioned to explore the ways in which materials worked to (re)create and negotiate multiple and changing definitions of masculinity.

A number of archaeological studies have focused on gender relations and negotiations at all or predominately male sites (Carnes 1990; Dixon 2005; Kryder-Reid 1994; Wilkie 2010; Williams 2008). As Kryder-Reid (1994) correctly points out in her study of a nineteenth century men's religious community, a single-sex site is not necessarily a single-gender site. Working from the genteel Victorian hegemonic gender ideology of separate spheres, which associated private space and domestic work with women and femininity and public work space with men and masculinity, Kryder-Reid (1994:111) illustrates how labor roles and hierarchies within a religious community worked to associate lay brothers with feminine qualities that stood in contrast to the ordained priest's "manly courage." Similarly, Williams (2008) argues for a consideration of multiple coexisting but conflicting hegemonic masculinities among nineteenth century Chinese diaspora communities. In an analysis of materials from the San Jose Chinatown, Williams (2008) shows how material culture and routine daily practices could be seen as feminine or masculine, depending on the subject position of the viewer. From the white Victorian perspective, the dress, hair, labor, and practices of Chinese men identified them as feminized and emasculated. Those same characteristics, however, when viewed by other Chinese men, were seen as an embodiment of Chinese hegemonic masculinity framed by its own context of Chinese history, literature, class, and politics (Williams 2008). Similarly, Wilkie's (2010) archaeological investigation of a late-nineteenth and early-twentieth century fraternity house highlights how even within a group of largely elite white men, hierarchy, labor, and fraternity roles created a gender system among the brothers. Interestingly, Wilkie (2010) argues that by associating the domesticity and subservience of the younger brothers with femininity, they were re-inscribing a hegemonic Victorian gender ideology. Through these homosocial gendered relations young men learned how to perform the newly emerging and always shifting "incarnations of maleness," and in doing so defined and sedimented both hegemonic and alternative masculinities, as well as femininity (Wilkie 2010:257). These studies illustrate that gender ideologies and categories are not fixed, but emerge through socially and historically situated intra-actions.

Gentility and the Intra-Relations of Ethnicity, Class, Gender, and Labor

Ethnicity, class, and gender were entangled with labor in the nineteenth century through conceptions of gentility. Gentility was the hegemonic ideology or the "preeminent model of propriety" of the Victorian period (Praetzellis and Praetzellis 2001: 645). Gentility, as a worldview, ideology, and material disposition, emerged as the growing post-bellum middle-class developed distinctive world views and consumption patterns that distinguished it from both the working- and upper-classes (Coontz 1988; Fitts 1999).

Conceptions of gentility during the Victorian Period were entangled with notions of progress, Protestant Christian values, and advances in industrial production, science, and engineering (Fitts 1999; Praetzellis and Praetzellis 2001). Gentility emerged during this period as a "suite of… values, behaviors, and material goods" centered around conceptions of order and specialization thought to promote moral rectitude and societal betterment (Howe 1976; Praetzellis and Praetzellis 2001:646). Fueled by a belief that the environment impacted one's character and that surrounding oneself with "morally uplifting influences" would lead to appropriate behavior and social progress, material culture and the built environment became important factors in creating genteel people and a moral society (Praetzellis and Praetzellis 2001: 646). An adherence to and promotion of these values in actions and material performance allowed one to signal their virtuous position, as "genteel behavior was a pre-requisite for becoming a respected member of the middle-class and for success in the white-collar world" (Fitts 1999:39).

Participation in this genteel lifestyle was signaled through pointed consumption of a "suite of artifacts that became de rigueur," and the participation in other material-discursive practices such as living in a single-family home, maintaining high standards of hygiene, and buying costly goods that were used in semi-public ritual consumption practices (*e.g.,* tea ceremonies) (McCarthy 2001; Praetzellis and Praetzellis 2001:646). Often, the material markers of these activities are interpreted archaeologically as evidence that a household actually occupied a socio-economic position within the middle- or upper-class. This reading of material culture, however, is static and categorical. People living in the past would have understood the ways in which these materials were perceived and would have actively manipulated class-based perceptions of themselves through strategic social-material practices and performances (McCarthy 2001; Praetzellis and Praetzellis 2001; Shackel 1993; Wilkie 2000).

For example, Adrian and Mary Praetzellis (2001:647) discuss how in the context of the American West, the materials of gentility were not used only by white upper- and middle-class families, but that these material signs were also used by immigrant and working-class families as a type of cultural capital "not merely to imitate the Victorian upper crust in some nervous attempt at social advancement" but to "pursue their own strategies." Examples include a prominent Chinese merchant in Sacramento who blended Chinese food and aesthetics with familiar Victorian material symbols to create an image of himself as respectable genteel man and to increase business opportunities and advantages for himself and other Chinese businesses in California. Another example includes African American Pullman porters who purchased genteel goods, economically beyond their occupational station. These objects worked to present the porters as gentlemen and served as a strategy to combat active racism that sought to exclude African Americans, both social and spatially, from the world of Victorian gentility (Praetzellis and Praetzellis 2001). What these examples illustrate is that material traces of genteel activities are not one-to-one markers of status or class, they are the contextualized remains of material-discursive practices, differential tactics employed by diverse communities towards diverse ends.

In summary, I argue that the social and historical particularities of labor and structures of power at the Samuel Adams Lime Kilns afforded novel intra-actions that worked to reconfigured ethnic, class, and gender categories and identities. I have attempted to build on recent scholarship that understands these identity categories as fluid and relational by framing their contextual redefinition in terms of entanglement and emergence. This approach recognizes that material-discursive practices don't just change perceptions or representations, they reconfigure material intra-relations in ways that the very connections underpinning categorizations of ethnicity, class, and gender are reimagined and redefined. A new materialist orientation, such as this, allows for archeological opportunities to explore ethnicity, class, gender, and labor at pluralistic sites as intra-acting, co-constituting, and emerging material-discursive practices through which novel connections, community identities, and group affiliations took shape.

Power, Pluralism, and Emergence

The history of continued demographic change and social reconfiguration in nineteenth century California meant that the threads connecting the relationships between ethnicity, class, gender, and labor were constantly being rewoven – changing the social fabric of the site, reshuffling the ways in which these phenomena shaped each other, and leading to the emergences of novel practices, meanings, and identities. This understanding of change is rooted fundamentally in new materialist notions of agential realism – that both humans and non-humans have the capacity to act meaningfully in the world. Agency does not mean, however, that one has ultimate free will and an unbridled ability to choose. The intra-actions and reconfigurations that took place at the Samuel Adams kilns were also framed by shifting structures of power.

Power, as a concept, is ambiguous and has been defined by different scholars in a multitude of ways (Comaroff and Comaroff 1992 ; Cowie 2011; Foucault 1979; Gramsci 1971; Marx 1978; McGuire and Paynter 1991; Weber 1946). For Marx, power was a resource, something to be possessed, concentrated, and mobilized in the materials of everyday life. This mode of conceptualizing power has framed much of the thinking around labor, industry, and power relations in historical archaeology (Cowie 2011; Hardesty 1998, 2010; Leone 1995; McGuire and Reckner 2002; Orser 1996; Saitta 2004; Shackel 2000a, 2009). This Marxist approach is limiting, however, in that it perpetuates a Hegelian-like dialectic that is at odds with a new materialist framing of material bodies as discursive, emergent, and active (van der Tuin 2011). Foucault's conception of power, on the other hand, is a critique of Marx and his historical materialism. For Foucault, power is "subject-less," it is relational, manifested everywhere at all times in the social enactment of daily life (Foucault 1979; Gaventa 2003; Smart 2002). In this light, power is not some "thing" one yields, "subjects are discursively constituted through power" (Gaventa 2003).

But power is also constituted discursively through subjects. For theorists like Latour (2005), power comes through action, whereby connections and networks are mobilized to work on one's behalf. From this perspective, "the amount of power exercised is not related to how much someone 'has' but to the number of actors involved in its composition" (Murdoch and Marsden 1995:372). Likewise, agency is not something that is held, "agency is enactment, a matter of possibilities for reconfiguring… Agency is about response-ability, about the possibilities of mutual response, which is not to deny, but to attend to power imbalances" (Barad 2012: 54-55). Agency, therefore, is a manifestation of power. Material bodies (human and non-human) are not totally free to act as they will, but the ability and capacity of bodies to act, whether it reproduces structures of power or challenges them (however subtly), creates a space for the exercising of power in all actions and intra-action. Power, therefore, (like conceptions of ethnicity, class, gender, and labor) emerges through material-discursive relations and intra-actions, sedimenting in historically contingent ways but existing constantly in a state of negotiation and enactment.

This multifaceted, ambiguous, and emergent understanding of power means that it can be enacted in various ways and along multiple dimensions. Instead of attempting to identify archaeologically who has power and what they did with it, archaeologists have begun to explore the diverse ways in which power emerges and is negotiated through particular relations. In industrial labor contexts this has been best articulated by Sarah Cowie (2011) in her conception of pluralistic power. The concept of pluralistic power recognizes that power can be manifested and experienced in a multitude of ways, "such as domination, resistance, hegemony, heterarchy, authority, intersectional identities, collaboration, collusion, and creative action" (Cowie 2011:7). The traces of these various forms of power and its negotiation also take multiple formsa and occur at multiple scales, from settlement organization and architecture, to company documents and workers' journals, to bodily experience and material culture. Critically, a pluralistic understanding of power relations and experiences provides opportunities for power to be examined as "both oppressive and productive, depending on the context" (Cowie 2011:8). In an industrial company town setting like the Samuel Adams Lime Kilns, this understanding of power is fundamental because it provides an opportunity to examine the ways in which laborers, even when working in oppressive situations and in seemingly rigid company power hierarchies and occupational structures, were able to agentively negotiate their positions and mobilize their own individual or collective power in meaningful ways.

Moving Beyond Resistance/Compliance Dichotomies

Fundamental to the notion of pluralistic power is a critique of overly simplistic resistance/compliance models of power relations and negotiations. These traditional models, rooted in dualisms and dichotomies, see worker agency and power situated only in active and direct resistance to authority and/or hegemonic power structures (Allen 2010; Goddard 2002; Hardesty 1998; McGuire and Reckner 2002; Shackel 2000a; Silliman 2001b). Often, these simplistic models are rooted in overly rigid readings of theories of practice that conceptualize daily agentive action as either reproducing structures or directly challenging them (Bourdieu 1977; Giddens 1993; Silliman 2001a). In this approach there is a strict duality of worker action – either they were actively working for those in power or against them. This approach has the consequence of disregarding or de-valuing other modes of action that could be seen as active and strategic negotiations of power relations that operate below, outside, or beyond overt forms of resistance (de Certeau 1984).

Actions, however, are not always or only entirely reproductive or resistive. Practices that work contrary to authoritative power may be indirect, transgressive, subversive, and/or subtle negotiations of power relations that work within and between hegemonic structures of power, rather than outright and directly against them (Casella 2001; Cowie 2011; de Certeau 1984; Silliman 2001b). These diverse tactics may be, and often are, employed differently based on the varied subject position of the actant, but they often take shape in the "practical politics" of everyday life (Casella 2001; de Certeau 1984; Metheny 2007; Scott 1990; Silliman 2001b:194). For these scholars, resistance need not to be overt, outright, revolutionary, or usurping, it can simply be the act of residing in a particular way within the strictures of controlled, oppressive, and/or hierarchical social contexts.

In the context of control and exploitation, as is the case at an industrial company town, daily agentive action, and the act of carving out a life and simply "getting by" is a politically charged negotiation of power (Lightfoot et al. 1998; Silliman 2001a:195). This understanding allows us to explore the ways in which different workers may have harnessed power (in their limited ways) and made tactical choices that benefited themselves while also necessarily working within oppressive power structures inherent in industrial systems of wage labor (Casella 2001; Cowie 2011; Gaventa 1982; Silliman 2001a). For example, Beaudry and Mrozowski (2001) argue that building a working-class culture amongst an otherwise diverse community of laborers would not have been active resistance to company domination, but it worked to reconfigure power relations in ways that that workers' activities and practices came to mean and do new things, often with more social weight. From this more nuanced and inclusive understanding of agency and practice in relation to power, we can begin to examine recovered materials as traces of material-discursive practices that emerged as diverse and multivalent tactics of power negotiation (Metheny 2007; Saitta 2004; Silliman 2001, 2006; Wurst 2006).

Similarly, archaeological work that has explored labor in colonial and plantation agricultural systems has effectively illustrated how the line between resistance, persistence, compliance, and survival can be blurry and situational. These parallel studies are relevant comparisons because the organization and layout of nineteenth century industrial company towns (as self-sufficient and paternalistic productive organizations) emerged out of British agricultural models and their later manifestations as plantations in the American South (Garner 1992; Mosher 2004; Singleton 1985; Wilkie 2000). As an example, in the context of Indigenous labor on Mexican-period California ranchos, Silliman (2001b, 2010) argues that overt resistance was not a reasonable strategy. Instead, he illustrates how daily practices in these systems of labor worked as "practical politics," whereby social positions and identities were subtly negotiated from within hierarchies of control and exploitation (Silliman 2001a:194). In the examination of a postbellum Louisiana plantation, Wilkie (2000) draws attention to the ways that freed African Americans created new communities and identities through the redefinition and reinterpretation of traditional African practice and aesthetics. These re-imaginings, though they were constructed agentively and worked to mobilize power for a historically disenfranchised community, were created within and framed by histories and relations of racism and labor exploitation.

These two examples illustrate that the mobilization of power and the negotiation of systems of oppression by a historically subaltern group does not always take shape in the form of antagonistic or overt resistance or rebellion. Often, power relations are negotiated from *within* contexts of control and exploitation, through creative solutions that allow people to get by, and through the mundane practices of everyday life. The shared focus that ties together these discussions of life within systems of exploitation is a consideration of agency. Rather than defining practices rigidly as either resistance or compliance, we need to explore more broadly the subtle ways in which spaces for agency were created and agentive action became mobilized in emergent communities.

Theoretical Orientations in Summary

In essence, this work can be considered a social or political ecology in that it is concerned with examining the ways in which diverse communities were assembled at a particular place and time, not as pre-existing entities, but through processes of entanglement, connection, collaboration, and mutual becoming (Bennett 2004). This theoretical orientation allows for an exploration of the ways in which social relations, structures, identities, subjectivities, and materialities emerged as entangled "phenomena that are iteratively (re)produced through ongoing material-discursive intra-actions" (Barad 2001:98). In this way, practices are understood as material-discursive (re)configurations "through which local determinations of boundaries, properties, and meanings are differentially enacted" (Orlikowski and Scott 2015). Encounters, negotiations, and intra-actions at pluralistic sites, therefore, re-oriented possibilities – they transformed "the very possibilities for change and the nature of change" (Barad 2007:391). This dissertation is an attempt to identify these possibilities and their changing nature at a nineteenth century industrial production site – to trace the active assembling of social-material relations as the emergent formation of novel communities of practice.

In a way, my theoretical approach in this dissertation is itself emergent – a fluid and boundless orientation and configuration shaped through the continued intra-action of a diverse set of ideas. I do not pretend to be after or have any illusions that I will be able to uncover the *one* definitive understanding of what took place at this small nineteenth century company town in the Santa Cruz foothills. Instead, what I am after are material stories of "indeterminate encounter" – the potential for social-material diffraction, entanglement, and emergence in the everyday practices and intra-actions of a diverse community (Tsing 2015:37). With this in mind, I will look to contextualized artifacts as entangled assemblages and attempt to trace the connections, unravel the knots, and "tell a rush of stories" that I hope will shed light on the lives of these early industrial workers, examine their "contaminated diversity," explore their emergent community relations, and contribute to archaeological studies of people in contact (Tsing 2015:37).

CHAPTER 3. HISTORICAL BACKGROUND

Environmental Background

The Samuel Adams Lime Kiln complex (CA-SCR-339H) is located on what is today Wilder Ranch State Park in Santa Cruz County on the Central Coast of California. The kiln complex covers an area of roughly 28-acres, acquired by the California Department of Parks and Recreation in 1997 as part of the larger 2,300-acre Gray Whale Ranch property acquisition (Wheeler 1998). Located roughly two miles inland from the Pacific Coast, the kiln complex is situated in a southeast trending bowl formed by rolling hills divided by various seasonal stream drainages. The eastern portion of the site is composed of a large meadow dotted with stands of live oak and coastal shrub. The kilns are located along a drainage in the western portion of the site that is covered by redwood, tan oaks, Douglas fir, a few dispersed willows, and a heavy understory of poison oak. The topography of the site drops at a moderately steep degree under dense redwood forest cover to the east and south towards Cave Gulch and Wilder Creek.

Geologically, the lime complex is located on the Salinian block, an elongated granite terrane situated between the San Andreas Fault and the Sur-Nacimiento Fault. The formation differs from adjacent formations by its inclusion of dolomite, carbonate rock masses, and high-grade limestone (Davis 1966; Hart 1978; Logan 1947; Stanley 1982; Wheeler 1998). Chemically the granite straddles the divide between calcic and calc-alkalic with a Peacock index (an alkali-lime classification system) of roughly 61 (Ross 1983).

Current uses of the site include a host of recreational activities, most frequently hiking, mountain biking, and horseback riding. The lime complex is located at the intersection of two fairly high-traffic trails – Engelsman Loop and Long Meadow Trail. An unnamed and unofficial trail follows the course of the historic Adams Creek Road directly in front of the kilns towards Cave Gulch. This path is heavily washed out in areas but remains popular with mountain bikers and serves as an access trail to the University of Santa Cruz campus (Kindon 2017).

History and Processes of Lime Production

The production of quicklime for building material and construction purposes dates back to at least the Roman period, but archaeological evidence has suggested that it may have been produced as early as 12,000 B.C. in the Near East during the Natufian Period (Boynton 1980, Dancaster 1915, Jameson 1895; Kindon 2017; Wheeler 1998). Since its early development, lime mortar and plaster became a fundamental building material, spreading and developing independently across the globe (Kindon 2017). In nineteenth century America, the primary uses for lime were in building construction and as an agricultural additive, although it was also used in a wide range of processes from sugar purification to papermaking, metallurgy, and leather tanning (Perry et al. 2007). Today, lime remains an important construction and agricultural additive, but it also serves critical purposes in steel making, environmental treatments, mining, and pharmaceutical and other chemical developments (Perry et al 2007).

Essentially, lime is produced by converting limestone (calcium carbonate) to quicklime (calcium oxide) by driving out carbon dioxide. When slaked with water quicklime becomes calcium hydroxide (lime putty) and, after coming in contact with air, reabsorbs carbon dioxide and returns to its original chemical state (calcium carbonate) – calcifying back into a hard, durable limestone material (Dancaster 1915; Kindon 2017; Wheeler 1998). To drive out carbon dioxide, limestone must be heated to a minimum temperature of 1,650 degrees Fahrenheit (Perry et al 2007). To achieve these temperatures, and most lime producers operated at temperatures of 1900-2450 degrees Fahrenheit, the limestone must be burned in a kiln or pit and must be burned for extended periods of time, typically three to six days (Perry et al. 2007; Kindon 2017; Wheeler 1998). This process is discussed in greater detail in Chapter 7, "Cultivating Lime; Creating Community."

Lime Production in Santa Cruz

Lime production began in California during the Mission Period (1769-1834) where it was used in a wide range of products including mortar, plaster, and whitewash, and in a number of different processes, including hide tanning and corn processing (Costello 1977; Perry et al. 2007). Although critical to Spanish- and Mexican-period lifeways, lime production appears to have occurred at the household or community level, often being produced as part of the mission complex (Webb 1952). The natural occurring limestone outcrops in Santa Cruz likely played a major role in the selection of the site of Branciforte in 1797, one of the three civilian pueblos established as part of the Spanish colonial operation in Alta California (de Alberni 1796; Perry et al. 2007). While kiln-style lime production (versus crude pit-style) would have been necessary for the scale of lime used in Santa Cruz during the Spanish- and Mexican-periods, no standing kilns or known kiln features exist or have been identified archaeologically. Notations in a historic map from an 1862 court case, however, suggest the Santa Cruz mission and Branciforte associated kilns were located near the present-day intersection of Escalona Drive and Walnut Avenue in northeastern Santa Cruz (Arana 1862; Perry et al. 2007; Wright 1862).

The rise of industrial lime production in Santa Cruz coincided with the California Gold Rush, as rapid population increase, associated urbanization, a growing agricultural industry, and widespread industrialization created a strong demand for processed quicklime in California and the wider American Far West (Perry et al. 2007; Wheeler 1998). The lack of an adequate local lime industry in California to meet these needs, however, initially led to processed quicklime being shipped to the West Coast from Europe and the East Coast of the United States. These limitations created significant economic potential for a regional lime industry and beginning in the early 1850s a number of entrepreneurial efforts focused on identifying local, high-quality, and accessible lime sources in Northern California.

The western foothills of the Sana Cruz Mountains were quickly identified as an area that met the primary economic requirements for the development of a local lime industry, and by the late 1850s at least 10 independent lime operations were established in northwest Santa Cruz County (Perry et al. 2007). Records of the earliest operations are sparse, however, and many of them were short lived (Perry et al. 2007). The most successful and well documented of these early operations was the Davis and Jordan company kilns (Harrison 1892; Lehman 2000). Constructed in 1853 near the corner of High and Bay Streets (now the entrance to the University of

California, Santa Cruz) Davis and Jordan constructed what was, at the time, the largest lime operation in the state (Wheeler 1998). The construction of a wharf and the purchase of a coastal property at the end of Bay Street soon followed, with a 325-barrel capacity schooner making regular trips to the San Francisco market (Jensen 1976). The quick success of Davis and Jordan initiated an influx of competing operations, sparking the widescale development of the commercial lime industry in Santa Cruz County. The Davis and Jordan company would persist, although under different owners and under a different name, until the collapse of the Santa Cruz lime industry in the mid-twentieth century. Beginning as a business partner in 1857, Henry Cowell later bought Jordan's share of the Davis and Jordan lime business in early July 1865, creating the Davis and Cowell Company. Cowell would later gain full ownership, forming the Henry Cowell and Company and then later the Henry Cowell Lime and Cement Company which had kilns in operation in Santa Cruz County until 1946.

Following the early boom in which numerous independent lime operations took root in Santa Cruz County, the local industry was characterized by consolidation. At least 11 independent lime producers were in operation throughout the 1850s, but by 1868 there were only between five and seven producers. These few producers, however, were providing the majority of lime cement used throughout California and upwards of 75% of that used and sold in San Francisco (Perry et al. 2007; Wheeler 1998). The latter part of the nineteenth century was characterized by the further consolidation of land, resources, labor, and production centers. By the turn of the twentieth century the market share of Santa Cruz lime remained consistent, but the number of producers was down to only two – the Henry Cowell Lime and Cement Company and the Holmes Lime and Cement Company (Perry et al. 2007).

The early kilns constructed in Santa Cruz County, and the style of kilns found at the Samuel Adams site, were intermittent pot-style kilns. This technology, which dates to at least the Roman Period, involves building, firing, and unloading single loads of lime. This approach was largely replaced in the Santa Cruz area during later periods by more efficient continuous-style kilns where lime and fuel could be added to a constantly burning kiln, without stopping to build or empty a load of lime (Eckel 1928; Perry et al. 2007; Redgrave and Spackman 1905). Intermittent pot-style kilns were typically built into a hillside to facilitate loading and were constructed of thick truncated limestone walls lined with fire brick to protect the kiln interior from high temperatures. Raw limestone was quarried by hand from local outcrops using hand drills and black powder or dynamite. The resulting blocks were broken by hand using hammers into roughly eight-inch diameter stones that would be hauled to the kiln by horses, mules, oxen, or rail (Perry et al. 2007; Wheeler 1998). Intermittent pot style kilns at the Samuel Adams complex and throughout Santa Cruz County were loaded and fired using the arch technique. A specialized laborer known as the archer would build an arch in the interior of the kiln pot to a height of four to five feet from the kiln floor. After the arch was complete, limestone blocks were loaded from the top of the kiln. The kiln was packed to the top of the pot, but sufficient space was left between blocks to allow for the necessary release of water and carbon dioxide (Wheeler 1998). After the pot was loaded redwood lumber (or other suitable hardwood) was fed under the arch and burned as the heat source.

It took roughly 140 cords (17,920 cubic feet) of local lumber (preferably redwood) and upwards of six days to completely burn the lime (with an average of four and one-half days), and an additional one and one-half to two days for the lime to cool to a temperature where it could be safely unloaded and packed into barrels. Access to fuel was insured through the purchasing of thousands of acres of timber stands by lime companies that employed hundreds of lumber men (Jarrell 1982; Wheeler 1998). The processing of lime was a technical art, as workers had to judge the completeness of the burn through the color and temperature put off by the rock. If not cooked enough a core of limerock would remain, making the resulting product worthless for mortar and plaster. If the limestone was overcooked it lost its ability to react with water, making it useless for most purposes (Perry et al. 2007). One lime worker noted that they could tell that the processes was operating at ideal conditions when “at night the rock was transparent, [and] in the day it had a yellow-golden color” (MacDougall 1989:12). Sheets of metal across the top kiln openings along with doors at the bottom allowed airflow and temperatures to be adjusted and maintained within the ideal range.

When the burn was nearing completeness, a rod would be driven into the load, with unobstructed prodding signaling complete calcination. When a burn was deemed complete the arch would be collapsed, spilling 135 to 150 tons of processed quicklime into the bottom portions of the pot. Left to cool to a temperature just low enough that the packing barrels would not burn, the lime was then raked and shoveled out of the kiln and into the barrels. The processed lime was not ground into a powder but kept and barreled in solid chunks (MacDougall 1989; Wheeler 1998). Coopers fashioned barrels by the thousands, with wooden staves to avoid the chance of spark, which, in the presence of raw quicklime, could have explosive consequences. While laborers had specific tasks, the multiple kiln pots meant that the work was constant, and kilns were tended to 24-hours a day. The barreled quicklime was placed on carts, drawn by teams of horses or oxen to waterfront wharves where company schooners brought the lime to market. Fire wasn’t the only danger, however, as water could also react with quicklime and ignite the barrels. As a result, a number of lime ships never made it to their destination, being engulfed by flames in the open ocean (Perry et al. 2007).

History of the Samuel Adams Lime Kilns, Henry Cowell, and Lime Industry Labor Organization

Activity at the project site began in 1858 by 27-year-old Samuel Adams, continuing under different ownership until 1909 (Perry et al. 2007; Wheeler 1998). For $2,500 Adams purchased 200 acres of Rancho Refugio, located roughly two miles north from the coast (Perry et al. 2007) (Figure 3.1). On this land, at a natural limestone outcrop, Adams established two intermittent pot-style kilns along with the necessary supporting infrastructure. Original features of the operation included the quarry and kilns along with a single-family foreman’s residence, a shared workers’ cabin, cooperage, cookhouse, and mess hall. Soon after establishing the lime operation, Adams purchased an additional acre at the mouth of Meder Creek, providing access to the ocean and maritime transportation networks. Later, Adams would purchase an additional 70 acres of land and negotiate with a neighbor for a more direct coastal access route (Wheeler 1998). By the 1860s Adams’ operation employed about 30 men, and at peak production produced roughly 30,000 barrels per year, which were loaded on his schooner at Powder Mill wharf in Santa Cruz and shipped to San Francisco for sale (Perry et al. 2007; Santa Cruz Sentinel 1865:2; Kindon 2017).

In October of 1868, a major earthquake struck the San Francisco Bay Area. The resulting damage highlighted the limitations of masonry construction and this, in turn, led to a local depression in the California lime market (Wheeler 1998). The economic downturn would be a major factor contributing to the consolidation of the industry, as economic pressures led many owners to sell their stakes in the lime industry. For the companies that could weather the downturn, they were able to buy cheap and amass substantial land and resources. It was likely this economic downturn that spurred Samuel Adams to sell his lime operation in 1869 to the larger Davis and Cowell company for $10,000 (Figures 3.2 and 3.3) (Jensen 1976). With this transfer the Samuel Adams operation became part of Davis and Cowell's growing regional lime empire. At this point the site began to be known also as Cowell's Upper Kilns due to their geographic orientation in relation to Cowell's primary kilns on Bay Street (Figure 3.4) (Wheeler 1998). After selling his lime operation Samuel Adams moved back to his home state of New York, dying there in 1886 (*Daily Evening Bulletin* 1886).

Henry Cowell, who would come to dominate the Santa Cruz lime industry, was born in Wrentham, Massachusetts in 1819 to a humble farming family. Little is known about his early life, but as a young man Henry moved to the American South and began work as a contractor. The discovery of gold in California in 1848 drew Henry and his older brother John to San Francisco. Like most of the individuals who profited economically from the Gold Rush, the brothers did not make their money in the "diggings," but in selling goods and services to the needy miners. The Cowells took advantage of California's early isolation, limited infrastructure, and sudden high demand for tools, food, and services, and began importing necessary goods from the East Coast and selling them for exorbitant prices. They also offered storage services and drayage to the gold fields, Sacramento, and Stockton (Perry et al 2007).

After the boom of the Gold Rush subsided, Henry Cowell used his early economic success and experience in transportation to enter the Santa Cruz lime industry. In 1857 Cowell bought an interest in the Davis and Jordan lime company shipping schooner the *Queen of the West*. In the early 1860s Cowell began investing more broadly in the Davis and Jordan lime company and in 1865 he bought Jordan's half of the business for between $70,000 and $80,000 (Harrison 1892; Perry et al. 2007). This led to a change in the company name to Davis and Cowell. With this acquisition Cowell's business interests turned singularly to the lime industry. In the same year that he became a partner in the lime company, Cowell and his family moved from San Francisco to Santa Cruz, into the house that had recently been constructed for Jordan. Upon his transition to Santa Cruz, Cowell began actively managing the business and participating hands-on in the process of lime burning, learning both the craft and business of quicklime production (Perry et al. 2007).

Faced with increasing competition in the 1860s, Cowell almost immediately began to take measures to gain advantages in the area, quickly gaining a reputation as a ruthless businessman. For example, in 1866 there was a growing demand within the community for a road to be built connecting Santa Cruz to Felton. Davis and Cowell quickly offered to be the ones to finance and build the road, with a few minor concessions: The road would be a toll road, the company would receive all the fees, and the road would connect to both their wharf and kilns. This proposed plan would essentially provide both a direct and consistent line of revenue, decrease transportation costs, and encourage additional shipping through their port. For obvious reasons this plan was met with considerable public resistance and never materialized (Perry et al. 2007; *Santa Cruz Sentinel* 1866).

In 1867, Cowell attempted to gain ownership of the entire Santa Cruz coastline between the Davis and Cowell wharf and the San Lorenzo River by arguing that it could be reclaimed for agriculture. If successful, Cowell would have gained significant control over the future of infrastructure development in the area and ownership of the only other wharf in the city, the one used by competing lime companies (Perry et al. 2007). The efforts were tied up in litigation, but Cowell pursued the efforts for over 11 years. As the *Santa Cruz Sentinel* newspaper reported, the attempted land grab was a veiled effort "only to monopolize and tax commerce to the detriment of labor and the resources of the country" (*Santa Cruz Sentinel* 1872). In 1868, Davis and Cowell fought the construction of the San Lorenzo Valley Railroad, a development that would have greatly benefited competing lime companies in Felton. The court battle eventually helped to push the railroad company into bankruptcy, effectively halting the project but also killing the wider economic benefits to other business and laborers that railroads often afforded. It is with little wonder, then, why a writer for the *Santa Cruz Sentinel* in 1878 concluded that "Henry Cowell is the worst enemy Santa Cruz ever had" (Perry et al. 2007). While many of Cowell's disputes were mediated through his company and he was often protected by wealth and bureaucracy, occasionally his disputes became personal. It was one such dispute with a neighbor over a fence-line that led to him receiving a gunshot wound to the shoulder. While not immediately life threatening, Henry Cowell died a few months later, on August 4, 1903 due to complications from the injury.

Up to the point of his death, however, Cowell worked tirelessly towards gaining total control of the Santa Cruz lime trade. Newspaper accounts of the shooting event provide insights into the popular understanding of Cowell and his strategy of regional lime domination. One such account describes Cowell as "a prominent Capitalist… reputed to be worth at least $3,000,000" (*Santa Cruz Sentinel* 1903). The article continues to note that "the Superior courts of many counties of the State bear the name of Cowell in many hard-fought actions for the acquisition or retention of valuable lands… Little by little Cowell has gained control of a good part of the lime properties in the State, either directly or by combinations. He also conducts an extensive business in kindred building requisites in various cities" (Santa Cruz Sentinel March 3, 1903).

Cowell's first effort toward regional consolidation began with the acquisition of the Samuel Adams kilns in 1869. Originally a two-kiln operation, Davis and Cowell quickly added a third kiln, increased the labor force, and expanded and intensified production. Building on the original features of the operation, Davis and Cowell added a separate foreman's office and an additional workers' cabin and made considerable changes to the cookhouse and mess hall components. This growth through acquisition and capital expansion would have significantly increased economies of scale and likely contributed to the closing of a number of smaller independent lime companies in the county. By the early 1880s only the I.X.L. and H.T. Holmes lime companies remained as local competition for the Davis and Cowell Company (Harrison 1892). In the early 1900s, Cowell would acquire I.X.L. Company kilns, bringing him very close to a regional monopoly (Perry et al. 2007)

When Isaac Davis died in 1888, Cowell took full control of the company (which required filing suit against Davis' son) and continued to pursue his goal of monopolizing the Santa Cruz lime industry (Harrison 1892; Perry et al. 2007). It appears that Cowell's strategy was increased vertical integration – owning and controlling every aspect of the lime production supply chain. This strategy allowed him to keep costs low and control resources and labor needed by his local competitors. An 1896 text outlines the extent of Cowell's operation and its control over production processes and resources, highlighting that his Bay Street kiln complex:

> "consists of some twelve thousand acres" with "commodious and carefully inspected farms and stables [that] afford accommodation for the seventy-five horses and mules and fifty yoke of oxen employed by the owners in the different branches of their extensive business… Some idea of the magnitude of their operation may be gained from the fact that employment is given to one hundred and seventy-five men, and that annual wages and expenses aggregate one hundred thousand dollars… As is evidence of the complete equipment of this great ranch in Santa Cruz County, even the carts, wagons, etc., employed in the service of its various enterprises are manufactured in shops on the premises." (Francis 1896:138, cited in Perry et al. 2007:72).

The extensive land holdings allowed for a steady supply of timber fuel, roads linked the various operations, teamsters moved product, and company owned ships brought the lime to market (Harrison 1892). Increasing investments in cattle, dairies, tanneries, forests, and agriculture allowed Cowell even greater control over the key inputs and infrastructure for all aspects of his industry (and many others outside of lime) from the raw materials, fuel sources, labor provisions, and everything in between (Perry et al. 2007).

In 1879 Cowell paid his men between \$360 and \$480 per year, or between \$30 and \$40 per month. Each day of missed work resulted in a docking of \$.75 for boarding, suggesting Cowell calculated board for each worker at \$273.75 per year. (Cardiff 1965; Perry et al. 2007). It is worth contextualizing these wages within broader company earnings to understand Cowell's degree of financial investment in labor. If we take an average of \$420 in wages for lime workers and estimate an average of 40 men employed at the Samuel Adams operation, then Cowell's annual labor costs were roughly \$16,800. For comparison, In 1879 Cowell's company ledger shows that lime was selling at the price of \$1.50 per barrel. Producing a minimum of 30,000 barrels of lime per year, Cowell would have grossed at least \$45,000 from the Samuel Adams operation alone. While the percentage of total expenses that wages comprise is unknown, they would have accounted for an estimated 37.3% of the operation's total annual gross income.

Cowell's desire to control all aspects of his lime business extended equally to labor. Cowell employed a system of paying his workers only once a year (Perry et al. 2007). On December 31st of every year, Cowell would travel to San Francisco and return to Santa Cruz with \$90,000 to \$100,000 in gold. He would stay overnight with his book keeper in the Cowell Ranch paymaster's house, a stone building with iron-bar protected windows. On January 1st, the workers from across his operations would come through the paymaster's house and receive their year of wages. Additionally, after receiving payment, almost all the workers were discharged, forced to decide at that moment if they would sign-on for another year (Perry et al. 2007; *Santa*

Cruz Sentinel 1879). Many men did not return, and this system of wage payment undoubtedly contributed to the relatively high labor turnover in the lime industry.

This wage payment strategy also worked to create a sort of indentured labor, whereby workers could not afford to leave before the end of the year and risk losing back wages. This wage payment strategy would also have necessitated a system of credit, whereby workers could acquire necessary personal items and goods throughout the year on advance or debited from their future earnings. This system would have bound workers to the company for a minimum of one year and served to tip the scale of power dramatically toward the company and its owner. Laborers invested their time on the promise of future pay, and if grievances emerged during the year, there was little they could do without risking the loss of pay for work already incurred. Workers, then, would need to find other ways to regain power in relations with Cowell and his company agents. This dissertation is in part an exploration of some of the creative and subtle ways this took shape through daily material-discursive practices that worked to build novel relations and connections between diverse lime workers.

One overt way in which labor power materialized in the Santa Cruz lime industry was in the formation of various labor unions and direct collective action in the form of labor strikes. By the late 1880s a number of labor unions had formed around specific occupations related to the lime industry. Beyond the Lime Workers' Union there were also unions for coopers, teamsters, and carpenters (Perry et al. 2007). The Lime Workers' Union was the first to mobilize a strike in Santa Cruz county, demanding an increase of $5 a month to the $30 a month they received along with room and board (*Santa Cruz Sentinel* 1903). In 1904 the Coopers Union also went on strike against both the Henry Cowell Lime and Cement Company and the Holmes Lime and Cement Company (Amin-Patel 2018; *Santa Cruz Surf* 1904). Because of the interconnected nature of labor in quicklime processing, the strike led to a complete stoppage of lime production. At issue were boarding practices and pay. The Coopers Union (No. 189) published a statement in the *Santa Cruz Sentinel* newspaper arguing that Cowell had broken his agreement to allow married men to live off-site at their personal homes with their family, rather than at on-site company provided housing. Since families were not allowed to join the laborer in his on-site accommodations, this forced married families to pay double rent and "placed a premium on bachelors" (Amin-Patel 2018; *Santa Cruz Sentinel* 1904:3).

The coopers were also striking for increased pay, demanding 10-cents per barrel instead of nine, a figure that would increase their wages to an average of $2.50 per (ten hour) day, a wage they identified as still "the least wages paid to coopers anywhere in the United States" (Perry et al. 2007; *Santa Cruz Sentinel* 1904:3). The coopers identified the failures of the company owner's business tactics as the reasons for decreased profitability, an outcome, they argued, that was not a result of their work and, therefore, should not be borne by the worker; "To these demands the only 'combination' made is on account of the lime war for which [the companies] are responsible, and they can afford to comply with the demand. We do not understand why we should suffer on account of their own action…If the 'combine' choose to lower the price of lime to a ruinous figure it is a business to which we do not desire to be a party to" (*Santa Cruz Sentinel* 1904:3). It is unknown how long the strike lasted or how it was resolved, but the companies argued that the decrease in lime price was a product of market forces beyond their control and that they had already made efforts to improve the infrastructure of the operations

(Perry et al. 2007). Archaeological findings, however, indicate that material investments in worker well-being were limited in the latter part of the nineteenth century. Furthermore, if the union statements are to be believed, the inability (or unwillingness) to pay better wages was not an outcome beyond their control, but a direct result of monopolization efforts and price dropping tactics aimed at driving competitors out of business.

In August of 1904 all teamsters and bull drivers employed by Henry Cowell Lime and Cement Company also went on strike. The issue for these laborers was the refusal of the company to operate a pre-entry closed shop hiring system, whereby the company would agree to hire only union members (Amin-Patel 2018; *Santa Cruz Surf* 1904). At the time of the strike, three company drivers were not part of the teamsters' union. The strike and petition for a closed shop suggests these non-union members were seen as a threat to the laborers' collective action potential. The strike was ultimately unsuccessful, but the efforts caught the attention of Fred Wheeler, a labor organizer with the American Federation of Labor. Wheeler worked to incorporate the teamsters' union into the emerging California State Federation of Labor, which included at total of 35 different labor unions (Amin-Patel 2018; Stimson 1955).

Overall, these strikes and invreased union activity and labor mobilization highlights a growing divide between company owners and wage workers in the Santa Cruz lime industry. A newspaper article written in 1906 by the Santa Cruz Building Trades Council exemplifies this growing animosity demanding that, "We want the class which sneers at the name Laborer, and the class which controls much money but little humanity, to realize that the organized laborers of today are coming forward in the course of events as no other class or party or creed has ever come… We want the laboring masses educated, for they will yet be rulers. We want *all men* to enjoy the resources of life, instead of the present system which causes one-half off Christendom to starve mentally and physically" (emphasis added) (*Santa Cruz Surf* 1906).

Following Henry Cowell's death in 1903, the company was inherited by his children and his eldest son, Ernest Cowell, took over as head of the lime business operations. Ernest appears to have shared his father's disdain for labor organization, insisting he would not be intimidated or swayed by strikes and boycotts (Perry et al. 2007; *Santa Cruz Surf* 1904). Ernest fought back against the unions by claiming they threatened violence against non-members. In response to the teamster strike in particular, Cowell refused to fire any non-union members and the company remained an open shop (Perry et al. 2007).

Production peaked in the Santa Cruz lime industry in 1904, the year after Henry Cowell's death, but soon after profits began to drop and the industry began to decline. A number of factors led to the crumbling of the industry over the following decades, but the most significant issues included increased fuel costs associated with the depletion of local timber stands, competition from new lime operations in the Pacific Northwest, the invention and introduction of new and more efficient continuous-style kiln technology, and the introduction of Portland cement which provided several advantages over lime mortar and quickly became the preferred building material (Perry et al. 2007; Wheeler 1998). As a result of dropping profits and increased economic stresses, the Henry Cowell Lime and Cement Company was forced to begin downsizing, and in 1909 lime burning activities ceased at the Samuel Adams Lime Kilns – marking the end of lime production activity at the operation. Much of the equipment was removed and used in new, more efficient, continuous-style oil burning pots at Cowell's Rincon operation (Jensen 1976; Wheeler 1998). By the 1920s lime production was down significantly throughout the county, and in 1946 the last Santa Cruz lime production facility, one owned by the Cowell Company, burned its last load of lime (Perry et al. 2007). While lime production activity apparently ceased at the Samuel Adams kilns in 1909, the area was not abandoned. Rather, it appears that dairy, ranching, and agricultural activities persisted until around 1965 (Wheeler 1998). The exact temporal association between the lime production operation and the later activities, however, is unknown.

The unique occupational history of the Samuel Adams Lime Kiln complex makes it an excellent site for testing the social impacts of resource consolidation and power centralization. Activity at the site between 1858 and 1909 is marked by two distinct phases of occupation and operation that differed widely in ownership, labor organization, and degree of company paternalism. During the first phase (1858-1868) the lime kilns were an independent entrepreneurial endeavor operating in a regional industry marked my numerous small-scale and independent lime operations (Jensen 1976; Perry et al. 2007). In contrast, during the second phase (1869-1909), the Samuel Adams operation was just one component of a larger lime production conglomerate owned by local business tycoon Henry Cowell. During this second period, the various lime operations throughout Santa Cruz County and the resources they controlled became consolidated, with almost all operations either folding or coming under the ownership of Cowell. This particular site, therefore, is uniquely situated for an investigation of the social-material effects of resource and power consolidation, as we can compare the work and domestic life of laborers at the same site and in the same industry, but in two very different social, historic, and economic contexts. Critically, during both period of operations the site appears to have been socio-spatially separated, with manual, domestic, and managerial laborers occupying different areas during work and home life. This practice of spatial segregation allows for a controlled archaeological analysis and comparison of the ways in which changes to resource control and company power differentially affected various labor groups at the site.

Ethnic/Immigration Context

The particular demographic history of the Samuel Adams Lime Kilns is also significant in the context of the proposed research questions and objectives. Like many industrial work camps in early-American Period California, the Samuel Adams Lime Kiln workforce was a diverse, pluralistic community (Perry et al. 2007). The nature of the work, the close living arrangements, the shared eating and communal spaces, and the relatively isolated nature of the community suggests this diverse labor population, despite hailing from very different places, speaking different languages, and otherwise having little in common, would have necessarily interacted in sustained and intimate ways through the practices of daily work-life.

Census data and historical sources suggest that during the early years the Samuel Adams operation was comprised largely of Americans and Canadians from the East Coast. By 1870, however, Irish immigrants were a significant portion of the manual labor force and Chinese immigrants occupied positions as company cooks. By 1880, Irish workers were still present but often occupied managerial labor positions with Portuguese immigrants from the Azorean Islands comprising the majority of the manual workforce. At the turn of the century, Irish laborers remained as lime operation managers, but Italian immigrants joined Portuguese workers in manual labor positions. Chinese immigrants maintained positions as company cooks from 1870 until the operation's closure in 1909.

The nuances of this demographic history will be discussed in greater detail in Chapter 6, "Life and Labor as a 'Lime Workers." This brief introduction, however, highlights the dynamic nature of these pluralistic sites. At the Samuel Adams Lime Kilns, over about 50 years, there was a drawing together of multiple migrant and immigrant communities from across the globe. The timing of their arrival, coupled with globally shifting constructions of race and ethnicity would have framed workers' interactions, positions within the operation, and potential opportunities (both within and outside the lime operation). Subsequent waves of immigration and entry into the labor force would have necessitated social reconfigurations, led to novel encounters, and produced novel communities of practice, with important implications for labor relations at the Samuel Adams kilns and beyond.

The Company "Town"

The Samuel Adams Lime Kilns, over its various years of operation and periods of different ownership, functioned generally as a company town. Company towns were a common model employed at industrial sites throughout the United States and the American West from the eighteenth to twentieth centuries. Modeled on European agricultural estates and the plantation system of the American South, company towns were designed to be self-sufficient communities where all members worked directly or indirectly in a single industry. These towns were typically designed, incorporating reform ideals into paternalistic management strategies and community layouts that sought to improve worker well-being, behavior, and productivity (Cowie 2011; Garner 1992; Metheny 2007; Mosher 2004; Mrozowski et al. 1996). True company towns had all the offerings of non-industrial communities, including things such as stores, music halls, churches, jails, fraternal organizations, and sports teams. Perhaps due to the spatial proximity to the city of Santa Cruz, or the relatively small workforce employed in the production of lime, the Samuel Adams kilns and most other lime operations in Santa Cruz never reached this degree of development. Even Cowell's Bay Street operation (Cowell Ranch), the largest and most established of the Cowell-owned kiln sites, did not meet the infrastructure requirements to be considered a true company town. Patricia Paramoure (2012:105), in her archaeological analysis of a workers' cabin at the Bay Street kiln site identifies the operation as an industrial "hamlet" or "village," and I believe this is a similarly apt description of the Samuel Adams Lime Kilns. While the operation did not have its own school, store, church, or formal entertainment, it was designed to house and provide for the industrial workers, who labored towards a single production goal, all under employment by a single company.

Later in this dissertation I will explore the changes to workers lives associated with the transition to ownership by Henry Cowell and his subsequent near-monopolization of the Santa Cruz lime industry. I will argue that Cowell's business and management strategy led to the prioritizing of profits and production over the well-being of workers, ultimately serving as one of the factors that encouraged the emergence of labor communities and the subsequent series of unionization efforts and strikes against the Cowell Company. Evidence for this argument is expressed in the material culture of the site, and will be discussed in detail in later chapters. Cowell, however, by buying into the lime industry and following a strategy of acquiring existing lime operations, never designed a company town from the ground up in Santa Cruz. We are forced to piece together the materiality of his business strategies and approach to labor through comparative analysis of features added, features removed, features improved (or not), and the changes to the workers' daily practices over time. There are limitations, therefore, in the ability to link directly the company town design elements of the Samuel Adams site to Cowell's business and management philosophy and strategies.

We are aided, however, through the consideration of a Portland cement manufacturing complex established by Henry's son, Ernest, near Mount Diablo in nearby Contra Costa County, California in 1906. Born in 1858, Ernst was raised in the lime industry. Ernest was close with his father, and as the eldest son it appears he was groomed from an early age to take over his father's business (Cardiff 1965; MacDougall 1989). It is likely, then, that Ernest's business strategies were modeled on those of his father's, and that the design of the company town at Mount Diablo, named Cowell, California, likely embodies as much of Henry Cowell's capitalist ideology and strategies as it does Ernest's.

In many ways the company town of Cowell reflects and embodies the paternalistic ethos of the Reform Movement and turn of the century industrial capitalism. Stocked with individual family housing, boarding houses, a company store, company office, hospital, town hall, and firehouse, Cowell was a true company town (Paramoure 2012). Lined with trees and equipped with lawns and gardens, the town model followed the garden city movement where aesthetically pleasing surroundings were considered a necessity for keeping workers happy and productive.

Whereas we do not have many documents that shed light on Cowell's approach to labor control in the Santa Cruz lime industry, there is significantly more transparency with the Cowell, California cement operation. At this townsite we know labor management was overtly paternalistic and town rules were strict and pervasive (Paramoure 2012). Like most company towns, the company provided workers with lodging, food, and goods (through a company store) – which insured workers' wages were largely returned to the company. The company's reach extended beyond work and wages, however, as it also controlled many of the intimate aspects of daily home life. For example, the company had a set bedtime (with no lights allowed after 10:30 p.m.), it had rules governing the limits of alcohol consumption, and it even controlled the amount of sugar that went into workers' coffee (Paramoure 2012; Rego 1996). When workers attempted to unionize and mobilize against the draconian company policies, Ernest Cowell actively resisted and refused to meet demands (Rego 1996). Workers or their families who broke company rules were subject to termination and eviction (Larkins 1984).

While we cannot simply transpose these company policies onto previous operations located in a different area and operated by a different member of the Cowell family, they nonetheless provide some insights into the management strategies and approaches employed by the Cowell business empire. At Cowell, California we see what kind of company town take shapes when there is an opportunity to begin with a clean slate, to design and build the operation from the ground up with minimal limitations. This would suggest, then, that the Cowell layout and regulations are the truest material expression of the Cowell's capitalist ideologies, strategies, and policies. Therefore, while the Samuel Adams Lime Kilns were not Cowell, California, insights from this later and better-documented operation suggest that Cowell had a domineering and controlling approach to industry and labor that took shape in material assemblages and configurations.

Previous Archaeological Investigations at the Samuel Adams Lime Kilns

This current research effort is framed by and benefits from previous archaeological undertakings at the Samuel Adams Lime Kiln site. These various survey and excavation efforts each had their own their goals, methods, and findings. In summarizing these previous studies I hope to illustrate the ways in which this current dissertation work both compliments and builds upon these previous research endeavors.

Survey

Previous archaeological surveys of the Samuel Adams Lime Kiln site and surrounding areas were conducted in 1988, 1991, 1992, 1993, and 1998. Through these various efforts a total of 22 distinct features have been identified and recorded (Figure 1.1) (LSA 1991; Staub 1992; Wheeler 1998; Ziegler 1993). Most notably these features include multiple quarries, three pot-style lime kilns, a number of building elements/foundations related to quicklime production, and multiple building elements/foundations associated with domestic life.

Excavation

Between 2006 and 2009, Foothill and West Valley Colleges collaborated on archaeological investigations at the Samuel Adams Lime Kiln site (the Foothill-West Valley Archaeological Survey – FWVAS). The primary goals of this project were to uncover important historic information about the lime kiln complex for use in interpretive material, and to serve as a "teaching laboratory for undergraduate students and public volunteers" (Kindon 2017: 7). From a research perspective, the objectives of the FWVAS were to "obtain a better understanding of the people who worked at the kilns and the nature of their daily lives" and to "arrive at a more representative, multidimensional picture of the vibrant, diverse community that surely surrounded the lime industry in early Santa Cruz County" (Kindon 2017: 10, 11). They also aimed to explore the industrial functions of various site structures/features, the "evolution" of the site over time, and the possible environmental impact of these landscape-scale changes (Kindon 2017: 11).

The FWVAS work resulted in the excavation of 56 test units (50x50 cm) from three transects in the central area of the site and 26 excavation units of varying sizes at 11 different loci (A, B, C, D, E, F, G, S, T, X, Y). In total, over 14,000 artifacts were recovered. While a catalog was produced, the level of detail, description, and analysis is limited to the extent that it cannot be used to substantively to address many of the FWVAS research questions. In an effort to engage with this existing collection, in 2016 all material from the FWVAS excavations were moved to the Historical Archaeology Laboratory at UC Berkeley for further identification and analysis.

While extensive, the FWVAS is limited in usability and degree to which it can be integrated with materials recovered in later SALK field efforts. The primary basis for this incompatibility is a lack of associated documentation. All field forms and most of the field journals associated with the FWVAS project were misplaced prior to UC Berkeley gaining access to the collection. While the catalog retains much of the provenience information, different excavation methods (*e.g.,* the use of arbitrary levels instead of natural) and a lack of detail results in data resolution for FWVAS materials that is much coarser and not directly quantitatively comparable with SALK data. Diagnostic and potentially informative materials, however, were reexamined and are discussed and incorporated into current research analyses when possible. A sample of the material collection (roughly 40%), in conjunction with the existing catalog were also analyzed as part of an upper-division historical archaeology methods course (Anthropology 121C: Historical Artifact Identification and Analysis) taught by Dr. Laurie Wilkie and assisted by me in the Fall 2016 semester. Findings from this re-analysis are included in the current work when possible and appropriate.

A detailed report by Dr. Andy Kindon summarizing the fieldwork and findings of the FWVAS project was disseminated in March 2017, just prior to the start of the SALK 2017 field season (Kindon 2017). Although largely descriptive, this report provides critical insights into the FWVAS methods as well as the nature of past practices at various spaces within the kiln complex. Kindon's (2017) report shows that the Samuel Adams site was a segmented place, with distinct areas that served particular functions. These spatial divisions, it was determined, aligned with different labor groups and activities and it was shown that significant disparities existed in artifact material types, qualities, and quantities across space. Despite the limitations of direct comparability, these reported findings and engagements with the existing collection proved critical in framing the questions and research design for the SALK 2017 project. In many ways, the FWVAS efforts served as a pilot study for SALK, as we could identify loci, features, and spaces that were particularly data rich, intact, and suitable for our project goals and questions. These insights allowed us to employ a minimal amount of excavation units in the recovery of a suitable dataset of materials.

CHAPTER 4. DIGGING INTO LIFE AND LABOR: ARCHAEOLOGICAL TESTING AT THE SAMUEL ADAMS LIME KILN COMPLEX

This chapter outlines the field and laboratory methods employed in the data recovery and analysis of materials from across 10 different loci at the Samuel Adams Lime Kiln complex. As discussed previously, the goals of the SALK project were to recover comparable material traces of everyday life from various work, domestic, and leisure spaces associated with different labor groups and periods of occupation. Methodologically, the Samuel Adams Lime Kiln (SALK) project was multiscalar, diachronic, and comparative. Contextual and comparative archaeological analyses of materials at activity area, household, and settlement scales allow for an investigation of the recursive relationship between broad-scale changes, community organization, and everyday practices, and how these changed over time. Archaeological data collection methods were also multistage and holistic. Building upon prior survey, excavation, and material data, this project focused on additional select subsurface sampling and laboratory analysis that would both compliment and contribute to existing datasets (Gonzalez 2016; Lightfoot 2008; Redman 1973, 1974). SALK 2017 excavations were designed to recover additional information about work, domestic, social, and leisure life at the lime kiln complex by excavating intact, data rich features and deposits where material traces of past activities were likely to be present and recoverable. In identifying these deposits and their general nature (location, depth, concentration, degree of disturbance) these excavations also aimed to provide information that will assist park staff in cultural resource management efforts (Hyde 2019). SALK 2017 operated as a field school, providing technical training in archaeological field methods for a total of 13 students from three different institutions of higher education (UC Berkeley, UC Santa Cruz, and West Valley College).

In an effort to recover material traces of everyday life, 12 units totaling 13 square meters were excavated from 10 different loci (structure remains/areas/features) from across the site (Figure 1.1). The sampling strategy was designed to provide a representative but comparable dataset of materials from spaces associated with the total range of activities and lived experiences at the site. As a result, the core work, domestic, and leisure spaces of manual, domestic, and managerial labor were sampled. The location of excavation units at each locus/location was determined using a judgmental sampling strategy, relying on surface features and prior archaeological research to determine their placement. This sampling strategy allows for a broadly comparative analysis of different practices and lived experiences for various labor groups across the site and through time. Table 4.1 summarizes the location, size and number of each unit at the various loci, and Figures 1.1 and 4.1 illustrate the location of each feature and unit within the broader site. Due to site sensitivity concerns, detailed loci-specific maps with unit locations have not been included in this dissertation. Maps were constructed for each excavated loci, however, and included in the excavation report that was submitted to California Department of Parks and Recreation (Hyde 2019). Ultimately, SALK excavation efforts recovered 27,831 individual artifacts (discussed in detail in Chapter 5, “Data Presentation: The Materials of Life and Labor at the Samuel Adams Lime Kiln Complex”).

Field Methods

Previous surveys, mapping activities, excavations, and material analysis has clarified feature locations, uncovered broad spatial patterns, and isolated undisturbed and data rich contexts. This preexisting data informed the placement of additional subsurface sampling undertaken as part of the SALK project (Lightfoot 2008; Redman 1974). Excavation units were located judgmentally in locations where the existing data suggested there was a high likelihood of recovering minimally disturbed *de facto* and primary contexts, artifacts, and assemblages (Shiffer 2000, 2010). All excavation units and associated surface features were mapped by hand using the tape-and-compass technique, with key points being recorded using a handheld Trimble GeoXH 05-08 GPS unit.

Because extensive site survey had been completed prior to the SALK 2017 project, survey was limited to systematic pedestrian survey in the area of select loci/features. Flagging of artifacts and the identification of architectural features and artifact surface concentrations allowed for the reconciliation of preexisting maps and data. This information, in turn, framed the determination of SALK 2017 unit placement locations. Geophysical survey was not conducted due to the presence of matrix heavily included with natural limestone cobble and block inclusions, the availability of visible architectural features, the presence of heavy vegetation, and relatively steep terrain.

A total of 12 units were excavated as part of the SALK 2017 field season. Units were excavated using standard archaeological procedures following natural (cultural) stratigraphy to maintain greatest contextual integrity and vertical control. In instances were natural deposits exceeded 10-centimeters in depth, arbitrary levels of 10-centimeters were used until a subsequent natural level was encountered. Units were excavated using hand trowels, brushes, dustpans, and archaeological picks when matrix density and hardness made it necessary. Artifacts were left *in situ* for as long as possible, with distinct features, associations, and artifacts being photographed and mapped in place before their removal. When necessary, artifacts were excavated individually and bagged appropriately. In most cases, artifacts were excavated with the associated matrix. The matrix and corresponding artifacts from each context were placed in 10-liter buckets. When buckets were full, matrix volume for each bucket was recorded on field forms and the excavated material were screened through 1/8-inch hardware screen, removing the matrix and leaving the artifacts behind. Student excavators removed the remaining archaeological material and bagged it according to material type.

A systematic flotation sampling strategy of two-liters of dirt per identifiable depositional level (referred to as contexts) was employed to recover small botanical and faunal remains that would not typically be recovered in 1/8-inch screens. This complementary flotation strategy provided a more accurate reflection of critical food production, consumption, and disposal activities (Pearsall 1989; Gasser 1985; Lennstrom and Hastorf 1995). Soil samples were processed in the Soils Lab at the Archaeological Research Facility of UC Berkeley. Light fraction was captured using chiffon mesh and was bagged but not analyzed. It is hoped that a qualified paleoethnobotanist will examine these samples in the near future. All heavy fraction was captured using 18x16 window screen and was then systematically identified and sorted. Artifacts from heavy fraction samples were catalogued according to material type and context and analyzed with the other recovered materials.

A one-cup bulk sample of screened soil was also taken from each context. While no chemical analysis was undertaken as part of the SALK 2017 project, these samples were instrumental in stratigraphic analysis and interpretations and will be retained as a record of the matrix color and composition from archaeological spaces, features, and contexts from across the site. Retaining these samples also allows for later chemical analysis.

When excavation of each context was complete the bottom of that context (top of subsequent context/level) was photographed and hand-mapped. A corresponding field excavation form was also completed for each context to record findings, soil sample numbers, photograph numbers, and artifact bag numbers. The use of standard field forms allowed for systematic and consistent recording of findings in each excavated context. Each student excavator maintained a field notebook in which much of the field excavation form information was duplicated and expanded upon. The notebooks, however, also provided the opportunity for individual excavators to provide detailed narrative descriptions of findings and initial/unfolding interpretations. I also kept a detailed field notebook of activities at all excavation units. All field forms and notebooks have been digitized for posterity.

All units were excavated a minimum of 10-centimeters below sterile matrix to ensure all cultural strata were sampled. Sterile matrix was evidenced either by the presence of dense orange and red clay or by the total lack of archaeological materials recovered for at least 10 consecutive centimeters (when at a depth beyond that established to be typical for the site through previous excavation). When a unit excavation was complete all four profile walls were drawn and photographed to record stratigraphic associations.

Stratigraphic relationships are presented with profile maps and Harris matrixes (Appendix A). Hand-drawn profile maps show strata graphically, highlighting their vertical orientations and relation to depositional features and artifacts. These profile maps are accompanied by Harris matrixes, which serve as schematic representations of depositional sequences. Harris matrixes for each unit are annotated with associated context and strata labels. Contexts refer to excavation layers recognized in the field and identified in the artifact catalog (represented by numbers), whereas strata are depositional layers observed in unit profiles (represented by Roman numerals). In some cases, not all excavation contexts were visible in profile stratigraphy. Where necessary, context descriptions were used to reconcile differences and aggregate excavation contexts into appropriate strata.

Preliminary sorting of material based on artifact type took place in the field, with like artifacts being bagged together and labeled with context information. Artifact types used were glass, ceramic, metal, faunal, building material, plastic, cloth/leather, and botanical. The number of bags for each artifact type was recorded on all excavation context forms. Upon completion of excavation at the site, all units were backfilled with previously excavated and screened matrix. After a year, while some settling in the excavated areas has occurred resulting in slight depressions, the excavated areas have generally returned to their pre-excavation state. It is expected that further seasons of vegetation growth will only further make the SALK 2017 excavation activities less visible.

Artifact Cleaning and Cataloging Methods

Cleaning of artifacts recovered during the SALK 2017 project began in the field. Artifacts that were still unwashed at the conclusion of the field season were transported to the Historical Archaeology Laboratory at UC Berkeley where the cleaning process was completed. All artifacts were washed except for a few select pieces of Chinese ceramics that were deemed potential candidates for future trace residue analysis. This analysis has not yet been undertaken.

Each artifact was cleaned using fresh water and soft nylon toothbrushes. Botanical remains and the few cloth/fabric remains recovered were not washed because of concerns that the cleaning process may destroy the integrity of the object. Select ceramic sherds from Locus B were labeled using a layer of clear acrylic copolymer in acetone to assist in efforts to cross mend sherds from different context and between units (Units 109 and 111).

Following cleaning, all artifacts were placed in polyurethane plastic bags with accompanying acid-free paper tag labels using archive quality acid-free ink. Most artifacts were bagged and labeled individually unless cross-mending was possible or other data existed suggesting distinct pieces were associated and representative of a single vessel/object. For practical purposes, due to large numbers of small and heavily fragmented remains, undiagnostic glass, ceramic, and metals objects of like characteristics (*e.g.,* color and shape) were bagged together.

Items were catalogued using an excel database designed by the author. The database is a modified version of the Sonoma Historic Artifact Research Database (SHARD). Changes to SHARD were made to reflect data recording needs specific to the SALK 2017 project research questions and goals. Material tables derived from this catalog are presented in Appendix B, organized by locus and unit. The complete catalog can be found in a report of SALK 2017 field efforts submitted to the California Department of Parks and Recreation (Hyde 2019).

Artifact Analysis

To allow for comparisons between loci and units, all artifacts were analyzed and catalogued based on their specific depositional context and feature association. Artifacts were analyzed based on a material-functional approach adapted from South's (1977) functional artifact system where materials are classified based on their intended use (Eichner 2017; Hume 1975). This hybrid approach allows for a consideration of the objects' active role in human life, while recognizing that materials have certain qualities that allow for the possibility of their use in ways that go beyond the original intentions of the creator or designer (Eichner 2017; Wilkie 2000). So, while artifacts were identified, bagged, and catalogued based on material type, analysis involved subsequent determinations of broad categories of functional use. For example, in Chapter 5, "Data Presentation: The Materials of Life and Labor at the Samuel Adams Lime Kiln Complex," the discussion of health and hygiene items recovered from the foreman's residence (Locus T) includes artifacts made from glass, rubber, and pigment, reflecting practices such as bottle nursing, personal grooming, laundry work, and medicinal treatment.

To allow for the desired comparative analysis, minimum number of vessels (MNV) and minimum number of individuals/items (MNI) counts were calculated along with the number of identified specimens (NISP; raw fragment counts) for each unit. Minimum number counts aggregate fragments that have similarities in physical qualities to such a degree that they cannot confidently be determined to have derived from separate vessels or items. This approach works to minimize the degree to which highly fragmented materials can lead to overestimation of vessel/item counts. This approach, then, allows for a more accurate consideration and comparison of past material realities across space and time, while controlling for potentially different depositional and post-depositional processes. For example, an angry foreman, in his rage at a botched load of lime, may have smashed a wine bottle at the porch steps of his office. In our excavation, this might be recovered as hundreds of small pieces of cylindrical olive bottle glass. On the other side of the site, manual workers, sharing a bottle of wine may have stashed a half-finished bottle at the corner of their porch to be consumed later. Forgotten and left to spoil, the bottle was later kicked under the porch where it fractured into three large pieces. Excavations at these spaces would recover these fragments, but a NISP comparison (even though they are of the same vessel type, same color, excavated from the same sized unit, and located at the same area of the structure) would suggest the foreman drank wine at a magnitude hundreds of times greater than the workers. An MNI analysis for the same remains, however, would lump the morphologically affiliated materials together, leading to a count of one for each locus – a much more accurate reflection of consumption patterns, despite the difference in recovered fragment quantities.

Ceramic materials were identified based on manufacturing technology, determined from paste hardness tests and visual inspection of paste attributes and degrees of vitrification (Majewski and O'Brien 1987). Ceramic analysis generally followed methods outlined by Allen et al. (2013) and Beaudry et al. (1988) that recognize the complex relationship between form, decoration, and meaning, and which proposes the complimentary use of documentary sources to provide a historical context for ceramic typology construction and analysis (Wall 1994). Very few ceramic artifacts were decorated, but when decorations were visible attempts were made to identify the pattern and were used to calculate vessel counts. Due to a large number of plain and undecorated whiteware and ironstone, ceramic analysis and minimum vessel counts were based largely on vessel form and shape. When recovered, rim and base diameters were measured to inform vessel identification and counts. Maker's marks were also utilized in determining vessel counts along with manufacture dates and country of origin information (Godden 1964; Lehner 1988; Praetzellis et al. 1983).

Glass artifacts were identified and analyzed following Jones et al. (1989) with a particular focus on vessel color, form, manufacturing technique, decoration, contents, and use. In most cases, due to the heavily fragmented nature of most of the glass remains, identification was limited to color and shape, and vessel counts had to rely on these attributes alone. When finishes, bases, manufacturing technology marks, or decorated/embossed body shards were recovered they were used to identify form, chronology, and possible contents, as well as vessel counts (Toulouse

1971; Lindsey 2017). Modification to glass (*e.g.,* knapping, edge use) was also identified and noted when present.

Metal artifacts were sorted based on type, form, and manufacturing technique. Metal artifacts were typically iron, copper alloy, and white metal (lead based) in composition. When possible, distinctions between types of metal artifacts were made (*e.g.,* cans, tools, nails), but most flat metal was heavily degraded and unidentifiable. The most prevalent identifiable and diagnostic metal artifact were nails. Nails were sorted based on manufacturing style (hand wrought, machine cut, or wire). Complete nails were measured, converted to penny sizes, and type was identified when possible (*e.g.,* finishing, shoe/boot).

Artifacts comprised of rubber, plastic, leather, or fabric were relatively infrequent. When encountered these objects were catalogued based on material type and specific form. Most rubber/plastic objects were buttons or personal hygiene objects (comb teeth), whereas leather was almost always from a shoe/boot. Objects of a particularly distinct or highly diagnostic nature are traditionally catalogued as “small finds.” In the case of the SALK project, these materials were grouped and catalogued according to primary material type (glass, metal, ceramic), but all diagnostic features were recorded.

Faunal remains are a critical line of material evidence because of their ability to shed light on food production, consumption, and disposal practices that have been shown to be intricately and meaningfully linked to the construction and negotiation of inequality, power, and identity (Brown and Bowen 1998; Crabtree 1990, 1996; Crader 1990; Gifford-Gonzalez 1991; Gifford-Gonzalez and Sunseri 2007; Landon 2005; Milne and Crabtree 2001; Otto 1984; Schulz and Gust 1993). The high-resolution sampling methods employed in SALK 2017 resulted in the fairly extensive recovery of faunal remains, allowing for a number of different zooarchaeological studies.

Analysis of faunal material was undertaken by me and focused on the identification of animal types, elements, cut marks, and cooking/processing methods, with the goal of reconstructing foodways, identifying differential consumption patterns between laboring groups, and exploring food practices as both a mode of social control and negotiation. Specimens were identified to the lowest possible classification. In many cases this was to the genus level, in some cases, however, specimens were confidently identified to the species level. When a specimen’s genus or even order was unidentifiable, elements were catalogued based on the most specific and narrowly defined category as possible (*e.g.,* unidentified Rodentia, medium bird). The “unidentified Rodentia” category includes animals in the rodent to rabbit size whereas “unidentified Artidactyla” refers to animals such as goat, sheep, pig, and deer. Categories such as “small bird” or “small fish” are based on relative size determinations when species identification was not possible. All butcher/cut marks were noted by location, count, and type of cut, if identifiable (*e.g.,* hand saw, mechanical saw, cleaver, knife) (O’Connor 2000). Quantitative analysis of faunal remains included calculations of number of identifiable specimens (NISP) and minimum number of individuals (MNI), (Klein and Cruz-Uribe 1984; Lyman 1994; Marshall and Pilgram 1993; Reitz and Wing 2008; Schulz and Gust 1983).

Chronology

Chronological determinations for units and stratigraphic sequences are presented with both *terminus post quem* (TPQ) and mean dates (South 1977; Deetz 1977). TPQ techniques present the earliest possible date for an artifact, context, or unit. This provides an understanding for the limit after which the associated activities must have occurred. Alternatively, mean dates provide an average for the material or deposit based on its date range of manufacture and/or historical use. Depending on the particular material, mean dates often over- or under-estimate actual periods of consumption or use. Similarly, by providing a temporal limit, but no method for considering extended use life, TPQs often present dates significantly earlier than expected. Used in conjunction and comparatively within the context of associated stratigraphy, however, these methods can elucidate well-defined temporal relationships between contexts, deposits, units, and materials from across the site.

CHAPTER 5. DATA PRESENTATION: THE MATERIALS OF LIFE AND LABOR AT THE SAMUEL ADAMS LIME KILN COMPLEX

As discussed in the previous chapter, a total of 12 units measuring a total of 13 square meters were excavated at 10 different loci across the Samuel Adams Lime Kilns as part of the SALK 2017 field project. This chapter will summarize and describe excavation activities and findings for each locus. Findings will be organized and presented first by functional occupation categories – including domestic/residential spaces, working spaces, social/shared communal spaces – and then by loci, following Wheeler's (1998) alphabetical identification system for discrete structural remains identified in his report as "features." In some cases, when multiple units were excavated in one locus but significant differences between the spaces exist, findings from specific units rather than the locus as a whole will be discussed. The term "context" will be used instead of "level" to allow for depositional activities that leave traces not best described or defined as vertically oriented stratigraphic levels (*e.g.,* post holes, pits, ash lenses, rodent burrows). Context descriptions for each loci/unit will be summarized to provide the necessary stratigraphic and depositional context for the presentation of artifact findings. For a detailed description of excavated contexts see the SALK 2017 excavation report (Hyde 2019). Table 5.1 shows different periods of company ownership for the different buildings (loci) and various deposits recovered archaeologically from across the Samuel Adams Lime Kiln site. These relationships and chronologies are discussed in greater detail below.

Domestic/Residential Space

Census documents, primary historic sources, company documents, and archaeological data all shed light on the demographics of the workforce and the living situation at the Samuel Adams Lime Kilns. Historical sources suggest between 30 and 50 men were employed at the Samuel Adams kilns at various periods, but it is likely that not all of the lime workers lived on-site. Instead, census records suggest between nine and 15 workers lived at the site full-time in company provided housing (Amin-Patel 2018; Perry et al. 2007). Close proximity to the town of Santa Cruz along with insufficient housing for the numbers of laborers required to work the kilns led a portion of the workforce to live off-site. These individuals would have traveled regularly to the kiln operation for work shifts or would have lived on-site part-time and/or seasonally.

Census documents and corresponding archaeological data suggest that there was one private residence for the foreman and his family. Manual workers lived together in a shared cabin, with a second cabin being added after Cowell gained ownership of the operation. Living spaces, then, were segmented based on occupation and position within the company hierarchy, allowing for the possibility of comparative analysis as the demographic make-up of these labor groups shifted through time.

Domestic/residential spaces at the Samuel Adams Lime Kiln complex are located in the eastern and southern portions of the site (Loci T, F, G, T/J) (Figure 1.1). The four loci identified as being largely domestic/residential in nature are located at roughly the same elevation line along the north-western facing slope of the geological bowl that defines the southeastern boundary of the site. Domestic structures are located at variable distances of 25-feet to 75-feet from the historic Adams Creek Road (and present-day trail). The domestic features are above the cooperage (Locus J) and across the road from the cookhouse and mess hall (Loci B, C).

A total of four units (three 1x1-meter and one 1x2-meter) were excavated from these domestic spaces. The goal of these excavations was to uncover material traces of the workers' daily lives and the nature of their non-work-related activities at the kiln complex. This project works from a position that sees labor as extending into the household, as well as leisure and other non-work spaces. It was expected that material traces of activities within these personal, and at least somewhat private, spaces may provide critical evidence for exploring worker relations, identity, agency, and consumer preference to better understand the emergent and strategic negotiation of cultural differences and corporate industrial power structures. The location for unit placement was determined based on surface survey data (visible architectural features and artifact concentrations), historic photos, historic and archaeological maps, and prior archaeological testing as part of the FWVAS project.

Locus T: Foreman's Household

Locus T is the collapsed structural remains of a multi-room wooden building (Hyde 2019; Kindon 2017; Wheeler 1998). It is defined by a heavy scatter of milled wood planks, vertical *in situ* wooden posts, brick concentrations and scatters, fragments of a possible brick chimney, and riveted iron stovepipe fragments. The location of the wood scatter is on the same hill face and at roughly the same elevation as Loci F and G (workers' cabins). In an early 1900s historic photograph of the location a two-room wooden building is visible in the left-hand portion of the image (Figure 5.1) (Perry et al. 2007:49). This building has been previously misidentified as a workers' cabin (Locus G) (Kindon 2017). The topography, orientation, building layout and location, and relation to other structures, however, suggests this building is in fact the feature identified archaeologically as Locus T. Archaeological findings, discussed in detail below, indicate this building served as the primary residence for the foreman and his family from 1858 until roughly 1880.

As part of the SALK 2017 project, Locus T was re-surveyed and it was recognized that at the southern extent of the timber collapse there were at least 3 medium-large mortared brick column features oriented in a line. It is thought that these brick features represent the original back (southern-most) foundation features for the Locus T building. This construction technology and orientation corresponds with that of the building in the historic photograph, whereby the structure is oriented downslope (north) and wooden pier supports are used at the northern-most aspect of the building to create a level timber foundation and floor.

A single 1x2-meter excavation unit (Unit 103) was placed within the central collapse of Locus T, in the southern portion of the feature. The exact placement was based on a desire to recover a sample of presumed inside space, while minimizing disruption to the collapsed, but fairly complete and well preserved extant wooden architectural elements. The goal of excavating in this space was to recover material traces of the foreman's domestic life within this distinct residence and provide comparative data for that recovered from other living spaces across the site, possibly shedding light on the differences and similarities between these household groups.

Excavations at Locus T exposed multiple layers of structural collapse, and interior floor feature, and sub-floor features (Figures 5.2 and 5.3) (Hyde 2019). The nature of the collapse and stratigraphy indicate that contexts and materials associated with Locus T were largely intact and undisturbed. Differences in architectural elements represented in the collapse suggest the roof of the structure (and likely some wall elements) collapsed onto a wooden floor, which over time collapsed onto a wooden and earthen subfloor. This depositional history indicates that the structural collapse capped cultural strata and the relatively rich assemblage of materials recovered in these contexts (4-6) are direct material traces of life at the Locus T household. Both small and large artifacts were present, suggesting some of the material likely fell between the interior floorboards, while other larger remains may have been stored or swept below the building, or dragged there by scavengers.

Locus T Artifacts

Architectural Remains. Unit 103 was located directly within a dense surface scatter of timber and brick architectural material. As a result, a large number (36%) of materials encountered were architectural in nature. Due to storage limitations, not all wood and brick artifacts recovered archaeologically were retained and cataloged, although they were noted on all field forms so their presence within various contexts was recorded.

A minimum of 464 nails were recovered from Locus T, as evidenced by the presence of a whole nail or nail head (Table 5.2). A wide range of nail sizes (3D-8D, 10D, and 12D) suggest a broad range of timber architectural elements were represented at Locus T, consistent with what one would find in a multi-room timber building. Machine cut nails make up the majority of nails recovered (n=431, 92.9%), whereas wire nails (n=16) comprise only 3.4%, hand forged nails and tacks (n=9) comprise 1.9%, and other cast iron and cut bolts, screws, and staples together (n=8) comprise 1.7%.

Brick, stone cobble, mortar/plaster, and timber elements were found predominately in the top 30-centimeters of the unit, although they were present in some quantity in almost every excavated context. These elements, based on the depth and location recovered, are likely traces of a number of different architectural features, including a wooden foundation post, subfloor/foundation features, wood floor and/or siding elements, and masonry foundation and wall elements. Metal architectural remains include fragments of an iron stovepipe and parts of a wood burning stove. At least three windows were present in the Locus T structure, as evidenced by the presence of flat window glass fragments in three slightly different colors (Table 5.3).

Lighting. Evidence for lighting at Locus T is limited to eight fragments of colorless chimney glass, representing a minimum of one lamp. Having recovered only chimney fragments and no font or metal burner components, it is impossible to determine if these chimney fragments are from a candle or oil lamp.

Food Storage. Evidence for food storage at Locus T includes flat metal can pieces and glass condiment storage vessels (Table 5.4). A total of 1,305 flat metal pieces were recovered, but these were largely undiagnostic. From these fragments a minimum of only two cans could be identified based on seam types. One can exhibited simple rolled seams (n=48) and one had sanitary seams. The heavily fragmented nature of all the flat metal remains made it impossible to identify any potential can contents. A minimum of three glass condiment bottles were recovered from Locus T. One bottle is likely a fragment of a gothic/cathedral-style condiment or pickle bottle. The other two vessels are ribbed condiment bottles. All of these bottles may have held a wide range of different sauces, condiments, and pickles (Lindsey 2017).

Beverage Storage. A total of 413 artifact fragments representing a minimum of 56 beverage storage vessels were identified from Locus T, all but one being glass bottles (Table 5.5). Due to the fragmentary nature of the remains, along with few identifiable marks or diagnostic features, many of the original contents were not identifiable (n=35, 62.5%). A large number of the vessels that could be identified were alcohol bottles (n=20, 35.7%), with six (30% of alcohol bottles) of those alcohol bottles being wine or champagne bottles and 13 (65%) being liquor/spirits bottles. One metal church key opened “Rex” beer can was recovered (5%), but this object dates to after 1960 so it reflects post-lime operation activity.

Service/Tableware Vessels (Glass and Ceramic). A relatively moderate amount of glass and ceramic service vessels were recovered from Locus T. The glass service vessel is limited to one colorless undecorated mold-made glass cup, with a 7-centimeter rim. The ceramic vessels are more numerous and diverse. The ceramic serving vessel assemblage is represented by a minimum of 10 vessels (12 fragments) (Table 5.6). The ceramic assemblage is diverse in form and types, with creamware, whiteware, blued whiteware, hotelware, and Rockingham ware all being represented fairly evenly in side plates, saucers, tea cups, buffet plates, luncheon plates, bowls, and cups. Of the vessels represented, 30% are decorated with molded patterns, and likely belong to an unidentified ceramic set (a matching saucer and teacup were recovered). This diversity of materials suggests we likely recovered a representative sample that illustrates a cross section of the types and forms utilized by the occupants of Locus T. Of note is the fragment of a Rockingham ware vessel, as this is one of only two examples recovered from the site (the other, possibly associated fragment was from Unit 101, located in an intermediate space between Locus T and J). While the fragment was too small to determine the vessel form, Rockingham wares were commonly available in utilitarian forms such as jugs, pitchers, bowls, and teapots (Claney 2005). The possible social implications of this vessel will be discussed in Chapter 6, “Life and Labor as a ‘Lime Worker.’”

Health and Hygiene. Materials associated with health and hygiene give insights into the nature of the household and the range of activities undertaken at Locus T (Table 5.7). Of particular interest was the recovery of three fragments of a baby bottle. The bottle shape and finish are diagnostic, but the word “baby” was also embossed on one of the fragments (Figure 5.4). Baby bottles were developed following the invention of the first rubber nipple by Elijah Pratt in 1845, but it wasn’t until the latter part of the nineteenth century that a more pliable volcanized rubber and the first infant formulas were developed (Bogucki 2007; Stevens et al. 2009). This finding is significant, because the rural kiln operation has been largely assumed to have been an all-male site. The presence of a baby bottle is strong evidence for both women and children being at the site for some period of time and supports the interpretation that Locus T is residence for a single family.

Additionally, a minimum of two bluing balls and one comb tooth were recovered from Locus T. Bluing balls were a pigment additive utilized in laundry work to make whites appear more vibrant. The comb tooth was made from black molded hard-rubber. The thickness of the tooth suggests it may have been a beard comb. The lack of diagnostic finishes or marks led to no glass bottles being conclusively identified as having medicinal contents, although it's likely some of the vessels counted in "Beverage Storage" were in fact medicinal.

Smoking and Narcotics. No material evidence of smoking was recovered from Feature T.

Clothing and Adornment. A total of 23 artifacts associated with clothing and/or adornment were recovered from Locus T (Table 5.8). At least six artifacts are associated with a leather shoe, including leather insole fragments, a shoe nail, copper alloy eyelets, and a copper alloy aglet. A total of 14 buttons were recovered in a wide range of sizes and styles, but the assemblage was dominated by Prosser-style buttons (n=9). In addition to buttons, two Levi Strauss jeans rivets, patented in 1873, were also recovered. Overall, the assemblage of buttons and rivets recovered suggests at least one male occupant of Locus T participated in wearing the popular workwear of the time – denim pants/overalls and sturdy work shirts with Prosser buttons. Additionally, one circular iron and resin brooch was recovered. The brooch was largely intact, but the domed resin front was cloudy and degraded, hiding any imagery that may have existed below. Overall, the clothing and adornment items recovered are fairly typical of laboring families in the late-nineteenth century.

Ammunition. Arms recovered from Feature T are limited to a single Minié ball. The bullet is cast lead with a diameter of .88cm, a total length of 1.67cm, and a concave base with an exterior groove. A distortion of the metal on the tip suggests the bullet was fired.

Tools. A suite of general household tools were recovered from Locus T. These materials include one-half of a bone knife handle decorated with cut concentric circles. Also recovered were the remains of at least two bucket handles, likely utilized for a diverse range of household activities. Of particular interest was the recovery of nine fragments of what may be a liquid battery bottle. The presence of a battery suggests that Locus T may have had electric lighting at some point, which may explain the relatively small quantity of lamp materials recovered. Alternatively, the battery may have power some mechanical equipment that was associated with the structure or the labor of the structure's occupants.

Other Small Finds. No other artifacts that fall outside the above categories were recovered from Locus T.

Faunal. A minimum of 14 individuals (NISP=269) are represented in the faunal assemblage from Locus T (Table 5.9). The presence of domesticated faunal remains at Locus T were limited to a minimum of one each of cow (*Bos taurus*), sheep/goat (*Ovis aries*/*Capra hircus*), and chicken (*Gallus gallus*). Beyond domesticates, represented in the faunal assemblage are a minimum of two cottontail rabbits (*Sylvilagus audubonii*), one squirrel (*Sciuridae*), one dusky-footed woodrat (*Neotoma fuscipes*), two other unidentified Rodentia, one small unidentified bird, one unidentified large fish, two California mussels (*Mytilus californianus*), and one land snail. The rodent and land snail remains are likely non-cultural post-depositional incursions. Of the 269 recovered faunal specimens at Locus T, only five exhibited evidence of butchery and two were burned. The range of butchery activities evidenced on the faunal material is broad. One element showed evidence of a knife cut mark, another had evidence of both hand sawing and a knife cut, and yet another showed evidence of hand sawing and cleaver chopping. Two additional elements showed evidence of butchery but the implement and method were unidentifiable.

Locus T Chronology

Chronological data for each Locus T context is listed in Table 5.10. Using the presence of copper alloy Levi's jeans rivet from Context 6, Locus T as a whole has a TPQ of 1873. Taking into consideration contextual data, mean dates, and other artifact manufacturing histories, the original occupation of Locus T appears to date to the late 1850s or early 1860s, as evidenced by a black hard-rubber button with a Novelty Rubber Co. mark recovered in Context 6. This branch of the Goodyear company was only in operation from 1855 to 1865, providing a tight date range of possible manufacture. Context 6 is interpreted as the historic subfloor, and it is likely that this button fell through the floorboards during the historic occupation of this structure (Hyde 2019).

A closer analysis of the materials, however, suggests the function of the building changed over time. This is evidenced through the fact that very little domestic materials recovered from Locus T date to a period later than 1870. This aligns with historic census data, which suggests that after 1880 (at the latest) the foreman and his family did not live on-site at the Samuel Adams Lime Kilns. Rather, it appears the foreman lived part-time on-site without his family, likely residing at the office (Locus S). The lack of domestic materials in upper contexts and an abundance of non-structural brick accumulations suggests Locus T may have been converted to a storage or other multi-purpose work space after about 1880, when no longer used as a private residence. This indicates that Locus T was likely constructed and occupied during the first period of operation (1858-1869), used as a private family residence until 1880 at the latest, and then used for alternative purposes until operations finally ceased in 1909.

Locus T Interpretation

The material recovered from Locus T is largely domestic in nature, suggesting the building served primarily as a household residence. The nature of the assemblage corresponds to that of a single-family residence, and comparison of artifacts, architecture, and building location suggest the building served as the home for the site foreman and his family. Materials like the brooch, baby bottle, the diverse ceramic assemblage (including matching teacup and saucer), lack of smoking paraphernalia, and relatively substantial presence of faunal remains mark this space as quantitatively and qualitatively different than the shared domestic/residential spaces of the manual laborers' cabins (discussed below). The large amount of faunal material in association with ceramic table and service wares suggest Locus T was a self-contained domestic space, in comparison to the distributed residence of the manual laborers (discussed in greater detail below). This evidence suggests the occupants of Locus T consumed their meals in their home, not in the separate mess hall along with the manual laborers. It is unclear, however, if the Locus T occupants cooked their own meals at the house. If the company cook prepared their meals, it appears that they were served or taken to Locus T to be consumed as a family. As discussed above, Locus T has material evidence of occupation as a private family residence from 1858 until roughly 1880, and as a multipurpose industrial workspace from 1880 until 1909.

Locus T/J: Intermediate Domestic/Work Space

Unit 101, a 1x1-meter excavation unit, was placed in what appears to be an intermediate area between a number of visible structural remains, architectural features, and archaeological features (Loci T and J). Excavations at Loci T/J exposed a number of architectural and archaeological features that appear to represent a combination of path/walkway features, downhill sliding material and matrix, and displaced material from adjacent looting activity (Figures 5.5 and 5.6) (Hyde 2019). Data from excavations at Locus T/J suggest a portion of the hillside was cut-out, forming a narrow platform in which a layer of bricks were laid, above which limestone blocks and wooden planks were placed, creating a floor/walkway. While some of the artifacts recovered appear to be displaced material from adjacent looters' pits, the material found in association with these architectural elements are likely accumulated traces of historic activities undertaken in the area surrounding the cooperage (Loci J) and the adjacent foreman's residence (Locus T). Because the material and context of Unit 101 appears to be distinct from the surrounding loci and units, however, it has been analyzed and described on its own, rather than aggregated with material recovered from units at Loci T or J.

Locus T/J Artifacts

Architectural Remains. A diverse assemblage of architectural material was recovered from Unit 101 including bricks, limerock cobbles, iron, and window glass materials. As discussed above, a brick and cobble foundation/subfloor feature was encountered, and most of the architectural materials are associated with this feature and associated context. Other elements are likely collapse and scatter from the adjacent cooperage (Locus J).

A minimum of 210 nails were recovered from Unit 101 (Table 5.11). The majority of these nails were machine cut (n=179, 85.2%), which is fairly consistent when compared to other units/features from across the site. Interestingly, however, 12.4% of nails recovered were hand forged (n=26), and only one wire nail was recovered (.5%). This pattern of having a greater preponderance of hand forged to wire nails suggests that the architectural features associated with Unit 101 (walkway and/or floor) were probably built during the earlier period of occupation at the site when, even though machine cut nails had been developed, hand forged nails were still often used because machine cut nails were not consistently or easily available. The presence of a wire nail, and the presence of wire nails visible in the extant posts surrounding Unit 101, however, suggest that the associated architectural features were maintained throughout the entire occupation of the site. Nail sizes recovered include 3D through 6D, 8D, and 10D, with the assemblage being dominated by 3D and 4D nails (n=48, 88.9%). This is a less diverse nail assemblage than that recovered at other domestic spaces, which further supports the associated architectural features as being relatively simple or functionally specific.

Also recovered from Unit 101 were fragments of barbed wire (exact style unidentifiable), an iron pipe, window glass, and a door latch/hook – elements likely associated with the adjacent cooperage or Locus T residence (Table 5.12).

Lighting. A minimum of three lamps were recovered from Unit 101 (Table 5.13). At least one lamp is an oil lamp, as evidenced by the recovered amethyst lamp font fragments. This artifact is likely associated with a recovered scalloped amethyst lamp chimney fragment. Remains from at least two other lamp chimneys were recovered, one colorless and one light natural blue green, but the lack of diagnostic features makes it impossible to discern if these were oil or candle lamps.

Food Storage. Recovered food storage vessels are limited to a minimum of one metal can and one ceramic soy sauce bottle (Table 5.14). The metal can is a simple rolled type, represented by 188 flat and rolled fragments. The soy sauce bottle is a light brown-glazed stoneware type vessel imported from China. This fragment is identified as a soy sauce bottle on the basis of a small spout fragment. Like the name suggests, these vessels often held soy sauce, but are also known to have been used to store vinegars and molasses (Brott 1987; Felton et al. 1984; Fong 2013; Olsen 1978).

Beverage Storage. A minimum of 55 glass beverage storage bottles were recovered from Unit 101, represented by 336 individual fragments (Table 5.15). Of these 55 vessels, 40 (72.7%) were unidentifiable because of the heavily fragmented nature, lack of embossed markings, and lack of diagnostic finishes. Bottles identified as originally containing alcohol represent 20% (n=11) of the assemblage, with nine of those vessels being liquor bottles and two being from wine or champagne bottles. Two bottles (3.6%) were pepper sauce bottles, with at least one being a gothic cathedral style bottle that was popular between 1850 and 1880 (Lindsey 2016). Additionally, fragments from at least two soda/mineral water bottles (3.6%) were recovered. One of these bottles was a light natural blue fragment embossed with marks linking it to Dyottville Glass Works, in operation in Philadelphia from 1844 through the 1870s (Lockhart et al. 2015).

Service/Tableware Vessels. Service vessels and tablewares from Unit 101 are represented by a minimum of 16 vessels, 11 ceramic and five glass (Table 5.16). Among the ceramic vessels, four (36.4%) are blued whiteware dinner and luncheon plates, two are whiteware (one soup bowl and one hollowware), two are grayed ironstone (one bowl and one plate), and two are hotelware (one teacup and one hollowware). One whiteware fragment with a William Adams maker's mark provides a manufacture date range of 1853-1865. In addition, one brown slipped Rockingham ware fragment was recovered. This ceramic assemblage is qualitatively similar to that recovered from Locus T, suggesting these materials may be associated with this adjacent domestic household.

Within the glass assemblage, three press molded vessels were recovered – one cup, one bowl, and one unidentified hollowware (Table 5.17). Additionally, an amethyst glass pitcher handle was recovered, along with an amethyst shot glass fragment with a thick, paneled base. Overall, the glass and ceramic service/tableware assemblage represents forms used in daily domestic life.

Health and Hygiene. A range of ceramic, glass, and hard-rubber health and hygiene materials were recovered from Unit 101 (Table 5.18). One fragment of a blued whiteware basin rim was recovered. The rim was large (38cm diameter) and everted, but the vessel was otherwise plain. Two cobalt glass bottles, one cylindrical and one square, were also recovered. These vessels had no diagnostic features or markings but the color suggests they likely contained medicine or poison. Two other vessels with patent finishes, one colorless and one light natural blue green, also likely held patent medicine, although the specific type was unidentifiable. Fragments from a Perry Davis Vegetable Pain Killer bottle were recovered in a number of contexts. The bottle was identified by a diagnostic "VEG…" embossing. This patent medicine was produced between 1845 and 1920 and was marketed as a cure-all for everything from colds and fevers to sea sickness, frost bite, and cholera. The contents of this patent medicine included alcohol, opium, camphor, pepper, myrrh, guaiac, and spruce oil. The presence of this, and other patent medicine bottles, gives some insight into the stresses and ailments of lime work, and the lack of regular access to more formal forms of health care.

In addition, teeth from at least four different hard-rubber combs were recovered from Unit 101 (Table 5.19). The teeth are identified as being from separate combs because their color and/or tooth dimensions are distinct. Two of the teeth are likely from general hair combs, while the other two may have been beard combs (based on the wider tooth form).

Smoking and Narcotics. No evidence for smoking or narcotic consumption was present at Unit 101 except for one cotton cigarette filter tip recovered in Context 1. Cigarette filter tips first became popular in the mid 1950s (Laurie Wilkie, personal communication 2019). The nature of this artifact, along with its location in disturbed soil near the surface makes it very likely that it is a product of post-lime activity, possibly even being a remnant from adjacent looting activity.

Clothing and Adornment. Clothing items recovered from Unit 101 include various components of a leather shoe and a range of buttons (Table 5.20). A number of artifacts including leather fragments, iron shoe tacks and nails, copper eyelets, and a heel, together represent a minimum of one leather shoe. An iron shank-style jacket button and copper alloy shank-style jacket button were also recovered. Also found were a white metal and black enamel sew-through shirt button, a white Prosser button, an oval bone sew-through pant button, and a copper alloy Levi's jeans rivet with denim attached (style in production between 1873 and 1890) – all items associated with industrial workwear clothing.

Ammunition. Two shotgun shell heads were recovered from Unit 101. Both shells are low brass, center primer, 12-gauge type shells. The shells are marked "Winchester, Blue Rival, No 12," which was produced by the Winchester Repeating Arms Company between 1894 and 1904 (Wildman 1895). Both shells show evidence of being fired.

Tools. Tools from Unit 101 are limited to an iron bucket handle, general rolled iron strapping, and iron bailing wire. These are all multi-purpose tools and materials, likely used for a range of domestic and industrial activities. Some of the bailing wire had been shaped into a small loop.

Other Small Finds. The only small finds recovered from Unit 101 were a small rectangular cut and engraved copper alloy collar or corner brace with a small stud attached and a fragment of iron mesh. The engraving on the collar is a vegetation and scroll design. It is possible that this metal object was originally part of a jewelry box, picture frame, mirror, or other decorative wooden object. The iron mesh is likely a fragment of sieve or screen.

Faunal. A total of 554 faunal specimens were recovered, representing a minimum of 10 individuals (Table 5.21). At least two cows (*Bos taurus*), one sheep/goat (*Ovis aries*/*Capra hircus*), one cotton tail rabbit (*Sylvilagus audubonii*), one squirrel (*Sciuridae*), one unidentified Rodentia, one duck (*Anas*), one unidentified medium fish, one California mussel (*Mytilus californianus*), and one unidentified clam are represented. A total of 59 specimens (10.6% of total faunal assemblage) show evidence of butchering, with hand sawed, knife cut, and cleaver chopped butchery methods all present. Saw marks are present on 39 specimens (66.1% of butchered elements), cleaver chop marks on 10 (16.9%), knife cuts on five (8.5%), and scrape marks on one (1.7%) (with some specimens having more than one type of mark). Additionally, a total of 33 specimens (6% of total faunal assemblage) show evidence of burning.

Locus T/J Chronology

Chronological data for each Unit 101 context is listed in Table 5.22. A TPQ of 1894 for Unit 101 comes from two Winchester Blue Rival Shotgun Shells (1894-1904) recovered from Contexts 2 and 3. Other artifacts recovered, including a William Adams ceramic (1853-1865) and an enameled black button manufactured between 1837 and 1865 (cast white-metal-style; Hume 1969) suggest the features and deposits associated with Unit 101 date to both the first and second periods of occupation at the site (1858-1868, 1869-1909). This is expected given the adjacent location of Unit 101 to the cooperage (Locus J), which would have been a critical component of lime work in both periods, and possible association with the foreman's residence (Locus T), which was occupied as a residence until at about 1880.

Locus T/J Interpretation

The recovered assemblage from Unit 101 is ambiguous. The material is largely domestic in nature and is quantitatively and qualitatively similar to the material recovered at the nearby foreman's household (Locus T). Architectural elements, however, were also encountered that suggest the space was a walkway or otherwise associated with the adjacent cooperage. In a historic 1900 photograph of the Samuel Adams site (Figure 5.7), there is a clearly visible ancillary structure that is separate and architecturally distinct but attached to the northeast side of the cooperage. This ancillary structure appears to be open walled and may have been a storage area or worker staging/resting area, as it is located next to the cooperage and directly across from the kiln fronts. Unit 101 is located in a space that would have been directly behind (and upslope) from this structure.

It appears then, that the materials recovered are a mixed aggregate of both primary historic deposits and post-depositional processes. Recovered materials are traces of historic deposits associated with the daily use of the walkway/floor feature and are themselves likely an aggregate of materials and traces from the surrounding buildings (cooperage, cooperage ancillary structure, foreman's house). Both historically and post-abandonment it appears these primary historic deposits have been augmented with downslope spreading and sloughing of matrix and materials from the upslope foreman's house (Locus T). Unfortunately, stratigraphic differences are not notable in the matrix above the architectural elements to determine which materials/contexts are primary deposits and which are secondary. Additionally, there is clearly evidence for post-depositional disturbance in the form of adjacent looters' pits. This appears to have deposited additional material from nearby (but deeper) locations into the upper contexts of Unit 101. As a result, the material recovered must be treated as an aggregate of activity traces from the cooperage, cooperage ancillary structure, foreman's household, and intermediary walkway/floor.

Locus G: Northern Shared Workers' Cabin

Locus G is the structural remains of a residential cabin located approximately 135-feet north of Locus F (another residential cabin) on the same hillside at roughly the same elevation (Hyde 2019; Wheeler 1998). The structure is identifiable on the surface by a brick foundation/wall oriented south and associated milled timber elements. Earlier surveys identified the brick feature being approximately 20 feet long, but at the time of the SALK 2017 excavations only intermittent portions of the feature were visible and its exact extent was difficult to identify. In addition to the brick wall, a previously unidentified mortared brick corner/chimney, an additional articulated square brick feature, and a moderately large masonry block scatter were identified.

A historic photograph from 1900 (Perry et al. 2007:49) (Figure 5.1) shows a small wooden cabin in the location of Locus G, similar in size and form to cabins at other Santa Cruz lime operations known to house the manual workers (Paramoure 2012). The cabin is located along the tree-line of a western aspect, roughly 100-feet east from the historic Adams Creek Road/Trail (occupied in the photo by an oxen train hauling lumber). A later photograph dating to 1957, purportedly of Locus G, is of poor quality but appears to show an extension or additional cabin built directly to the south of the cabin shown in the 1900 image (Wheeler 1998). This extension is not present in the 1900 photograph so it may have been a later addition, or the 1957 photographed structure is misidentified. Archaeological excavation did not clarify this issue. Regardless, the material remains recovered from Unit 106 at Locus G are determined to be associated with the manual workers' and their cabin/domestic activities. In this dissertation I will refer to the Locus G cabin as a single household and building, but it may have been comprised of multiple rooms or structures.

The Locus G cabin was built on the hillside using wooden pier supports to create a level structure and is fronted by a small porch. The observed brick feature corresponds to the back/upslope (eastern most) structure foundation. The historic photographs illustrate that the eave of the structure was supported by at least four posts and covered a western facing door flanked on either side by small windows.

In Kindon's 2017 FWVAS report he identifies the structures visible in the center of the 1900 photo (Figure 5.1) as Features F and G (the north and south shared workers' cabins). As discussed above, I believe this identification is incorrect, and what is represented in the photo is a structure identified archaeologically as Locus T (center of the photo; foreman's residence) and a workers' cabin identified archaeologically as Locus G (right aspect of the photo). This alternative identification is based on the relationship between the structures and the surrounding topography, the size and footprint of the structures depicted, and the known distance between Loci G and F, which is substantially larger than that represented in the photo.

Excavations at Locus G (Unit 106, a 1x1-meter excavation unit) did not expose any architectural or discrete depositional features, and the matrix was fairly undifferentiated throughout (Figures

5.8 and 5.9). In addition, the overall artifact assemblage recovered broadly reflects worker domestic and leisure activities. All factors taken into consideration, however, indicates that excavations at Locus G recovered traces of outside activities (yard space) associated with the northern shared workers' cabin (Hyde 2019). Compact layers of matrix associated with increased artifact density (Contexts 3 and 4) likely represent outside "living" surfaces associated with the historic occupation of this structure. The lack of any additional features, however, suggests it is likely a mixed assemblage of domestic and leisure materials swept or dropped *in situ* just outside the structure (Hyde 2019). The extremely compact nature of Contexts 3 and 4 could reflect the possibility of there being a tamped earth feature such as on outside patio/use space or, more likely, a path that could have connected Locus G to the other workers' cabin (Locus F), mess hall, and/or central production area of the site.

Locus G Artifacts

Architectural Remains. Architectural remains from Locus G include nails, bricks, limerock cobbles, and lime mortar/plaster (Table 5.23). A total of 41 nails were recovered but were limited to 4D (n=5) and 10D (n=2) penny sizes (Table 5.24). The majority of nails were machine cut (n=36, 87.8%) with only one being wire (2.4%). An additional two screws were also recovered. At least one window was present, as evidenced by fragments of light natural blue-green flat window glass.

Lighting. A total of eight colorless lamp chimney fragments were recovered, representing a minimum of one lamp. The lack of any diagnostic features, fonts, or burner elements make it impossible to distinguish whether these chimney elements were a part of oil or candle lamps.

Food Storage. Food storage objects are limited to a minimum of one metal can and one ceramic hollowware. The can is represented by 89 fragments of flat metal, none with any seams present. One sherd of brown-glazed stoneware was recovered from Locus G. Stoneware vessels such as this were imported from China and typically functioned as a transport vessel between the location where the contents were produced and/or sold and where they were consumed (Fong 2013). While the exact form of this fragment was unidentifiable, these ceramic stoneware vessel types often held soy sauce, liquor ("wine"), vinegar, or a variety of preserved foodstuffs such as beans, pickled vegetables, pickled eggs, and dried seafood (Brott 1987; Felton et al. 1984; Fong 2013; Olsen 1978).

Beverage Storage. A total of 95 fragments of beverage storage vessels were recovered from Locus G, representing a minimum of 29 vessels (Table 5.25). Of these vessels, 18 (62%) were unidentified and 11 (38%) originally contained alcohol. Within the alcohol bottle assemblage eight (72.7%) were liquor/spirits bottles and three (27.3%) were wine or champagne bottles. Due to the highly fragmented nature of the glass bottle materials at Feature G, no exact companies or contents were identified.

Service/Tableware Vessels (Glass and Ceramic). Service and tablewares were recovered in very small quantities at Locus G. One colorless molded glass cup or bowl was recovered along with one white ironstone saucer. Both the glass cup/bowl and the ironstone saucer were undecorated.

Health and Hygiene. Recovered objects from Locus G associated with health and hygiene are limited to glass vessels. A total of 15 fragments representing a minimum of three medicine or chemical bottles were recovered (Table 5.26). The vessels were determined to likely be patent medicine or chemical bottles based on the general form, color, and location of embossing. While all three vessels show evidence of embossing, the small sample of letters limited our ability to identify them further.

Smoking and Narcotics. No materials associated with smoking or narcotics consumption were recovered from Locus G.

Clothing and Adornment. Materials associated with shoes, pants, and jackets were recovered from Locus G (Table 5.27). These materials included leather fragments, a shoe tack, and a heel and sole fragment represent a minimum of one shoe/boot. A copper alloy Levi's jeans rivet with blue denim attached was also recovered, along with a sew-through iron button and three distinct shank-style jacket buttons.

Ammunition. A single copper alloy rifle cartridge casing was recovered from Locus G. The cartridge was a .22 long rim fire-type ammunition. No marks were present on the casing, but there was evidence that it had been fired.

Tools. No specialized tools were recovered from Locus G. General metal strapping was present, which may have served as an all-purpose tool for a number of routine practices and maintenance activities.

Other Small Finds. One small, smooth pebble was recovered from Locus G. While it is possible this pebble is non-cultural, it is unlike the natural pebble inclusions found in the matrix across the site. The smooth nature of the pebble was comparatively anomalous and exhibited the characteristics of being river or use worn. With these characteristics in mind, it is possible that the pebble was used as a game piece or was a worker's personal collectible item.

Faunal. A total of 10 highly fragment specimens were recovered from Locus G (Table 5.28). Only one fragment could be confidently identified as belonging to pig (*Sus scrofa domesticus*). All other fragments were identifiable only to the order of Artiodactyla.

Locus G Chronology

Chronological data for each Locus G context is listed in Table 5.29. The TPQ for Locus G is 1873, based on the presence of a Levi's jeans rivet recovered in Context 2. While few datable artifacts were recovered from Locus G, the TPQ for each context is roughly 1870, and the average context date is 1891. This suggests the northern workers' cabin (Locus G) may have been built and occupied during the second period of operation at the site (1869-1909).

Locus G Interpretation

Locus G is interpreted as being a shared workers' cabin, one of two primary residences for single laborers at the Samuel Adams Lime Kilns. Overall, the recovered assemblage reflects the aggregation of a limited range of domestic, social, and leisure practices undertaken by manual laborers at their shared cabins. Because the cabins would have been cramped, it is likely that the outside space surrounding the residence (the area sampled with Unit 106) was an important and widely used social space. This is supported by the rich assemblage of materials recovered through shovel-test pits in the area between the cabins and mess hall, undertaken as part of the FWVAS (Kindon 2017).

As noted in the chronology section above, materials from Locus G tend to post-date 1870, with an average date for the locus being 1891. This is substantively different than the chronological data for the other workers' cabin (Locus F; discussed below), which has TPQs of 1850 and 1860 for its lowest contexts and an average date of 1882 for the locus as a whole. While this difference may reflect sampling issues, it is also very likely that Locus G was constructed and occupied at a later date. A similar conclusion was reached by Tinoco (2011) who did a comparative chronological analysis of nails recovered as part of the FWVAS project. It is likely, therefore, that this additional workers' housing was constructed following the acquisition of the operation by Cowell in 1869 to meet the needs of an expanding operation and work force.

Locus F: Southern Shared Workers' Cabin

Locus F is the structural remains of a small residential cabin, comprised of a mortared firebrick corner, a six-foot dry-laid rock wall oriented to the south, and an additional mortared firebrick feature. While not included in the 1900 photograph discussed above (Figure 5.1), the archaeological remains of Locus F indicate it was constructed and oriented in a manner similar to Locus G – built on the hillside using wooden pier supports to create a level structure and front porch on the moderately steep hill slope. The lack of carbonization or ash suggests the bricks associated with Locus F are not from a chimney or hearth feature, but likely served as an aspect of the structure foundation.

Excavations at Locus F (Unit 107, a 1x1-meter excavation unit) exposed architectural collapse and cultural material that support it having been a shared workers' cabin – like Locus G located further to the north. The overall nature of the contexts, artifact assemblage, and relationship to architectural features indicate that the Unit 107 was located in a space that would have been under the elevated wooden floor of the rear (eastern) portion of the cabin (Hyde 2019). Small artifacts recovered (like buttons and pieces of bottle glass), therefore, reflect largely inside activities and materials that fell through the spaces and cracks in the floorboards. Larger artifacts were likely swept, kicked, stored, or dragged under the cabin by scavengers.

The generally homogenous matrix throughout Unit 107 makes differentiating deposits challenging, but clear levels of architectural debris and artifact concentrations do allow for some stratigraphic interpretation (Figures 5.10 and 5.11). The determination that this assemblage reflects an under-the-cabin space is informed partially by surrounding architectural features. Upslope to the east of the unit is significant masonry collapse, with at least one probable corner and wooden post support feature located directly northeast of the unit. The architectural debris west (downslope) of Unit 107 is consistent with being a collapsed masonry foundation. If this foundation is collapsing downslope, it is collapsing into the footprint of the cabin. Unit 107, therefore, is located within the original footprint of the historic cabin, close to the rear (eastern) portion of the structure. Because this cabin was elevated, however, the primary cultural level encountered (Context 4) was not a direct living space, but the exposed earth below the cabin's elevated wood floor (subfloor). This context was characterized by increased artifact density and a compact matrix, likely a result of differential moisture levels and use of the space as an intermittent or expedient storage area. It appears that the structural collapse capped this historic sub-wooden floor living surface and artifacts recovered in these contexts are direct traces of activities undertaken by the workers within one of their shared cabins.

Locus F Artifacts

Architectural Remains. Architectural remains recovered from Locus F include a diverse assemblage of nails, bricks, limestone blocks, lime mortar/plaster, wooden planks/beams, and window glass (Table 5.30). Based on the nature of the strata and depositional contexts, these represent a range of architectural elements from the southern workers' cabin, especially foundation and floor elements. It appears there were at least four windows present at this cabin, as four distinct colors are represented.

A minim number of 65 nails were recovered from Locus F (Table 5.31). These nails are diverse in size, with 3D, 4D, 5D, 7D, 8D, and 10D being represented. This diversity in nails further supports the notion that a diverse range of structural collapse (floor, wall, and/or roof elements) are represented in Unit 107. Machine cut nails dominate at 90.8% (n=59) of the nail assemblage, with wire nails representing the remaining 9.2% (n=6). No hand forged nails were recovered from Locus F.

Lighting. Three glass fragments representing a minimum of two lamps were recovered from Locus F. The glass fragments were from two lamp chimneys, one colorless and one amethyst. No font or burner elements were recovered, making it impossible to determine whether the chimneys were part of oil or candle lamps.

Food Storage. Food storage at Locus F is represented by a minimum of one simple rolled metal can. A total of 307 flat metal can fragments were recovered, five of which exhibit evidence of having a simple rolled seam.

Beverage Storage. A total of 77 fragments of beverage storage materials were recovered from Locus F, representing a minimum of 27 vessels (Table 5.32). The original contents for a total of 17 vessels (63%) were unidentifiable. All of these vessels were glass except for a single metal pull-tab can. Pull-tab technology was developed in the 1960s, however, so this is likely a post-lime operation artifact. Alcohol bottles represented 37% (n=10) of the beverage storage assemblage. Within alcohol bottles, wine and champagne comprised 20% (n=2) of the assemblage and liquor 80% (n=8).

Service/Tableware Vessels (Glass and Ceramic). No glass or ceramic service or tablewares were recovered from Locus F.

Health and Hygiene. No glass, ceramic, or other health and hygiene items were recovered from Locus F.

Smoking and Narcotics. A total of three bowl fragments representing a minimum of one ball clay tobacco pipe were recovered from Locus F. The pipe was undecorated.

Clothing and Adornment. Clothing items recovered from Locus F include buttons, shoe parts, and a cooper alloy jeans rivet. Specifically, these recovered materials include one white sew-through Prosser shirt button and one cut-bone sew-through pant or suspender button, a total of five shoe/boot fragments including sole parts and multiple shoe tacks, and a Levi's jeans rivet with blue denim attached.

Ammunition. No arms materials were recovered from Locus F.

Tools. No specialized tools were recovered from Locus F. Metal strapping that may have been used for a number of purposes was recovered, however, as was bailing wire bent into a hook shape.

Other Small Finds. No other small finds were recovered from Locus F.

Faunal. A total of 29 faunal specimens were recovered from Locus F, representing a minimum of six individuals (Table 5.33). The species represented are limited to wild game, including at least one cottontail rabbit (*Sylvilagus audubonii*), two unidentified rodents, an unidentified fish, one California mussel shell (*Mytilus californianus*), and one land snail (probably non-cultural). No specimens exhibited evidence of butchering, however, two fragments of mussel shell were burned.

Locus F Chronology

Chronological data for each Locus F context is listed in Table 5.34. A TPQ of 1875 was determined for Locus F based on the presence of an external thread bottle in Context 3. This is supported by the presence of other datable artifacts with similar manufacturing date ranges including a Levi's jeans rivet (TPQ 1873). The TPQ for the lowest contexts, Contexts 4 and 5, are 1850 and 1860 respectively. While the dates for these contexts are based on glass manufacturing technology (relatively broad ranges of 50 to 85 years) this marked difference in context TPQ indicates that Feature F, the southern workers' cabin, was occupied during both periods of operation (1858-1868, 1869-1909). Taken into consideration with the artifacts and respective dates for Locus G, it is likely that Locus F was constructed and occupied as part of the original operation and Locus G (the northern workers' cabin) was built later, after Cowell took ownership and expanded the operation in 1869.

Locus F Interpretation

The totality of information concerning Locus F, including historical, architectural, and material data, indicate that it was a shared workers' cabin for the manual laborers, who lived at the site without their families. Overall, the materials recovered shed light on the daily lives and domestic activities of this diverse and shifting labor group. When the materials recovered from the cabin are considered in the broader context of the site, it appears the manual workers lived in a shared distributed household – where various aspects of their domestic life took place in different buildings/places throughout the lime operation. Material traces of worker life at both cabins is marked by a narrow range of activities. There are no tools or other objects associated with work outside of workwear clothing buttons. It also appears workers may have taken small meals or snacks at the cabins, but the vast majority of their meals were consumed at the shared mess hall (discussed below).

Additionally, there was a notable lack of leisure activities outside of alcohol consumption represented at the shared workers' cabins. There are no material traces and/or objects associated with playing music, writing, or gambling (a possible gaming piece from Locus G and pipe fragments from Locus F are the only exceptions), suggesting the cabins were not the primary location of such social activity. This is not entirely surprising, as the cramped conditions were likely unattractive spaces to spend one's free time and, in this case, I believe the lack of material traces for such activities in both inside (Locus F) and outside (Locus G) spaces suggests the shared workers' cabins were used primarily for sleeping. It is likely, therefore, that the cabins served as a sort of flophouse, where shifts of laborers would cycle through the cabins to rest and sleep. The lives of the workers, then, appear to be segmented and distributed across the landscape – work was completed at the kilns and quarries, food was consumed at the mess hall, leisure practices undertaken in and around the mess hall (discussed below), and cabins were used for sleeping and/or quiet escape.

Chronologically, there is evidence that the Locus F cabin was constructed and occupied earlier than the Locus G cabin. So, while the nature of material types and quantities is relatively similar between the two loci, it appears Locus F represents the original Samuel Adams-period workers' cabin, and the Locus G cabin was added after Cowell took ownership and the operation expanded around 1869.

Work Space

While the nature of work at a lime kiln was diverse depending on one's specialty, specific task, or standing in the company, one shared feature was physically demanding labor. To make processed lime, a number of activities and specific labor tasks and occupations were employed. While not all of the laborers lived on-site, the segmentation of work and the complexity of producing lime at an industrial scale necessitated a large degree of labor organization and management, as well as sustained working relations between lime workers of various specialties, occupations, and backgrounds. These activities and labor groups were organized across the landscape in segmented spaces. Testing at all of these identified work spaces, then, allows for a comparison of activities and associated martial culture across labor groups and occupations.

Undoubtedly, there were laborers who did multiple tasks or followed materials through various stages of its processing, but there is documentary evidence that suggests there were also occupational specialists (Perry et al. 2007). As discussed in Chapter 7, "Cultivating Lime; Creating Community," lime burning was both a craft and an art. As Perry et al. (2007:124) note, "workers had to learn how to deal with impurities in the raw material, varying moisture levels in the rock and fuel, and other variables. It took great experience to consistently produce a good product.” This is critical because it suggests that even manual laborers were not simply unskilled workers but would have been experienced and knowledgeable individuals. Repositioning lime workers as craft laborers forces us to reconceptualize the relationships individuals had to their work and its products, and the reasons for which they found employment in the lime industry, both of which have dramatic implications for understanding both life and labor at lime kiln sites (Laurie 1989).

Locus S: Foreman’s Office

Locus S is the collapsed architectural remains of a single-room building identified as the foreman’s formal office space (Hyde 2019; Wheeler 1998). The locus is located on a moderate north sloping hill approximately 35-feet southeast from the Adams Creek Road/Trail and 100-feet northeast from Locus T. The structure is located at the eastern end of a valley, at the eastern limit of the site. This location means the building would have been the first structure encountered by people traveling to the operation via Cave Gulch from the city of Santa Cruz or from Cowell’s main Bay Street (Cowell Ranch) kilns. Additionally, the location of this building would have provided a line of sight to the primary work spaces of the kiln fronts and cooperage. Slight grades along the lower slopes of the hillside suggest heavily used (if not formal) trails/walkways connected Locus S to the central workspace of the kiln operation.

A survey conducted in 1998 describes a collapsed square redwood board and batten structure with posts (Wheeler 1998). At the time of the SALK project in 2017, vertically oriented posts were visible, but no collapsed wooden structure was discernable. There was, however, considerable brick and limestone cobble collapse, along with minimal wood plank collapse (Hyde 2019).

To the immediate north and southwest of Locus S is a line of fence posts, which correlate to a 1900 photograph of the Samuel Adams complex (Figure 5.7) that shows a wooden fence surrounding Locus S. While a structure is not clearly visible in the photograph, the fence appears to enclose a space and is markedly different than other architectural elements seen in the photo or observed archaeologically across the site. The fence associated with Locus S is whitewashed and appears well constructed with tight spacing between boards.

Two 1x1-meter units, Unit 100 and 104, were excavated at Locus S are part of the SALK 2017 project. Units 100 and 104 were located along a brick and mortar foundation edge, within the footprint of structural collapse. These units were located directly next to each other, oriented to follow a porch feature that was exposed during excavation. It was hoped that the space being sampled was just outside the original structure and below the wooden porch. This location was desirable because it was thought that considerable material might have been stored under the porch, swept to this area from within the structure, and/or have fallen through the porch floorboards. With these assumptions in mind, it was thought that Units 100 and 104 had a strong potential to reveal a broad sample of material associated with life at the Locus S structure. Though they were excavated independently, the units are associated and contexts and artifact findings from both units will be discussed together in the material analysis of this loci –the foreman’s office.

Excavations at the foreman's office exposed porch and sub-porch features, intact deposits, and a wide range of artifacts associated with domestic and managerial labor activity. Stratigraphic associations and articulated architectural elements confirmed expectations that Units 100 and 104 were located in the porch area of the structure, as numerous horizontally oriented beams and vertically oriented wood posts were exposed in the upper-most contexts (Figures 5.12 and 5.13). Wood plank/beam elements recovered deeper in Units 100 and 104 suggest there was also a prepared sub-porch wood "floor," likely constructed as a semi-protected outdoor storage area. A number of large and intact objects recovered from these contexts further support this interpretation.

Locus S Artifacts

Architectural Materials. Both Units 100 and 104 were located in areas thought to be associated with historic porch space that had significant surface evidence for structural collapse. Not surprisingly, architectural elements make up a significant proportion of cultural material recovered from this feature (57%). Represented within architectural remains are nails (of various sizes and manufacturing techniques), window glass, bricks, rock cobbles, lime mortar/plaster, a metal brace, cut wood elements, and a metal lock (Figure 5.35).

A minimum number of 403 individual nails, based on the presence of whole nails or discrete head fragments, were recovered from Locus S (Table 5.36). The wide range of nail sizes (2D through 10D) suggests the nails recovered are the traces of multiple different architectural features/elements associated with Locus S (porch, floor, siding, structural, and roof). Machine cut nails dominate the assemblage at 92% of all nails. Fifteen wire nails (3.7%), six fence staples (1.5%), and only one hand forged nail (.25%) were also recovered.

The fence staples recovered at Locus S are notable when considered in the wider architectural context. The presence of existing wooden posts in the surrounding area of Locus S, along with the evidence of a wooden fence along the eastern margin of the structure in a historic photograph of the site (Figure 5.7) illustrate that there was an enclosed outside space associated with Locus S. This demarcation of a property boundary and the privatization of space that comes both physically and symbolically with the construction of a fence has significant implications for our understanding of who may have lived at Locus S, and what their relationship to the other workers may have been (discussed in more detail later). The fragments of a cast iron and white metal lock is also a notable find, as its presence further indicates a need to protect resources and/or private property.

Lighting. The historic presence of lighting objects are evidenced by numerous glass chimney fragments (NISP=23), oil lamp fonts (NISP=10), and an oil lamp smoke plate and chain fragment (NISP=1). While glass chimneys can be used for candle lighting, the presence of multiple glass fonts suggest the glass chimneys were associated with oil lamps. Differences in decoration between the lamp fonts (one plain, one molded) provides an MNI of two for oil lamps at Locus S. Given the 24-hour nature of lime work, it is possible these lamps were used for night work as much as for domestic and leisure activities.

Food Storage. Evidence for food storage at Locus S is represented by flat metal can pieces and ceramic jar fragments (Table 5.37). A total of 137 can fragments were recovered. Of those fragments most (NISP=117, 92%) were unidentifiable flat iron fragments. Of the remaining fragments, five could be identified as being simple rolled cans – a manufacturing style common on all kinds of cans until about 1910 – and two fragments could be identified as belonging to a round key-opened can, providing a total MNV of one for cans from Locus S. Key-opened cans were invented in 1866 and were used on cans that held solids or chunks, at this time most often fish, fruits, or coffee. In addition, four fragments, representing an MNV of one for a ceramic meat or anchovy paste jar were recovered. While no marks were present on the recovered fragments, the form of the small jar is identical to that for J. Sainsbury's Bloater Paste, a spread made from salted and smoked herring.

Beverage Storage. A total of 144 glass beverage storage fragments were recovered from Locus S, representing a minimum of 40 vessels (Table 5.38). While the heavily fragmented nature of the remains made it difficult to identify original contents (MNV for unidentified=18, 45%), a significant percentage were identified as alcohol bottles of some kind (MNV=21, 52.5%). Within the assemblage of alcohol bottles, seven (33.3%) were wine bottles and 14 (66.7%) were liquor bottles. At least one square olive bottle was embossed with "SC…A…" and along with the shape of the bottle was identified as being an Udolpho Wolfe's Aromatic Schnapps bottle. While schnapps is an alcoholic beverage, its aromatic nature was highlighted in advertising for its medicinal qualities, especially for urinary tract health (Wilkie et al. 2016). One soda or mineral water bottle is also represented, comprising 2.5% of the glass beverage assemblage. This light natural blue soda/mineral water bottle is embossed with "PHIL" in a manner that ties it to Dyottville Glass Works, a Philadelphia, Pennsylvania based glass manufacturer in operation from 1844 to 1870 (Lindsey 2016; Lockhart et al. 2015). A tooled light natural blue "blob" style finish recovered in a different context is likely associated with this Dyottville bottle.

Service/Tableware Vessels (Glass and Ceramic). A small number (MNV=3) of glass and ceramic service vessels were recovered from Locus S, all from Unit 100 (Table 5.39). The ceramic service vessel assemblage was limited to one undecorated ironstone hollowware and one undecorated blued whiteware hollowware. The glass vessel is a press-molded glass plate with an unidentified embossed stars and hemisphere pattern.

Health and Hygiene. Health and hygiene related materials from Locus S include fragments from ceramic, glass, and rubber materials (Table 5.40). Ceramic items are limited to two fragments from a blue transfer-print whiteware ceramic basin. The basin has a thick, flat, scalloped edge with a deep body slope. The transfer print is the Tyroleon Pattern, and while a maker's mark is not present, this pattern was used by William Ridgeway and Co., in operation between 1834 and 1854 in North Staffordshire, England.

Glass items were determined to be medicinal based on bottle form, finish form, color, or (in most cases) a combination of these features. A small square/rectangular milk glass fragment is likely from a cold cream jar. In addition, a minimum of eight medicine/patent medicine bottles were identified (Table 5.41). On most (n=5) no marks or embossing were present, making it impossible to identify the specific type of medicine being used. Clearly identifiable, however, are two cobalt blue Bromo-Seltzer bottles. One bottle, recovered from Unit 100, was whole, large, had a tooled patent finish, and an embossed “262” on the base. The cup-molded manufacturing technique dates this bottle to between 1880 and 1910.

A single black hard-rubber comb tooth was also recovered from Unit 104. This artifact provides potential insight into grooming, style, and performances of masculinity, discussed in greater detail in Chapter 8.

Smoking and Narcotics. Smoking activities are represented at Locus S through the presence of tobacco pipe fragments (n=5) and a metal tobacco tin fragment (n=1) (Table 5.42). A minimum of four ceramic tobacco pipes were recovered. Two of these pipes were white ball clay pipes and molded with maker’s marks. The first, recovered in Unit 100, was a Gambier Company pipe manufactured in Paris, France (Figure 5.14). The second, recovered from Unit 104, was a plain pipe embossed on the stem with a maker’s mark for Duncan McDougall, Glasgow, Scotland. The two other pipes recovered were redware bowls, found in Unit 100. The first redware bowl was plain in form but exhibited evidence of an exterior black slip. This style is noted by Pfieffer (1982) as being particularly popular between 1860 and 1870. The second redware bowl was an undecorated elbow reed-style pipe with an embossed “Weil & Co” mark, for which very little information was discovered. A tobacco tin, which would have held the loose cut pipe tobacco, was also recovered in Unit 104 and identified by the can-top shape and embossed “AC” from the tobacco identifying mark.

Clothing and Adornment. Clothing and adornment items from Locus S are comprised predominately of various buttons, rivets, and shoe parts (Table 5.43). A total of 17 buttons were recovered. Of these buttons seven were jacket buttons. Of note are one gold-plated copper, three cut shell, and two cut and polished bone jacket buttons, all of which have important implications for the performance and embodiment of class and status, discussed later. Other buttons include one suspender button, two pant buttons, four shirt buttons, one underwear button, and one unidentified button. Also of note was a small copper jacket, shoe, or pant button, and a cut and polished bone collar/cuff stud. A number of shoe parts, including leather, eyelets, sole/insole parts, tacks, and screws were recovered which are likely associated with a pair of largely in-tact (and spatially associated) shoes/boots that were found inverted in Context 5 in the northwest wall of Unit 100 (Figure 5.15).

Ammunition. Arms material from Locus S was limited to a single copper alloy shotgun shell head. The shotgun shell was a low brass style 12-gauge shell marked with “P.C.C., No. 12, League” corresponding to the Peters Cartridge Company. This style of Peters shell was manufactures between 1896 and 1911.

Tools. No tool materials were recovered from Feature S.

Other Small Finds. A number of small finds were recovered that have the potential to shed considerable light on the nature of life at Locus S. Of note is a fragment of a mirror, highlighting that one’s appearance was important, and when taken into consideration with other material remains from this locus provide further evidence for the embodiment and performance of particular class and gender ideologies. Internal mechanism from a clock were also recovered, a unique find at the Samuel Adams kiln complex. Clocks and time keeping were an important aspect of industrial labor and can be interpreted as assemblages of managerial power within an industrial production context. In addition, two cribbage-like cast iron gaming pegs were recovered, shedding light on leisure and gambling activities that may have taken place at Locus S. Finally, a shield-style copper nickel dating between 1867 and 1883 was recovered from Unit 104.

Faunal. The faunal remains recovered from Locus S are presented in Table 5.44. A minimum of one individual animal is represented from the common domesticated species of cow (*Bos taurus*), sheep/goat (*Ovis aries*/*Capra hircus*), pig (*Sus scrofa domesticus*), and chicken (*Gallus gallus*). Also represented are wild species including at least one quail (*Callipepla californica*), at least 2 other (non-quail) small birds, a minimum of six cottontail rabbits (*Sylvilagus audubonii*), two squirrels (*Sciuridae*), one unidentified fish, one California mussel (*Mytilus californianus*), and one limpet. Butchering (n=16) is evident on 5% of all recovered faunal remains, exhibiting a mix of knife and hand-sawed marks. Four remains (1.2%) show evidence of burning.

Locus S Chronology

Chronological data for each Locus S context is listed in Table 5.45. The TPQ for Locus S as a whole is 1896, based on a Peters Co. Cartridge recovered in Context 4. Stratigraphic deposits exposed in Units 100 and 104 of Feature S appear to be relatively undisturbed, however, and the recovery of a “shield” style nickel recovered from the lowest cultural context (Context 7, Unit 104) indicates that the original occupation of Locus S may date to the 1870s. This coin was recovered under a porch feature, so it is possible that the structure itself was built and occupied sometime before 1867 and the coin was deposited under the porch (and thus recovered in a lower context) at a later period of occupation. Average dates for each unit, however, also support an occupation of this structure primarily after 1875, suggesting Locus S is likely associated with the second period of occupation at the site.

Locus S Interpretation

Architectural, locational, artifactual, and historical data all suggest that Locus S represents the structural remains of the foreman’s office, and the traces of managerial life and labor in this workspace. Materially, the fence feature clearly demarcates a private space that is not evident elsewhere at the site. The location of the structure is strategically located in such a way that from the porch there would be a relatively unobscured sight-line to the major work spaces of the kilns, quarry, and cooperage, allowing the foreman to keep a watchful eye on the lime workers and their activities. The peripheral location along the eastern margin of the site core along a historic access road/trail (Adams Creek Road) also means this building would have been the first encountered by people traveling to the site from Santa Cruz and/or from Cowell’s main operation at the Bay Street (Cowell Ranch) kilns. This would allow for the foreman to keep an eye on people and materials entering and leaving the operation. This location would also serve to have the site’s managerial labor, the presumed agent of the company, as the first aspect of the operation one would encounter upon arrival.

The materials recovered from Locus S are a mix of work and domestic related items in proportions not seen at other loci. While domestic remains such as faunal elements, ceramic tablewares, and clothing items are present, they are represented in smaller quantities and in a narrower range of diversity than expected for a primary domestic residence. When the recovered assemblage is considered in relation to the location and orientation of the building, it suggests it was primarily a work space where food consumption and other domestic tasks were occasionally undertaken by a narrow range of individuals. For example, at Locus S, there is no evidence for women and children, for domestic work such as laundry, for cooking activities, or other traces of a family life. Instead, all the clothing items are associated with menswear, and non-work activities appear to be limited to drinking, gaming, and consuming foods not found elsewhere at the site (*e.g.*, fish/meat pastes and limpets).

The presence of a clock highlights the importance of time for the occupant, with the control of time (and by extension labor) being a primary responsibility of the site foreman. The recovered lock parts also highlight a perceived value, and thus need for protection, of this space or the things with which it contained – the valuable materials, equipment, and/or intellectual property necessary to operate a lime kiln. A preponderance of decorative shell jacket buttons, a gold-plated jacket button, and in particular a bone cuff/collar stud, illustrate that the occupant of Locus S was not engaged in the hard manual labor that lime production entails, and instead supports the notion that they were employed in supervisory and management activities consistent with being a foreman.

The food remains present are also substantively different in type and quantity from domestic spaces across the site. The presence of things like meat pastes in association with a transfer print basin and gaming pieces suggest this space was at least sometimes used to host and entertain visitors, laborers, and company owners or executives, with the materials of the space designed to reflect the distinguished position of the occupant. Overall, the nature of the materials from Locus S indicate an elevated status and distinct set of daily practices associated with managerial activities.

Chronologically, Locus S has a TPQ of 1897, but there are a number of diagnostic materials recovered (transfer print ceramic, Dyottville bottle) that date to earlier periods of the operation (average ceramic date is 1880). These earlier dates, however, still cluster after about 1870, suggesting the foreman's office was built and occupied during the second period of ownership. The presence of the office and the traces of activities recovered archaeologically, therefore, have the potential to reflect changing approaches to management and company organization associated with the shift to Cowell ownership (1869-1909).

Locus J: Cooperage/Storage

Locus J is an L-shaped masonry foundation/retaining wall of the historic cooperage. The mortared limestone feature measures roughly 100-feet long by 30-feet wide and is located approximately 50-feet across from the kiln front (Locus I). The south wall of Locus J measures 9-feet 2-inches tall, while the east wall is 8-feet 9-inches tall, showing no change from measurements taken by Wheeler in 1998. Approximately 50-feet of the southern wall has collapsed and a fire scarred wooden post-and-board fence now stands in its place. This feature defines the southern and eastern footprint of what would have been an elevated 1.5 story rectangular gable-roofed timber cooperage on piers, over an open-air ground level room. The extant ground surface today within this locus, therefore, would have been the floor of the cooperage's open-air lower level (Figures 5.16 and 5.17) (Hyde 2019). Unit 105 (a 1x1-meter excavation unit) was located one-meter from the southwestern corner to sample this previously unexcavated area.

The identification of Locus J as the cooperage is based on photographic, historic, comparative, and locational data. The shape, form, and location of the structure match known cooperages at other Santa Cruz Lime Kilns, specifically Cowell's Bay Street (Cowell Ranch) kilns (Perry et al. 2007). Processed lime would have been put directly into barrels from the kilns and, due to the volatile nature of processed quicklime, it had to be protected from the elements, especially water. As a result, most kilns in the Santa Cruz region had eaves that extended over the doors of the kiln front (Perry et al. 2007). For the same reasons, cooperages were often located directly across from the kilns, so empty barrels could be easily transported to the kiln to be filled, and loaded barrels could be easily transported to the cooperage for storage until transport (Perry et al. 2007). The covered level area below the timber cooperage and directly across from the kilns would have provided an ideal storage space for empty and packed barrels, as well as other equipment necessary in the lime production processes. Additionally, a 1900 photo of the Samuel Adams operation shows a large wooden structure that matches the characteristics of Santa Cruz lime cooperages in the same location as the Locus J archaeological features (See Figure 5.7). In the photograph, this building includes an attached open-air ancillary structure, which likely served as a fuel storage or worker staging/resting area.

Locus J Artifacts

Architectural Remains. Architectural remains from Locus J include various nails, limestone blocks and cobbles, lime mortar/plaster, and wood elements. A minimum of 52 nails were recovered in sizes 2D, 3D, 4D, 6D, 8D, 10D, 20D, 30D (Table 5.46). Considering Unit 105 was located in the lower level of the cooperage, the diversity of nail sizes represented are a reflection of the multiple architectural elements that would have historically existed in the area surrounding the unit. It is likely these nails were used in everything from structural elements to floor and wall elements, as well as shelving or other internal architectural and/or storage features. The wood elements recovered are also products of various timber element collapse. Of the 51 individual nails recovered, a total of 32 (62.7%) were machine cut, two (3.9%) were wire, 14 (27.5%) were hand forged, and three (5.9%) were unidentified.

The recovered limestone blocks and cobble remains are evidence of collapse from the adjacent stone retaining wall/foundation features and masonry floor/subfloor features (Table 5.47). No window glass was recovered from Locus J. This aligns with expectations based on historic photos that show the cooperage being elevated on posts and having an open and masonry-walled ground floor/basement, where Unit 105 was located.

Lighting. No materials associated with lighting were recovered from Locus J.

Food Storage. No materials associated with food storage were recovered from Locus J.

Beverage Storage. A total of 14 glass fragments associated with beverage storage were recovered from Locus J, representing a minimum of seven vessels (Table 5.48). The fragmentary and non-diagnostic nature of four of the vessels made it impossible to identify their original contents (57.1%). The remaining three vessels (43.9%) originally contained alcohol. Two of these vessels were liquor flasks, and one was a wine or champagne bottle. No recovered fragments exhibited marks, so specific contents and/or companies were not identified.

Service/Tableware Vessels (Glass and Ceramic). A single colorless press-molded hollow glass table or serviceware vessel was recovered from Unit 105. The small nature of the fragment made the pattern and exact form unidentifiable.

Health and Hygiene. No health or hygiene related items were recovered from Locus J.

Smoking and Narcotics. No materials associated with smoking or narcotics consumption were recovered from Locus J.

Clothing and Adornment. No clothing or adornment objects were recovered from Locus J.

Ammunition. No arms materials were recovered from Locus J.

Tools. Two large fragments of moderately thick rolled flat metal (thicker than can metal) identified as being fragments of a metal shovel head were recovered in Locus J. Due to the degraded nature of the shovel a number of small flat metal fragments (n=90) recovered (primarily in the top context) are assumed to be associated with this shovel. Shovels were a critical tool for transporting the processed quick lime to wooden barrels. The presence of a shovel in this area, then, further supports Locus J being the cooperage work space, with the lower level serving as a storage and/or staging area for lime production and packaging activities and equipment. Additionally, fragments of general bailing wire were recovered, likely used for a wide range of maintenance and production related tasks and activities.

Other Small Finds. No other archaeological materials that do not fall into the above categories were recovered from Locus J.

Faunal. Faunal remains from Unit 105 are limited to a single cow (*Bos taurus*) vertebrae fragment (the transverse process). No butcher or burn marks were present on this bone.

Locus J Chronology

Chronological data for each Locus J context is listed in Table 5.49. A limited number of datable artifacts were recovered. A turn-paste molded bottle recovered from Context 1 provides the strongest date and a TPQ of 1880. However, due to the close proximity to the kilns, as well as the critical role of the cooperage in lime manufacturing, it is very likely that the cooperage was extant during the entire life of the lime operation (1858-1909).

Locus J Interpretation

Excavations at the cooperage (Locus J/Unit 105) were located within the footprint of the historic structure in the southwest interior corner, one-meter from both the south and west walls. Excavations exposed architectural elements that provide insight into the nature and function of the cooperage. The limited number of artifacts recovered across all categories suggests this space was used for storage rather than being an active work space for the laborers.

The presence of sterile soil (Contexts 3 and 4/Stratum III) at a depth of only 15-centimeter below surface supports the idea that significant amounts of earth were removed as builders cut into the hillside in the original construction of the cooperage. The east and south (extant) walls of Locus J would have served as a retaining wall and foundation for the timber super-structure of the cooperage (see Figure 5.7). It appears that after a platform was cut into the hillside a limestone gravel and cobble layer (Context 2/Stratum II) was laid directly onto the exposed sterile clay. This cobble feature appears to have formed a floor (with possible timber flooring above) and would have served as the working/storage surface in the ground level of the cooperage (Figures 5.16 and 5.17).

It should be noted that the construction method employed at Locus J appears to deviate in some ways from the construction of domestic structures situated on the same hillside. While Locus J shares the feature of having a back (eastern) masonry foundation to support the timber superstructure, it is unique in the degree to which the building footprint has been cut into the hillside. This construction technique is different than that used at the hillside residential structures, where an elevated upslope brick foundation and downslope wooden post method was used to create a flat timber living/structure platform, with very little earth modification. It is likely that the unique construction method of Locus J was employed out of a necessity to locate the cooperage within close proximity of the kiln fronts. Notably, however, it would have required a substantially larger labor and energy input than that invested in the construction of worker housing. The high construction quality of the masonry retaining wall/foundation is observable in the nature of the wall construction and in its largely intact state. This stands in stark contrast to the dilapidated and seemingly expedient quality of construction of the observable masonry architecture associated with domestic spaces across the Samuel Adams complex.

Locus I: Lime Kilns

Locus I corresponds to the central lime kiln pot features of the Samuel Adams complex (Figure 5.18). The kilns are comprised of three connected pots, roughly aligned southwest to northeast and measuring approximately 120-feet long by 35-feet wide and 15.5-feet tall. The walls of the kilns thin slightly, measuring roughly 5-feet at the base and 4-feet at the top. The kiln entrances are arched, lined with fire brick, and measure 3-feet 9-inches tall and 2-feet wide. From the top of the kilns graded paths are visible as remnants of a gravity rail system that connected the quarry to the individual pots.

From southwest to northeast the pots are referred to as Pot 1, 2, and 3. The kilns are comprised of cut limestone blocks and mortar, with small limestone cobble and fire brick chinking, and are built into the hillside directly in front of the quarries. The interiors of all three kilns are lined with (now partially vitrified) fire brick. Both Pots 1 and 2 show significant bulging, some cracking, and are heavily overgrown with oak, willow, poison oak, blackberry brambles, wild strawberry, and other vines. Medium- to large-size trees are also growing on top of (and in some cases out of) the highest aspects of the kilns themselves, threatening their structural integrity. The front face of Pot 3 has collapsed out, exposing the back interior of the kiln and leaving significant collapse in the southern area of this kiln.

Pot 2 is still loaded with raw, unprocessed limestone. It appears Pot 2 was arched, loaded, but never fired. Each single pot has four lower openings that would have been accessed historically through heavy iron Dutch doors. At each door an arch was constructed from the raw material that would support the load of raw limerock above it, but also provide space that allowed for the building of a fire and constant refueling throughout the lime cooking process. The arches of Pot 2 created an empty fuel cavity measuring roughly 10-feet long, 5.5-feet tall, and 2.5-feet wide. From the existing arches it is possible to see the skill and masonry work necessary to arch a successful load of lime, a rare archaeological glimpse into the craft of lime burning (Figure 5.19).

Overall, the form and construction technique of the Samuel Adams kilns are remarkably similar to Old-World pot-style kilns that have technological roots in the Roman Period (Mark Emerson, personal communication 2017). Not all three kilns, however, are identical. Pot 2, the middle kiln, appears to be the most well-built. Limestone blocks comprising Pot 2 are relatively uniform in size, mortaring is consistent, all chinking was achieved with small limestone cobbles, it appears the most structurally sound, and the existing loaded pot evidences its durability. Pot 1, on the other hand, while standing, appears more expediently built, is less uniform, and along with limestone cobbles has firebrick chinking. Pot 3 is largely collapsed so the nature of its construction is more difficult to evaluate, however, the construction style of standing elements appears more similar to Pot 2 than Pot 1.

Historical sources suggest that Pots 2 and 3 were the original kiln elements constructed by the Samuel Adams workers in 1858. In 1868 a *Santa Cruz Sentinel* article about the Samuel Adams operation notes that "the works consist of one large quarry on the brow of a hill, near the kilns – two in number." The addition of a third pot (Pot 1) likely coincides with the transfer of ownership to Cowell in 1869, who appeared to increase the production of the operation, as the number of laborers listed in the census jumps from seven in 1860 to 15 in 1880. While there were probably others that worked the kilns that did not live on-site, this increase is likely representative of a broader expansion and intensification in production, infrastructure, and labor during the Cowell-owned period. There is also archaeological evidence that this transfer of ownership was associated with the addition of a second worker's cabin and the construction of the foreman's office. The cruder construction of Pot 1 suggests it was an expedient effort, likely built quickly by Cowell's workers to capitalize on their growing market share and economies of scale to outcompete other lime producers in the area.

Excavations at Feature I (Unit 102, a 1x1-meter excavation unit) were located in front of Pot 2 on the east side of a buttress between Pot 1 and 2. Excavation in this location exposed features and artifacts associated with lime burning using pot-style kilns (Figures 5.20 and 5.21). Perhaps unsurprisingly given the high temperatures and presence of noxious fumes, the totality of data recovered suggests the kiln fronts were primarily work spaces, with little evidence for leisure or social activity taking place (Hyde 2019). Materials recovered, however, do give insights into the processes and challenges of making lime in the Santa Cruz region.

Locus I Artifacts

Architectural Remains. Architectural remains including various nails, limestone blocks, lime mortar/plaster, bricks, sand bags, and metal kiln parts were recovered from Locus I. A minimum of 42 nails were recovered in penny sizes 2D, 3D, 4D, 8D, and 10D (Table 5.50). The 4D penny size nail was the most common size, comprising 36.4% of the assemblage. Of the 42 nails recovered, 31 of those nails (73.8%) are machine cut, three (7.1%) are wire, and eight (19%) are hand forged. The presence of all three nail types in significant quantities suggests, as was expected, that the kilns were central to the lime operation and would have been used and maintained throughout both periods of site occupation (1858-1909).

The limestone blocks, cobbles, and fire brick recovered from Locus I represent limited collapse from the adjacent kiln front and buttresses (Table 5.51). Also recovered from Locus I was a kiln door and associated door latch. The kiln door is cast iron, slightly trapezoidal in shape, measuring 16-inches wide at the top, 26.2-inches tall, 20.9-inches wide at the base, and 1.5-inches thick. From historic photographs and descriptions, we know that this artifact would have been the lower aspect of a double-hung door (Dutch door) setup at the lower kiln doorway (Perry et al. 2007). These doors would have provided access to the cavity below the limestone arch where timber fuel would have been fed and the fire tended, and from where the processed lime would have been removed for packing into barrels. The double-hung style door would have allowed for greater airflow and temperature control and minimal disturbance when checking on the status of the lime and fuel during the firing process. At the time of this research, only one other example of a kiln door from the Santa Cruz region exists, recovered from the Bay Street (Cowell Ranch) kilns (Perry et al. 2007). The style and dimensions of this Bay Street example are identical to the example recovered at Locus I of the Samuel Adams kilns.

In addition to the kiln related architectural features, a minimum of one sand bag was recovered from Locus I, evidenced through the presence of burlap fabric fragments in association with isolated patches of sandy matrix. The Adams Creek Road/trail bed between the kilns and cooperage (Loci I and J) serves as a major drainage point for the surrounding hills. Today, during the winter months, the area surrounding the kilns is inundated with water and frequently floods. It is likely that workers in the past were also forced to mediate flooding issues and would have utilized sand bags to direct water away from the kiln front where its presence could greatly impact the successful processing of lime.

Lighting. No materials associated with lighting were recovered from Locus I.

Food Storage. A total of 61 fragments of flat metal, three with seams present, were recovered from Locus I, representing a minimum of one simple rolled can. The can shape was unidentifiable, and there were no marks, making it impossible to identify potential can contents.

Beverage Storage. A total of seven glass fragments representing a minimum of five vessels were recovered from Locus I (Table 5.52). Five of the fragments were very small, and the other two had been melted, so the original contents were not identifiable for any of these vessels.

Service/Tableware Vessels (Glass and Ceramic). No glass or ceramic table or service wares were recovered from Locus I.

Health and Hygiene. Two small fragments of cobalt glass, representing a minimum of one vessel, were recovered from Locus I. Cobalt colored glass typically contained medicines, cosmetics, and poisons (Lindsey 2016).

Smoking and Narcotics. No materials associated with smoking or narcotics consumption were recovered at Locus I.

Clothing and Adornment. Four fragments of a silver-plated watch fab chain were recovered at Locus I. The chain was comprised of square links with decorations of slightly raised squares on an etched background.

Ammunition. A single copper alloy cartridge casing base was recovered from Locus I. Base measurements indicate it is likely a .22 or .25 caliber ammunition. The casing is rim fired, but no maker's marks were present.

Tools. Tool materials from Locus I were limited to a cast iron fragment and pieces of bailing wire. The cast iron fragment is a small rectangular corner, heavily carbonized, which may have been a mold or structural element of the kiln feature.

Other Small Finds. No other artifacts that do not fall into one of the above categories were recovered from Locus I.

Faunal. A total of 20 faunal specimens representing a minimum of four individuals were recovered from Locus I (Table 5.53). One of these individuals was a land snail, however, and it is likely this is a post depositional incursion rather than food remains. One bone fragment was an unidentified Artiodactyla element, one was from an unidentified species of bird, and two other fragments were part of a mussel shell (*Mytilus californianus*). None of the faunal remains exhibited butchering or burning.

Locus I Chronology

Chronological data for each Locus I context is listed in Table 5.54. The TPQ for Locus I determined from artifactual material is 1860, from fragments of a two-piece molded bottle. This general date is supported by the presence of an unmarked cartridge casing, a technology that began being widely available in the 1850s. We also know from historic sources that the kilns were first built in 1858 with the start of the Samuel Adams lime operation (*Santa Cruz Sentinel* February 13, 1858; *Santa Cruz Sentinel* October 2, 1858). As the presence of these artifacts all indicate, the kilns would have been a critical feature of lime manufacturing during both periods of operation (1858-1868, 1869-1909), although it appears the western-most kiln (Pot 1) was a later addition, likely being built sometime after Cowell took ownership in 1869.

Locus I Interpretation

Materials recovered from Locus I, though limited, shed light on the tools, processes, and challenges of producing lime in Santa Cruz county in the late-nineteenth and early-twentieth centuries. Most notable was the recovery of a cast iron kiln door, watch fob, and sand bags. The kiln door is one of the few items recovered associated directly with the lime kilns – an artifact of daily use and engagement by the lime workers as it gave access to the kiln and was used to control kiln temperatures. The watch fab serves as a materialization of the overlapping temporalities and taskscapes that became interwoven in the production of lime, but also of the system of wage labor that framed interactions between workers in a company town. The sandbags provide unique insight into the challenges of burning lime in a semi-rural frontier setting, illustrating that managing water flow was a critical part of working the kilns, especially during the wet winter months.

Locus V: Cold Storage

When architectural features and recovered artifacts are considered in conjunction with the structure's spatial relationship to the cookhouse, it becomes clear that Locus V served as a cold storage room for the company provided foodstuffs. Locus V is a partially collapsed rectangular mortared limestone structure measuring approximately 20-feet long by 12-feet 4-inches wide and 8-feet tall. There are no window or door openings visible on the standing north and west walls. A distinct masonry block in the center of the southern foundation (the wall is collapsed), however, may mark the location of a historic door or access point for this structure. A 1957 photo of Locus V shows a vertical masonry add-on with an opening on the north wall that would have supported a gable roof (not extant as of SALK 2017) (Wheeler 1998). No previous excavation had taken place at Locus V, so the location of Unit 108 was based largely on the nature and orientation of architectural features. Unit 108 (a 1x1-meter excavation unit) was placed in the center of the rectangular structure footprint, with the primary goal being to shed light on the nature of activities undertaken at the feature and identifying the possible function of the structure (Figures 5.22 and 5.23). It was hoped this location would result in the recovery of artifacts representing a broad sample of the activities undertaken at the feature, while also allowing us to avoid areas of major architectural collapse and vegetation disturbance.

Locus V Artifacts

Architectural Remains. Nails and other architectural remains make up over half of all the material recovered from Locus V (n=603, 52.7%). A minimum of 229 nails were recovered of various manufacturing types (Table 5.55). A total of 131 (57.2%) were machine cut, 88 (38.4%) were wire, four (1.7%) were hand forged, and three (1.3%) were cast. A wide range of nail sizes were also recovered with penny sizes including 3D to 8D, 10D, 12D, 20D, and 30D.

The western and southern walls of Locus V are mostly collapsed, however, the north and west walls are largely intact. Built roughly 2-feet 10-inches up from the ground in the west wall are the burned remnants of five wooden square beams (defined as joists or girders by Wheeler 1998). The remains of two burned square wooden beams are also built into the north wall, oriented perpendicular to the west wall beams. The height and orientation of these timber elements makes it likely that these beams formed the architecture for internal storage features. At a depth of roughly 6- to 8-centimeters below the surface a thick (10-centimeter) cement floor feature was encountered. This cement had rectangular channels with embedded wood elements, indicating that the feature was a constructed cement floor that supported timber elements, which likely articulated with the roof and/or interior architectural elements (Figures 5.22 and 5.23).

Non-nail architectural material recovered from Locus V includes limestone cobbles, wood plank elements, lime mortar/plaster, an iron washer, barbed wire, and an iron pipe fragment (Table 5.56). No window glass was recovered. The barbed wire fragment was identified as a Burnell Four-Point style, developed in 1877. Overall, the architectural material recovered matches the standing architecture and supports the interpretation that this was a single-story windowless masonry room with internal wood shelving and or divider elements and a cement floor.

Lighting. No materials associated with lighting were recovered from Locus V.

Food Storage. A total of eight fragments representing one light blue “Perfect Ball Mason” canning jar were recovered at Locus V. Finish fragments indicate that the jar had a “Lightning” type closure, introduced in the 1880s (Lindsey 2016). This jar could have contained a wide range of preserved fruits, vegetables, meats, dried grains, beans, or other foodstuffs. A total of 315 undiagnostic flat metal pieces were also recovered. While no seams were found, the thickness and general morphology suggests these fragments were from food cans, representing an MNV of one.

Beverage Storage. Evidence for beverage storage at Locus V includes four glass fragments, representing a minimum of one colorless flask. This vessel would have contained some type of liquor, but an absence of marks makes it impossible to say which type, specifically.

Service/Tableware Vessels (Glass and Ceramic). A single ceramic sherd representing a minimum of one whiteware vessel was recovered from Locus V. The small nature of the fragment made form identification impossible.

Health and Hygiene. No materials associated with health and hygiene were recovered from Locus V.

Smoking and Narcotics. No evidence for tobacco or narcotics consumption was recovered from Locus V.

Clothing and Adornment. A single overall button was recovered from Locus V. This overall button is a cast iron shank-style button measuring 32 lignes. The button is embossed with “Can’t Bust ‘Em” above a rooster wearing overalls, standing proudly with its chest puffed out (Figure 5.24). This logo is associated with the Eloesser-Heynemann Company based in San Francisco. The company was started in 1851 but began using the “Can’t Bust ‘Em” slogan in 1876 and started to focus specifically on workwear in 1890 (Psota 2002). Associated advertising by the company for their line of work overalls listed additional slogans such as “Union Made” and “Made by White Labor Only.” This verbiage suggests the company clearly aligned itself with particular ethno-racial based labor positions and movements emerging in California in the latter part of the nineteenth century. The possible social implications of this artifact on labor and ethnic relations at the Samuel Adams operation is discussed in greater detail in Chapter 8.

Ammunition. No arms materials were recovered from Locus V.

Tools. An array of tools were recovered from Locus V (Table 5.57). Fairly prevalent in Contexts 1 through 4 were fragments of general bailing wire. This could have been used for a number of purposes associated with hanging and securing materials and foodstuffs within Locus V. Fragments from at least one metal bucket were also recovered. The bucket also would have been used for a number of general-purpose activities. A large cast iron plow blade and splitting wedge were also found in Locus V. These materials were recovered in the uppermost contexts and likely are remnants from later ranching activities that took place at the site. This illustrates, however, that Locus V was used as a storage area even after the lime activities ceased, with the specific function shifting from food storage during the lime processing years to equipment storage during the ranching years.

Other Small Finds. No other materials falling outside of the categories above were recovered at Locus V.

Faunal. A total of 205 bone fragments representing a minimum of seven animals were recovered from Locus V (Table 5.58). The faunal remains were heavily fragmented and large mammal bones were identifiable only to the order of Artidactyla, of which there was at least one individual animal present. Also present as a minimum of one individual each were chicken (*Gallus gallus*), cottontail rabbit (*Sylvilagus audubonii*), squirrel (*Sciuridae*), an unidentified small bird, an unidentified rodent, and a land snail (likely non-cultural). Of the 205 bone fragments recovered three (1.5%) showed evidence of butchering (all sawed), and 79 (38.5%) showed evidence of burning.

Locus V Chronology

Chronological data for each Locus V context is listed in Table 5.59. Locus V has an overall TPQ of 1877 based on the presence of a Burnell Four-Point style barbed wire fragment. In addition, all datable materials have average dates after 1885. These materials, along with the presence of a highly diagnostic “Can’t Bust ‘Em” overall button (TPQ 1876) found in an undisturbed context (Context 5 – wood/floor feature above cement floor), indicate that the original construction and occupation of this cold room structure dates to the second period of operation at the Samuel Adams site (1869-1909).

Locus V Interpretation

The artifact assemblage recovered from Locus V differed from other areas across the site. There was a marked lack of domestic, social, or leisure materials, with almost all of the non-architectural objects recovered relating to food and/or food and beverage storage. Coupled with the unique architecture, especially the presence of a thick (10-centimeter) cement floor, this structure is interpreted as a being a cold storage room. The thick masonry walls and thick cement floor would have served as adequate insulation to keep this room cool and help preserve the perishable foodstuffs it housed. Wheeler (1998) notes that this structure resembles the "Moyle House" recorded at the mining town of Bodie. This mortared stone structure had a gable roof and interior supports that created scaffolded storage that held beer and soda water. The orientation of burned timber elements within the standing walls of the structure at Locus V suggest a similar construction technique and function was employed at the Samuel Adams cold room. While the cold room interpretation has been posed by other authors based on the proximity of Locus V to the presumed cookhouse (Kindon 2017; Wheeler 1998), findings from excavations at Unit 108 provide further material evidence in support of this conclusion. While chronologically diagnostic material from Locus V is limited, a TPQ of 1876 for the matrix just above the cement floor feature (Context 5) indicates that the construction and use of Locus V dates to the Cowell-period of ownership (1869-1909) and is another addition that accompanied the expansion of the operation.

Locus C: Cookhouse

Locus C is a well-constructed masonry building foundation, rectangular in shape and oriented roughly east-west. A 1x1-meter unit (Unit 110) was excavated within the interior footprint of this structure foundation, abutting the interior of the east wall. Excavations exposed architectural elements, archaeological features, and a dense assemblage of diverse materials (Figures 5.25 and 5.26). This material is qualitatively and quantitatively distinct from assemblages recovered elsewhere across the Samuel Adams site. The totality of data recovered suggests Locus C served as the cookhouse for the lime operation during the both periods of ownership (1858-1909) and would have been the primary workspace of the Chinese cook during at least the Cowell owned years (1869-1909).

Locus C Artifacts

Architectural Remains. A wide range of architectural materials were recovered from Locus C, including nails, structural elements, window parts, and fragments from various building accessories. A minimum of 90 nails were recovered (Table 5.60). Of those 90 nails, 51 (56.7%) are machine cut, eight (8.9%) are wire, 21 (23.3%) are hand forged, and 10 (11.1%) are unidentifiable. A wide range of sizes are also represented including penny sizes 3D through 6D, 8D, 10D, and 20D.

Brick and small limestone cobbles were found throughout Locus C. Other structural elements such as wood planks, iron brackets, an iron spike, iron wind stakes, an S-hook, an iron chimney pipe fragment, and lime mortar/plaster fragments were also recovered (Table 5.61). The large iron spike, multiple wind stakes, and S-hook all indicate that there may have been a tarped/canvas roofed extension associated with the kitchen. It is possible there may have been an open-walled outdoor extension for cooking, covered by tarp/canvas to provide some protection from the elements. This would have allowed for hot and smoky cooking activities to have been located outside of what appears to be fairly tight interior cookhouse quarters. In addition, a door latch was recovered as well as fragments from at least two different glass windows.

Stratigraphic and artifactual associations suggest an interior floor with collapsed shelving was encountered in the excavation of Unit 110 (Hyde 2019). The orientation and distribution of various materials suggests there was a low wooden cabinet feature or wooden shelves that held various ceramic serving vessels, glass and ceramic condiment and alcohol bottles, and other cooking implements and ingredients central to food preparation at the site (discussed in greater detail in Hyde 2019).

Datable materials from Locus C suggest the cookhouse was used throughout both periods of ownership. Stratigraphic features, including a sand lens, and dense inclusions of mortar and plaster in Context 8 suggest the cookhouse may have been refloored or otherwise rehabilitated after ownership transferred to Cowell 1869. It is likely this construction coincided with other infrastructure updates across the site such as the addition of a third kiln and the construction of a foreman's office and an additional workers' cabin.

Lighting. A total of 169 fragments representing a minimum of nine different lamps were recovered from Locus C (Table 5.62). Fragments from both chimneys and shades are represented. The chimneys recovered have plain rims, small scalloped rims, deep scalloped rims, or rims with conical beads. Recovered lampshades were found in light yellow, yellow, and colorless variations. At least one of the lamps was an oil lamp, as evidenced by an iron burner plate fragment. The remaining eight lamps may have been either oil or candle.

Food Storage. Food storage materials from Locus C include a metal can and ceramic cannister/jar. A total of 567 flat metal fragments were recovered including one key, representing a minimum of one turn-key style iron can and one sardine/fish can. The turn-key style opening was introduced in 1866 and was most prevalent on cans that contained fish, fruit, or coffee. The sardine can is rectangular with rounded edges, with long opening marks visible on the top portion of the can. Sardine cans became common after 1875. Also recovered was a rim fragment from a greyed ironstone cannister or jar. This jar could have held a wide range of foodstuffs.

Beverage Storage. Beverage store vessels from Locus C include a wide range of glass bottles and a single glazed stoneware bottle. A total of 94 glass fragments were recovered representing a minimum of 23 vessels (Table 5.63). The heavily fragmented nature and few recovered fragments with markings made determining original contents difficult. Of the 23 vessels recovered, contents for 12 (52.2%) were unidentifiable. A total of 11 vessels (47.8%) contained alcohol, with seven (63.6%) of those 11 vessels originally containing liquor and four (36.4%) containing wine or champagne. Nine fragments of bottle foil (white metal) were also recovered, further supporting at least some presence of champagne/sparkling wines and/or beer.

Additionally, a whole glazed stoneware liquor bottle was recovered from Locus C (Figure 5.27). The body of this bottle had a dark blue glaze over a light brown slip. The bottle is a globular tear-drop shape with a tapered and flared finish, consistent with the morphological characteristics of Chinese ceramic vessels used to hold and ship liquor such as *ng ky py* and *mei kuei lu* (Chace 1976; Choy 2014; Felton et al. 1984; Olsen 1978; Praetzellis and Praetzellis 1979). The vessel measures 17-centimeters tall, with a base diameter of 8.5-centimeters and a rim diameter of 6-centimeters. An unidentified Chinese character shaped with raised clay is present on the bottom.

The dominant exporter of these liquors was the Wing Lee Wai company, established in 1875, which used bottles produced by the Black Glaze Guild (Choy 2014).

Service/Tableware Vessels (Glass and Ceramic). A total of 79 ceramic tableware fragments were recovered from Locus C. Many of these fragments were large and diagnostic, allowing for the identification of a minimum of 33 ceramic tableware vessels (Table 5.64). This ceramic assemblage is dominated by blued whiteware (n=17, 51.5%) and ironstone (n=10, 30.3%) ceramic types, with hotelware (n=2, 6.1%), whiteware (n=2, 6.1%), redware (n=1, 3%), and porcelain (n=1, 3%) comprising smaller proportions. Notably, the single porcelain fragment is from a "wintergreen" (or celadon) rice bowl (Fong 2013; Greenwood 1996; Wegars 1993). The wintergreen color is associated with jade and has connections to health in Chinese consumption practices (Yuqun 2010). Having a rice bowl in wintergreen highlights the intra-relations of health and food consumption practices in Chinese culture, discussed in greater detail in Chapter 8.

The forms of vessels represented are also diverse. Mugs (n=10, 30.3%) and plates (n=15, 45.5%) dominate the assemblage. Within plates, most are medium sized luncheon plates (n=7, 46.7%) with the remaining being small salad plates (n=4, 26.7%), large dinner plates (n=3, 20%), and a very small side plate (n=1, 6.7%). The remaining tableware forms include rice bowls (n=2, 6.1%), cups (n=2, 6.1%), bowls (n=2, 6.1%), and a pitcher (n=1, 3%). Most of the tablewares are plain or undecorated (n=26, 78.8%). The decorated tablewares (n=7, 21.2%) are all variously molded. Most molding decoration is limited to simple annular bands, but one mug handle had a molded floral/feather pattern, and the pitcher, a bowl, and salad plate had Gothic style geometric molded bodies and/or rims. While the vessels were generally plain, vessels do not appear to have derived from a formal set. Instead, it appears the ceramic vessel collection was assembled haphazardly, with a preference for affordable plain vessels. No glass table or service wares were recovered from Locus C.

Of note are a number of peck-mark modified ceramic vessels. A total of four fragments from at least two vessels (one blued whiteware plate and one ironstone mug) with peck-marking were recovered. The three fragments from the blued whiteware plate were refitted. One of these fragments has the word "Chow" pecked into the glaze on the front face (body) of the plate (Figure 5.28). This mark is almost identical, in style, shape, and form, to one recovered on the backside of a plate's base in Unit 109. On an adjacent re-fitted sherd, located in front of the "Chow" mark, is another partial peck-mark that appears to depict "Ah." On the back of this same vessel is another peck-marked "Ah," in the same cursive style as the partial front peck-mark (Figure 5.29).

On the ironstone mug, there is a grouping of crude peck-marks in the center of the backside of the vessel's base. These peck-marks are deep and do not form any identifiable word or pattern (Figure 5.30). Peck-marking ceramic vessels is a traditional Chinese practice, and examples of peck-marked vessels have been recovered from a number of Chinese diaspora contexts in California and the American West (Michaels 2005). In almost all other cases, however, the peck-markings are Chinese characters, which is distinctly different than the Romantic script in which these marks are stylized (Michaels 2005). The significance of these marks and these differences will be discussed in detail in Chapter 8.

Health and Hygiene. Three glass vessels recovered from Locus C relate to health and hygiene (Table 5.65). The first vessel is an amethyst colored square medicine bottle with a prescription finish. The exact contents of this vessel could not be determined. Also recovered was a body fragment from a very light natural blue green Chinese medicine vial. Often referred to as "opium bottles" this is a misnomer, as they traditionally were used for a wide variety of traditional Chinese herbal and mineral based medicines (Fong 2013; Voss et al. 2015; Waghorn 2004). Finally, there was recovered an embossed colorless rectangular-paneled bottle with a flare finish. The embossing evidenced the vessel as a H.E. Swan, Jenny Lind Hair Gloss bottle. H.E. Swan (Horace E. Swan) was a perfume manufacturer based in Fall River, Massachusetts from 1850 until 1861 (Kovel 1996). Jenny Lind, the face of this particular hair oil, was a world-famous Swedish opera singer. Under the invitation and facilitation of P.T. Barnum, Jenny Lind was introduced to American audiences in 1850 through a United States tour.

Smoking and Narcotics. Multiple objects associated with both tobacco and narcotics consumption were recovered from Locus C (Table 5.66). One undecorated stem of a ball clay tobacco pipe was recovered. The stem is oval in cross section. Also recovered were two fragments of a tobacco can, identified based on the fragment shape. In addition to tobacco related materials, a fragment of an opium pipe bowl was recovered from Locus C. This opium pipe bowl is a grey stoneware with a buff polish, "circular" style shape, with two annular bands around the bowl orifice (Felton et al. 1984). The implications of opium smoking for investigations of Chinese identity and labor practices will be discussed in Chapter 8.

Clothing and Adornment. Clothing and adornment items recovered from Locus C include six buttons (Table 5.67). These buttons include two shirt buttons (one white Prosser four-hole sew-through with pie crust design and one shell two-hole sew-through), two jacket buttons (one cast iron shank style and one wooden four-hole sew through style), one cast iron pant button, and one black Prosser button for an unidentified article of clothing.

Ammunition. Arms materials from Locus C include four copper-alloy cartridge casings and one lead bullet. Of the cartridge casings, three are whole and one is only the base. Two of the casings have no marks. A mark on one casing identifies it as a .38 long centerfire, manufactured by the Union Metallic Cartridge company between 1873 and 1911. The other casing is identified by marks as a .22 long rimfire cartridge produced by Western Cartridge Company/Winchester from 1940 to the present and is likely a product of ranching or target practice activities that postdate the lime operation. All four of the casings show evidence of being fired. The single bullet recovered measures .87-centimteres in diameter and 1.5-centimeters long and has impact scars, suggesting it was fired. The bullet diameter is closest to a .338 caliber, however, warping due to impact has slightly distorted the bullet dimensions.

Tools. A number of general tools were recovered from Locus C, including handle and body fragments from an iron bucket, bailing wire, cast iron pieces, and wire hooks. More specific tools include a sewing-type pin, a whole flat-style iron hand file (for knives/metal tools), a bone-handled knife, the butt of a copper plated iron knife tang with annular bands engraved, and large burned cast iron fragments that appear to be components of a wood burning stove – all but the pin being specialized tools related to food preparation and cooking.

Other Small Finds. Other materials recovered from Locus C include a carved wooden pocket knife handle with a copper shield emblem. The shield emblem was popular on a number of different types of pocket knives produced by different companies.

Faunal. A total of 1,324 animal bone fragments representing a minimum of 24 individuals were recovered from Locus C (Table 5.68). The faunal assemblage is diverse, with 20 different species being represented. These species include common domesticates recovered elsewhere at the site such as cow (*Bos taurus*, MNI=2), pig (*Sus scrofa domestica*), sheep/goat (*Ovis aries*/*Capra hircus*), and chicken (*Gallus gallus*), but also less common wild species like deer (*Odocoileus*), and uncommon wild species such as stellar sea lion (*Eumetopias jubatus*) and harbor porpoise (*Phocoena phocoena*). Other species include wild birds, various rodents (some of which may be non-cultural intrusions), various fish, and California mussel shells (*Mytilus californianus*). Of the individual specimens, cow is the most prevalent (n=96, 7.3%) with domesticates as a whole representing 9.4% (n=124) of the identified specimens.

Of the 1,324 recovered bone fragments recovered, a total of 133 (10%) show evidence of cut marks and 522 (39.4%) have at least partial burning. It was not possible to identify the implement for all cut marks, but at least 50 (37.6% of cut specimens) had saw marks, 29 (21.8%) had cleaver chop marks, and two (1.5%) showed direct evidence of both saw and chop marks. There does not seem to be a strong correlation between the species and type of cut present, except on sheep/goat elements, where only one cut mark is present and it is a cleaver chop, and on pig elements where three of the eight cut marks present (37.5%) are cleaver chop marks, two (25%) are saw marks, two (25%) are unidentified marks, and one (12.5%) exhibits knife marks. Also of note is the stellar sea lion rib specimen, which is culturally modified at the distal end. The exact implement was not identified but the smooth distal face and rounded margins indicates that the rib may have been stone ground or cut and then became pot polished while cooking.

Locus C Chronology

Chronological data for each Locus C context is listed in Table 5.69. A number of ceramic fragments with markers' marks were recovered from Feature C, providing solid dates for the feature, unit, and contexts. A TPQ of 1891 for the feature/unit is provided by an Alfred Meakin ceramic fragment that was manufactured between 1891 and 1897 recovered in Context 10 (excluding the steel Winchester Super X cartridge dating to post 1940, which was determined to be a trace of post-lime manufacturing activity at the site). The additional recovery of fragments from a John Wedgewood ceramic (Context 10) manufactured between 1841 and 1860, a T. & R. Boote "Grenade Shape" ceramic (Context 6) manufactured between 1858 and 1867, and glass fragments from an H.E. Swan "Jenny Lind Hair Gloss" bottle (Context 10) made between 1849 and 1861 suggests that Locus C was built and occupied during the first period of operation (1858-1868). Additional ceramic fragments such as those from Hope and Carter (1862-1880) and Edward Clarke (1865-1887), along with the Alfred Meakin (1891-1897) discussed above, illustrates that use of Locus C continued during the second phase of occupation, although stratigraphic data indicates that the structure may have been refloored/rehabilitated at least once during its occupation (Hyde 2019). The similar nature of artifacts recovered across contexts, however, suggests that the function of the structure, being the company cook house, stayed consistent through time.

Locus C Interpretation

The preponderance of material associated with food preparation and cooking and overall paucity of domestic remains recovered from Unit 110 indicates that Locus C served as the cookhouse for the lime operation (Hyde 2019). Collapsed shelving associated with large numbers of ceramic vessels give insights into the material constituents of the cookhouse and their spatial organization. Census data, other historic sources, and recovered material suggest the company cook during the later years were Chinese immigrant men. Material from this locus, therefore, not only provides insight into the types of food provided to workers, but also the daily practices of Chinese domestic labor at this lime operation. The mix of Euro-American and Chinese objects and foodstuffs suggest the cookhouse was an important locus of intra-action, negotiation, and emergence, discussed in greater detail in Chapter 8.

Social Space

While life at the Samuel Adams Lime Kilns would have revolved primarily around work, social interactions at communal gathering spaces during time-off would have been important features of life as a lime worker. These social spaces would have also been critical areas of sustained intra-action and emergence, as well as spaces where worker agency, identity, and resistance could have been negotiated and expressed. Even though these industrial social spaces would have been critical aspects of life, relatively little is known about how lime workers spent their non-work time, and the nature of social interactions in these culturally diverse communities more broadly.

Locus B: Mess Hall

Locus B is a rectangular masonry structure foundation oriented roughly east-west with an intact "U" shaped wall feature built into a small gradually sloping hill. To the south, approximately five feet from the southern building wall there is a low foundation or other articulated limestone masonry feature. It is possible this external foundation supported wooden beams and created a covered outside area.

Two 1x1-meter units were excavated at Locus B (Units 109 and 111). One unit (109) was located within the visible building footprint, while the other (111) was located outside. While the units are spatially close, only 1.75-meters away from each other, architectural features and uncovered subsurface features suggest the spaces they sampled are distinct (although not unrelated). Together, excavations at Locus B recovered a number of architectural and archaeological features and a diverse assemblage of material remains (Hyde 2019). In total, archaeological findings indicate that Locus B served as the mess hall for the Samuel Adams operation.

Excavations at Unit 109 within the structure exposed a historic floor/living surface (Context 5) characterized by a cobble lens and dense artifact accumulation (Figures 5.31 and 5.32). This dense layer of artifacts likely represents a single depositional dumping event associated with the closing of the lime operation, providing aggregate data for the use of interior space at Locus B

(Hyde 2019). Unit 111 was placed outside the structure footprint, adjacent to the low masonry feature thought to define an outside extension. Surprisingly, additional subsurface masonry foundation features were exposed, suggesting Unit 111 may have been placed in the location of a covered outdoor feature or ancillary structure associated with Locus B (Figures 5.33 and 5.34) (Hyde 2019). It appears this was a later construction, however, as below these masonry features there was a well-defined pit feature filled mostly with butchered faunal bone. This suggests the outside space south of Locus B was likely a dumping area until a later addition to the structure extended the structure footprint into that area (Hyde 2019). The materials recovered from Unit 111 appear to be of a secondary context, being dumped or otherwise accumulating in this semi-outdoor space.

Locus B Interior (Unit 109) Artifacts

Architectural Remains. A wide range of architectural materials were recovered from Unit 109. A minimum of 78 nails were recovered in various penny sizes from 3D through 6D, 8D, and 10D (Table 5.70). Included in this count is a single screw. A total of 54 nails (69.2%) are machine cut, nine (11.5%) are wire, 13 (16.7%) are hand forged, one (1.3%) is cast, and one (1.3%) is unidentified.

Other architectural materials include large cut limestone blocks (not collected), smaller limestone cobbles, brick fragments, wooden plank fragments, a marble block, lime mortar/plaster, and a wide range of non-structural architectural elements (Table 5.71). Specifically, these include iron pipe fragments, iron brackets, a door latch, a door strike/face plate, a door hinge bracket, a ceramic agateware doorknob, fragments from at least three separate windows, and pieces of Rodgers Modern Flattened Strand type barbed wire which was introduced in 1888. Additionally, there is evidence of a tented extension that may have extended the mess hall space into a semi-outdoor area, providing more room, ventilation, and heat control. Evidence for this was recovered in multiple tent grommets, an iron stake, and tent anchors (with bolts, nuts, and washers/grommets), and in the exposure of a short masonry foundation or wall feature in Unit 111.

Lighting. A total of 1,576 fragments representing a minimum of 13 different lamps were recovered from Unit 109 (Table 5.72). Identification of discreet lamps was based largely on comparisons of rim diameters and decorative styles. All recovered rim fragments had some type of decoration, usually a type of scalloping or beading. While most of the fragments are from lamp chimneys, the presence of a molded lamp font suggests at least one lighting feature was an oil lamp.

Food Storage. Food storage materials recovered from Unit 109 include metal, glass, and ceramic objects. A total of 2,887 metal fragments representing a minimum of three metal cans were recovered. At least one can was a large turn-key style can (likely canned fish or coffee), one was a simple rolled square/rectangular can, and one was a cylindrical hole-in-cap style can (Table 5.73).

Evidence for glass food storage vessels recovered from Unit 109 include a minimum of four jars and four condiment bottles (Table 5.74). Three of these glass jars are colorless, with the other being light natural blue green. At least one jar is a canning jar, evidenced by a groove-ring wax seal-type finish. The other finish types present include simple ground, flare, and straight. These jars could have held a wide range of foodstuffs. Of the four condiment bottles recovered, three have vessel shapes common for pepper sauce bottles, and one has a club finish typically found on Worcestershire sauce bottles. These condiment bottles reflect laborer manipulation of company provided food and will be discussed in greater detail in Chapters 7 and 8.

A total of 10 ceramic fragments representing a minimum of five ceramic food storage vessels were recovered from Unit 109 (Table 5.75). These vessels include one brown-glaze stoneware jar that may have held cooking oils or any number of foodstuffs used in traditional Chinese cooking, one ironstone cannister/jar, one blued whiteware cannister/jar, one hollow stoneware vessel, and one whiteware cannister/jar (Felton et al. 1984; Fong 2013; Wegars 2013). The Euro-American ceramic cannisters/jars also could have held a wide range of different foodstuffs.

Beverage Storage. A total of 2,270 fragments representing a minimum of 85 different glass beverage vessels were recovered from Unit 109 (Table 5.76). Of these vessels, the original contents for 38 (44.7%) were unidentifiable. Of the identifiable vessels, 45 (52.9%) were alcohol bottles and two (2.4%) were mineral/soda water bottles. Within the alcohol bottle assemblage 20 (44.5%) are wine/champagne bottles, two (4.4%) are beer or wine bottles, 21 (46.7%) are liquor bottles, and two (4.4%) could be liquor, wine, or beer. Also recovered, in supporting evidence for champagne/sparkling wine and/or beer consumption, were 345 fragments of white metal bottle foil caps and a minimum of one stamped white metal muselet cap. Beyond Euro-American alcohol, a total of 75 Chinese glazed stoneware fragments representing a minimum of three liquor bottles were also recovered at Unit 109 (Table 5.77).

Service/Tableware Vessels (Glass and Ceramic). A total of 1,279 ceramic fragments representing a minimum of 165 tableware vessels were recovered from Unit 109 (Table 5.78). A relatively high proportion of large ceramic fragments recovered allowed for the identification of a large number of discrete vessels. This ceramic assemblage is dominated by blued whiteware (n=64, 38.8%) and ironstone (n=50, 30.3%) vessels, and to a lesser extent whiteware (n=37, 22.4%) vessels. The remaining assemblage is comprised of hotelware (n=9, 5.5%), porcelain (n=3, 1.8%), creamware (n=1, .6%), and redware vessels (n=1, .6%).

The ceramic assemblage from Unit 109 is comprised mostly of plates (n=93, 56.4%), bowls (n=24, 14.5%), and drinking vessels (n=36, 21.8%). More specifically, the plates include 29 salad plates, 22 dinner plates, 21 luncheon plates, 12 buffet plates, eight unidentified plates, and one bread plate. Bowls include 22 regular bowls, one pedestaled rice bowl, and one unidentified hollowware. Drinking vessels included 25 mugs, seven cups, three teacups, and one stein/large mug. The remainder of the assemblage is comprised of food service vessels (n=5, 3%) including a platter, two saucers, a vegetable dish, and a sugar bowl; beverage service vessels (pitchers, n=6, 3.6%); and one hollow redware cooking vessel (.6%). Overall, there is no strong correlation between ceramic type and form, with all of the major forms being found in multiple ceramic types (whiteware, blued whiteware, ironstone). Porcelain vessels, however, were limited to bowls (n=3). This suggests that the ceramics may have been comprised of multiple plain sets, with the assemblage being formed by multiple successive additions over the course of the life of the operation.

Most of the ceramics recovered from Unit 109 are undecorated (n=150, 90.9%), whereas only 15 (9.1%) have decoration. This decoration includes molding (n=12, 7.3%), typically scalloped rims or gothic style body paneling; gilding (n=2, 1.2%), found only on porcelain bowls; and polychrome hand painting (n=1, 0.6%), also found only on a single porcelain bowl.

Of note, however, is a single plate fragment with the word “Chow” pecked into the glaze on the flat underside of the vessel’s base (Figure 5.35). This mark is almost identical to one recovered on the face of a plate in Unit 110 (Figure 5.28). As discussed above, peck-marking ceramic vessels is a traditional Chinese practice (Michaels 2005). In almost all cases recovered in California, however, the peck-markings are Chinese characters, which is distinctly different than the Romantic script that characterizes the “Chow” marks recovered at the Samuel Adams site (Michaels 2005). The significance of these marks and these differences will be discussed in detail in Chapter 8.

Health and Hygiene. Health and hygiene artifacts recovered from Unit 109 include two ceramic cosmetic jars, one whiteware and the other porcelain. While the exact contents could not be determined, faint color on the porcelain jar suggests it may have been painted. Also recovered were five glass fragments representing a minimum of one Florida Water bottle. Florida Water is a “perfumed spirit” developed in the nineteenth century (Sullivan 1994). Though produced by various manufacturers, Florida Water was typically characterized by its lavender, bergamot, orange, and spice components. Florida Water was used primarily to mask bodily odors and was applied to the skin and clothes, but it was also thought to have medicinal properties and it was frequently consumed orally and sprayed into the air under the auspices that it prevented infection (Sullivan 1994). The refreshing and stimulating qualities of Florida Water also led it to being used as a cosmetic, thought to help with freckles and acne, as well as aftershave. The particular embossing on the Florida Water bottle recovered from Unit 106 ties it to Murray and Lanman Druggists based out of New York, the most popular producer of Florida Water in the nineteenth century.

Smoking and Narcotics. While no artifacts associated with tobacco smoking were recovered, multiple objects associated with opium consumption were found in Unit 109. The first object is a fragment of a polished grey stoneware opium pipe bowl. Though the fragment is small, it has two incised annular bands around the orifice and is likely a circular-style bowl, similar to that found at Locus C. In addition, the base of a small copper alloy can, possibly part of an opium can, was also recovered.

Clothing and Adornment. A total of six metal and hard-rubber clothing items were recovered from Unit 109 (Table 5.79). These items include an iron shoe eyelet, a shank-style pant button, a black hard-rubber four hole sew-through pant button (post 1851), an iron shank-style jacket button, an iron four-hole sew-through style jacket button (style popular from 1837-1865), and a copper alloy gaiter button. The gaiter button is a unique find at the site, although not surprising, as gaiters would have likely been an important form of personal protection equipment in most aspects of lime work.

Ammunition. A single copper alloy rimfire cartridge casing was recovered from Unit 109. While there are no markings on the casing, it shows evidence of being fired, and bore diameter suggests it was a roughly .357 caliber type of ammunition.

Tools. A number of generic tool materials including fragments of iron strapping, bailing wire, and an iron bucket were recovered in Unit 109 (Table 5.80). In addition, multiple large cast iron stove elements, including parts of a stove burner, were also recovered. It is likely that a wood-burning stove was located in the mess hall to provide heat and for basic cooking and hot water needs.

Other Small Finds. Notable small finds from Unit 109 include various decorative furnishings. Specifically, the handle from a Limoges (France) porcelain "altar vase" was recovered. This handle was molded into a swan wing, and although missing, it would have articulated with the curved swan neck and body, which attached to the body of the globular pedestalled vase on two opposing sides. While this example appears to be only molded, many examples of the Limoges swan vases are gilded and hand painted in polychrome. These were often used alone as decorative pieces or could have held flowers or other decorative materials. A rim fragment from a colorless cylindrical glass vase with a flared opening was also recovered. The presence of these ornamental furnishings indicate that the mess hall would have been decorated to create an inviting and pleasing environment that mimicked the aesthetic of household parlors or community saloons. This will be discussed in greater detail in Chapter 8. In addition to the vase fragments, a fragment of silver plating, likely from a utensil, was also found in Unit 109. This was a unique find, not replicated anywhere else at the site.

Faunal. A total of 685 animal bone fragments representing a minimum of 18 individuals were recovered from Unit 109 (Table 5.81). The assemblage is diverse, with 18 different species being represented including common domesticates such as cow (*Bos Taurus*), pig (*Sus scrofa domestica),* and sheep/goat (*Ovis aries*/*Capra hircus*). A wide range of wild species were also found, including hare (*Lepus californicus*), starling, an unidentified medium bird, small and medium sized fish, an unidentified pinniped, and a possible muskrat or other large rodent. Other animals present that may not have been consumed as food but were later intrusions into the matrix include ground squirrel (*Otospermophilus beecheyi*), pocket gopher (*Thomomys bottae*), dusky-footed woodrat (*Neotoma fuscipes*), skunk (*Mephitis mephitis*), an unidentified mouse species, and land snail. Also present were the mandible and vertebrae elements from a cat. No butcher marks were observed, so while it is possible the cat elements are the remains of a meal, it is more likely that the cat was a pet or stray that lived at the site. Notably, no marine shell remains were recovered from Unit 109.

Of the individual specimens recovered that were identifiable to at least the genus, domesticates make up the majority of the faunal assemblage (n=128, 26.6%). Within these domesticate specimens cow is represented by 21 fragments (16.4%), pig by one (.8%), sheep/goat by six (4.7%), and unidentified Artiodactyla by 100 (78.1%).

Of the 685 bone fragments recovered a total of 37 (5.4%) show evidence of butchering and 157 (22.9%) show evidence of burning. Specifically, saw marks were visible on 17 of the specimens (45.9% of butchered bone), cleaver chop marks were on two elements (5.4%), and one element

(2.7%) showed evidence of both sawing and cleaver chopping. All butcher marks appear on the domesticated species (which includes "unidentified Artiodactyla" elements). While this supports the idea that many of the Rodentia species are later non-cultural intrusions, it is also possible that the wild species present, especially the birds and fish, were cooked whole.

Locus B (Interior) Chronology

Chronological data for each Unit 109 context is listed in Table 5.82. Ceramic fragments from an A.J. Wilkinson ceramic (Contexts 1 and 5) provide a TPQ of 1896 for Unit 109. However, a Joseph Clementson ceramic fragment (Context 6) dating to between 1850-1864 recovered in association with other artifacts that have TPQs in the early to mid 1800s indicates that Feature C was constructed during the first period of operation at the site (1858-1868). Additional recovered ceramic material with makers marks provide solid dates including Henry Burgess (1864-1891), Edward Clark (1865-1877), Alfred Meakin (1875-1883), John Maddock and Sons (1880-1896), Thomas Hughes (1891-1894), and A.J. Wilkinson (1896-1920). This range of ceramic dates suggests that Feature C was occupied through both periods of occupation (1858-1909).

Locus B Exterior (Unit 111) Artifacts

Architectural Remains. Architectural remains recovered from Unit 109 include a range of nails as well as other building materials, glass, and metal objects. A minimum of 83 nails were recovered in sizes 2D through 6D, 8D, 10D, and 20D (Table 5.83). The majority of nails are machine cut (n=53, 63.9%), with the remaining being hand forged (n=14, 16.9%), wire (n=10, 12%), unidentified (n=5, 6%), and one screw (1.2%).

Other architectural material includes cut limestone blocks (not collected), lime mortar/plaster, flat brackets, two possible door latches, and a door hinge bracket (Table 5.84). A tent grommet and large rivet provide further evidence for possible tenting used to extend the space of the mess hall beyond the building footprint. Glass fragments suggest at least two windows were present in this vicinity of the mess hall.

Lighting. A total of 280 glass fragments representing at least two lamps were recovered from Unit 111. Chimney decorations on the lamps include deep scallops and conical beads. Fragments from a molded lamp font suggest at least one of the lamps recovered was an oil lamp. The lamp font is press molded with a geometric iron cross pattern.

Food Storage. Metal, glass, and ceramic objects associated with food storage were recovered from Unit 111. A total of 1,879 flat metal pieces representing a minimum of two metal cans were found. Most of the fragments are associated with a simple rolled can, but a metal can key suggests at least one turn-key can was also represented. While the simple rolled can could have held a wide range of foodstuffs, turn-key cans most often contained fish, fruit, or coffee.

Also recovered were ceramic fragments representing a minimum of two vessels (Table 5.85). One fragment is from a blued whiteware cannister/jar with a flanged rim and two fragments are from Chinese glazed stoneware jars (MNI=2), which could have held a wide range of traditional Chinese foodstuffs or condiments (Felton 1984).

Additionally, a single fragment of a colorless pickle jar and single fragment from a light natural blue pepper sauce bottle were recovered. These condiments mirror those recovered from the interior mess hall unit (Unit 109).

Beverage Storage. A total of 422 glass fragments representing a minimum of 36 vessels were recovered from Unit 111 (Table 5.86). Alcohol bottles represent 47.2% of the assemblage (n=17), with the remainder being unidentified beverage vessels (n=19, 52.8%). Within the alcohol bottle assemblage recovered, nine (52.9%) of the vessels were liquor bottles, six (35.3%) were wine/champagne bottles, and one (5.9%) was an amber ale bottle. A total of 22 fragments of white metal bottle foil associated with champagne/sparkling wines and/or beers were also recovered. In addition, 37 fragments representing a minimum of five Chinese glazed stoneware liquor bottles in various colors were recovered from Unit 111 (Table 5.87).

Service/Tableware Vessels (Glass, Ceramic, and Metal). A total of 155 ceramic fragments were recovered from Unit 111 representing a minimum of 20 tableware vessels (Table 5.88). A single hotelware fragment was recovered (5%), otherwise the relative proportion of ceramic types is fairly similar with seven ironstone (35%), six blued whiteware (30%), and six whiteware vessels (30%) represented. Bowls are the predominate vessel form (n=7, 35%), with others being fairly evenly represented with four salad plates (20%), two dinner plates (10%), one luncheon plate (5%), three mugs (15%), one pitcher (5%), one crock lid (5%), and one unidentified flatware (5%). There is no strong correlation between vessel types and forms.

Most of the recovered tablewares are plain or undecorated (n=15, 75%). Two vessels (10%) had simple molded annular bands at the base, the pitcher (5%) had elaborate floral and geometric molding on the body and handle, one (5%) mug had geometric molding on the handle, and at least one (5%) plate had floral molding.

No glass table or service wares were found, but two fragments representing a minimum of one enameled metal coffee pot were recovered from Unit 111. The coffee pot is enameled in a mottled light blue-grey. A mark on the pot's base identifies it as "Agate, Nickel-Steel Ware" produced by LaLance and Grosjean Manufacturing company, operating in New York from 1898 to 1955. Advertisements for the product describe it as "seamless," being made from "a single sheet of the best open hearth steel and furnished with nickel plated copper trimmings and outside bottoms" (*The Metal Worker* 1900).

Health and Hygiene. Health and hygiene materials from Unit 111 are limited to two glass artifacts. The first is a light natural blue green Chinese medicine vial, comprised of three fragments. As discussed above, these vessels are commonly referred to as "opium vials," but in actuality held a wide range of traditional Chinese herbal and mineral medicines and remedies (Fong 2013; Voss et al. 2015; Waghorn 2004). The second object is a very light natural blue green glass vial or syringe fragment. Not enough of the vial/syringe was recovered to determine its exact form and purpose, but syringes were used in the nineteenth century for a wide range of medical purposes from cleansing wounds and body cavities (typically ears) to enemas, venereal disease treatments, and contraception (Feldmann 1999; Schaefer 2013; Eichner and Wilkie 2015)

Smoking and Narcotics. A single stem fragment from an undecorated white ball clay tobacco pipe was recovered from Unit 111.

Clothing and Adornment. Clothing items recovered from Unit 111 include a copper alloy shoe lace hook, copper alloy Levi's jeans rivet with denim attached, and a copper alloy overall button (Table 5.89). The overall button is a shank-style button embossed with "Boss of the Road," a brand of workwear produced by the Eloesser-Heyneman Company of San Francisco (the same producers of Can't Bust 'Em workwear) (Psota 2002). Similar to the advertising of Can't Bust 'Em clothing, Boss of the Road ads prominently noted that they were "Union Made." Boss of the Road buttons in this style were produced between 1878 and 1910 (Psota 2002).

Ammunition. Arms material recovered from Unit 111 include two cartridge casings and one lead bullet. Both bullet cartridges are .22 caliber long Super X rimfire casings, but one is copper alloy and one is steel. The copper alloy type of Super X was introduced in 1907 and the steel in 1940, suggesting both casings are associated with post-lime manufacturing activities. Both casings show evidence of being fired. The bullet is a .40 caliber conical Minié ball used in muzzle loading rifles. This style of ammunition was introduced in 1855. Impact warping suggests this bullet was fired.

Tools. Tool materials recovered from Unit 111 are from multi-purpose materials such as bailing wire, an iron bar, and at least one iron bucket. The presence of various cast iron stove fragments (including burners) further support the idea that a wood burning stove was located in the mess hall.

Other Small Finds. A number of artifacts recovered from Unit 111 do not fall within the above categories of material culture. One object is a whole cast iron coat/hat hook shaped in a scrolled design. It is not surprising to find this object in a mess hall, as it was customary to remove one's hat when eating, and the heavy coats and protective workwear would have been burdensome and uncomfortable to wear while eating and socializing. Also recovered was an edge fragment of a glass mirror. Mirror bar backs were common in taverns and saloons of this period, suggesting the mess hall may have had a similar aesthetic. Other objects involved in the creation of this broader aesthetic will be discussed together in greater detail in Chapters 7 and 8. Finally, an amber fragment from a Carter's ink bottle was recovered, providing further evidence that the mess hall was not only where worker's ate and drank, but it was also an important space for a number of other social, leisure, and practical activities.

Faunal. A total of 577 animal bone fragments representing a minimum of 19 individuals were recovered from Unit 111 (Table 5.90). Within Unit 111, a discrete bone pit feature was encountered and will be discussed in greater detail below. The animals represented are diverse, with at least 18 different species present. While MNIs are spread evenly across the species (the only species with more than one animal represented is pig, MNI=2), the number of individual bone specimens recovered are weighed heavily toward domesticated species, specifically cow (*Bos Taurus*, n=38, 6.6%), pig (*Sus scrofa domestica*, n=22, 3.8%), and sheep/goat (*Ovis aries*/*Capra hircus*, n=13, 2.3%). Other notable species represented that were likely used for food include deer (*Odocoileus*, MNI=1), chicken (*Gallus gallus*, MNI=1), an unidentified wild medium sized bird (MNI=1), an unidentified wild small sized bird (MNI=1), cottontail rabbit

(*Sylvilagus audubonii*, MNI=1), hare (*Lepus californicus*, MNI=1), unidentified pinniped (MNI=1), and a mussel shell (*Mytilus californianus*, MNI=1). Other species present as an MNI of one that might have been consumed as food include a cat (*Felis catus*, possibly the same individual recovered in Unit 109), an opossum (*Didelphis virgiana*), a mouse, squirrel, vole, woodrat, and land snail. None of the elements from these individuals, however, had evidence of butchering or cooking.

Of the 577 recovered bone fragments, 69 (12%) show evidence of cut marks and 70 (12.1%) show evidence of being burned. While it was not possible to identify the cutting implement on 18 elements (26.1% of butchered bone), a total of 37 (53.6%) elements have evidence of being sawed and seven (10.1%) were cleaver chopped. There is no strong correlation between the species and/or element and type of cut marks present.

The bone pit encountered in Context 5 provides additional insight into foodways, as the context indicates that these specimens are direct traces of food consumption (and disposal) activities, and not later incursions. When examining the remains from the bone pit in isolation there is a NISP of 88 and MNI of six (Table 5.91). Almost all of the individuals represented are domesticates (MNI of domesticates being four). While unidentified (n=26) and unidentified artiodactyla (n=20) elements comprise 29.5% and 22.7% of the overall faunal assemblage respectively, cow (*Bos taurus*, n=17) comprise 19.3%, pig (*Sus scrofa domestica*, n=12) comprise 13.6%, sheep/goat (*Ovis aries*/*Capra hircus,* n=2) comprised 2.3%, and chicken (*Gallus gallus*, n=1) comprised 1.1%. Non-domesticates present include an unidentified pinniped (n=9, 10.2%) and unidentified medium-sized wild bird elements (n=1, 1.1%). Additionally, a high proportion of the elements are butchered (n=27, 30.7%), with both saw and cleaver chop marks represented. Butcher marks are found on all species represented except the two birds. A wide range of elements are represented across species, but appendicular (NISP=22, 25%) and rib (NISP=20, 22.7%) elements dominate, with vertebrae also comprising a significant proportion (NISP=16, 18.2%). The context and nature of this bone pit feature suggests it provides a more accurate representation of the species and meat cuts typically consumed by the lime kiln workers.

Locus B (Exterior) Chronology

Chronological data for each Unit 111 context is listed in Table 5.92. The TPQ for Unit 111 is 1898, provided by an Agateware enameled coffee pot with maker's mark. Most of the ceramics recovered have TPQs dating to the late 1800s. These include fragments with marks from companies such as George Jones and Sons (1873-1891), A.J. Wilkinson (1885-1896), and Johnson Brothers (1891-1896). Other artifacts recovered, such as the Minié ball, however, suggest Locus B and the deposits associated with Unit 111 date to earlier periods. This ammunition technology was developed in 1855 but went out of use by about 1875 as it was replaced by vastly superior cartridge technology. This range of dates represented throughout Unit 111 support the findings from Unit 109 that Feature B was occupied through both periods of occupation at the site (1858-1909).

Locus B Interpretation

The totality of data available for Locus B indicates that it was the primary mess hall for manual laborers at the Samuel Adams operation. Domestic items are largely absent, and the material assemblage is dominated by alcohol bottles, food storage containers, condiment bottles, and animal food remains. Not only does this support the interpretation of Locus B as a mess hall, it highlights the importance of this space as a social gathering area, where workers of various backgrounds and specialties would have come together to enjoy a hot meal and enjoy a brief respite from the toils of lime work. As with the cookhouse, the mix of Euro-American and Chinese materials and foodstuffs in the mess hall indicates that this social space was an important locus of social encounter and emergence, the details of which will be discussed in Chapter 8. While the artifacts do not provide much chronological detail, the stratigraphic associations suggest the mess hall was occupied throughout both periods of ownership, with the likelihood that there was an extension added later, possibly following the transfer of ownership to Cowell and the wider expansion of the operation.

CHAPTER 6. LIFE AND LABOR AS A "LIME WORKER"

Historical archaeology is distinct in approaching the study of the past through both material and documentary data. Historical documents can provide data that is independent, interdependent, complementary, and/or contradictory to archaeological data (Little 1992). The power of historical text is that it can provide emic insights and lines of information that are lost or obscured in material traces recovered by archaeologists (Beaudry et al. 1991). Historical records, though, are biased and fragmentary, and recovered archaeological data often sheds light on the critical aspects of life that are left out or purposefully excluded from historic documentation. Often this excluded information regards the routine and seemingly unimportant or taken for granted aspects of human existence – the food we eat, the way we organize our spaces, the way we structure our daily lives. These quotidian aspects of life, however, are often the ones that are most strongly framed by cultural conventions, traditions, and norms. The enactment of these practices in daily life work to critically shape understandings of ourselves and the world, and our experiences of both (Deetz 1977).

Material remains are also often the only historical traces for history's silent majority – the disenfranchised, the illiterate, and the subaltern. In the case of the Samuel Adams Lime Kilns, there are volumes of historical material about Henry Cowell, his family, their business enterprises, and their broader impacts. For most of the lime workers, however, the individuals that actually lived and toiled at the kilns, a notation in a census identifying their name, occupation, and their place and date of birth is the extent of their presence in historical records. These workers often did not own property, keep journals, or rise to prominence in ways where the intimate details of their lives were recorded. The blood and sweat of these laborers, and others like them, though, is the foundation on which modern California was built. And, as will be shown, these workers were on the front lines of encounter that marked the emergence of a globalizing world in the nineteenth century, a world of social negotiation and transformation unprecedented in human history.

Mass migrations from Europe and East Asia drew many of the emerging global industrial proletariat together to the work camps, factory floors, and urban cores of America. Unable to afford an escape, these individuals lived and worked shoulder to shoulder with strangers from foreign lands, confronting alterity with every encounter, every word spoken, every glance shared. It is these goings-on, the intimate daily relations that go largely unnoticed, let-alone documented, that had rippling consequences for the enfolding social fabric of the nineteenth and twentieth centuries. It was in these "practical politics" that notions of ethnicity, race, class, gender, labor, and community were actively negotiated and woven together into identifiable and identifying patterns by which people came to understand themselves, their world, and their place within it (Silliman 2001a:194).

At the Samuel Adams Lime Kilns there is enough historical evidence to know that it was a socially diverse site, structured along hierarchical divisions of labor that often aligned with ethnicity (Table 6.1). It is also known, however, that the particular make-up of this diversity, and the particular associations between ethnicity and labor, shifted over time as new waves of immigrants entered the area and previously established immigrant groups worked their way up the company hierarchy. What we don't know from historical data is how these processes and changes were actively negotiated (or promoted) by the workers themselves, how these changes were experienced differentially across labor groups and through time, and what the broader social impacts were of theses shifts – how did the very categories of ethnicity, class, gender, and labor, and even the understandings of us and them transform through the experiences of living in a pluralistic frontier industrial site such as the Samuel Adams Lime Kilns? What were the meanings and power dynamics that emerged out of these spaces and activities? In other words, what were the material-discursive practices of life and intra-action at this industrial operation? This chapter attempts to engage with both historic and archaeological data to begin exploring these questions.

With only limited documentary data to draw upon, the material record becomes critical to exploring past processes and experiences of intra-action and transformation. Historic and archaeological data are qualitatively different but engaging these lines of evidence in complementary and comparative ways can provide insights. This is the power of historical archaeology, then, to provide multiple and sometime alternative narratives that enrich our understandings of the past. By approaching historical and material data as comparable data sets they enhance each other, and allow for stories to emerge from the interstices – stories that add nuance, greater detail, new perspectives, and understandings with the potential to not only re-shape our understandings of the social and historical particularities of a place, but also to revolutionize the way in which we understand the very fabric of social relation – the entanglements of becoming and the enfolding of history altogether (Wilkie 2000).

This chapter is one such effort to intra-weave historical data with the material remains recovered at the Samuel Adams site to tell stories, humanize the material, and create a picture of the dynamic social landscape at work. In many ways this effort builds on the previous data presentation chapter, highlighting patterns and synthesizing historic data to provide a more contextualized understanding of the recovered material. The goals of this chapter are to identify the role and use of the sampled spaces, the people who occupied them, and the types of activities they pursued on a daily basis. Following Mrozowski (2006:1) this chapter aims to "present a series of intimate portraits of individual and corporate households." In doing this, I hope to paint a picture of what life was like for different groups of laborers at the Samuel Adams Lime Kilns, and illustrate how their lives were both reflections of, and contributors to, broader social transformations taking shape across California and the United States during the late-nineteenth and early-twentieth centuries. Due to the particular historical trajectory of the Samuel Adams Lime Kiln site, archaeological analysis also has the potential to explore how changes in management and company business strategies impacted the daily lives and community relations of various labor groups in different ways. As a result, this chapter presents the lived experiences of different labor groups at the Samuel Adams Lime Kilns over time and provides the necessary context for the examination of the dynamic social relations, performances, and emergences that will be discussed in Chapter 8.

Managerial Labor at the Lime Kilns

The foreman was a distinct position within the lime kiln operation. While we know that the manual labor force comprised a diverse range of specialists, almost all are listed in censuses and other historic documents simply as “lime workers,” “lime burner,” “works at lime kiln,” or “day laborer.” The foreman, however, is typically identified as such in historical documents, distinguishing him from the rest of the quicklime production labor force. While the foreman’s primary task was to organize labor, control production, and manage the day-to-day lime burning operations, he was also an agent of the company. Historical records suggest neither Samuel Adams nor Henry Cowell ever lived at the site, and their physical presence at the operation appears to have been relatively infrequent. This means the foreman, in his position as manager, was expected to embody the company and act towards its best interest. This position of distinction and power came with material rewards. Our archaeological investigation recovered traces of some of these material privileges, but it also recovered patterns that add layers and nuance to our understanding of who the foremen were, what their lives were like, how they strategically navigated their intermediary position between capitalist company owners and manual wage laborers, and how this changed over time with shifts in demography and ownership.

The foremen at the Samuel Adams Lime Kilns differed from the manual laborers in that, from at least 1858 until at least 1870, their immediate families lived with them on-site at a private residence within the industrial lime complex (Locus T). While the lime operation was in a semi-rural area and operated as a small and limited company town, it was not entirely disconnected from the nearby city of Santa Cruz. The Samuel Adams operation was located only about one and one-half miles from Davis and Jordan’s (later Davis and Cowell’s/Henry Cowell’s) Bay Street kilns, and about two to three miles from the western-most aspects of the city of Santa Cruz. Access to both of these locations from the Samuel Adams Lime Kilns would have been fairly easy and direct via roads/trails through Cave Gulch. This distance is not so great to inhibit some workers from living off-site (at least part time) while working at the kilns. The proximity would also have allowed the foreman and his family periodic access to the comforts of town-life, even while living on-site at the industrial complex. It is unclear if the foreman children were schooled at home at the kilns or if they attended the Mission Hill School, which was established in 1857 and would have been roughly two and one-half miles away (Koch 1978). In 1870, two of the foreman’s children are listed as being “at school,” possibly suggesting they were pupils at the Holy Cross Boarding School, near the site of Mission Santa Cruz. After at least 1880, however, the foreman’s family no longer lived on-site at the Samuel Adams complex, but resided in a private residence near Cowell’s ranch (associated with the Bay Street kilns), on the western edge of the city of Santa Cruz.

The primary managerial labor spaces at the Samuel Adams Lime Kilns were Locus T and S. Material remains from Locus T indicate it was the domestic residence for the site foreman and his family between 1858 and at least 1870. Materials recovered in contexts associated with the collapsed wooden floor and subfloor dating to this period reflect a broad range of domestic household activities including food service and consumption, personal health and hygiene, and child rearing. The presence of materials such as the glass baby bottle and brooch are the only evidence of women and children recovered anywhere at the site. Notably, previous FWVAS excavations also recovered a small cameo with a profile face, a frozen charlotte doll, and a glass marble – objects that further support the notion that Locus T was occupied by a family including men, women, and children.

While exact differences in wages between manual workers and managers is unknown, the foreman was typically an older man with prior experience in lime production (Perry et al. 2007). His position as foreman gave him and his family elevated status and power within the hierarchy of the lime works. This is evidenced materially in a number of ways. The first is the fact that the foreman and his family lived in their own private residence, while manual workers lived without their families in shared cabins. The performance of this distinction extended to activities as well, as materials recovered from the foreman's spaces appear to be entangled with Victorian notions, aesthetics, and practices of gentility, marking these spaces as distinct from those occupied by the manual laborers (discussed in greater detail in Chapter 8).

Material remains from Locus S, on the other hand, suggest it served as the foreman's office – his workspace – after about 1875. From at least 1880 until the operation closed in 1909, after the foreman's family began living in western Santa Cruz, the foreman's office also likely served as his domestic residence. This interpretation is supported largely through architectural features and a unique mix of materials related to both domestic life and managerial work activities (discussed in greater detail in Chapter 4).

Early Days: Life at the Foreman's Family Residence

Census documents allow us to identify the potential occupants of the foreman's family residence (Locus T) throughout various periods. Beginning in 1858, Asa Hull served as the foreman of the Samuel Adams operation and lived on-site in the private residence (Locus T), along with his wife Sarah and son George, who was only 4-months old in the 1860 census. A good friend and business partner of Samuel Adams from New York, Hull moved to California to work with Adams and start the lime business. Hull served as site foreman and overseer of operations in Santa Cruz while Adams handled sales and accounting duties in San Francisco (Perry et al. 2007).

Hull served as foreman until at least 1862, when he and his family moved to San Francisco to take over the company bookkeeping (Perry et al. 2007). An advertisement of household goods for sale "on account of departure" in the *Santa Cruz Sentinel* on November 1, 1862 provides a rare glimpse into the material world of an early lime foreman in Santa Cruz. The list of goods presents a genteel existence surrounded by a "Rosewood Piano with all the furnishings," imported carpets, oil paintings, and a private horse and buggy. A listing of $10,000 in real estate and $500 personal estate in the 1860 census further highlights the Hull family's class distinction in relation to the manual laborers', none of whom list any estate value.

Hull is unique in the history of foremen at the Samuel Adams kilns in that he appears to occupy a position in the emerging professional and middle-class. While he served as foremen during the early years, there is little evidence to suggest he had much prior experience in lime manufacturing. He was a businessman and entrepreneur who later made his living in real estate. Following Hull, the Samuel Adams foremen appear to have been individuals who rose within the ranks of the regional lime industry. These distinctions and their social implications are discussed in more detail in Chapter 8

Upon Hull's departure from the site sometime after November of 1862, Alexander McDonald, the operations' cooper, took over as site foreman (Perry et al. 2007; *Santa Cruz Sentinel* 1865). It is unclear, but likely, that McDonald would have moved into the Locus T residence at this time. While McDonald's son (age 26) also lived and worked at the operation as a carpenter, it is unknown if the senior McDonald's family moved to the site to occupy the house with him upon his promotion to foreman.

McDonald's time as foreman of the Samuel Adams operation was limited, moving to take the position of foreman at the competing I.X.L. Lime Company kilns near Fall Creek sometime before 1870 (*Santa Cruz Sentinel* 1882). In the 1870 census Michael Hickey, from Rhode Island, is listed as foreman at "Davis and Cowell's Upper Lime Kiln," as the Samuel Adams Lime Kilns were often referred to after Davis and Cowell took ownership of the operation in 1869. Michael Hickey lived at the foreman's residence (Locus T) with his wife Catherine, an Irish immigrant, and their four children; Daniel (age 13), Minnie (age 10), John (age 5), and Mary (age 2). Before about 1875 it appears there was not a designated foreman's office, or it was located in a currently unidentified and untested location. During this time, it is possible the foreman's work space/office was at, attached to, or adjacent to his place of residence (Locus T). The formal and separate foreman's office (Locus S) appears to date to after 1875 and is associated with the Cowell-period of ownership.

Materials recovered from Locus T suggest activities undertaken at the foreman's residence were largely domestic during the earlier years (from 1858 to at least 1870, after which it served a storage function). The traces of these domestic activities, however, differ in notable ways when compared to the domestic spaces of the manual laborers. At the foreman's residence, faunal remains were recovered in substantially higher numbers than those recovered at the shared workers' cabins (NISP=209/MNI=13 for foremen compared to NISP=10/MNI=5 for manual laborers) (Figure 6.1). Similarly, differences exist in service/tablewares between the foreman and manual laborer domestic spaces, with 19 fragments representing a minimum of 11 vessels being recovered from the foreman's household while only two fragments representing a minimum of two vessels were recovered from either of the shared workers' cabins. This distinction suggests the early foreman and their families did not take meals with the rest of the workforce at the communal mess hall, and instead consumed meals together in their private residence. It is unclear, however, whether the foreman's family prepared their own meals or whether they were prepared by the company cook and consumed at the residence.

Of note was the recovery of a saucer and teacup from the foreman's residence, as these are specialized vessels that provide evidence of participation in the powerful cultural practice of tea consumption (Christensen 2012; Fitts 1999; Praetzellis and Praetzellis 2001). Tea consumption, it has been argued, was a highly symbolic domestic ritual during the Victorian period (diZerga Wall 1994). Serving as an important arena of social negotiation for the aspiring middle-class, the social-material performance of tea consumption was a way to both mark and advance one's position as a genteel member of society. Critically, these activities stood in marked contrast to coffee consumption (discussed later), which was entangled in an emerging working-class identity shaped in relation to gentility (Wood 2004). The performance of upward mobility by early foremen (or at least Hull) is further evidenced in the other materials listed for sale in the 1862 newspaper ad discussed above. These objects included a wide range of different furniture, decorative home furnishings, items of comfort (feather bed), and items of entertainment and leisure that would have signaled the family's gentility and economic success through an appearance of comfort, well-being, and conspicuous consumption (Leach 1993; Praetzellis and Praetzellis 2001).

Alcohol was consumed at the foreman's household in fairly substantial quantities, however, complicating our understanding of the performance of gentility at the lime kilns. Of the recovered bottle glass from the foreman's residence a minimum of 34% were alcohol bottles, indicating that the foreman, and possibly his family, did not conform to the temperance ideals of Victorian gentility (Fitts 1999; Praetzellis and Praetzellis 2001). This pattern may reflect regional particularities regarding the social perceptions of alcohol, as Californians often had a more liberal stance toward alcohol, even in the driest days of the temperance movement and prohibition (Rose 1986). It appears, however, that the foreman family were consuming this alcohol in particular ways – ways that may have actually confused or complicated social-material connections between gentility and alcohol consumption. Within contexts associated with the final occupation period of the foreman's household (Loci T and T/J) a minimum of 2 glass (probable stemware) cups were recovered, one press molded with a simple pattern – an artifact type not found anywhere else at the Samuel Adams site. The presence of these formal and specialized drinking materials reflect notions of gentility and propriety, and stand in marked contrast to the plain whiteware mugs and glass bottles from which manual workers consumed their alcohol. In this way, even in the consumption of alcohol, which occupied a contested space in understandings of gentility, the foreman family appears to have attempted to signal their social distinction through the strategic use of material objects. Also recovered within these same contexts, however, was a shot glass – an object with deep ties to the working-class saloon. This patterning suggests a multivariant alcohol consumption pattern that may have been rooted in the type of alcohol being consumed, who was doing the consuming, and/or the social context of consumption. The entangled nature of alcohol consumption and its social implications will be discussed in greater detail in Chapter 8.

Domestic labor, including child rearing, appears to have also been an important activity at the foreman's household, until at least 1870. This is evidenced through the number of women and young children listed on census documents as living at the site, as well as the presence of wide range of objects associated with family life (Costello and Praetzellis 1999; Kindon 2017; Wilkie 2003; Wilkie and Bartoy 2000). One ceramic of note recovered was a Rockingham ware vessel. While the small fragment made the pattern type unidentifiable, the most popular Rockingham pattern during this period was the "Rebecca at the Well" motif which represents a biblical scene commonly connected to notions of women as housemakers and providers (Claney 2004; Eichner 2017; Wilkie 2003). In the context of nineteenth century Victorian gentility this object would have served as a "material reification of the cult of true womanhood and values of motherhood" (Claney 2004; Wilkie 2003:7). The presence of this ceramic at the foreman's residence may reflect the unique household makeup and the genteel ideologies that may have underpinned the gendered division of work between the foreman and his wife. Evidence for the undertaking of domestic labor at the foreman's household by women and children is further supported by the recovery of bluing balls, used in laundry work. The presence of these materials also reflects differential understandings about sanitation and the performance of cleanliness as it related to constructions of domesticity – practices with emerging class connotations in the late-nineteenth century (Howson 1993; Tomes 1990).

The relationship between health, domesticity, and children are best explored by an examination of recovered baby bottle fragments (Figure 5.4). The recovery of a baby bottle does more than simply highlight the presence of children and women at the Samuel Adams site. In the mid- to late-nineteenth century, mothering ideologies were deeply rooted in notions of gentility and class (Apple1997; Hays 1996; Wilkie 2003). As Fitts (1999) and Pratezellis and Praetzellis (1992) argue, child rearing was an important manifestation of gentility, and was seen as a way to insure the perpetuation of status and class across generations. Performing and participating in "proper mothering behavior" had status implications, and these activities at the foreman's household may have further served to create boundaries and distinctions between managerial and manual labor (Wilkie 2003:11). This proper genteel behavior began to take on the ideologies of scientific mothering in the last quarter of the nineteenth century, as growing understandings of germ theory led to advances in sanitation technology and an increased focus on hygiene and cleanliness as a means to promote health (Tomes 1997; Wilkie 2003).

The baby bottle was one such material expression of this emerging ideology, as hand or bottle feeding practices were seen as a sanitary solution to breast-feeding when the mother suffered from nursing related infection, pain, illness, and disease, or the child was not thriving (Grulee 1916; Wilkie 2003). Nursing bottles began to be available following the development of the rubber nipple in 1845 (Stevens et al. 2009). By the 1880s nursing bottles were widely available in various forms and commonly used (Grulee 1916; Wilkie 2003). In 1897, bottles could be purchased from the Sears, Roebuck and Company Catalog for 60 cents per dozen, with rubber nipples an additional 20 to 60 cents per dozen (Wilkie 2003). Nursing bottles were typically 6 to 12 ounces and graduated so one could control the volume of liquid and ensure the child was receiving the proper quantity of food (Wilkie 2003).

The presence of a baby bottle at the foreman's household sheds light on the hardships of nursing and child rearing in a semi-rural industrial location in the American Far West. Living without the aid of other women or ready access to medical care, bottle-feeding may have been used as a reaction to, or a preventive measure against, threats of associated illness. In this way, the baby bottle may also be a reflection of the hardships children and mothers faced in an industrial environment that would have been perpetually engulfed in noxious fumes and covered in caustic lime dust. The pollution created by the lime operation along with other environmental stresses may have led to children at the kiln site having health issues or not thriving, or it may have impacted the mother's health in ways where breast feeding was not possible. Bottle feeding, therefore, may have been a mother's emergent response to the bodily materialities of a life spent intra-acting with quicklime. This co-constitutive nature of workers' bodies and quicklime is explored in further detail in Chapter 7.

Recovered in Locus T/J, the Perry Davis Vegetable Pain Killer is another trace of medical strategies employed by the foreman and his family. This patent medicine was advertised as curing a wide range of maladies including colds, fevers, and cholera. Patent medicines were often used when access to formal healthcare was not possible, and the presence of this medicinal bottle serves as another reminder of the health effects and stresses of living and working in an area without immediate access to medical professionals or a network of families to provide assistance.

Later Days: Life at the Foreman's Office

It is unknown exactly how long Hickey and his family lived at the site, but by 1880 at the latest it appears that Patrick Dorsey, a longtime employee for Davis and Cowell, occupied the position as site foreman (Perry et al. 2007; *Santa Cruz Surf* 1918). A native of Ireland, Dorsey began working for the Davis and Jordan (later Davis and Cowell) company as early as 1859 at the age of twenty-one (Perry et al. 2007). Dorsey would end up being employed by the Cowells for over five decades, working his way up from being a general lime laborer to a production operation foreman. This long relationship between Dorsey and the Cowell companies was recognized in 1911 when Ernest Cowell died and left Dorsey $2,500 (*Santa Cruz Surf* 1918).

It appears Dorsey was initial promoted to foreman when he moved to the Samuel Adams Lime Kilns in the late 1870s, a position he held at the site until the operation closed in 1909 (Perry et al. 2007). Dorsey was installed as foreman of the Samuel Adams operation sometime shortly after the Davis and Cowell company acquired the kilns in 1869. Given his longtime connection to the Davis and Jordan/Cowell company, this was likely a strategic maneuver to integrate the previously independent lime operation into the growing Cowell conglomerate. One would imagine this effort was part practical and part cultural, as the Cowell company worked to ingrain new ways of working and living that aligned with the capitalist industrial ethos of its owners.

Importantly, it does not appear that Dorsey lived with his family on-site at the Samuel Adams Lime Kilns. In census documents from 1870 to 1900 Dorsey is listed as living within the city limits of Santa Cruz near the Cowell's Bay Street Ranch. Dorsey lived at this location in a private residence with his family; wife Mary (from Canada), Anna (age 14), and William (age 12) (ages in 1880 census). As discussed above, this home site would have been only about one and one-half miles from the Samuel Adams operation. During this same period (1880-1990) no specific foreman residing at the Samuel Adams operation is discernable in the census documents. This suggests Dorsey lived part-time at the Samuel Adams site, commuted to the site daily, or lived on-site without his family but was not enumerated as such in the census.

A lack of domestic remains at Locus T dating later than about 1875 indicates that the private foreman's residence was not used as such after Dorsey became foreman and his family remained living off-site near Cowell Ranch. The establishment of the foreman's office sometime shortly after 1870, and the presence of both managerial work and domestic activities at this location indicate that the foreman's office (Locus S) also served as his place of residence while at work (likely with an attached, unexcavated/unidentified private room). This suggests that, during the later years of occupation at the site, Locus S is the primary space associated with managerial domestic, leisure, and work activity. Because it is possible that Dorsey both lived and worked at the office space, archaeological findings from Locus S will also be compared with the domestic spaces of Loci T, G, and F (the shared workers' cabins) to explore differences and similarities in everyday practices and experiences between managerial and manual laborers in the lime industry over time.

Sometime between 1870 and 1880, it appears the foreman's residence (Locus T) began being repurposed for some other use. The nature of the brick and timber surface scatter at Locus T, which was substantially denser than at any other comparable locus, suggests the residence may have been re-used as a storage area or multi-use industrial structure after the Hickey family vacated prior to 1880. This is further supported by the recovery of a glass battery at the original foreman's residence. First developed in the 1830s, early liquid batteries were commonly used for telegraph communication (Marland 1964). While no historical reference was discovered and no lines were recovered, it is possible telegraph networks were used to communicate between managers and company owners or superiors at other sites. This would have been limited to the later years of Cowell ownership when the Samuel Adams kilns were part of a network of operations and telegraph communication may have allowed for organization and coordination between the various operations. More likely, the battery was used to power some industrial machinery that occupied the Locus T after the foreman moved to his office space (Locus S). Alternatively, the presence of a battery may explain the general lack of oil lamps recovered at Locus T throughout both periods of use. A minimum of only three lamps were recovered at the foreman's house compared to 15 from the mess hall and nine from the cookhouse. This discrepancy may be based on the presence of electric lighting systems at Locus T.

The location of the foreman's office (Locus S) itself was a materialization of the foreman's position, as it would have provided a relatively unobscured line of sight to the central area of manufacturing operations – including the kilns, cooperage, and storage areas. This strategic location and manipulation of space to allow for effective surveillance highlights the role of foreman as overseer, and imbues his position, and this space, with power in labor relations (Cowie 2011; Foucault 1979; Leone 1995). The solitary location and general layout of the office also reflects early capitalist management and boundary-making efforts. The office, located separate and distinct on the landscape from other workspaces, appears to have been surrounded by a well-built wooden fence, remnants of which still stand today. This would have demarcated the office space as a private place, and would have allowed control of access, a space management strategy not seen elsewhere at the site. This control and privatization of space was also materialized in recovered lock components. These objects stand out in an otherwise open communal work environment. While the fencing elements and lock would have worked to symbolically separate the foreman form the other workers, using material boundaries to reify power differences at the site, they also would have served functional purposes, as the foreman would have been responsible for handling and protecting valuable information, resources, and equipment.

Materials recovered from the foreman's office shed light on the types of activities pursued in this managerial work space. The recovered faunal assemblage, which was comprised of a higher relative proportion of small wild game (along with types not present at other locations, such as meat or fish paste) indicate that food consumption practices at the foreman's office were socially charged. In the context of company provided food, the consumption of food types not available to other workers would have been a performance of privilege and access. These food remains likely reflect a mix of daily meals consumed by the foreman alone while working and meals that would have been consumed along with prominent visitors such as company owners, business partners, and contractors or suppliers, where the foreman would have served as the face of the operation and host for the meetings. The relatively higher proportion of communal alcohol bottles like wine and champagne over personal consumption vessels like pocket flasks (66.7% to 33.3% respectively) at the foreman's office suggests that social alcohol consumption and pairing of alcohol with food would have been a hosting practice employed by the foreman. By consuming and (in select intra-actions) providing other laborers (both those superior and inferior to him in the labor hierarchy) with rare or difficult to acquire food and drink, the foreman could actively perform and thus manipulate his perceived status and power.

The foreman's tactics of self-presentation also worked to distinguish himself from the manual labor force in strategic ways. A total of 17 buttons were recovered from Locus S. Many of these buttons were metal and Prosser workwear buttons found elsewhere at the site, but there was a higher proportion of shell and bone buttons recovered from the foreman's office. In addition, there were two button types recovered from the foreman's office that were found nowhere else – a bone collar/cuff stud and a gold-plated jacket button. Both of these items would have been highly visible in daily interactions and would have worked to both reflect and perpetuate the elevated status of the foreman within the operation – the nuances of which are discussed in greater detail in Chapter 8). The importance of self-presentation for the foreman is further reflected in the recovery of a transfer print basin, comb tooth, and mirror fragments, which highlight the desire of the foreman to show himself as clean and presentable, embodying genteel notions of respectability and physically distinguishing himself from the labor force. The basin would have also allowed visitors and guests to the office to wash up without venturing too far into the industrial operation where the central water features were located, and thus mediating the need to encounter first-hand the manual labor workforce as well as the dust, heat, and fumes associated with lime production. Limiting visitor access to the kiln operation in this way would have allowed the foreman to serve as an intermediary and retain control over external access and perceptions of lime production work and life.

Many of the remains from the foreman's office also shed light on the ways in which labor was organized and engaged. Clock parts from a medium-sized table or wall clock highlight the important role of control over time in industrial production and labor management. Control over productivity also took shape in health-related items, specifically the large bottle of Bromo-Seltzer recovered under the porch feature of the foreman's office. The bottle was of an industrial size, and therefore was likely not strictly for personal use by the foreman. The nature of the ills for which Bromo-Seltzer was used suggest it was an important substance for addressing laborer ailments that may have decreased productivity. Bromo-Seltzer was advertised primarily as a headache and pain cure, health issues that were likely common as men at the kilns worked in high heat, under extreme physical stress, and with a material that reflected sunlight and produced noxious fumes during its processing (Lockhart et al. 2014). One can imagine that as workers faced health issues such as these, they could visit the foreman who would dole out a dose of Bromo-Seltzer and send the laborer back to work. Notably, Bromo-Seltzer was also well known as a hangover cure (Wilkie 2010). We know from the presence of alcohol bottles recovered from across the site that laborers consumed alcohol in fairly significant quantities. It is likely that Bromo-Seltzer was proscribed by the manager to workers who had particularly rough mornings and found their energy and will to work lacking. Finally, Bromo-Seltzer was also commonly used as a libido suppressant (Wilkie 2017, personal communication). Given the lack of women at the site and the all-men's shared living quarters among manual laborers, Bromo-Seltzer may have been seen by management as a strategy to control workers' urges, protect the foreman's family, and limit what was seen as undesirable sexual activity between the men (Hardesty 1998; Shackel 2009).

Life at the Shared Workers' Cabins

Material and photographic evidence for Loci F and G suggest they were shared workers' cabins for the single manual laborers (Hyde 2019). The narrow range of nail sizes recovered along with a lack of wire nails indicate that these buildings were simple constructions expediently built with minimal investment in maintenance or elaboration over the years. Materials recovered suggest the cabins were used primarily for sleeping and leisure activities, while the shared mess hall (Locus B) served as the primary food consumption and social space for manual laborers. Materials recovered during the previous FWVAS project are largely comparable and support this interpretation. In this way, manual laborers occupied a sort of distributed residence where various domestic activity areas – such as sleeping, eating, socializing, and working – were located at various spaces across the industrial complex.

Census and other historic documents allow us to identify the numbers of workers living at the site, their names, and ethnicity for most periods of occupation (Table 6.1), although archaeological contexts and deposits associated strictly with the earlier Samuel Adams period of ownership are limited. The smaller number of men represented during the earlier years is a reflection of a smaller production capacity (only two kiln pots present) and, possibly, different management strategies that resulted in many of the manual laborers living off-site. For example, census documents from 1860 list three of the on-site laborers as being coopers or carpenters and the other three are listed as a lime cooker or laborer. Three men would not have been sufficient to run two kilns, and an 1865 newspaper article notes that the Samuel Adams operation employed thirty hands, with the workforce expected to double in the spring (*Santa Cruz Sentinel* 1865).

Archaeological data supports census documentation that there was a single shared workers' cabin from 1858 until at least 1869, when Cowell took ownership and the operation expanded. At that time, archaeological and historic data suggest a second shared cabin was built to accommodate the larger workforce. This is not reflected in census documents, as individuals listed as "lime workers" or "laborers" for the Samuel Adams kilns during those years are listed under a single dwelling number. It is likely, however, that the census enumerator lumped the two cabins together as a single dwelling, or the names and data were taken from employment rolls and the distinction between cabins was not recorded. In either case, the list of employees presented in this dissertation reflects only a fraction of the entire workforce employed at the Samuel Adams Lime Kilns throughout the various periods. They do, however, present a detailed sample of the workforce's demographic make-up. While census notations and corroborating historic data allow us to confidently identify the occupants of these cabins from 1860 through 1880, census documents do not exist for 1890 and the lack of notation or corresponding descriptive housing or occupation designations make it difficult to identify the exact workers living at the operation in 1900 (Table 6.1).

Comparisons of census documents highlight broad demographic patterns over time and suggest substantial shifts occurred in the ethnic make-up of the workforce at the Samuel Adams kilns and Santa Cruz lime industry as a whole. While American- and Canadian-born laborers dominated the Samuel Adams workforce (85.7%) in 1860, by 1870 they made up only 40%, with 50% being Irish immigrants and 10% being Chinese immigrants. By 1880 the percentage of native-born workers was down to 7.1%, while Portuguese immigrant workers (predominately from the Azores) comprised 50% of the lime workforce, Irish immigrants 28.6%, Swedish immigrants 7.1%, and Chinese immigrants 7.1%. While the exact workers of the Samuel Adams operation could not be identified in 1900, the workforce demography of Cowell's nearby Bay Street kilns is likely comparable to that at his Samuel Adams operation. It is even possible that the Cowell workers living and working at the Samuel Adams operation were listed in the census as part of the broader list of Cowell-associated laborers and are listed at his Bay Street kilns. The demographic makeup of Cowell associated laborers in 1900 was 5% American-born, 5% Irish immigrant, 35% Portuguese/Azorean immigrant, 10% Chinese immigrant, and 45% Italian immigrant. These demographic proportions and patterns are similar to industry wide numbers for Santa Cruz in 1900 (Perry et al. 2007).

It is unknown if the shared workers' cabins in the later Cowell period were split based on ethnic groupings, as was the case at some other lime kiln complexes in the Santa Cruz area (*Santa Cruz Surf* 1889). In censuses from 1870 and 1880, while Samuel Adams laborers are identified as all being in one dwelling, they are grouped by country of origin, with most Irish immigrant laborers being listed together, as with Portuguese/Azorean immigrants. This may suggest that cabins or spaces within cabins were organized and separated along ethnic lines. No company documents were recovered that outlined whether this separation, if indeed there was any, was a formal company policy or worker preference.

These demographic patterns highlight broad temporal shifts in the relationship between ethnicity/nationality and labor occupation that were mirrored across Santa Cruz County, California, and the American West throughout the mid- to late-nineteenth century. During the early years (1858-1870) the broader Santa Cruz lime industry manual workforce was similarly comprised predominately of native born and northern European immigrants, with a general shift to greater numbers of Irish manual workers over time at native-born workers took on managerial positions. By the 1880s, however, Portuguese/Azorean immigrants appear to have supplanted the Irish as the predominate ethnic group comprising the manual labor force in the Santa Cruz lime industry. Corresponding with this shift, some Irish immigrants, most of which had served in lower positions in the lime industry prior, moved into management positions. Alexander McDonald's movement from cooper in 1860 to site foreman in 1865, as discussed above, is one example of this pattern. By 1900 Irish workers retained management positions, but Italian immigrants comprised a large portion of the workforce, slightly outnumbering Portuguese/Azorean immigrants.

Interestingly, outside of management positions, there does not seem to be a strong retention of labor within the workforce throughout the Santa Cruz lime industry. Very few workers listed as lime workers are present in the industry in subsequent censuses. If a worker is identified as being part of the industry in multiple censuses, they have almost always moved up in the company hierarchy, attaining a managerial or specialized labor position. General manual laborers, if they don't move up, appear to take their labor elsewhere. The grueling work conditions for relatively low pay likely contributed to this high worker turnover (Perry et al. 2007). As one of the few industries in the county that consistently hired immigrant wage laborers, however, lime work may have been seen as an available and viable temporary occupation to build the necessary resources to then go into other ventures or occupations.

A survey of Samuel Adams workers listed in the 1880 census found that many of the workers (60%) could not be traced in other later historic documents. While it is possible that some of the workers may have returned to their home country, it is more likely they simply lived lives where documentation was largely avoided, or there were changes or original misspelling to their names that make it difficult to identify the same individual later in time. The prevalence of common names amongst lime workers also makes tracking individuals challenging. In instances where similar names were identified in later documents, they were only assumed to be the same individual if that conclusion was supported by additional data, such as having the same birth year.

Of the 40% of laborers that could be tracked, there are similarities in later occupations and lived experiences. We know that the foreman, Patrick Dorsey, stayed on as the foreman of the Samuel Adams Lime Kilns until its closure in 1909, at which point he continued to be employed by the Cowell company. None of the earlier Irish immigrant manual laborers are found in later documents. Among the Portuguese/Azorean immigrant manual laborers, however, all of those that could be tracked ended up moving to counties further north in California and working in other industries. For example, Manuel Lima went on to live in Marin county with his family as a dairy farmer, a regional industry that came to be dominated by the Portuguese. Frank Silva went to live in San Jose and worked as a day laborer. By 1920 Manuel Rosa was living in San Jose, and while he didn't work, he lived with his son who was a farmer. Similarly, in 1930 Manuel Williams, presumably retired from manual labor, lived in San Leandro with his nephew, who worked at the local cotton mill.

While these examples provide only a sample of worker's lives after their time in the lime industry, they provide some insights into broader labor and settlement patterns. Irish immigrants who were able to attain a foreman position appear to have had some job security within the lime industry. If they did not stay at the same operation, they, like Alexander McDonald, appear to have found opportunities at other kilns in Santa Cruz County. These opportunities may have been a product of having a longer tenure in the industry, with Irish immigration to the area happening earlier than Portuguese and Italian, or it may be that being a native English speaker afforded advantages in managerial positions. Among the Portuguese/Azorean laborers, it looks as if they tended to move out of the lime industry into different occupations. The documentation of many Portuguese/Azorean lime workers (or their children) later as dairymen and farmers indicate that these laborers may have seen lime work as a temporary wage position that allowed them to accrue the necessary capital to move into a self-employed agricultural-based business. Their presence in Portuguese/Azorean strongholds of San Jose, San Leandro, and Marin County, suggest the lime workers of Santa Cruz were connected to emergent overseas Portuguese communities that took root throughout the San Francisco Bay Area in the late-nineteenth and early-twentieth centuries.

While this work is focused on exploring the material-discursive ways in which diverse workers built connections, collaboration, and relations across differences, pluralistic living was not always harmonious. The most well documented conflict among workers was a violent altercation that erupted between Portuguese and Irish workers at the I.X.L. kiln complex near Felton in 1889. Referred to as "a conflict of races" in local newspaper headlines, accounts detail how an Irishman named "Dennis" and an unnamed Portuguese worker got into an altercation at the dinner table in the shared company mess hall. This argument erupted into a wider brawl, with sides being drawn based on ethnicity/nationality, and two Irishmen being badly beaten before fleeing to their cabin. One account alleges that the Portuguese workers assaulted the cabin by throwing rocks, badly damaging the structure and forcing the Irishmen to flee to the woods (*Santa Cruz Surf* 1889). Another account claims the Irish went to the Portuguese workers' cabin and beat them with clubs (*Santa Cruz Sentinel* 1889). In the end, two Portuguese and five Irish were arrested. One of the arrested "Irish" laborers was John Igo, from Connecticut, who is listed as working at the Samuel Adams kilns in the 1870 census (*Santa Cruz Sentinel* 1889; *Santa Cruz Sentinel* 1889).

While this event highlights the ways in which ethnic boundaries persisted and framed many relations and group affiliations within pluralistic contexts, it also provides insights into worker relations at lime kiln sites beyond the conflict. Of note is that the altercation occurred "at the supper table" in the company mess hall (*Santa Cruz Sentinel* 1889:3). This event, therefore, highlights the importance of the mess hall as a locus of encounter and social negotiation between workers. Though this interaction turned violent, it appears to be an anomaly, one of the few documented violent conflicts between lime workers. In being the exception rather than the rule, this event provides an example of the daily intra-actions that took place between diverse workers of various backgrounds as they routinely shared meals, tables, and words together in the mess hall, cabins, and work spaces of various lime operations. Also of note in the newspaper account is that the Irish and Portuguese retreated to their respective cabins, highlighting the ways in which ethnic groups were separated spatially at the I.X.L. kilns. While it is unknown if this practice of segregation was employed at the Samuel Adams kilns, it was a common practice in company towns of the industrial period and used as an explicit strategy to prevent potential collaboration and collective action between ethnic-based work groups (Wood 2004).

Material evidence recovered from the workers' cabins suggest a relatively narrow range of activities were undertaken at these spaces, including sleeping, clothes storage and changing, self-care, small-group socialization, and leisure (primarily alcohol consumption). As discussed above, the majority of meals appear to have been consumed at the shared mess hall, as relatively few ceramics were recovered from the workers' residences. Interesting differences exist, however, between faunal remains recovered at the two cabins. At Locus G, which sampled outside space, only domesticated species were recovered. At Locus F, no domesticates were recovered – all faunal remains were from wild terrestrial and maritime species. Some of these wild species, such as the rodents and land snail are likely non-cultural post-depositional incursions. The rabbit, fish, and shellfish elements, however, are very likely traces of food remains. This suggests the worker's diet was partially supplemented by wild species that could be easily caught using traps or nets, or gathered from the intertidal regions of the nearby coast. These low labor investment resources may have provided a way for workers to add additional calories to their diet or augment the supplied food to meet their diverse tastes.

What, then, accounts for the discrepancy in food remains between the two otherwise very similar workers' cabins? One interpretation is based on depositional differences: Elements of wild species such as rabbit and fish are small (compared to Artiodactyla domesticates) and may have more easily fallen through the floorboards or been swept under furniture within the cabin, while larger remains were dumped outside. Another interpretation is that these discrepancies are traces of worker depositional choices. The practice of supplementing provided foodstuffs may have been looked upon poorly, if not outright prohibited, by the company. The presence of wild faunal remains within the footprint of the cabin, therefore, may suggest workers were hiding the remnants of these supplementary meals and disposing of the remains in private, less visible areas, versus the dumping of provided foodstuffs outside of the cabin in full view. This highlights how even mundane items and traces of daily activities such as food consumption could have been contentious and contested arenas of power and identity negotiation.

At the shared workers' cabins, the conspicuous lack of tools, formal gaming pieces, ceramic service/tablewares, lighting, and other materials typically associated with domestic pursuits illustrate that these spaces were used for a relatively narrow range of activities. Historic photos of the shared workers' cabins at Cowell's Bay Street kiln show structures that are almost identical in size and form to those at the Samuel Adams kilns with sparse interiors with single beds (Figure 6.2) (Perry et al. 2007). Given that labor shifts ran 24-hours per day, a portion of the workforce would have likely slept during parts of the day and would have needed a space that offered a respite from the hectic activity of both work and primary social spaces (*e.g.*, the mess hall). While no bedsprings or other direct evidence of sleeping were recovered at the Samuel Adams site, the relative lack of domestic, lighting, and social/leisure materials outside of alcohol consumption indicate that these shared cabins spaces were reserved primarily for sleeping and rest.

Due to the seemingly transient nature of the workforce, the fairly close proximity to the city of Santa Cruz, and the likelihood that many men likely had families and homes off-site, it is probable that the cabins were used like a flophouse or other cheap lodging where minimal amenities were available – a common offering exploited by laborers across California during the nineteenth and early-twentieth centuries, (Groth 1994). Given the 24-hour nature of lime work, it is even possible that workers rotated through beds as shifts changed. In this way, the cabins would have served a purpose, and been the central sleeping and resting space for all manual workers, regardless if they lived at the site full time, or not. In this way the cabins may be better understood as a shared bedroom than as a domestic residence.

The other prominent activity that appears to have been common at the workers' cabins is alcohol consumption. A minimum of 56 beverage bottles were recovered from both workers cabins, with 21 (38%) originally containing some kind of alcohol. While the heavily fragmented nature of these bottles suggest they could have been re-used, likely for water, their presence in significant numbers suggests alcohol was also frequently consumed at these spaces. The proportion of alcohol types differ, however, from that recovered at other areas of the site. In most other areas the proportion of wine to liquor artifacts recovered was around 40% to 60% respectively, with the ration closer to 50:50 at the mess hall where wine and beer were likely consumed in greater quantities along with meals. At the mess hall it is easy to imagine a group of workers sharing a bottle of wine or drawing a mug full of beer from a communal barrel as they ate their dinner and shared stories from the day (or night) of work. Alcohol consumption at the mess hall likely occurred as a part of social interaction, as workers drank while pursuing other leisure activities like eating food, writing letters, playing games, and singing and playing music.

At the workers' cabins, however, there is no evidence of beer consumption and proportions of alcohol-related bottle glass are 20% wine to 80% liquor, with most of the liquor coming from personal-size flask-type glass vessels. This suggests a different drinking pattern at the workers' cabins than at other domestic and social spaces. The higher proportion of personal liquor flasks reflects alcohol consumption at either the individual level or amongst smaller groups. On the one hand, the paucity of wine and beer remains, and lack of other leisure or social materials recovered from the workers cabins may indicate that workers were consuming alcohol in these cabin spaces as a form of self-medication, to dull the pain of manual work and to help one sleep in a 24-hour work and shared habitation environment. These material patterns remind us of the difficulties and physical toll that industrial labor took on workers, and the various strategies pursued by workers to manage the pain and make a life within these hardships.

On the other hand, small-group alcohol consumption at the cabins would have been an important social drinking practice (Akey 2018; Powers 1999; Rosenzweig 1983). Sharing a liquor flask between a few men in the relative privacy of a worker's cabin would have been a much different alcohol consumption experience than that which occurred at the communal mess hall, but it would have been no less entangled in the social-material practices of community and boundary-making. The sharing of liquor among smaller groups would have been important experiences of socialization that built intimacies and personal ties among smaller, particular worker groups. These smaller drinking groups may have emerged through connections in nationality, language, religion, or occupation, or they may have just been whoever was together at a particular moment in time. The multivalency of these connections, however, would have ensured that the make-up of these small groups was diverse, and would have shifted over time, likely in every manifestation of a drinking event. Each liquor bottle, then, reflects the assemblage of a momentary community, a sharing and building of connections between drinkers, entangled in bodily intra-actions with alcohol. As this emergent community dissipated into the broader workforce, threads of these connections would remain, working to weave together the broader social fabric of the lime laborer community.

Alternatively, the presence of alcohol bottles at the workers' cabins may be evidence of re-use, an idea supported by the heavily fragmented nature of recovered alcohol bottles. Large quantities of alcohol bottles recovered at the mess hall indicate that most of the social drinking occurred in this space. While it is possible that workers brought a partially consumed bottle of alcohol back to the cabins with them, it is also possible the workers, having finished their bottle in the social environment of the mess hall, left with the empty bottle. Stopping by the well, located not far from the mess hall, the worker could have filled it with fresh, cool water to set beside him for ready access during the night. Depending on the quantity of alcohol consumed before heading to bed, the water would have been an important aid in getting them through the night, ready to work again in the morning.

While the re-use of the alcohol bottle as a water bottle would have likely been an individual engagement, this material intra-relation could have also worked in indirect ways to form and maintain connections between workers. By bringing the physical remnants of a shared social experience back to the quiet solitary space of the cabin, workers may have also been bringing with them, and thereby fostering the memories and connections of community building. Later, while alone in the cabin – possibly in an effort to address the thirst created by prior communal alcohol consumption – a worker drinking water out of the same liquor or wine bottle that was shared amongst a group of laborers earlier would re-engage social-material entanglements of community, shared consumption, and camaraderie, forging those connections across both space and time (Smith 2008). The bottles would be imbued with memory, and the movement of the bottle into a new space would have brought with it social and temporal resonances. In this way, the bottle could have done and meant many different things as it traveled spatially and temporally across the industrial landscape. This idea is explored further in Chapter 8.

Life at the Kilns

Based on their specific task, manual laborers would have occupied a wide range of work spaces across the site including the quarries, kilns, cooperage, barns, storage areas, surrounding forests, roads, and spaces in between. Processing lime into quicklime on an industrial scale involved a number of overlapping activities and specific labor tasks. There were blasters and quarrymen in the quarry dislodging and shaping the raw limestone; there were laborers that transported the raw material to the kilns on the gravity rails; there were archers and kiln loaders that built the load of limestone within each kiln; there were those that tended to the fire, maintaining desired temperatures over the days it took to process the lime; there were those who unloaded the lime into barrels; there were lumbermen that felled, processed, and transported the timber that fueled the kilns; there were coopers who fashioned the barrels that transported the processed lime; and there were teamsters that brought the barrels of lime to ships and railyards (Perry et al. 2007).

With multiple kilns and fires requiring constant attention, labor shifts were in operation 24-hours a day (Perry et al. 2007). The physically grueling nature of lime work is highlighted in many historical documents and first-hand accounts relayed through newspaper articles. For example, Fred Wagner, who witnessed the process of getting the finished quicklime into barrels described the experience; "The lime would be so hot and they'd just let it cool enough so it wouldn't burn the barrel; that's when they started drawing it, and them poor fellows, I know some of them would just bleed at the nose" (Perry et al. 2007; Wagner 1966).

Manual work spaces explored archaeologically as part of this project include the kilns (Locus I) and the cooperage (Locus J). In these sampled spaces there is a conspicuous lack of non-work-related materials. The vast majority of materials recovered are architectural in nature, tools directly associated with lime work, or items indirectly related with lime work such as a bailing wire and a watch fob chain. A small number of non-work-related materials recovered from work spaces were glass beverage bottles. A minimum of 12 bottles were recovered from the kilns and cooperage, and at least four (33.3%) of them originally contained alcohol. While this could be evidence of laborers consuming alcohol while at work, it could also be another example of re-use

– with glass bottles of all types being used as water bottles when laborers were engaged in hot and physically demanding lime work.

The general lack of materials associated with domestic or leisure practices within all contexts of work spaces, however, indicates that there was a strict divide between work and non-work life at the kilns during both periods. While materials recovered at the mess hall (discussed below) suggest management had little oversight and exerted relatively little control over worker's free-time activities, the conspicuous lack of social and leisure materials at work spaces along with the presence of tools and objects associated with time-keeping, suggest these work environments were more tightly regulated. This may have been managerial or company regulation or it may have been self-imposed by workers, as lime work could be dangerous, and one needed to be focused on their tasks and the tasks of those around them to do their job effectively and safely.

Workers were also operating in a relatively competitive labor market. The separation of work and leisure activities, therefore, may be a reflection of worker agency and commitment to the craft of burning lime, where negligence could result in injury or the loss of an entire load. These mistakes could have significant impacts on profit, and one would assume laborers responsible could be terminated or otherwise economically punished. Since workers were paid only once per year during the Cowell period, the threat of termination or wage withholdings due to poor work must have loomed large and framed the manual laborers' attention and approach to work. The material evidence for a general lack of non-work-related materials in work spaces could just as easily be interpreted, then, as a reflection of laborers' seriousness and commitment to their work (and their wages), rather than company-imposed restrictions or control. Either way, as will be discussed in greater detail in Chapter 8, it appears that a management strategy emerged, especially during the Cowell period of ownership, that played strategically with the balance between freedom and control, where workers were relatively free to spend their non-work time as they pleased but work spaces were reserved, controlled, and generally limited to work-related activities.

Life at the Mess Hall

Material and historical data suggest Locus B was the mess hall (or dining room) of the broader cookhouse complex. It is in this space that the manual workers consumed all three meals provided by the company. The general lack of domestic material and preponderance of evidence for food and beverage consumption support this interpretation. When hot meals were served the entirety of the manual workforce would gather at the mess hall to eat. But additionally, the mess hall appears to have been a place where workers could retire between shifts. Manual laborers of all sorts would have gravitated to the mess hall at various points of the day to socialize, relax, and participate in a wide range of leisure activities. Alongside the food consumption-related objects, a relatively large proportion of materials found at the mess hall were associated with the consumption of alcohol and coffee, and a smaller amount associated with narcotics consumption (opium pipes and tin). The comparatively large number of remains associated with lighting (88.6% of all lighting remains were recovered from Locus B) illustrates both the 24-hour nature of lime work for manual laborers, and the importance of the mess hall as a social and leisure space throughout all hours of the day (Figure 6.5).

The sharing of meals would have been an important ritual that brought workers together and built connections and camaraderie as they participated in a familial practice – breaking bread together on a daily basis. As Wilkie (2010:74) argues in her analysis of archaeological material from a nineteenth-century fraternity, a sense of brotherhood was "created at the table." Evidence for these social food consumption practices are found in the ceramic vessel fragments, glass bottle shards, and faunal remains, which were recovered in quantities substantially higher than at any other space across the site. As seen in a comparison of materials across loci (Figure 6.6), more ceramic service/tablewares and beverage storage materials were recovered from Locus B than from any other locus, by a wide margin. The types of ceramic service and tablewares represented are diverse both in type and form. The majority of the ceramic assemblage is comprised of blued whiteware, ironstone, and whiteware vessels, with a smaller percentage being hotel ware, porcelain, creamware, and redware (see Chapter 5). Ceramic forms within these types are dominated by plates of various sizes, bowls, and mugs. Taken into consideration with the faunal remains recovered from both the cookhouse and mess hall, the ceramic assemblages suggest worker diets were comprised of stews and roasts (large plates and bowls), with bread and vegetables (small side plates), likely served family style on large platters – where workers grabbed an individual plate and served themselves from a communal dish. This was a common form of food service in boarding houses, hotels, saloons, and working-class eateries across the United States during the nineteenth and early-twentieth century (Erdoes 1979; Groth 1994).

The cookhouse also appears to have been an important social and leisure space and, in materials recovered, appears to have functioned much like a community saloon. Saloons were constant features on the social landscape of the American Far West since the early American period, and leisure was an important time for the expression of identity for working class laborers (Beaudry et al. 1991; Erdoes 1979; Kingsdale 1973; Russell 2011). While well known as a place where one could indulge in alcohol, sexual entertainment, and/or gambling, saloons were also important working-class social spaces where a diverse range of people congregated to leisurely socialize, share the news, talk politics, or undertake business deals (Dixon 2005, 2006; Erdoes 1979; Moore 1897; Russell 2011; Spude 2005). Given the often uncomfortable living arrangements for the working class in the West, which often took the form of hotels, boarding houses, and flophouses, saloons served as a communal living room, as an extension of the household, and, as a result, they were often the kinetic center of a community (Erdoes 1979; Kingsdale 1973; Powers 1998; Spude 2005).

As Jack London notes during an escapade in Oakland, "Saloons are poor men's clubs. Saloons are congregating places. We engage to meet one another in saloons. We celebrated our good fortune or wept our grief in saloons. We got acquainted in saloons" (London 2009[1913]). E.C. Moore, writing in 1897 on "The Social Value of the Saloon," argues that the saloon was "an integral feature of life. It was a loafing place, news center, and basis of food supply in its free lunch counter," it supplied "legitimate needs and stands alone in supplying them. It transforms the individual into a *socius* where there is no other transforming power. It unites the many ones into a common whole which we call society… Primarily the saloon is a social center." The recovered objects associated with health and hygiene (*e.g.*, the Florida Water bottle and syringe) and writing implements (Carter's Ink bottle) further highlight the importance of this shared multi-purpose space, and the range of activities pursued there. In the distributed household of the manual lime worker, the mess hall served as the workers' dining room, living room, parlor, and corner saloon. It was a warm social space where one could be free of the tight confines of the cabins to enjoy a hot meal, share a bottle of wine or a cup of coffee, trade news, and pen a letter to one's relatives back home. As the material evidence suggests, the mess hall would have been the social heart of the Samuel Adams operation.

This saloon experience was also a gendered one. Saloons of the American West emerged to meet the needs of a growing population of single men, migrating to urban and work centers to take advantage of the economic opportunities they afforded. This shared experience, however, led to an emerging bachelor culture that eschewed the traditional norms of family life, instead finding community and camaraderie in the shared homo-social leisure spaces of saloons, pool halls, boarding houses, clubs, and, I argue, company town mess halls (Chudacoff 1999). Evidence for the nature and type of activities undertaken at the mess hall, then, can provide critical evidence regarding how a diverse group of laboring men lived through and tactically negotiated the challenges of a life in lime work, both individually and as social groups, creating connections and communities rooted in shared work and leisure experiences that cut across traditional ethnic, occupational, and class divides. For these reasons, shared social spaces were an important area of focus for the SALK 2017 project.

When asked about leisure practices and social interactions among the manual laborers at Cowell's Bay Street kilns, informant Adalbert Wolff (1972:24-25) said, "they just stayed in their little shacks, and there was nothing in the way of social activities going on at all. No, they just stayed, I think, pretty much by themselves. Of course some of them, some of the Italians, for instance, they had wine. I suppose others too." It's worth remembering that Wolff was a German immigrant and employed in a management position in 1915, a decade after substantial labor unrest in the lime industry. Socializing and shared leisure activities between the workers was likely more common than he suggests, but his managerial position precluded his involvement in it and likely even led to these activities being hidden from his view. Interestingly, as discussed above, archaeology at the Samuel Adams workers' cabins recovered only small amounts of material associated with alcohol consumption and no materials associated with social activities like gambling. While this may be a product of sampling error, the FWVAS recovered similar proportions of bottle glass and tobacco related items from their excavations at the workers' cabins (Akey 2018; Kindon 2017). So, it would appear that archaeology supports Wolff's observations, that the cabins were not the primary locations for social and leisure practices at the industrial complex. Instead, it appears the mess hall was the center of social activity for kiln workers.

That the mess hall was an important social space is evidence materially by the relatively large amount of alcohol bottles recovered from both the interior and exterior spaces (47.2% and 52.9% of bottle assemblage being alcohol bottles, respectively). In addition, a majority of ceramic drinking vessels that were recovered were mugs, which could have been used to consume barreled beer or wine or bottled liquor as easily as they were used to consume coffee, tea, milk, and water. Also found in the cookhouse was an opium pipe, an opium tin, and tobacco pipe stem. Taken together, this assemblage, when compared to the manual laborers' domestic spaces, supports the notion that the company mess hall was an important social space where workers of various ethnic backgrounds came together to socialize, relax, and dull the pains of hard labor through drinking, smoking, and narcotics consumption (Smith 2008; Wilson 2005; Wylie and Fike 1993).

When asked if (Harry) Cowell disapproved and intervened in worker drinking Wolff (1972:25) said, “Oh that wasn’t his business. He didn’t care.” This perspective by Cowell is in direct contrast to traditional notions of corporate paternalism that sought to control workers’ “vices” and typically forbade alcohol consumption while on the job and in company provided housing (Beaudry 1989; Beaudry et al. 1991; Beaudry et al. 2001; Mrozowski et al. 1996). Even in California, where there was generally a more liberal stance on alcohol consumption (even at the heights of the temperance movement), company towns typically controlled alcohol consumption in an effort to maintain efficiency and productivity under the guise of worker health and well-being (Pappas 2004; Tone 1997). The prevalence of alcohol bottles across most domestic and social spaces at the Samuel Adams kilns suggests alcohol consumption was common, however, and workers did not try to hide either their consumption or disposal of alcoholic beverages. This suggests that Harry Cowell’s twentieth century position on alcohol consumption was likely an extension of his father’s, and a similar *laissez faire* attitude toward worker social and leisure activities was in place during Henry Cowell owned-periods of operation at the Samuel Adams kilns. This means that the presence of alcohol bottles cannot simply be interpreted as worker resistance and subversion of company control, as has often been the case in other archaeological interpretations of industrial work sites (Beaudry 1989; Mrozowski et al. 1996). By extension, the lack of materials associated with alcohol consumption cannot uncritically be assumed to reflect the effectiveness of company control over worker actions. Instead, alcohol consumption appears to be entangled in complex relationships that involve worker identity, labor, agency, and power, suggesting alcohol was consumed for a number of reasons including tradition/custom, as an escape, to create working-class solidarity or other group cohesion, or for other individual or personal reasons (Beaudry et al. 1991).

The nature of beverage consumption, as evidence in bottle types and distribution patterns, provides further nuance to leisure and alcohol consumption practices among the lime kiln work force. Of the 81 alcohol bottles recovered from the mess hall (Units 109 and 111), there was an almost even split between bottles that would have likely been consumed in groups (*e.g.,* large wine, sparkling wine, and beer bottles; n=29) and others that may have been consumed individually (*e.g.,* flasks; n=28). While liquor from personal flasks may have also been shared amongst workers, the smaller size and thin shape would have made it easy to slip into one’s jacket pocket to be consumed throughout the day, in various spaces, whenever the owner of the bottle had the desire. This form of alcohol consumption may have been as much a way to moderate the pains and injuries of hard manual labor, as it was a leisure practice to help one relax and escape the monotony of industrial work (Smith 2008). As discussed above, the sharing of a personal flask between workers, even just a sip, would have worked to build relations – entangling workers in complex material-discursive practices.

The consumption of liquor was also widely thought to be an effective way to warm oneself during this period. For lime workers relegated to the night shift or work during the cold and wet winter months, warming spirits may not have only been allowed, but provided by the company to keep workers productive and comfortable. While a lack of alcohol bottles from work spaces could be seen as workers abstaining from drinking while on the job, the large number of flasks recovered, and the broader context and ideologies towards alcohol consumption suggest that workers may have in fact been drinking while laboring in workspaces, but that they brought the bottles back with them or took care to not leave any traces of their activities (Mrozowski et al. 1996). One must also recognize that a large burning kiln would be an easy and attractive location to dispose of one's spent liquor bottle. Evidence for this activity would be sparse, but it would take shape as highly vitrified fragments of glass, exactly like those recovered from Unit 105 located in front of the kiln Pot 2.

The larger bottles of alcohol, especially wine bottles, would have likely been consumed by a group of workers in a relatively short period of time, as open wine spoils quickly. The relatively high prevalence of wine/sparkling wine bottles suggests that alcohol was as much of an important material in creating social ties and bonds as it was a personal leisure and escape item. Archaeologists have long been fascinated with the role of drinking practices, their links to various aspects of identity, and their implications for building social groups (Dietler 2006; Douglas 1987; Gusfield 1987; Holt 2006; Wilson 2005). As Michael Dietler (2006:229) notes, alcohol and drinking is a "special form of embodied material culture" that played an important role in the political economy and power relations of colonial and post-colonial settings around the world. The act of communal consumption, lubricated by the intoxicating qualities of alcohol, has long worked to break barriers and build connections and relations between individuals and social groups.

Adalbert Wolff, in recounting life at Cowell's Bay Street kilns in 1915, remembers the Italian manual laborers drinking wine during their time off and him, and on at least one occasion imbibing along with them (Wolff 1972). This brief anecdote is important because it highlights that drinking patterns worked to define and also transgress or challenge group boundaries. While consuming wine was associated with Italian and Portuguese labor by Wolff, his story suggests that at least once (and he was only on-site for six months) he, a German immigrant, spent time drinking wine with the Italian manual workers. Wolff was also in a position of managerial labor, suggesting that alcohol consumption among workers may have been utilized strategically to build relationships, social connections, and good will across ethnic, language, occupation, and power divides (Dietler 2006; Kingsdale 1973; Pena and Denmon 2000).

As Wilson (2005:12) argues "national and ethnic identities are dynamic states of being and becoming, and the values, actions and institutions which make these identities material are differentiating practices." Wilson (2005:3, 14) goes on to note that "in essence drinking itself is cultural," and as a "differentiating practice" alcohol consumption has served, and continues to serve, as a significant activity that works to (re)frame "actions, networks and other relations." Along these lines, Wilkie (2010) explores the relationship between alcohol consumption and rituals as a form of male bonding at a late-nineteenth century fraternity house associated with the University of California, Berkeley. In her study she illustrates how rituals, which often included liberal consumptions of alcohol but also ceremonial regalia and practices, worked to create a community through shared experience, linking practices to memories and meaning in ways that worked to shape boundaries of affiliation and identification.

The fraternity community provides an interesting comparative population for the Samuel Adams workforce, as it was an all-male community of similar size, existing in California during roughly the same period, comprised of individuals who lived and worked together (with domestic help from various Asian countries, nonetheless) to build a brotherhood across various ethnic and class differences. While rituals of the sort that were common at college fraternities are not likely to have occurred at the Samuel Adams kilns, and the creation of a community through ritual was not necessarily purposeful or organized, we cannot overlook daily mundane rituals as important intra-actions and shared experiences that worked to shaped notions of group identity and membership (Chudacoff 1999; Fass 1977; Wilkie 2010). It would have been in small, daily rituals of consuming meals, splitting a bottle of wine, and pouring a round of beers out of the communal keg while sharing a smoke and warming oneself next to the stove, that bonds and affinities would have been created within a diverse workforce. It is within these material-discursive intra-actions that superficial differences in one's country of origin or native language were overshadowed by the commonalities of work and life at the lime kilns. In was in these daily rituals of intra-action that the foundations of community began to emerge.

Life at the Cookhouse

Material and documentary data suggest Locus C was the cookhouse for the lime operation and Locus V served as an associated cold storage room (Hyde 2019). Given the 24-hour nature of lime work, and the fact that at least part of the workforce lived on-site, it was common practice for lime operations to have a cookhouse and associated mess hall as part of their operation to provide workers with food and drink. Unfortunately, the nature of the stratigraphic sequence and recovered materials at the cookhouse make it impossible to isolate materials that might date directly to the different periods of ownership. During Cowell's period of ownership (1869-1909), however, we have documentary evidence to suggest that the operation cook was always a Chinese immigrant laborer, a pattern he employed elsewhere at other kilns he owned (Perry et al. 2007). At the Samuel Adams kilns these individuals were Ah Soy (1870) and Ban Arc (1880).

Beginning in the late 1840s, large numbers of Chinese immigrants came to California as Western imperialism exerted both push and pull factors on the largely agricultural area of the Pearl River Delta in the Guangdong province of southern China (Fong 2013). These processes quickly created a diasporic community of diverse, but largely Cantonese-speaking Chinese immigrants that spanned the Pacific (Fong 2013; McKeown 1999; Wang 2005). Like many immigrant groups before and after, the Chinese arriving in the United States often took hard labor and low paying jobs that other labor groups would not fill (Fong 2013). In the complex intersections of racism and gendered divisions of labor, Chinese immigrant men also carved out a niche in the domestic service industry, working as cooks, launderers, gardeners, and domestic servants. These jobs were seen as feminine by white labor and, due to the predominately male population of the American West in the mid-nineteenth century, led to a paucity of workers in these sectors and a high demand for new labor. Chinese men, already constructed as effeminate and "other" by white Euro-American populations, often filled these traditionally female labor roles, further entangling issues of race, labor, and gender in the American West (Wang 2004; Williams 2008).

Increased immigration and visibility of Chinese labor, coupled with waves of economic downturns in the late-nineteenth century led to antagonistic labor relations, with white labor positioning Chinese labor as the root cause of low wages and unemployment (Fong 2013; Wang

2004). These anti-Chinese sentiments, which became core tenets of various organized white labor groups, such as the Workingmen's Party of California, led to various taxes and legislation meant to deter Chinese immigration, ultimately culminating in the Chinese Exclusion Act of 1882, which explicitly prohibited all immigration of Chinese laborers (though its enforcement was uneven) (Lew-Williams 2018). Beyond legislation, this discrimination and antagonism against Chinese labor in the nineteenth and early-twentieth centuries was often manifested in overt violence, with mobs physically driving out Chinese workers, Euro-American laborers killing Chinese laborers, and multiple acts of arson and vandalism in Chinatowns across the American West (Fong 2013; Lew-Williams 2018; Pfaelzer 2008).

Archaeologists working on immigrant Chinese groups have examined the ways in which communities resisted these violent and discriminatory acts and persisted as vibrant American communities, challenging simplistic acculturation models and providing nuance to the white-versus-Chinese narrative and that is often perpetuated (Baxter and Allen 2002; Collins 1987; Fong 2013; Greenwood 1993, 1996; Gust 1993; Praetzellis 2004; Praetzellis and Praetzellis 1997; Voss 2005b, 2008b; Voss and Allen 2008). In their various work, these scholars have challenge assumptions that Chinese immigrants held on to traditional practices more rigidly than other immigrant groups. Instead, their work aims to explore how various Chinese-American communities existed as fluid, varied, and adaptive groups that were shaped, but also played an important role in shaping the social, political, and economic landscape of early American Period California. This relational and historically contextual view of life for laborers of Chinese descent provides an opportunity to explore the novel and emergent social entanglements and practices they employed in the dynamics of nineteenth century California and will be critical in examining the lived experience of being the sole Chinese worker in the diverse industrial Samuel Adams kiln complex.

At Cowell's other operations, specifically the Bay Street (Cowell Ranch) kilns, the cookhouse (overseen by a Chinese cook) was divided into a kitchen, a pantry, a communal dining room, a private dining room for Cowell, and sleeping quarters for the cook. Based on visible architectural features and materials recovered at the Samuel Adams excavations, it is most likely that Unit 110 excavations were located in the equivalent kitchen aspect, Unit 109 was located in the main shared worker's dining room (mess hall), and Unit 111 was located just outside that same room. It is unlikely that there was a private room for Cowell or the foreman, as Cowell did not live on-site and material evidence suggests the foreman took his meals at his private residence or office. It is also unclear if the Chinese cook lived at the Samuel Adams cookhouse complex. Census records list the Chinese cook within the same household as the other manual laborers, although, as discussed above, there are a number of reasons why this may not be an accurate representation of spatial divisions at the site. If the Chinese laborer boarded at the cookhouse complex, this space was not directly sampled as part of the SALK 2017 project. This is evidenced through a relative lack of domestic materials (health, hygiene, clothing, and adornment items) recovered at the cookhouse complex when compared to other domestic spaces across the site.

Materials recovered at the cookhouse, however, strongly support historic data that suggest a Chinese laborer served as company cook and was the primary occupant of the cookhouse in the later period of occupation (1869-1909) at the Samuel Adams site. As Figure 6.3 illustrates, Chinese import items and other objects traditionally used by Chinese immigrants in the

American West are found in significantly higher proportions in the cookhouse and mess hall spaces. While the presence of Chinese objects does not automatically equate to the presence of Chinese labor, taken as a total assemblage, considering historic data, and comparing the material across the site, the nature of the cookhouse finds suggest it was likely the primary space utilized by Chinese labor at the Samuel Adams kilns. And, although domestic material was sparse, and excavations do not appear to have directly sampled the cook's sleeping quarters, given the anti-Chinese sentiment in California during the period in which Chinese laborers were employed at the site it is very likely that the Chinese cook lived somewhere within the cookhouse complex, separate from the European immigrant workforce (Daniels 1988; Wang 2004).

John Dong (Dong Hong Goon) was one such lime industry cook, working for Cowell at various lime operations throughout the 1920s and 1940s. Dong was born in Canton, China in 1909. His father had been born in San Francisco and worked as a cook for Cowell at his kilns near Felton, but returned to China to marry and start a family. The Dong family moved back to the United States for work around 1912. It was during this period in California, when John was about 11 years old, that he began working as a cook's helper at Cowell's Bay Street kilns, primarily washing dishes but also learning the cooking trade. Later, Dong became the primary cook at the Bay Street kilns and later at the Rincon kilns.

Interviews were conducted with John Dong in 1965 as part of the University of California, Santa Cruz Regional History Project (Dong 1967). The UC Santa Cruz campus is situated on 2,000 acres of the historic Bay Street kilns (Cowell Ranch) which includes a number of historic buildings associated with the lime operation, including the cookhouse. As part of historic preservation efforts, the Regional History Project was initiated in 1963 with the goal of creating a robust historical and oral historical archive for the Central Coast and the UC Santa Cruz campus. As part of these early research efforts it was discovered that John Dong, the last cook for the Cowell Ranch, still lived in Santa Cruz. He was interviewed in the back room of his grocery store by Elizabeth Spedding Calciano on October 24, 1965. His insights provide details into the nature of domestic labor in the lime industry under Cowell ownership.

While Dong worked as a cook after the period in which the Samuel Adams kilns were in operation, the interviewer notes that "in many ways the Cowell cookhouse was an anachronism – the menus and working conditions were not at all unlike those in the cookhouses of preceding decades" (Dong 1967:vii-viii). Dong noted that the menu during his time at the Rincon kilns later in his cooking career was very similar to earlier offerings , suggesting there was general consistency between operations and through time. So, while the information presented by Dong may not be precisely accurate and directly transferable for interpretations of the Samuel Adams operation, especially during the earlier years, it does provide some insights into the ways in which domestic labor and consumption was organized and implemented at a lime operation under Cowell ownership, and it can be examined against the particularities of material and historical data associated with the Samuel Adams kilns.

In his position as cook for the Cowell Ranch, Dong said he worked on a wood stove with oil lamps, beginning work to prepare breakfast each morning at 4:00 a.m. He noted that the men would eat at 6:00 a.m., with work beginning at 6:30. Tasked with cleaning up after the workers' breakfast, he would then move straight into preparing lunch. After lunch, the cook had roughly an hour for a break before preparing for dinner, which was served between 5:30 and 6:00 p.m. (Dong 1967; Perry et al. 2007). Dong notes in his interview that meals were almost always the same thing, day in and day out saying, “You know how Harry Cowell was. (Laughter) He was stingier than anyone else… Yes. He don’t put anything in the kitchen. Only beans, potatoes, something like that, or some bread… You don’t see no bacon around there do you? (They would) get some steak. They’d be killing a beef up there every week. So every meal we’d have a beef. Beef every meal. Nothing else changed. Steak stew or something like that, and that’s about all” (Dong 1967:8-9). The one exception, Dong notes, was fish, which was served every Friday to meet the desires of the largely Catholic Portuguese and Irish labor force. Not surprisingly, fish remains were recovered at the cookhouse, mess hall, and a number of other spaces across the site. The implications for fish consumption from both a company investment cost reduction strategy perspective and as a way in which laborers created communities and connections through religious practices will be discussed in Chapter 8.

The cookhouse itself was sparsely equipped. During Dong’s tenure as cook at the Bay Street kilns there was only one large wood burning stove, a sink, and a few counters and tables (Dong 1967). There was no electricity at the Bay Street kilns until the 1950s, with water being heated by running water pipes through the stove. While only a few mangled fragments of a large cast iron stove were observed and recovered archaeologically at the Samuel Adams cookhouse, there was also a cobble and cut limestone platform that likely served as the wood stove foundation. A lead pipe leading from the direction of a spring past this elevated masonry platform was encountered in the excavation of Unit 110. It is likely that this pipe brought fresh water to the cookhouse and was heated in a similar manner as described by Dong at the Bay Street kilns.

Dong mentions that the beef was acquired from Cowell’s own herds, and after the animal was slaughtered it was halved and stored in a cold storage building adjacent to the cookhouse. Dong mentions that the slaughtering and butchery was done by one of the operation’s manual laborers. Another oral account of the process in 1915 by Adalbert Wolff outlines how the blacksmith at Cowell’s Bay Street kilns would handle the slaughtering and butchering of steers when necessary (Wolff 1972). The presence of a similar cold room next to the cookhouse at the Samuel Adams operation suggests similar activities and uses were pursued at this site. Excavation at the Samuel Adams cold storage room (Locus V) recovered evidence of a thick insulating cement floor and food storage activities – which further supports this functional interpretation. Dong also notes that the cook would simply cut off what they needed for each meal from large sides of meat (Dong 1967). Butcher marks from faunal elements recovered from across the Samuel Adams site showed evidence for a preponderance of hand sawed and cleaver chopped marks, those you would expect from “household” level butchery. Furthermore, the cut marks evidenced on elements from the Samuel Adams kiln were fairly crude, with a large number of multiple, partial, and/or interrupted cuts which would suggest butchering activities were done by someone untrained in the technical aspects of large animal butchery. No butcher marks were identified as being from a mechanical band saw, cutting technology that would have been employed in an industrial slaughterhouse or by a specialized butcher, further supporting a similar, cut-as-needed approach utilized by the cook at the Samuel Adams kilns.

At Cowell’s Bay Street kilns, one worker was responsible for growing vegetable crops, raising stock, and slaughtering the animals for meat. It is unknown if this was the same process employed at the Samuel Adams kilns, however, the large barns and plentiful growing area around the cookhouse would suggest this model was likely followed. At Cowell's Bay Street kilns, the staple foodstuffs not acquired from the ranch, such as sugar and flour, were ordered through the foreman, at the request of the cook, who acquired them from suppliers in Santa Cruz or San Francisco (Dong 1967). While this was probably the same model employed at the Samuel Adams kilns, the significant numbers of Chinese glazed-stoneware vessels recovered at the mess hall and cookhouse suggests the Chinese cook at this location also acquired cooking ingredients and alcohol himself, likely supplementing that which was provided by the company and acquired by the foreman.

In addition to the beef-based main dish, Dong would make cheese from milk. Some of the pepper sauce bottles recovered from Loci B and C may have actually contained vinegar, which can function as a curdling agent in cheese making (Lindsey 2017; Switzer 1974). Dong also baked six loaves of bread per day, made biscuits for breakfast, and fruit pies for dessert. Coffee was supplied by the cook as well, with beans being ground by hand every day. According to Dong, recipes were basic, with pepper typically the only spice used in cooking. This was supported archaeologically as there was a conspicuous lack of materials associated with condiments at the cookhouse. The comparatively large amount of pepper sauce, vinegar, and condiment bottle fragments along with and Chinese glazed-stoneware vinegar, soy sauce, and pickle vessels found at the mess hall, however, suggests workers individually adjusted the flavor of their provided food through various offerings. While the heavily fragmented nature of the glass remains made it impossible to identify the exact type or producer of the various pepper sauces, it is likely that types such as the Portuguese piri-piri or Italian pilacca were used by groups to create flavor familiarities that were conducive to different tastes. In doing this, condiment use, as a creation of particular flavor, may have worked to evoke memories of the homeland and build community connections at the lime operation. Alternatively, the variety of pepper sauces and condiment bottles may have been a common good, provided by the company in the mess hall. Exposure to various types, the, may have led to experimentation and blending of flavors, finding commonalities across varieties while also creating new tastes – an idea explored further in Chapter 8.

Dong also notes that during his time cooking at the Cowell Ranch there were only about 15 men, so he worked alone. During his father's time, there were upwards of forty men and he had a helper to assist him. The cook's days were roughly 14 hours of work, and as a cook's helper Dong was paid only $55 per month (in the 1920s). Later, when he worked alone as the primary cook he made $75 per month (Dong 1967). When asked why he was willing to work such long hours for low pay Dong responded, "Well, there wasn't no place to go and nothing to do. I might as well stay and enjoy it. One thing I liked about that place is nobody bother you. The boys wouldn't care about whatever you doing as long as you get the job done" (Dong 1967).

Notably, Dong also remarks on the separation between management and manual labor. Dong says that before he died, Samuel H. (Harry) Cowell (Henry Cowell's son and business heir after the death of the elder son, Ernest) would often visit the cookhouse for breakfast. On these occasions, the ranch foreman "would bring bacon or something good to eat" (Dong 1967). The owner would either eat by himself in a small private dining room, or be joined by the foreman – at that time being Frank George. This is further supported in an interview of Adalbert Wolff, who lived and worked with George at the Bay Street operation in 1915. While Wolff was George's assistant and the company timekeeper, he did not eat with George, and instead ate with the manual laborers being told "Well, you're living in the house at night, but you eat in the cookhouse" (Wolff 1972:4). In this way, food and food consumption was used by the company owners and managers as a way to draw boundaries between labor groups at the kilns. This supports material findings that suggest the foreman at the Samuel Adams kilns likely ate some, if not all, of his meals at his private residence or office, where he also likely entertained and met with business and labor associates.

As both historical sources and material findings suggest, the primary activities undertaken at the cookhouse (Locus C) and cold room (Locus V) were related to food preparation and storage activities. Overall, materials related to domestic activity were found in relatively small proportions. In contrast, faunal remains were found in significantly higher proportions at the cookhouse, with a faunal NISP from one unit that is 1.05 times higher than the faunal NISP from the next highest Locus at the site – Locus B, which includes materials from two units (109 and 111) and an associated bone pit (Figure 6.1). This suggests intra-actions with animal food parts were a primary activity in the cookhouse space. While it is surprising to find such large numbers of animal bones within the building footprint, they may have been associated with pickled or dried meat that were stored in the cookhouse. Much of the faunal material, however, was located within levels of structural collapse and contexts associated with the historic living surface, so it is possible that faunal material (along with other materials) was dumped in this location upon site abandonment. If this is the case, the fill likely came from closely surrounding areas and provides a sample of material activity traces associated with the locus. The FWVAS project placed a 1x2 meter excavation unit just outside of the cookhouse, on the other side of the wall from SALK 2017 cookhouse unit (Unit 110), and recovered a relatively small amount of faunal material (NISP=81), but a similar lack of domestic-associated artifacts.

While oral accounts presented above suggest a narrow range of foodstuffs provided to workers, archaeological investigations at the Samuel Adams kilns recovered a faunal and material assemblage diverse in animal species and condiments and sauce bottles (Cardiff 1965; Dong 1967; Wolff 1972). While Dong notes that beef dominated the menu, and cow elements do make up a significant portion of the faunal assemblage from the cookhouse and mess hall (MNI=2, 9%; NISP=96, 48.7% of identifiable genera), there are also identifiable elements from a total of 18 other genera/species. While some of these are rodents and other organisms that may be products of non-cultural processes or vermin elimination efforts, elements from animals like pigs, sheep/goat, chicken, and deer have cut marks, and as such can be identified as food remains from lime period activity. This suggests that the types of foods consumed at the Samuel Adams kilns were more diverse than that consumed at the Bay Street kiln in the early part of the twentieth century. This discrepancy may be a product of shifting food sourcing strategies and/or strategic supplementation practices employed by the workers. It is likely that in the earlier years of the lime operation, food was supplied primarily through transaction and business arrangements with local stores, grocers, or suppliers. Later, Henry Cowell's son Samuel ("Harry") began expanding the Cowell Company interests more substantially into agricultural endeavors. This likely resulted in greater access to cattle at cheaper prices and resulted in a greater reliance on this single domesticate species later in the twentieth century. This process of vertical integration over time was common throughout the Cowells' business ventures and in this case shows clearly how it's cost savings often resulted in negative effects for the lime laborers (Perry et al. 2007).

Of note within the faunal assemblage from the cookhouse is the presence of a harbor porpoise and stellar sea lion elements, with butcher marks. Consumption of pinnipeds and cetacean meat does not appear to have been a common activity in the historic-period, and its presence in this assemblage could mean a number of things (Cass 1985). First, it could mean that at some point in time, access to more traditional meat protein such as beef, pork, and mutton was limited and alternative types of meat were substituted. This is unlikely, however, as at least one element was recovered within the bone pit in direct association with domesticate faunal remains. Alternatively, the consumption of marine mammal meat may be a product of preference, and it may have been desired by one or more of the labor groups represented at the lime kilns. If this was the case, a preference for marine mammal meat has simply not been well documented historically. If this meat source was actively sought out, cetacean and pinniped elements would have been relatively easy to acquire from any of the various Portuguese/Azorean whaling and Chinese fishing villages along the Santa Cruz and San Mateo Coasts, located in close vicinity to the lime operation. In fact, the presence of these marine mammal elements may reflect traces of these regional immigrant community connections that extended beyond particular industries.

Alternatively, this marine mammal meat may have been used to feed pets. One of the few known uses of pinniped meat in the nineteenth century was in dog and cat food, as the meat was seen as an undesirable byproduct of pelt, oil, and "trimmings" hunting (Abbot 1939; Bonnot 1928; Cass 1985; Fry 1939). Elements from a cat were also recovered at the mess hall, so it is possible the marine mammal elements are remnants of pet food, although one would assume scrapes of beef, mutton, pork, and fish would have been suitable and prevalent. Another alternative is that the bones are a byproduct of the use of marine mammal oil in lamps. While it is unlikely that the purchasing of this lamp oil would include bones, it may have been acquired through cheaper and/or informal channels and arrived on-site in an unfinished state, with the processing being finished at the lime kiln complex. Having nearby Portuguese/Azorean whaling villages and lime workers of the same ethnicity/nationality may have allowed for these more informal networks of exchange. These materials, therefore, may also reflect a type of non-dietary supplementation where lighting or heating fuels were acquired by the laborers outside of company channels. Lastly, as one of the bones appears to have been ground down on its distal ends, it is also possible that recovered remains are not traces foodstuff, but that the marine mammal bones themselves were used in traditional medicine or ritual activities, however no historical mention of this by any ethnic group present at the site has been discovered. The "trimmings" (testes and penises) from breeding adult sea lions, however, are known to have been considered an aphrodisiac in traditional Chinese medicine until the 1930s, and their whiskers were a desirable ornamental material (Cass 1985; Bonnot 1928). The marine mammal skeletal elements, then, may be associated with these ritualistic and/or folk medicine practices

The interpretation of food preparation and storage activities at Loci C and V is further refined through ceramic and glass material remains. The general lack of both ceramic remains and glass bottles at the cold storage room (Locus V) – except for glass storage jar fragments – supports the notion that this was a storage area, and objects and materials were removed from this space to be engaged with in cooking or consumption activities. In contrast, at the cookhouse (Locus C), a relatively large proportion of ceramic tablewares (Figure 6.4) of various forms were recovered. The spatial associations between excavated materials indicates that the ceramic tablewares were stored in this location and collapsed into the center of the building, where they were uncovered through the excavation of Unit 110 (Hyde 2019). If food preparation activities were taking place in Locus C, then we would expect to find large numbers of ceramic tablewares, such as we did, as we know they were washed and likely stored in the cookhouse so meals could be quickly and easily plated and served, or set out in the mess hall for shared buffet or "family style" consumption.

Notable in this assemblage of ceramics is the presence of at least two ceramic rice bowls, one a pedestaled hotel ware, and the other a wintergreen porcelain. Only one other rice bowl was recovered at the Samuel Adams site, in the adjacent mess hall. The presence of rice bowls recovered from the cookhouse may suggest the cook prepared and consumed different types of food than what he prepared for the lime workers. Alternatively, it is possible he consumed the same meals, but he did so from a vessel that was more familiar to him. Either way, it is likely the cook consumed his meals separate from the manual laborers in the mess hall. The necessary division of work, and the likelihood that the cook was busy cooking and cleaning while the workers ate, further support this idea. The presence of these rice bowls highlights, however, that the Chinese cook used tools that were familiar to him to prepare meals for the non-Chinese men and/or consume his own meals.

Excavations from Locus C and V also uncovered tools that provide further insight into the nature of activities and daily life at the cookhouse and cold storage room. At the cold storage room, excavations recovered tool-type objects included bailing wire, bucket fragments, a splitting wedge, and plow blade. The plow blade and splitting wedge are likely remnants from later ranching activities, but it also suggests that the cold storage building may have been used to house equipment, tools, or other materials beyond foodstuffs, even during the lime production period. The bailing wire may also be a remnant of later activity, but its presence in lower levels indicates that it was also an important tool during the lime operation, and in the cold room it likely would have been used to hang and/or secure cuts of meat and other foodstuffs.

Tool materials recovered from the cookhouse further support the prevalence of food preparation and cooking activities taking place there. A knife recovered in Unit 110 would have been directly utilized in food preparation and a flat-style hand file would have been used to keep this knife, and other tools like it, sharp. Keeping manual tools like this sharp would have made chopping and cutting easier, a trace of the massive labor input that was necessary on a day-to-day basis to feed the lime workers, and the importance of effective tools and skills. In addition to these tools, multiple other artifacts were recovered from the cookhouse that are associated with food preparation and consumption, including cast iron hooks, bucket fragments, and stove parts.

In general, the lack of domestic materials indicate that Unit 110 was not located in the living space of the cook (if he did, in fact, have a room attached to the cookhouse as historical documents suggest). The presence of a whole glazed-stoneware Chinese liquor bottle and an opium pipe fragment, however, suggest the cookhouse space was an important leisure space for the Chinese cook. While anti-Chinese sentiments may have made it challenging for the Chinese cook to socialize with the other workers, and may have even created a hostile environment where the cook felt endangered, the relatively private space of the cookhouse – an area where other workers would not need to be – could have provided a safe space and a respite from the potentially charged and hostile social environment outside the cookhouse doors. This privacy would have also afforded the space to participate in culturally specific practices. If practices, such as eating with chop sticks out of a rice bowl, preparing or consuming traditional medicines, or caring for his queue were undertaken in spaces shared with other workers, it may have made him a target for ridicule or attacks. Recovered objects like the Chinese whiskey bottle, opium pipe, traditional medicine vial, and even Jenny Lind hair gloss bottle, all serve as traces of the symbolic leisure and self-care practices pursued by a solitary Chinese cook in his primary work space.

Also recovered, however, are material traces of contact, negotiation, and transformation. Discussed in greater detail in Chapter 8, a number of materials and assemblages challenge the oversimplified notion of cultural persistence by Chinese immigrant laborers in the American West. The recovery of materials traditionally identified as Chinese from across the site, the presence of materials traditionally identified as Euro-American in spaces associated with Chinese domestic labor, and the recovery of objects that have been modified in ways that make them impossible to be classified as either Chinese or Euro-American, all highlight that the diverse group of laborers were entangled daily in material-discursive practices that led to sharing, blending, transformation, and the novel creation of materials and practiecs that transcended culture-group definitions. These objects and activities bear the traces of intra-action and emergence, allowing us to untangle the connections and multiple possible meanings and interpretations. These materials and intra-actions are discussed in greater detail in Chapter 8.

CHAPTER 7. CULTIVATING LIME; CREATING COMMUNITY

Calcium carbonate, a “naturally” occurring “material” that snakes its way through the geological topography of California, is transformed into limestone, an “object” of human use, through processes of identification and removal (quarrying) from its ancient resting place in the ground. Calcium carbonate is transformed again through specific human intervention (“cooking”), from limestone into quicklime – a material fundamental to life in the modern age, and one more conducive to shipping, quantification, commodification, and sale than raw limestone. By adding water to quicklime and leaving it exposed to air, however, one transforms it back into limestone (calcium carbonate), sedimenting it in a new way – one that has been orchestrated by human hands to meet a specific purpose (Figure 7.1). The limestone, then, is transmuted through intra-action with humans. But this process and experience of lime transformation also shapes the human body; metamorphosing it into labor, into a craftsman that must dwell in the world of rock and learn to speak its language (Ingold 2000). The overlapping processes and temporalities of limestone intra-action work to reconfigure relations, blurring boundaries not only between natural and cultural, limestone and quicklime, or active and inactive, but also between us and them, as workers – diverse in ethnicity, language, religion, and labor specialty – reshaped relations and emerged as a novel community (or entangled communities) through the practices of lime work. The workers at the Samuel Adams kilns, I argue, were not just physically, economically and socially transforming the limestone, the rock and the labor were simultaneously transforming the workers. The quicklime, the workers, and the labor community were co-constitutive, emerging anew through the particularities of intra-action in an extractive industry of the nineteenth century American Far West.

Archaeologies of extractive industry have traditionally worked from models and frameworks that position various components involved (human and non-human) in dichotomous and antagonistic relations (Hardesty 2010; Spude et al. 2011). In these approaches, workers – as bounded, discrete, and identifiable entities – mobilize their collective labor and expend their energy *on* the earth, wrestling its value out and away with chisel and dynamite. Nature, however, does not exist separate from humanity, nor vice versa. Nature is transformed into resources – into economic value – through particular intra-actions between overlapping assemblages of capital, labor, industry, and technology. This research attempts to move beyond traditional dichotomous models of resource extraction to think about the ways in which producers and products co-constitute each other through the very act of encounter and intra-relation.

Positioning quicklime, labor, and community as co-constitutive builds on new materialist philosophies presented earlier that understand all matter as being continual, vibrant, and emergent. By examining the lime production processes, structures of labor division, and tasks employed, I hope to illustrate that industrial lime workers were not distinct from the rock they worked. In dwelling with lime, I argue, the lime workers had to live, work, and communicate with a host of agentive bodies including rock, fire, water, trees, animals, weather, and humidity (just to name a few), an extremely complicated process that is belied by the seemingly simple nature of processed quicklime – an unassuming chalky white powder.

The goal of this chapter, then, is to illustrate that quicklime production was not a series of segmented tasks performed in a factory-system assembly line. It was a craft, “guided by tactile engagements, sensory cues, and experience,” involving entangled processes and temporalities orchestrated through intimate bodily intra-actions to produce a suite of desired outcomes (Ryzewski 2013:351). Making lime is a dance between diverse rocks, tools, and workers, with the action of each framing and impacting the action of the other over the period of days. It is hoped that presenting the production processes as material-discursive intra-action forces a reconsideration of lime work as craft rather than unskilled labor, and its enactment as meaningful in reconfiguring and building emergent community relations (Ingold 2001, 2010; Ryzewski 2013; Webmoor and Whitmore 2008).

As Krysta Ryzewski (2013:351) argues, “Making objects, whether by wrought or mechanized techniques, is now and was in the past a multisensory affair.” She also notes that archaeological assemblages are well positioned to explore the “inseparable social and material complexities and textilities of craft techniques, technologies, and associated things” (Ryzewski 2013:352). Building on these ideas, I suggest that the materiality of lime makes it especially well suited as matter to think through and challenge traditional divisions between nature and culture, subject and object, self and other, and animate and inanimate (Descola 2013). Ryzewski, and other archaeologists interested in phenomenology, are critical of traditional *chaîne opératoire* approaches that present linear and bounded stages of material production, claiming that it is necessarily an abstraction, an oversimplification that privileges human agency (Dobres 2000). Instead, making things always involves “the culmination and flow of carefully orchestrated combinations of tacit negotiation, experience, memory, and skill by the craftsperson, embodied in performed technique and bodily interactions” (Dobres 2010; Keller 2001; Lechtman 1977; Ryzewski 2013: 354; van der Leeuw 2008). As Stewart Brand (1994:2) describes it, there is a “kink” between the plan or idea, which is solid and fixed, and reality, which is fluid. Craftsmen work in that kink; “a world that does not stand still… with materials that have properties of their own and are not necessarily predisposed to fall into the shapes required of them, let alone to stay in them indefinitely” (Ingold 2010: 93; Ingold and Hallam 2007). Success in each human engagement of making is framed, therefore, “by the craftsperson’s ability to understand and adjust to the continuously variable signals emitted... by the negotiation of nonverbal, sensory clues, identifiable based on the individual’s intuition, experience, and empirically derived knowledge” (Ryzewski 2013: 354).

Positioning limestone as agentive, lively, vibrant matter, one can argue, then, that lime workers were involved in material-discursive intra-actions with mineral bodies (Barad 2007; Kohn 2013). In other words, laborers constantly communicated with rock in the production of quicklime. This understanding of communication between humans and non-humans moves beyond Saussurean linguistics and the limits of code, to a Peircean view of semiotics rooted in theories of biosemiotics and practice, as discussed earlier (Deacon 2012, 2015; Kohn 2013; Peirce 1998). From this perspective, meaning emerges through action and its effects, and information is transmitted between various bodies through signs. In other words, actants, both human and non-human, communicate in emergent ways through signaling; iconically, indexically, or symbolically (Peirce 1998). From this perspective we can understand a worker feeling the temperature of heat being put off by a load of lime and the color with which it glows as indexical signs that point to other esoteric processes and conditions that are interpreted and understood by the laborer, effecting his action and response, leading him to add fuel or adjust the airflow, which in turn effects change in the burning lime rock (not to mention the wood fuel itself, the stone kiln, the surrounding flora and fauna, and the actions of other workers entangled in a shared taskscape).

The workers and lime, along with a host of other matter, it could be said, are cohabitating on this industrial landscape, each with a "life force," each "making itself felt" (Barad 2012: 59; Haraway 2015). As Barad (2012:59) argues, working from the realm of quantum physics, all matter "feels, converses, suffers, desires, yearns and remembers." The following of matter through the production of quick lime at the Samuel Adams kilns, therefore, will aim to be presented in such a way where this agentive dynamism and communicative capacities of matter are highlighted and interrogated, with implications for how we understand community at a nineteenth century industrial work site.

The production of quicklime involves alchemy, whereby substances are known by their "look and feel" and are transformed through "magical" processes as they are "mixed, heated, and cooled" (Elkins 2000; Ingold 2010:94). A close interrogation of lime challenges our understanding of geological materials as inert, and instead frames it as lively, vibrant matter (Barad 2007; Bennett 2004; Chen 2012; Cohen 2015; Coole 2013). For the kiln workers, limestone was not a static or passive object, it was active, it grew, shrank, consumed, burned, and choked, framing their world in an industrial town and many of their actions within it. As an actant in an industrial operation, limestone could crush, it could explode, it could burn, it could build, and it could create – both physically and economically (and with or without human intervention).

At the Samuel Adams kilns ancient beds of rock, themselves comprised of sedimented marine animal skeletons, shell, and coral, were transmuted into a caustic construction material through intra-actions with combusting old growth redwood elements in an industrial cathedral of articulated limestone and brick. The resulting powder could be transformed again through the addition of water, formed into any shape desirable, before binding with air molecules and sedimenting as stone, chemically identical to its "original" limestone form, having been momentarily deconstructed, commodified, and then reassembled in an emergent form. The study of lime in the industrial period, therefore, is a study of matter in transformation. As we trace the continued and emergent transformation of limestone into quicklime and then back into limestone we are, as Deleuze and Guattari (2004:451) insist we must, following "matter in movement, in flux, in variation" (Ingold 2007). In approaching the production of quicklime in this way, we can explore the textility of lime and the way in which laborers did not just work lime, but dwelled in mineral and geological worlds and temporalities.

Tim Ingold (2001, 2010) introduced the notion of textility as a way to challenge traditional hylomorphic technological frameworks that saw making as human imposition on the material world, instead presenting an understanding of making as forms that emerge through interventions in flows of material. Ingold (2010:91) argues that making should be seen as a "practice of weaving," whereby any one thing can be shown to be a knot – an entanglement in the meshwork of matter and materials that comprise the physical world (Kuchler 2007; Latour 2005). Making, Ingold (2010:92) insists, "is about the way in which materials of all sorts, energised by cosmic forces and with variable properties, mix and meld with one another in the generation of things." Making quicklime, therefore, is less about exerting mechanisms on inert limestone to make something different, than about intervening in the geological dynamism of rock to temporarily transform it, in a way that allows it to be reconfigured and reformed in new ways, ways that sometimes (but not always) work towards the ends intended of the intervener. The lime worker and limestone are not "interacting entities," one the subject and the other an object, they are bodies in relation, intra-acting – "trajectories of movement, responding to one another in counterpoint, alternately as melody and refrain" (Barad 2007; Ingold 2010:96). Understanding lime and work in these ways makes limeworkers "itinerant wayfarers" (Ingold 2010:93) making their way through a "taskscape" (Ingold 1993:162), engaging "in a continuous variation of variables, instead of extracting constants from them" (Deleuze and Guattari 2004: 410).

For Ingold (1993:162), taskscapes are "a pattern of activities 'collapsed' into an array of features." He uses this idea in contrast to landscapes which are presented as fixed objects, rather than generated forms. Taskscapes are the traces of boundless topographies and overlapping temporalities that take form as agents experience, perform, and (intra-)act in the world (Ingold 1993). Critically, these taskscapes, which are not distinct loci but congealments of activity, emerge through the social performance of tasks (Ingold 1993). The Samuel Adams Lime Kilns, therefore, should be understood and examined as a taskscape, that is, not as a fixed and bounded entity or thing, but as particular configurations of intra-action that took shape as diverse groups and individuals dwelled in a particular space and time (Ingold 2000). Ingold's dwelling perspective builds on Heidegger's (1971) idea that forms, what are often called the built environment and material objects (the central focus of any archaeological investigation), emerge through activity as part of the landscape, not separate from it. A rural lime kiln provides an effective way to think about the dwelling perspective because limestone, the focus of industrial exploitation, the sole reason for activity on this landscape at the kiln complex in the nineteenth century, is also used as the primary construction material for the features that process the lime, as well as the houses and roads that populated the hillsides and linked this community to others. The meters deep hole in the ground, the limestone kiln, the arch of raw limestone, the redwood and limestone houses, the sawed stumps, the tamped trails, the invasive species of wheat, and the piles of detritus are all traces of dwelling – a taskscape in which lime, a lime kiln complex, and a community of lime workers emerged.

Quicklime

At a chemical level, manufactured lime is produced by converting limestone (calcium carbonate: $CaCO_3$ [$CaO+CO_2$]) to quicklime (calcium oxide: CaO) by driving out carbon dioxide (CaO_2), in a process known as calcining. To drive out carbon dioxide the stone must be heated to a minimum temperature of 1650 degrees Fahrenheit (900 degrees Celsius) (Perry et al. 2007). To achieve these temperatures, and most nineteenth century lime producers operated at temperatures of 1900-2450 degrees Fahrenheit, the limestone must be burned in a contained, insulating environment (most often a kiln or pit) for extended periods of time (typically three to six days) (Perry et al. 2007; Kindon 2017; Wheeler 1998). The resulting quicklime is a chunky powder material which, although it can be caustic and volatile, can be easily packed in containers for transportation. For construction purposes, when slaked with water, quicklime becomes calcium hydroxide ($Ca(OH)_2$) or "lime putty," a viscous substance which can be applied to various surfaces as an adhesive and protectant, used to fill gaps and cracks, or shaped into virtually any form (with a mold and/or other tempering materials). After coming in contact with the air, lime putty begins to "cure," absorbing carbon dioxide and returning to its original chemical state (calcium carbonate), calcifying into hard, durable limestone (Figure 7.1) (Dancaster 1915; Kindon 2017; Wheeler 1998). Creating quicklime, then, is less about creating a new "object" or material, and more about intervening in the state of lime-matter, manipulating its range of potential materialities, temporarily transforming limestone into a substance that is more malleable and manipulatable, more conducive to modern industrial processes and transportation systems, before activating it to sediment (again) into a more durable from. In this sense, through various social-material entanglements and agential re-configurations, the matter of lime comes to matter in new ways. This durable form, however, is never final or fixed. As soon as quicklime solidifies back into limestone it is subject to environmental intra-actions that work to degrade its solid form, eroding the limerock back in to a powder. Lime matter, then, like all phenomena, is always in a state of immanent enfolding through intra-action.

Cultivating Quicklime

The seemingly simple steps necessary to convert limestone into lime belie the complex craft of creating high quality industrial grade quicklime in a competitive market. While the description of a manufacturing process is always an abstraction and oversimplification, in this section I will attempt to highlight the art of making lime. As Perry et al. (2007:43) note:

> "(lime making) was a craft, and like all crafts, it required considerable knowledge and practice to produce consistent high quality results. Subtle aspects of the process varied with the design of the kiln, the type of fuel used, and with the unique physical characteristics of the stone being burned. Stone characteristics could vary from one quarry to another, or even between outcrops just a few feet apart. Many Santa Cruz lime burners carried their secrets to the grave."

Robert Boynton, in his detailed examination of modern lime production technology, similarly describes the art of making lime, drawing parallels to the approach of a "French chef" in the way they understand, consider, and adapt to the variability of materials and inputs in creating a particular product (Boyton 1980:132). In addition to the manufacturing complexities, the work of making lime was segmented into various tasks and occupations. In a multi-pot operation which would have had multiple loads of lime in different states of completion being fired all at once (like at the Samuel Adams operation), these tasks would have cross-cut spaces, time, and occupations, segmenting and intersecting activities and bodies in complex ways. Unlike the French chef, working (theoretically) as a solitary craftsman, lime production involved the orchestration of multiple bodies, as well as tools and materials. Understanding the lime kiln complex as patterned activity and performance of form is presenting it as a taskscape rather than a landscape, and in my description I will aim for the former (Ingold 1993). So, while the processes of making lime will be organized chronologically, from quarrying to barreling, the experience of making lime would have been much more holistic and cyclical. Much of the information in this section comes from the "Steps in Making Lime" chapter of *Limekiln Legacies* by Frank Perry and Robert Piwarzyk, who reconstruct the lime producing activities through a rigorous examination of primary historical sources, oral histories, architectural and landscape surveys, newspaper accounts, and general lime manufacturing texts (Perry et al. 2007).

Limestone forms through the accumulation of the remains of calcareous organisms such as corals, mollusks, plankton, and gastropods, subjected to high pressures that lead to their sedimentation and cementation into rock (Eckel 1928). If the limestone is further subjected to metamorphic processes it becomes classified as marble. Through various geological and tectonic processes, these deep-sea limestone/marble deposits emerge as outcrops distributed across the globe. Studies of Santa Cruz limestone have determined that it is technically marble, being metamorphosed at a depth of roughly nine miles below the Earth's surface at temperatures of roughly 1,290 degrees Fahrenheit (Perry et al. 2007; Stanley 1982). While geologically marble, commercially the terms marble and limestone are used differentially based on the way in which the stone is utilized. When the rock is cut and used in masonry or art it is called marble, and when crushed, burned, or otherwise manipulated for use in other areas, it is referred to as limestone (Gay 1957; Perry et al. 2007). Because the primary use of the rock quarried and processed in Santa Cruz was for construction purposes I will refer to the "natural" (unprocessed) material as limestone or limerock.

In Santa Cruz, limestone outcrops were quarried by hand using hand drills and explosives. First, a hole would be drilled into the rock using a sledge hammer and X-bit rock drill. This was a two-person job, with one pounding the sledge while the other held the drill, rotating it between each strike (Perry et al. 2007). In at least one case, a hole was drilled seven feet deep, but most were likely in the range of three to five feet in depth (Perry et al. 2007; *Santa Cruz Weekly Courier* 1897). Into this hole explosive powder and a fused was placed. Until the mid 1860s black powder was used, which dislodged large chunks, necessitating greater labor input to break the stone into the desired smaller sizes. Later, blasting powder was used, which dislodged smaller pieces of rock and decreased subsequent rock breaking labor (Perry et al. 2007). Blasting powders used in in Santa Cruz operations were typically produced by Giant and Hercules powder companies based in the San Francisco Bay Area, and California Powder Works, located in Santa Cruz and partially owned by Samuel Adams (Perry et al. 2007).

Multiple drilled holes would be blasted at once while workers were (ideally) a safe distance away. The resulting effects on the bedrock stone would depend on the location of the drilled hole along with the amount of powder and type of powder used, with the goal being to produce limestone chunks roughly six-inches in diameter (Perry et al. 2007). Workers would wait five to ten minutes after the blast, as loose rocks often fell long after the explosion. When deemed safe, workers would re-enter the quarry and the dislodged limestone was broken by hand using hammers into the desired block sizes (Perry et al. 2007). Not all of the limestone would be of high quality, however, so quarriers had to read the stone, examining grain size, impurities, and inclusions to determine effects on the final product and potential responses and reactions within the kiln, sorting desirable stone from undesirable. Only the best quality rock was selected, and undesirable stone types or sizes were discarded in tailings around the quarry and kiln or used as fill for roadways and building construction at the site. The selected stone would then be transported to the tops of the kilns. At the Samuel Adams site this was achieved by the use of gravity rails (Perry et al. 2007; Wheeler 1998). Because limestone loses roughly 44 percent of its weight when fired into quicklime, most kilns were located in close proximity to the quarry, limiting the distance travelled when the material was at its heaviest state (Perry et al. 2007).

Pot style kilns at the Samuel Adams complex, and throughout Santa Cruz County, were loaded and fired using the arch technique. A laborer with specialized skills known as the "archer" would build an arch of raw limestone in the interior of the empty kiln pot. The arch had to be skillfully built, as it supported the entire load of lime, and if the arch collapsed during the firing process the whole load would be lost (Perry et al. 2007). The open space formed by the arch was the fire chamber, where the heat source was located and fuel was added throughout the duration of the burn. The middle kiln at the Samuel Adams complex was loaded but never fired and the arch of raw limestone is still visible, providing a rare glimpse into the arching craft (Figure 5.19). This is the only known example of a loaded kiln in the Santa Cruz area, and its existence for over a century after it was packed stands as a testament to the skill of the lime laborers, and the archer in particular. The blocks visible on the arch interior are roughly shaped but tightly packed. The fire chamber is about two-feet wide, with vertical walls to a height of about four and one-half-feet that bend into a pointed Gothic-style arch. The fire chamber extends roughly 10-feet into the kiln pot.

After the arch was complete, limestone blocks were loaded on top of the arch from the upper opening of the kiln pot. According to Frank George, foreman at the Bay Street kilns (Cowell Ranch), it took 325 tons of limestone to fill a kiln pot (Calciano 1971; Perry et al. 2007).The pot was loaded mindfully, with an understanding of how the block size and packing tightness would impact the burning process. Larger blocks were used to create the arch, with gradually smaller ones filling the pot above it. The smaller limestone blocks would cook faster, and thus were located further away from the heat source, allowing for variously sized blocks to be uniformly processed by the end of the burn (Perry et al. 2007). The kiln was packed to the top of the pot walls, but sufficient space was left between blocks to allow for the necessary release of water and carbon dioxide (Wheeler 1998). Improperly loaded lime (which relied on properly cut blocks) would not fire evenly and could result in some portions being overcooked while others were undercooked, both being unsuitable final products that would not have been barreled for sale.

After the pot was loaded with lime, redwood (or other comparable firewood) was fed under the arch and burned as the fuel source. Oil may have been used to start the fire, but timber elements were the desired fuel source for the burning process. Workers who lit the fires were referred to as "firemen" (Perry et al. 2007:51). The qualities of desired wood fuel included a "long flame" that burned the limestone evenly, high water content that created steam which lowered calcining temperatures, and a cooler burning temperature than other fuels, which resulted in the highest degree of control and had the desired effects on the limestone in a pot-style kiln (Perry et al. 2007:48). Redwood had all of these attributes and was locally available, leading it to be the primary fuel source used in Santa Cruz lime operations.

Airflow through the kiln was another variable that impacted lime burning and this was controlled through the double hung (Dutch-style) kiln doors and sheet metal coverings on the top of the pot openings. These kiln elements could be adjusted to control airflow, which effected temperature, which in turn effected the time and degree of burning. To calcine the limestone, the blocks needed to be heated to at least 1650 degrees Fahrenheit, but no more than 2450 degrees Fahrenheit. Thermometers were not used in the burning process, instead workers had to rely on a wide range of senses, skills, and experience to understand the various signs emitted by the limestone and decipher the internal temperature and workings. Frank George noted that workers knew the temperature was in the appropriate range if the rock glowed transparent by night and golden-yellow during the day (Calciano 1971). Similarly, a light gray smoking of the kilns reflected good burning conditions, whereas black smoke meant the fire was not getting enough air, and visible flames or no smoke meant the fire was getting too much air (Perry et al. 2007). Reading these visual cues, the workers could react and intervene, anticipating the range of potential responses and affects – intra-acting and communicating with the lime. Keeping a steady temperature was crucial, so workers tended to the kilns 24-hours a day, usually in teams of two men per shift, reacting to the lime cooking signs, intervening when necessary, and orchestrating the shifting variables to achieve a desired final product (Wheeler 1998).

Completeness of the burn was determined by visual cues, or a rod could be driven into the load, with unobstructed prodding signaling complete calcination (MacDougall 1989; Wheeler 1998). If not cooked enough, a core of limerock would remain, making the resulting product worthless for mortar and plaster. If the limestone was cooked too fast or too long it lost its ability to slake, or react with water, a critical feature in using lime as construction material. When the burn was complete the fuel would be removed and the lime was left in the kiln to cool. Cooling also had to be controlled, as it would affect the lime's ability to slake and its overall quality. Cooling took an additional one and one-half to two days. To begin the unloading process the arch was manually collapsed using a metal hook, bringing the processed lime down into the fire chamber (Perry et al. 2007). With the lime just cool enough to handle, workers would use long rakes and shovels to extract the lime from the kilns and load them into barrels. The processed lime was not ground into a powder but kept and barreled in solid (but brittle) chunks. Upon extraction and before barreling, the processed lime chunks were again inspected. Underburned lime was notoriously difficult to identify and a worker had to develop a feel for the density, as limestone lost a considerable amount of mass through the calcining process. Often, undercooked lime was retained and further processed in a subsequent firing. Overcooked lime had a yellow discoloration and was always discarded (Perry et al. 2007).

Properly processed lime was placed in barrels. Processed lime draws carbon dioxide from the environment, so it was critical to package and seal the lime in barrels as quickly as possible to retain a high quality (Perry et al. 2007). Lumbermen who acquired timber fuel and barrel materials were employed by lime manufactures, sometimes as contractors (Perry et al. 2007). Barrels were made locally with wood from the native tan oak and redwood trees. Barrel hoops were typically made locally from hazel (Cardiff 1965; Wheeler 1998). Almost all lime manufacturers employed their own coopers and made their own barrels. Packed barrels were transported to the coast by horse or oxen train or skiffs down creeks where they were loaded on ships and transported to market in San Francisco (Perry et al. 2007). Consumers were encouraged to return barrels, with lime companies paying up to thirty cents for used barrels, which were reused or recycled (Perry et al 2007;

Cultivating Community

Considerations of fluid and unbounded group affiliation and identification that emerge through activity have been conceptualized by anthropologists and sociologists as communities of practice. The notion of a community of practice captures the social weight of doing and being, the macroscale implications of material-discursive practices, and the sedimentation of practices as *habitus*, while allowing that communities are never static, but constantly emerging through intra-action (Dietler and Herbich 1998; Dobres and Hoffman 1994; Hegmon 1998; Ingold 2001; Knapp 2003; Lave 1991; Lechtman 1977; Minar and Crown 2001; Sassaman and Rudolphi 2001; Wallaert 2013). Critically, in examinations of communities of practice, the connection between practice, identity, and community is on activity – the doing and the relationships involved – not the final product (Lave 2012).

While historical records suggest some laborers may have entered the Santa Cruz lime industry with some prior knowledge and experience, and many came from areas with established lime industries and traditions, sources also suggest many manual laborers came to the industry with little tangible experience (Perry et al. 2007). Developing a feel for the craft of making lime would have required on-the-job apprentice-like training where laborers learned by observing and doing, gradually taking over tasks as they learned them in partnership with more skilled individuals. At the Samuel Adams Lime Kilns we know that company position and labor tasks were filled by different ethnic groups during different periods of occupation, with some laborers moving into higher positions as newer immigrants filled lower manual labor positions. This would have necessitated ethnic, class, and occupational intra-action in the transference of labor and craft skill. In day-to-day activities, as various tasks overlapped and entangled in the lime taskscape, and the inherently interwoven nature of tasks necessitated communication and collaboration between labor groups, further intra-actions would have occurred. Lave (1991:67) defines this intersection of doing, knowledge sharing, and community as "situated learning," a kind of situated social practice which "emphasizes the relational interdependency of agent and world, activity, meaning, cognition, learning, and knowing" and the "inherently socially negotiated quality of meaning and the interested, concerned character of the thought and action of persons engaged in activity" as it is situated in the "historical development of ongoing activity." Lave (1991:68) argues that as one moves from the periphery to the center of a community of practice, "knowledgeable skill is encompassed in the process of assuming an identity as a practitioner, of becoming a full participant, an old timer." Thus, community of practice affiliation and membership, as fluid as that may be, has a dialectical relationship with individual identity construction – there is "identity in participation" (Lave 1991:72).

An examination of the processes involved in creating high quality quicklime has highlighted the necessary skill and experience that would have been mobilized by a diverse workforce across multiple tasks, occupations, locations, and temporalities. This framing challenges the modern understanding of technology as existing in opposition to art (Ingold 2001). Instead, it suggests we consider technology as craft, and craftsmanship as skill, as the etymological origin for both art and technology suggest we do (Greek *tekhne* and Latin *artem/ars*, both meaning skill in a craft) (Ingold 2001:17). This shift to viewing industrial lime production as craft means laborers were not unskilled workers merely implementing a static plan, but were actively engaged in implementation, situating practices within a dynamic environment of human and non-human actors and intra-actions (Dakouri-Hild 2013; Kenoyer et al. 1991; Ingold 2001; Lave 2012; Lemonnier 1992; Miller 2007; Ryzewski 2013; Sassaman and Rudolphi 2001).

As my description of the lime making process aims to illustrate, skill was necessary in all of the intra-related tasks, from quarrying, to arching, to burning – highlighting that labor was often associated in practice, but it was not necessarily defined as unskilled versus skilled work. This is an understanding of labor that is distinct from economic value, which is the monetization of labor based on economic benefit, which could be manipulated in the capitalist system and impacted by factors such as labor supply and competition to result in highly skilled craftsmen being framed, treated, valued, and paid as "unskilled" manual laborers. More specifically, in industrial capitalism, labor compensation shifted from one based on use value to one based on exchange value. As Mrozowski (2006) notes, drawing on Marx, this shift gave a tremendous amount of power to the capitalists in "setting the parameters of this exchange," allowing them to set wages well below the value that was added through the work of a manual labor-force. Wages, therefore, are not always accurate reflections of skill or value added, but a product of complex entanglements of power, capital, economy, politics, labor, race, age, and gender (among other things).

Hélèna Wallaert (2013) explicitly explores the relationship between apprenticeship and the creation and negotiation of social boundaries through indigenous pottery making in both New Mexico and Cameroon. She argues that apprenticeships create a "specific social habitus," whereby one learns to be a particular type of person in a particular community of practice (Walleart 2013:38). In this way, traditions and technological styles can be understood as sedimented practices, but nothing is fixed, and traditions and group boundaries shift through their very enactment. Sassaman and Rudolphi (2001) are also concerned with pottery makers in the American Southwest, but they focus on the overlapping and multiple communities of practice at work in the production a particular object (a decorated ceramic pot). They identify at least three communities of practice entangled in ceramic production having to do with manufacture, decoration, and use. Critically, they note, these communities may have been embodied, mobilized, performed, and participated in by a single individual – overlapping, intra-acting, and framing each other in dynamic ways.

Practices at the Samuel Adams kilns became engrained as tasks, roles, and occupations, and entangled in notions of ethnicity and class, but through the lens of archaeological and historical analysis we see that these very boundaries shifted as workers went about living and working their daily lives (Crown 2014). Samuel Adams Lime Kiln laborers were continuously making community along shared tasks (practices/occupations), but also across the site more broadly as their lives and work became entangled in the collaborative effort of making lime, and possibly even regionally as lime workers – an aspect of their identity that may have framed or intra-sected with other communities of practice, including ethnicity, religion, language, and class. The fluidity of work (both spatially, temporally, and demographically) surrounding lime would have led to a constant reconfiguring of boundaries that worked to (re)define particular communities of practice traditionally identified as ethnicity, occupation, and class. These overlapping and entangled communities, working at multiple scales, would have emerged through lively daily intra-actions and constant negotiation, continuously transforming, re-drawing boundaries, and cultivating community amongst the diverse population of early industrial Santa Cruz lime laborers.

There are also the physical, embodied, and experiential ways in which intra-actions with lime worked to re-draw boundaries and create communities of lime dwellers (Joyce 2004; Joyce and Meskell 2003; Yates 1993). In examining these intra-actions, the boundaries between material bodies become blurry – they are emergent and transformative. The entanglements of labor are not just about humans acting on lime. The lime also acted agentively on the laborers, they engaged in intra-actions, it was a co-constitution of material bodies. Workers' bodies, seemingly diverse in ethnicity, class, and occupation, would have been re-shaped in a community of labor practice through shared bodily intra-actions with lime and quicklime. Not only would worker's hands become callused and muscles toned through the hard work of manual labor, the bodily markers of the broader working class, but lime workers would have shared particular bodily materialities – their skin covered in a layer of white powder, hair matted with sweat and dust, lungs burning from the noxious air, skin and eyes tingling with a caustic burn (Hyde *in press*).

As workers shared work spaces, residences, and meals, they would have also shared coughs, burns, and aches – the bodily materiality of quicklime intra-relations. The laborers' bodies were transformed through lime work, emerging through repeated intra-actions with mineral bodies in their variously shifting forms, creating bodily materialities in ways that were shared and connecting across occupational, ethnic, and class lines. These shared bodily experiences and emergent materializations would have worked to create a community of lime workers, in physical bodies, conditions, and experiences. It is not that these differences masked other aspects of differentiation, such as ethnicity or class, but they would have become entangled in the complex formation of community building within this pluralistic site. Working with quicklime would have been an ongoing process of "diffraction," a mattering of "differential entanglements," a differentiation of difference based on the material realties of industrial lime work (Barad 2007:381). These shared material practices, experiences, and realities may have become the matter that mattered – the distinguishing aspects (the connecting features of differentiation) about which a shared lime worker identity and a sense of community emerged within a diverse workforce.

CHAPTER 8. THE POWER OF PLURALITY: INTRA-ACTIONS AND EMERGENCE IN THE INDUSTRIAL FRONTIER

This chapter explores the social-material entanglements of pluralistic life at the Samuel Adams Lime Kilns. Conceptualizing artifacts as assemblages of relations, entangled intra-actions, and traces of material-discursive practices, I attempt to investigate the active and dynamic ways in which laborers negotiated boundaries of difference and structures of power to make a life for themselves and forge novel communities within the strictures of industrial life. The goal of this work is not to identify material markers of a particular ethnicity, class, or gender, but to trace the ways in which socially meaningful material bodies emerged – being negotiated, challenged, and reshaped through the encounters of daily life. In doing this, I aim to challenge static and positivist understandings of social categories and identities and push analysis beyond often binary and/or oversimplified models of social relation (*e.g.,* resistance versus compliance, and linear understandings of cultural change). It is hoped that in doing this I present a more fluid, agentive, and contextualized understanding of workers' practices and highlight the ways in which negotiations of difference actually fostered novel connections, relations, identities, and materialities at industrial sites of the American Far West.

A resistance to positivist explanations means that I will rarely present *an* interpretation of *the* singular story of the materials and their social entanglements. Rather, I will present a series of sometimes overlapping, sometimes contradicting narrative possibilities supported empirically by archaeological, archival, and oral historical data. This approach is rooted in an understanding that the meanings of signs and the activity of matter is highly variable and dependent on context and perspective. For example, I will discuss how a button with a rooster image can at once be understood to be an emblem of working-class identity, a marker of racist labor allegiances, a tie to national heritage, or an astrological sign. All of these meanings are real and "true," and existed contemporaneously at the Samuel Adams Lime Kilns. Materials are always ambiguous, and a single reading is therefore impossible and incomplete. But rather than shy away from ambiguity, I attempt to embrace it, showing how the unbounded nature of matter – its "immanent enfolding" and "ongoing articulation" – provided the opportunity for agency, reimagination, and community-making (Dolphijn and van der Tuin 2012:49; Barad 2007:379). In this way, plurality, intra-action, and ambiguity are shown to be powerful, diffracting, and generative. Our task as archaeologists, then, is to use context and relationships to trace the various plausibilites, meanings, and implications of these emergent practices and materials.

Conceptualizing objects as entangled and emergent phenomena necessitates a reconsideration of the structure and presentation of their interrogation. Discussions cannot be situated in clear discrete topics such as ethnicity, class, and gender, because this betrays and masks the ways in which these social-material realities are intra-connected and intra-related. So, how does one explore the entanglement and assemblage of materialities without defaulting to chapters segmented into topics that re-inscribe the very divisions and boundedness that the work is attempting to critique? Strategies toward addressing this have been diverse, but have included the use of narrative (Yamin 2001), thick description (Alberti et al. 2011; Whitmore 2014), lists (Bennett 2004), assemblages (Latour 2005), and engagements with third-wave feminist theories of intersectionality (Flewellen 2018; Franklin 2001; Geller 2009; Wilkie 2003, 2010; Wilkie and Hayes 2006).

While my work in some way draws on all of these approaches, I have also consciously embraced the blurry, ambiguous, and boundless quality of entanglements in the structure of this discussion chapter. While some of the following discussions result in a greater or lesser degree of focus on aspects of ethnicity, class, gender, labor, and/or power, I explicitly attempt to highlight and draw together the intra-active and co-constitutive nature of these phenomena and lived experiences. For this reason, this chapter is purposefully de-organized (but not disorganized). This means the chapter does not follow a traditional archaeological model of structuring the discussions of materials by location (*e.g.*, Locus S, Unit 100), or by material type (*e.g.,* glass, metal, ceramic), or even by social categories (*e.g.,* ethnicity, class, gender). Instead, materials are explored thematically, and I attempt to weave connections to topics like ethnicity, class, gender, labor, and power into broader conceptual discussions, rather than discuss any one topic in isolation in its own chapter or section. In the discussions below I begin with a social phenomenon (*e.g.,* shifting relations, worker agency, people in contact). I then discuss different artifacts and material patterns to illustrate their various entanglements, processes of assembling, multivalent connections, diffractions, meanings, and their active role in the creation and negotiation of these various social-material phenomena.

This approach has the result of feeling like the reader must jump between ideas, trace connections between the pages, and revisit concepts presented earlier in the chapter. In many ways, disorientation is the goal. It should be impossible to identify where the discussion on ethnicity begins or ends, for example, and that is because it doesn't. Conceptions of ethnicity haunt every object/assemblage and every discussion of class, gender, power, labor, identity, and agency, and *vice versa*. This chapter, therefore, is best understood and approached as a series of intra-acting thematic vignettes. In this form, I hope, multiple data driven narratives will emerge that highlight material as active, lively, materially-discursive, and entangled in ways that allow us to trace patterns of diffraction and novel emergences of meaning, matter, practice, and community.

The Socio-Cultural Context of Encounter at the Samuel Adams Kilns

As discussed in detail earlier, the Samuel Adams Lime Kilns (and other nineteenth century industrial sites like it) was a dynamic pluralistic site. At the kiln operation, over about 50 years, there was a drawing together of multiple diasporic communities, and while many of the individual workers were transient, the site was a locus of intimate and sustained socio-cultural encounters. Over the years, a diverse and shifting population of laborers worked long shifts together, ate at a communal mess hall, and shared small domestic spaces. The timing of the various diasporas, coupled with globally shifting constructions of race and ethnicity framed these encounters, positions within the operation, and potential labor and promotional opportunities (both within and outside the lime complex). The Irish, Portuguese/Azorean, and Italian populations in America, which comprised the bulk of the lime workforce, were all subjected to various overlapping racialized national discourses that positioned them as not entirely white, as lazy, and as potentially violent. These ideas often led to exclusion and exploitation in the nineteenth century as the successive "Other" found occupational options limited to the most demanding, most dangerous, and lowest paying positions (Gutman 1977; Roller 2018). Chinese laborers were racialized in their own, different ways, but they were similarly constructed as alien "Others." The nature of traditional Chinese practices, cuisine, and dress intersected with hegemonic notions of labor and masculinity to largely limit Chinese immigrant laborers to a small range of potential occupations, those generally perceived as feminized domestic work (Chen 1999; Wang 2004; Williams 2008). Therefore, while many Chinese immigrants in the West worked in some of the most demanding and dangerous manual labor positions (especially railroad construction), many others found positions in cooking, domestic, and laundry work (Chen 2002, Fong 2013, Daniels 1988; Wang 2004).

Critically, however, as each diasporic group embodied the social position of "recent immigrant," a process that was continuous and varied, they reconfigured the social landscape, threw perceived social boundaries into relief, and necessitated a reconfiguration of individual and community identity. As Didier Fassin (2011:215) highlights, drawing on the work of Michael Kearney (1991), "immigrants embody the articulation of borders and boundaries, even beyond what is generally assumed by the studies of transnationalism. They cross borders to settle in a new society and discover boundaries through the differential treatment to which they are submitted." The transient and dynamic nature of the lime industry workforce would have made moments of encounter and intra-action a foundational and ever-present, if not sometimes unconscious, feature of the social landscape. Rather than looking for material markers of group identity, whether it be ethnicity, class, gender, labor, or otherwise, and rather than focusing on atypical or anomalous practices as being in opposition to tradition, we need to think about the materiality of difference making as strategic and active practices that reshaped boundaries – both creating connections and distinctions between people and groups at particular moments in time (Jordan 2018). In other words, rather than describing difference during these transformative periods, we should be tracing material-discursive practices of differentiation (*i.e.*, diffraction).

Shifting Relations and the Emergence of Industrial Labor Communities

While the history of the Samuel Adams operation is defined by pluralism and workforce diversity, the particularities of social intra-actions and labor relations were framed by company policies and management strategies, which shifted along with changes in ownership. The Samuel Adams operation was defined by two distinct periods of ownership, the Samuel Adams owned period – from 1858 to 1869 – and the Davis and Cowell/Henry Cowell owned period – from 1869 to 1909. These two periods of ownership are marked by differences in labor management, workforce demography, and degree of investment in both capital and worker well-being. These differences had rippling consequences for the lived experiences of all laborers and were important factors that shaped worker relations. This historical particularity, then, presents a potentially fruitful context to explore how broader industry and company changes worked differentially to foster particular material-discursive intra-actions that led to emergent practices, which reconfigured worker relations and community boundaries. Drawing on material culture patterns from both periods and multiple scales, the following section will explore the active negotiation and formation of these novel social connections.

Labor Relations in the Samuel Adams Period: Constructing Boundaries, 1858-1869

During the earliest period of operation, the Samuel Adams Lime Kilns were a designed community (Cowie 2011; Garner 1992; Mosher 2004; Mrozowski et al. 1996). While no company documents or other historical sources exist regarding the operation and community design plan, the archaeological traces of the built environment reflect intent following the principles and ideologies of company town design, corporate paternalism, and worker surveillance, as well as Victorian gentility (Beaudry and Mrozowski 2001; Casella 2001; Garner 1992; Leone 1995; McCarthy 2001; Metheny 2007). For example, the industrial core, the work space of the site, is clustered together in a distinct space separate from the domestic spaces of the site. This organization would have created economic efficiencies between various operational tasks, but it also worked to reproduce Victorian genteel ideologies of the separations between work and home/domestic life (diZerga Wall 1994; Garner 1992; Cowie 2011). This strategic separation of space also served to create a landscape where work spaces could be observed, relatively unimpeded, by the foreman from both his residence (and later his office), creating a position of power and control through observation (Casella 2001; Delle 1998).

The organization of residential/domestic space was similarly designed. The domestic spaces were located separate from the industrial core, organized along the same general elevation in a rough line on the eastern hills of the valley. The foreman and his family lived apart from the manual laborers in a multi-room private residence on the hill directly above the industrial core. During the early years, the foreman lived at the site with his family, and the material assemblage recovered indicates that food preparation, consumption, and other domestic activities all took place at the foreman's residence. The single manual labor force, on the other hand, lived in shared single-room cabins, distinct in space, form, and composition from the foreman's household. The manual laborers also shared a communal mess hall, a central social space and location where they received three company provided meals per day. It is unclear where the domestic laborers lived during the early period, but it is likely that they lived in a room attached to the cookhouse, as was probably the case in later periods.

At a landscape scale, the operation was designed to create and reinforce social divisions between workers based on their occupation and perceived class. During the earlier Samuel-Adams period, material assemblages associated with the foremen families differ markedly from those associated with manual work space. These spatial-material distinctions, especially when contrasted to later periods (discussed below) indicate that activities and performances pursued by these labor groups worked to draw boundaries between the workers, re-inscribing class/occupational based distinctions.

It should be noted that the demographic composition of the manual workforce during the Cowell period was much less diverse than during the later Cowell period. The Samuel Adams-period lime workers were all born on the East Coast of North America, save Alexander McDonald, who was originally from Scotland but had been living in the United States for at least 27 years before being hired as the operation's cooper around 1860. This workforce make-up suggests intra-ethnic differences would have been more muted. While social relations may have been framed by understandings of nationality and or state/regional identities, it appears that class and occupational distinctions were the primary factors of differentiation around which social group boundaries were created and negotiated during the earlier Samuel Adams-owned period.

An important feature of distinction during the earlier period is the presence of a foreman, Asa Hull, whose socio-economic position and material-discursive performances indicate he identified as being a part of the emerging professional/middle-class. Hull was not a career manual laborer or lime worker, he was a businessman and real estate agent, and a business partner of Samuel Adams in the Santa Cruz lime venture. According to the 1860 census, while he was working as kiln foreman, Hull owned other real estate valued at $10,000 and had a personal estate of $500 (the only member of the operation at any point in time with any listed assets).

An advertisement listing Hull's household goods for sale, discussed earlier, provides insights into the material accoutrements of his domestic life while at the kilns. Objects such as a piano, imported carpets, oil paintings, and a personal horse and buggy reflect participation in a genteel life marked by conspicuous consumption and the participation in classed activities that served as markers of difference between himself and the laborers he managed (Cowie 2011; Howe 1976; Leach 1993; Praetzellis and Praetzellis 2001; Wurst and McGuire 1999). These objects were signs that indexed economic success through the appearance of comfort, well-being, material indulgence, and an attainment of "the good life" (Leach 1993:xiii). While we do not have similar historic documentation for the foremen that followed Hull, the 1870 census lists Michael Hickey and his wife and children as living at the site. Corresponding material evidence associated with this period suggests a continuation of similar genteel activities were undertaken by the Hickeys, although they did not have the same economic means as the Hulls.

The materials recovered from the spaces and contexts associated with the foremen and their families during the earlier period illustrate the active construction of social boundaries between themselves and the manual workers through participation in genteel practices. As discussed previously, gentility was the prevailing cultural ideology of the Victorian period, emerging alongside a growing middle-class of professionals that saw their labor and social position as distinct from the working-class. Some of the genteel activities pursued by both the Hulls and Hickeys include concerted child rearing, gendered divisions of labor, conspicuous consumption, and ritual tea consumption.

An investment in childhood, as evidenced in baby bottle fragments and children's toys, reflect a broader genteel understanding of childhood as a distinct stage of life, and these materials would have been central features within an explicit effort to create a comfortable domestic space where the family was safe from the outside world (diZerga Wall 1994; McCarthy 2001; Wilkie 2003). Material evidence for food service and the presence of objects like bluing balls also indicate female labor participation in ways that aligned with contemporary genteel notions of gendered labor divisions, which positioned women as masters of the domestic realm. Evidence for a matching set of molded tea wares from the foreman's household stands in stark contrast to the mix-matched and largely undecorated ceramics used in the company mess hall. Participation in ritual tea ceremonies by the foreman and his family in their personal private space would have been a critical aspect of the performance and embodiment of gentility (Bushman 1993). Ritualized tea ceremonies were entangled in the broader material culture of middle-class gentility and domesticity. Served in the parlor of one's home, often to neighbors and other members of the genteel community, the form and decoration of tea wares along with the types of foods served were seen as reflections of one's social position (diZerga Wall 1991). As such, they were actively and self-consciously used and manipulated as tactics of class mobility in these highly ritualized and socially competitive social-material engagements (diZerga Wall 1991, 2000; Wood 2004).

Unfortunately, materials and contexts that can be isolated to the manual laborers of the earlier period are limited, constraining our ability to undertake period-specific comparative analysis between the manual and managerial laborers. The sole Samuel Adams-period workers' cabin (Locus F) was also used during the subsequent Cowell-period, and period-distinct strata and contexts were not identified. Generally, however, the materials recovered in earlier contexts associated with manual labor spaces provide little evidence of aesthetic contributions to the domestic space or the conspicuous consumption of material goods. Items recovered are largely limited to workwear clothing items, patent medicine bottles, and alcohol bottles.

Manual laborers did not live with their families on-site and shared their domestic space between multiple men. These manual workers, therefore, unlike the foreman, were unable to participate in genteel family relations rooted in gendered divisions of domestic labor. Mirroring patterns seen in more urban working-class contexts with saloons, the mess hall became an extension of the domestic space, serving as a type of shared parlor where one could eat, drink, socialize, and participate in leisure activities (Dixon 2005, 2006; Erdoes 1979; Kingsdale 1973; Powers 2006; Moore 1897; Spude 2005). This collapsing of public and private space, along with limited participation in class-based consumption practices, was a markedly working-class experience.

Taken together, the material and historic sources from the earlier Samuel Adams-owned period reflects company efforts – through townsite design, labor organization, and material access – to reinforce company power hierarchies and create/perpetuate occupational and class-based divisions between managerial and manual laborers. Differences in daily practices, living and working spaces, and living arrangements created a context that provided opportunities for managerial labor to participate in a performance of gentility. The physical separation of managerial labor and the participation in genteel activities (by both male and female members of the managerial family) reflect an awareness of emerging class-based values, and active efforts to participate in material-discursive practices that further differentiated and distinguished managerial labor from the manual workforce, even in the context of a semi-rural industrial work site (Blumin 1989).

Embodying these different spaces, practices, and materials, the foreman and his family would have actively generated and reinforced their middle-class position between the company owner and the manual workers (Bledstein 1976; Blumin 1989). Within a broader capitalist ethos, this would have also served to perpetuate a masking ideology of upward mobility that encouraged workers to toil in the exploitative trenches of industrial wage labor under the false promises of escaping a working-class life and joining the middle- (if not upper-) class (Leone 1995, 1999a). The notion of gentility offered hope that one could rise above their station and the social confines of their occupation by adopting particular forms of living, without actually attaining the power and status afforded the capitalist class (Blumin 1989; Bushman 1993; Cowie 2011). Through the presence, practices, and performances of the foreman and his family, divisions and inequalities between managerial and manual labor were distinguished, but in doing so, the hegemonic ideology and false consciousness of upward mobility was also actively enhanced and perpetuated (Agbe-Davis 2018; Jordan 2018). Community diffraction during the earlier Samuel Adams-period, therefore, appears to have occurred along class-lines, perpetuating and defining these distinction through the performance of a genteel lifestyle by managerial laborers and their families.

Labor Relations in The Cowell Period: The Blurring of Boundaries and Community-Making, 1869-1909

The transition of ownership would have been a period of site-level social-material intra-actions, whereby Cowell and his agents began engaging with the existing material landscape. Archaeological findings indicate that, after acquiring the Samuel Adams Lime kilns, Cowell did not demolish the entire existing operation and begin anew. Instead, Cowell added to and manipulated the existing material assemblages. These additions and changes were not distinct or separate from the existing material features, however. For example, the additional kiln pot was built directly onto the existing kilns, the additional shared worker's cabin was located strategically between the existing cabin and the industrial core, the cold storage room was built so that it could be easily accessible from the existing cookhouse, and extensions made to the mess hall were built off the footprint of the existing building. Even at the object-level, artifacts recovered show that Cowell added to the existing tableware and glassware assemblages, rather than dumping the entirety of existing material and installing all new vessels. From a labor perspective, it appears that Cowell installed a new foreman, but it is likely that the manual labor force continued to work at the operation through the transition of ownership.

These examples are traces of site-level intra-actions and highlight the multi-scalar nature of emergence. The social-material configurations associated with the Cowell-period of ownership are not new in the sense that they did not exist before Cowell's ownership. In fact, Cowell employed a sort of salvage ownership strategy whereby he incorporated, supplemented, adjusted, and contributed to the existing materiality of the lime operation. In these ways, the Cowell-owned operation emerged in time through strategic material-discursive intra-actions with the previous Samuel Adams operation. These social-material encounters, then, span ownership periods and discrete buildings, deposits, and artifacts. The site itself, as various entangled material assemblages, is the sedimented traces of continued reconfigurations of matter as new ownership, labor practices, workers, and materials engaged in social-material relations during the latter part of the nineteenth century and early twentieth centuries.

In the years following the transition of ownership to Cowell, intra-actions and transformations resulted in shifts to the workforce demography, changes in living arrangements, and alterations in the degree of investment in capital and worker well-being. Specifically, after Cowell took ownership there was a marked increase in the use of immigrant labor, first from Ireland and later from Portugal/Azores and Italy, and the employment of Chinese immigrants solely as cooks. Associated with this change, was a shift to hiring or promoting foremen that were experienced lime workers who had risen in the occupational ranks at one of Cowell's kilns or another contemporary lime operation. Along with this shift in foreman hiring practices, it appears that the foreman's family did not live on-site with him beginning in at least 1880. In addition, the transition to Cowell ownership was marked by an initial investment in the operation's capital, and then a subsequent lack of investment in worker-related infrastructure for the remaining duration of the kiln complex's operation.

Material patterns suggest that upon gaining ownership of the Samuel Adams Lime Kilns, Cowell increased production through the construction of an additional kiln pot and a second shared workers' cabin to house the necessarily expanded workforce. Even this, however, appears to have been done expediently, with immediate profits as the goal over longevity, aesthetics, worker well-being, or even worker safety. This is shown in the construction techniques of the later kiln addition, which has less-uniform blocks, more chinking, incorporated more recycled kiln waste into the structure, and was generally of cruder construction than the other kiln pots. The low diversity of nails (only two sizes represented) used in the Cowell period-added workers cabin suggests it was a simple structure, with few embellishments or additions that would have made life more enjoyable for the workers. Low proportions of wire to machine cut nails across the site, combined with a mean ceramic date of 1884 from the mess hall, suggests that additions, maintenance, and investments in spaces and objects associated with the manual laborers were low. It appears Cowell was willing to invest in features of the site that would increase economies of scale and profitability, but not in features that would improve the quality of life for the lime workers. This is perhaps epitomized best in the fact that almost immediately after the operation was seen as being inefficient and not as profitable as the company's other kilns, the Samuel Adams complex was closed and material and labor resources were spread across Cowell's other operations (Perry et al. 2007).

In a series of 1904 newspaper articles surrounding union strikes, Cowell frames his resistance to investment in worker pay, well-being, and other infrastructure as being due to economic factors, where meeting these demands would threaten the profitability and success of the business. In the same years as the strikes, however, production of quicklime peaked in Santa Cruz County (Perry et al. 2007). Additionally, with the acquisition of the I.X.L. Company near the turn of the twentieth century, Cowell had a near monopoly on the Santa Cruz lime industry, with only the Holmes Lime and Cement Company as a major regional competitor. So, in reality, during the same period that Cowell owned a significant majority of lime operations in Santa Cruz and production was peaking, he was refusing to increase worker wages and improve living conditions at his work sites. Possibly aware that the lime industry was reaching its zenith and that resource limitations would soon result in decreased profits, Cowell likely aimed to capitalize on boom periods to the greatest extent possible by minimizing capital investments in anything that didn't increase profitability.

This is a markedly different approach to labor control than was employed at many other company towns during this same period. Throughout Europe and the United States, the late-nineteenth century saw the rise of the Reform Movement, which led to a belief that providing good working and living environments for employees would make them more efficient, productive, and loyal employees (Mosher 2004). Cowell's strategy of minimal investment, then, was likely at least in part a product of the wider labor market. During this period, Santa Cruz County had limited wage labor options, so there were few alternative lines of employment for recent immigrant laborers. Additionally, Cowell employed a number of strategies (such as paying workers once per year) that made it difficult for workers to quit once they were employed at his lime kiln. In this context, it appears Cowell had little incentive – economic or otherwise – to invest in his workers' well-being.

These changes implemented by Cowell, and the general lack of investment in worker well-being and infra-structure were not purely economic issues, they also worked to reconfigure social relations throughout the lime operation. Interestingly, though Cowell and his company largely embodied an industrial capitalist ethos and worked at a macro-scale level to perpetuate hegemonic corporate power structures, materials recovered archaeologically suggest, in fact, that these changes worked to blur the boundary between managerial and manual laborer. Many of Cowell's social-material strategies, then, actually created spaces and opportunities for the reconfiguration of labor practices and the emergence of novel labor communities that shifted power relations between the company and its employees.

In Victorian America, working-class behaviors and ideologies, which were as much gendered and racialized as they were classed, were constructed largely in opposition to hegemonic notions of gentility. The material recovered from manual labor domestic spaces (mess hall and cabins; Loci B, F, G) – most of which are associated with the Cowell-owned period of occupation – are marked by a general lack of evidence for participation in overtly genteel activities. For example, there is very limited evidence for the consumption of tea in a genteel ritual manner, with only a minimum of three teacups recovered from the mess hall and cabins (1.6% of total ceramic MNV count from these spaces). Similarly, there is a paucity of remains associated with health and hygiene at the manual worker spaces when compared to that of the foreman (Figure 8.1). As a notable example, a minimum of five hair or beard combs were recovered from managerial spaces while none were recovered from manual laborer spaces. Furthermore, there is little evidence for participation in conspicuous consumption practices by manual workers at the Samuel Adams site.

This relative lack of genteel-related material is accentuated by the relative preponderance of materials typically associated with an emerging nineteenth century American working-class ethos and identity. This is evidenced most clearly in the manual laborers' living situations and alcohol consumption patterns. As discussed above, the manual laborers lived in shared accommodations, probably five to six men per cabin at a time, with the possibility that work shifts rotated into the space throughout different periods of the day (Paramoure 2012). As a result, domestic activities were distributed, and primary food consumption and leisure activities were pursued primarily within the shared space of the mess hall.

Once such important social/leisure activity undertaken by the manual workers appears to have been heavy alcohol consumption, a practice at odds with Victorian gentility. This prominent drinking culture is evidenced in the recovery of substantial glass remains associated with alcohol consumption – wine, liquor, and beer bottles comprising a minimum of 49.6% of the glass assemblage associated with manual workers' spaces. It is also likely that an unquantifiable amount of beer and wine was consumed in mugs from communal barrels. As discussed in Chapter 6, a mix of wine and liquor bottles in both large and personal flask sizes indicates that alcohol was consumed by manual laborers as both a shared communal activity and individually.

The relationship between alcohol consumption (or lack of) and gentility is often couched in the language of class, but it was as much a gendered and racialized performative consumption practice in nineteenth century America (Dietler 2006; Dietler and Hayden 2001; Smith 2008; Spude 2005; Wilson 2005). An emerging working-class masculinity – seen as a threat to polite society – was projected onto immigrant wage-workers, reinforcing stereotypes regarding their hard drinking and rambunctious temperament. The rise of the temperance movement in the late-nineteenth and early-twentieth centuries highlights these connections in that it was, in fact, as much about attacking working-class and immigrant groups as it was about riding the world of the perceived social ills of alcohol (Herd 1983; Powers 2006; Putnam 2004; Reckner and Brighton 1999; Taillon 2002). The ubiquity of alcohol remains in domestic and leisure spaces associated with manual laborers, and no evidence to suggest that these activities were being hidden, suggests that as a group, manual laborers did not kowtow to the rising genteel pressures of temperance and instead embodied a working-class masculinity where the quantity of alcohol consumed was seen as a measure and performance of one's manliness (Blocker 2006; Kingsdale 1973; Murdock 2001; Reckner and Brighton 1999; Walker 2011).

I have argued that the material culture recovered from the mess hall mirrors that recovered from western saloons, which were important working-class institutions and spaces of homo-social encounter and negotiation (Blocker 2006; Dixon 2005; Kingsdale 1973; Moore 1897; Powers 2006; Spude 2005). Saloons in the American West were male institutions where individuals learned to be a particular type of man, as the activities and relations fostered in the saloon worked to define working-class masculinity in the nineteenth and early-twentieth centuries. Serving as the parlor or social space for manual laborers at the lime kiln, the mess hall, like a working-class saloon, would have fostered homo-sociality and pluralistic encounters. In the sharing of food and alcohol "relations of reciprocity" would have been created, fostering the building of connections and the creation of a shared work-class identity (Blocker 2006; Dixon 2005; Holt 2006; Kingsdale 1973; Moore 1897; Powers 2006; Wood 2004:231).

Also present in manual laborer space is material evidence for pipe smoking. Pipe smoking, especially in public, was seen as a very un-genteel thing to do, and pipe smoking actually emerged as a signifier and "emblem of working-class identity" – standing in stark contrast to the Victorian notions of rectitude (Beaudry and Mrozowski 2001; Pena and Denmon 2000). Furthermore, recovered clothing items from work spaces reflect the presence of common workwear, with multiple Prosser work shirt buttons, cast iron work coat buttons, Levi's denim work jeans rivets, and overall clips (recovered by FWVAS) serving as signs of manual work and working-class identity. Lastly, a marble recovered from a FWVAS shovel test unit in the space between the cabins and mess hall also provide evidence for gaming and gambling, another practice associated with nineteenth century working-class culture.

Overall, the suite of material culture recovered from spaces associated with manual labor during the Cowell-owned period suggest workers were not making concerted efforts to engage in material-discursive practices of gentility. Instead, materials illustrate that manual workers pursued activities and relations that were constructed at the time as being emblematic of working-class labor. These materials, however, were not simply material markers of a static class position, but instead are the traces of the manual laborers' active participation in material-discursive practices that worked to create a community of practice at the Samuel Adams operation – a community whose shared ways of doing, being, and looking extended beyond the boundaries of the kiln site, entangling them with emergent conceptions of the wider working-class.

The strategic negotiation of gendered and classed material-discursive practices is even more evident when we examine the material culture associated with the Cowell-period foremen. In some ways, the later foremen appear to incorporate aspects of genteel life. For example, the foreman lived and worked in a separate and private office space, demarcated by a permanent fence feature that limit access. When it comes to traces of materials from the foremen's daily lives, there is evidence that the foreman consumed a greater variety of foods than manual workers, including more expensive and prestigious types like wild game and canned meat pastes that would have been easily recognizable within the genteel community. Furthermore, a relatively large number of hair and beard combs (n=5) along with medicine bottles, transfer-print wash basin fragments, and pieces from a mirror in the foreman's spaces reflect emerging genteel notions of hygiene and the importance of one's physical appearance in the performance of respectability.

This genteel image was further promoted and embodied through personal adornment items like bone cuff/collar studs that would have signaled that the wearer was of a managerial occupation, tasked with organizing labor and keeping the books rather than hard physical labor where such an accoutrement would surely be lost. The "white-collar job" moniker that persist today reflects this entanglement of material culture, labor, and class as "the stiff-bottom shirt with a detached starched collar indicated that the wearer was a white-collar gentleman who labored mentally rather than physically" (Wang 2004:70). Perhaps most emblematic of his social position, however, are the material remains of a clock recovered at the foreman's office. Few artifacts better embody the ideologies of Victorian gentility and the ethos of industrial capitalism in which they emerged – the clock is a materialization of order, science, mechanization, segmentation, discipline, and timeliness, and it worked to cement those features as foundations of modern industrial life (Cowie 2011; Landes 2000; Leone 1999b; Mrozowski 2006).

That the clock was a symbol of managerial industrial labor is exemplified in an 1874 *Santa Cruz Sentinel* newspaper article that gave readers an idea of what a typical day of work was like at the lime kilns. Though the specific kiln being observed was a newly constructed continuous style operation at the Thomas Bull kilns near Felton, the descriptions nonetheless provide insight into the importance of time keeping and the association between time keeping instruments and managerial labor. For example, the author notes that "everything moves like clock-work" with the various tasks of lime burning articulating into a seamless production process. The author of the newspaper goes on to note, "for and behalf of Messrs. Holmes & Bull, Col. H.G. Shaw, presented Mr. Wm. Russel [sic], *their efficient foreman with an elegant gold watch and chain* (emphasis added). The presentation was made in the presence of the company and supplemented with a few appropriate remarks. It was handed to Mr. Russell as a testimonial of the esteem in which he was held by his employers, and as a memorial to the successful completion of the Monitor Kiln under the intelligent direction of the recipient" (*Santa Cruz Sentinel* 1874). The archaeological recovery of a decorated watch fab and clock parts, then, are not simply functional industrial accoutrements, but signs that index the power and labor of the company and its managerial agents, materials that both reflected and perpetuated social and cultural capital within an industrial system of production.

Critically, however, materials recovered from the managerial work spaces associated with the Cowell-owned period do not indicate that the foreman wholly embraced a genteel life or that he always participated in practices that clearly distinguished himself from the manual workers. Multiple lines of evidence reflecting the foreman's activities indicate that he actively employed material-discursive practices that were strategically ambiguous – blurring the social-material boundary between the genteel middle-class and the working-class in ways that afforded him the necessary social flexibility his labor position required. This is evidenced in alcohol consumption practices, facial hair and grooming practices, and clothing/bodily adornment practices.

The fact that the foremen during the Cowell-owned period came from a working-class background and had experience as a manual laborer in the lime industry is critical to understanding differences in managerial and manual labor relations between the Samuel Adams and Cowell periods. The elevation of a manual worker within the company hierarchy to the position of foreman would have shifted that worker's subject position and would have reframed their subsequent experiences and relations with manual laborers in critically different ways than those of earlier foreman who entered their management position from an already established middle-class/managerial background. Foremen during the later Cowell period were insulated from the capitalist class in ways that Asa Hull was not. While they may have had direct contact with Cowell and members of the company's upper management, structural divides would ensure that these later foremen could never attain the same position. The working-class background and wage labor position of Cowell-period foremen, even as managers, ensured that they would never be seen, or likely identify, as a member of the middle- or capitalist-class.

Their movement from a solidly working-class position as lime laborer to a management position as site foreman would have place Cowell-period foremen in a liminal position at the social, occupational, and spatial boundary between the working- and capitalist-class, at a moment when the very notion of a middle-class was just emerging (Blumin 1989). It appears, however, that even upon promotion to a managerial position, these foremen did not wholeheartedly embrace the material-discursive practices of emergent middle-class Victorian gentility (the markers of upward mobility). Instead, the material record shows that the foremen during this later period served as strategic arbiters, blurring the boundary between management and manual labor, participating and performing in emergent practices that were neither consistent with working- nor middle-class practices and ideologies. These novel practices emerged though historical intra-actions with both the manual laborers and company owners/other managers, working to shape those very categories in their becoming.

The foremen engaged with assemblages of material culture in ways that the material itself actively worked to both create connections and blur occupational boundaries, allowing them to navigate their liminal position within the company structure. For example, while there is evidence that the foreman drank similar types of alcohol as the manual laborers, the presence of decorated glass cups and stemware demonstrates he consumed that alcohol in controlled and refined ways that were often tied to an elevated class status. In the same contexts, however, shot glass fragments were recovered. Shot glasses are objects with strong connections to working-class saloons and are associated with perceived working-class alcohol consumption patterns that revolved around drunkenness and perpetuated stereotypes of a lack of control and crudeness, which was framed as being in opposition to gentility. This material patterning recovered from the foreman spaces, then, illustrates that the foreman participated in multiple different alcohol consumption patterns, and was able to perform both working-class and gentile alcohol consumption patterns depending on the type of alcohol, reason for consumption, and company with which he was consuming it.

As discussed above, a relatively large number of comb teeth (n=5), probably from a beard comb, were recovered in spaces associated with the foreman, while none were recovered from manual work spaces. Throughout history, the length, shape, and "tidiness" of one's facial hair served as a very public and very malleable aspect of self-presentation and performance that could signal one's occupation, religion, and social standing (among other things) (Peterkin 2001). Due to the nature of facial hair as being associated with the male sex and one of the public markers of puberty and the social shift from adolescence to adult, the meaning of facial hair as it pertains to things like occupation and social standing has almost always also been rooted in ideologies of masculinity. In Victorian America, facial hair was popular among a wide range of social groups (Peterkin 2001).

In one of the few photos of workers at the Samuel Adams kilns, an 1890s image shows 21 out of 26 workers having some kind of facial hair, while four are completely clean shaven, and one is unknown as has his lower face is blocked (Figure 8.2). Interestingly, of the 21 individuals with facial hair, 17 appear to wear a moustache while only four have any sort of beard or goatee. While no names are associated with the photo and it is thus impossible to identify exactly which individual is the foreman, there is one figure that sticks out as the probable individual. There is a tall man, of pale complexion, standing slightly above all the other men in the rough center of the group. He is one of the few individuals not wearing a hat. He is also one of the only four individuals with a full beard (or large goatee) rather than a moustache. This patterning, coupled with the recovery of beard combs only in the foreman's spaces, highlights the entanglement of class/occupational standing, ethnicity, masculinity, and facial hair. While most men donned facial hair, as was popular at the time, it appears the largely Portuguese/Azorean manual labor workforce preferred smaller moustaches. This may have been purely stylistic, or it may have been functional, as longer and thicker facial hair may have been dangerous or uncomfortable in manual lime kiln work. Likewise, for the foreman, the longer facial hair may have indexed his removal from the hot and dangerous nature of manual lime work.

The foreman's beard was ambiguous. Like most of the manual workers he had facial hair, but it was notably distinct, stylistically different than the moustaches popular among the other laborers. The long but kept beard (as evidenced by the combs), therefore, could have been used to both create connections with, and distinguish himself from, the manual workers in ways that would have been clear but mutable in daily face-to-face interaction. So, while facial hair was linked to masculinity, it appears the type of facial hair you wore was one way in which you indexed just what type of man you were at the lime kilns. The context of encounter and particular configurations of these bodily-materials would have worked to create a particular emergence of meaning through discursive practices, in this case one of labor unity and collectivity or one of power hierarchy and authority.

In nineteenth century industrial sites, tools, clothing, personal items, and objects of adornment, would have also worked with, beyond, or against the body in complex ways to construct the very categories they indexed, continuously creating meaning through active embodiment (Joyce 2004). A number of clothing items were recovered from across the site. Materials recovered from the shared manual workers' cabin showed a high degree of similarity, with the assemblage being dominated (not surprisingly by workwear elements. These items included Levi's jeans rivets and buttons from other common workwear companies like Boss of the Road and Can't Bust 'Em (discussed above). Also recovered were fragments from leather boots, Prosser work shirt buttons, and iron workwear jackets. This similarity in clothing materials found at the manual worker's spaces is likely a product of function as the nature of lime work necessitated sturdy and protective clothing. This shared functional need is important, however, because in the formation of a particular community of practice (of lime labor) the workers, regardless of differences such as ethnicity, language, or specific occupation, appear to have taken on similar material trappings of bodily adornment. New materialist orientations necessitate that we consider these materials not as passive markers but as active in their own right. These buttons, clothes, and other highly visible features circulated as components of bodily assemblages, and as such, they would have become entangled in the negotiation of boundary making and community making. In their similarity, I think, they would have worked to build connections and relations across these traditional boundaries of difference – reconfiguring differences that matter – working to build a community of lime laborers.

Like the "similar but different" facial hair discussed above, the assemblage of clothing material associated with foreman spaces during the Cowell-period indicates that clothing and adornment items were utilized strategically to both construct and negotiate his liminal position. In many ways, the clothing materials recovered were similar to those found in the spaces associated with manual laborers, there were Levi's rivets, Prosser work shirt buttons, and iron jacket buttons. Critically, however, the clothing material assemblage also different from the manual laborers' assemblage in small but important ways. Recovered from the foreman's office were things like bone collar/cuff studs which would have taken the place of fixed Prosser buttons on work shirts, and cut shell, bone, and even gold-plated jacket buttons which would have stood out in comparison to the typical cast iron workwear jacket button (Figure 8.3). The foreman also appears to have smoked tobacco pipes at his office (n=5), where the pipe, an emblem of working-class masculinity in the nineteenth-century, would have been highly visible in face-to-face intra-actions with other workers (Beaudry and Mrozowski 2001). Again though, the tobacco pipe fragments associated with Cowell-period foremen were not identical to those smoked by the manual laborers. While all the tobacco pipe fragments recovered from manual worker's spaces were undecorated white ball clay pipe fragments, the pipe elements found at the foreman's office were intricately designed or notably distinct (Figure 5.14).

These materials had the capacity to signal that the foreman was a laborer, but not just any manual laborer. These objects would have been strategically ambiguous – they would have been both familiar and different when viewed by the manual workers in daily encounters with the foreman. These bodily materials are evidence of strategic practices of boundary-making that purposefully created ambiguities and allowed the foreman situational flexibility. While the foreman may have been a manual laborer in the past, his elevated company position came with new responsibilities, new living arrangements, greater income, new power, and new relations to the men he previously worked alongside. These familiar, yet different, materials both reflected and reproduced the intermediate and liminal position of the foreman in Cowell's lime operations. Depending on the particularity of the social situation the same materials could have worked to build cohesion and connection to the manual workers in their similarities, and in other situations they could embody the foreman's authority, power, and status in their distinctions (Flewellen 2018). In this way, the materials provided the capacity to slip into various communities or subject positions when it would have been most advantageous – highlighting the fluid, emergent, and situational nature of community in pluralistic sites.

This "one foot in both worlds" life of the Cowell-period foreman may not have been something in which he was subjected to as much as it was a position he actively and strategically created and maintained. Being able to present himself as a member of the community of manual laborers would have allowed him to use and create social capital and goodwill to have workers perform in particular ways or to ease potential labor tensions, both of which would have had positive economic benefits for the company. But the foreman's ability to also embody the authoritative position of foreman through these same ambiguous bodily markers would have allow him the potential to mobilize power and authority in discrete relations when needed. These ambiguous markers could also have been reconfigured in relations between the foreman and his company superiors, from their view serving as markers of distinction (rather than markers of unification between different work groups) and serving as evidence that the manager was appropriately embodying his position as an agent of the company. Depending on the entanglements of a particular social situation, then, the same markers could work to do and mean very different things.

It is also possible that the use of material signs by the foreman was not as much an economic strategy as a survival tactic. As discussed above, the period of Cowell's ownership was marked by a decrease in investment in worker well-being and a corresponding growth in working-class consciousness, unionization, and collective action. Cowell and his business partners did not live on-site at the Samuel Adams kilns, and thus, they were fairly insulated from direct encounters with the increasingly disgruntled manual laborers. Instead, the site foreman served as their intermediary. In many ways, the foreman was on the front line of labor disputes, as the on-site company representative and arm of the capitalist owner's will. If labor tensions turned violent or resulted in strikes, the foreman was going to feel the brunt of that antagonism. Given the foremen's personal history as part of the wider manual labor community, however, it is likely that they sympathized with the labor complaints against Cowell and the collective call for increased wage, fair labor practices, and better working conditions. For all of these reasons, the foremen would have been wise to take measures to not fully distance themselves from the manual laborers they were tasked with overseeing.

These material examples, I believe, illustrate that the ambiguity and fluidity of material markers in pluralistic contexts are what make them powerful – they are strategically malleable by all actants involved. There is no monopoly over meaning, rather there is contestation and negotiation whereby meanings and markers become sedimented, but are never rigidly defined. Bone collar studs and full beards cannot, therefore, be seen simply as static markers of corporate power and class. These materials were part of a larger suite of material discursive practices that actively and routinely created, manipulated, and changed group boundaries along occupational, class, gender, and ethno-racial lines. Furthermore, these reconfigurations could be employed agentively by diverse actants towards equally diverse ends, ensuring the meaning of materials remained ambiguous, mutable, and thus powerful.

The totality of the material assemblage discussed above suggests the foreman used material-discursive practices to create opportunities to side with both the manual laborers and the company owners depending on his own strategic needs and the possible threats he was facing. The materiality of managerial labor at the Samuel Adams kilns, then, was emergent in intra-action – it was a novel, ambiguous assemblage born of the social, historical, and genealogical particularities of a liminal labor position within a hegemonic corporate power structure. The plurality of meanings afforded by the foreman assemblage would have allowed him to pass as being a part of both the manual labor and managerial labor community depending on the particularities of the intra-action and who was doing the viewing. The material accoutrements of managerial labor were a strategic assemblage that allowed the foreman to actively negotiate the "in-betweenness" of his liminal position in ways that may have benefited himself as an individual, the workers he was responsible for, and/or the company on whose behalf he was working. The foreman, therefore, was neither fully a part of the managerial middle-class (*i.e.*, genteel) community, nor was he fully a part of the working-class community (as if either of those categories could be clearly defined and bounded). Instead, the foreman blurred the boundary between these two nebulous worlds of hierarchical status, participating in an emergent assemblage of material-discursive practices that challenged the fixity and boundedness of class categories and distinctions.

This practice of incorporating genteel material markers has been previously referred to as a "vernacular gentility" practiced by "middling people" (Bushman 1993:xiii). I feel this term is misleading, however, because it suggests it is another form or sub-culture of gentility, and a suite of defined material practices that constitute a clearly defined middle-class. Alternatively, the evidence from the Samuel Adams Lime Kilns suggests that if a managerial middle-class was taking shape in America, it was a diverse process, highly contextual, and emergent. Likewise, the manual laborers, while embracing much of the materiality of a working-class ideology, were strategically manipulating the materialities of class to better their lives and create a sense of community and collectivity that worked to reconfigure power relations at the site. These examples highlight the relational nature of class and the importance of considering local historical and social particularities when considering class and other community relations, adding to McCarthy's (2001:145) admonishment that "terms such as 'working-class' and 'middle-class' are inadequate, if not misleading, when the complex sets of behaviors and values that comprise the fabric of everyday experiences in the past are considered."

Working Within the Industrial Landscape: Agency and Making Residence

Participation in a general working-class ethos and ideology by manual laborers (during both periods of ownership) does not mean, however, that they, both individually and collectively, did not take measures to improve their lives – socially, materially, and aesthetically. While plain whiteware and ironstone vessels dominated the ceramic assemblage at the mess hall, it was accented with decorated vessels that have elaborations such as rim gilding (n=2), hand-painted designs (n=1), and elaborate molding (n=2). These decorated vessels generally appear as singular examples, and outside of some modestly molded gothic wares, the decorated ceramics do not appear to be part of a set. These were likely personal items, then, brought by various workers to the mess hall to make it a more comfortable and aesthetically pleasing environment.

A French porcelain Limoges altar vase with molded swan handles serves as an interesting example of manual laborer material embellishment. Altar vases were commonly used as display pieces, and this vessel would have held flowers or other decorative elements. We must remember that while the mess hall served officially as the communal dining area for the workers, the material recovered suggests it was also an important social and leisure space. Decorated ceramics suggest workers took care to create a pleasing living environment, even in what might have otherwise been a fairly bleak industrial work site. Additionally, the largely Catholic workforce would have needed a place to worship on Sundays when tending to the kilns kept them from traveling to the church in Santa Cruz. It is possible, then, that the mess hall was used as an ad hoc church, where Catholic workers could gather and celebrate mass together. The alter vase, however, serves as the only possible evidence of religious activity recovered at the Samuel Adams site.

The presence of decorative and luxury ceramics in archaeological context is often framed as evidence for genteel activity, or the performance and manipulation of genteel material markers by working-class individuals striving for a higher station. But do these material examples, recovered in a place designed to be a manual laborers' space and only used by other manual laborers simply indicate that these workers were performing or attempting to attain a genteel lifestyle? I believe this would be a very narrow reading of these materials. Instead, this material patterning, considering the social and historical particularities of the site and the context of their discovery, appear to me as traces of worker agency that may have little or nothing to do with gentility or a display of upward mobility. Instead, I believe the presence of these ceramics reflects manual laborers exerting power and control over one of the few spaces within the kiln operation where they had that ability.

An analysis of the 1875 Massachusetts Bureau of the Statistics of Labor report found that, contrary to popular opinion and characterizations, working-class laborers and their families invested significantly in their home furnishings and self-presentation (McClymer 1986). While by no means "lavish," the researchers found that the working-class of the nineteenth century were able to afford and tended to surround themselves with the "creature comforts" of modern life (McClymer 1986:388). At the Samuel Adams Lime Kilns, the workers did not control the food they ate, what time they worked, where they slept, and many other intimate aspects of their daily lives. The workers could, however, in small ways supplement and modify their otherwise mundane daily existence through the addition of choice materials and participation in select practices. These daily negotiations were not neutral, however, as these "practical politics" were the routine and intimate ways in which individuals coped with, negotiated, and initiated change from within the structured labor landscape of the kiln operation (Silliman 2001a:195). These material patterns of aesthetic and decorative embellishment, therefore, reflect meaningful practices, but they may not have been seen by the workers as overt resistance as much as they may have been actively making a home, or "staking out a residence" – attempting to create a life within the limits and regimentation of nineteenth century industrial life (Morris 2015; Silliman 2001a:203).

Recognizing the strictures of life that often frame agentive action, de Certeau (1984:30) notes that, "without leaving the place where he has no choice but to live and which lays down its law for him, [one] establishes within it a degree of plurality and creativity." In other words, as workers found themselves trapped in the lime industry (as few other high demand wage labor industries existed at the time in Santa Cruz) and subjected to company controls and demands, they went on living, making a life within the existing limitations and structures of power. The context of industrial lime labor necessitates that we look beyond common consumption items as evidence for worker agency and life-making, because workers' access and ability to choose things like the food they ate and the ceramics they ate from were controlled by the company. Instead we must think about the ways in which workers supplemented or augmented these provisions, acted and chose strategically within the conscribed available options, and produced things to act agentively within a controlled labor environment. By examining the way people "produce and reproduce their everyday lives" we can provide insights into the diversity of lived experiences and add nuance to the traditional resistance/compliance models of worker agency and industrial labor (Wurst and McGuire 1999:192).

The Way to a Man's Heart is Through His Stomach: The Power of the Cook

In this light, the company cook, historically a lone Chinese immigrant amongst a Euro-American workforce, emerges as an important position, The cook occupied a unique position with the company labor hierarchy: Being indirectly associated with lime production tasks and occupied largely in domestic work, the cook was often seen as an outsider, part of the workforce but separate (Dong 1967). This position, however, came with advantages, whereby ready access to and control over company provided foodstuffs would have afforded him an ability to harness power within the strictures of a company town setting.

Like African Americans who worked in the planter's house as cooks or domestic servants, this proximity to power in a hierarchical labor system, while sometimes providing challenges, also afforded advantages. While African servants and cooks were more susceptible to abuse, their positions in the home were also more economically secure and came with benefits not realized by other plantation workers, such as eating leftovers from the planter's meals (higher quality food) and receiving gifts or hand-me-downs (Tucker 1988; Wilkie 2000). This access to material culture otherwise made inaccessible to their enslaved community by economic disadvantages provided domestic workers considerable power – power that was materialized through the ability to parlay these rare, desirable, and otherwise unattainable materials into other acquisitions, favors, or debts.

The cook's position at the Samuel Adams Lime Kiln would have afforded him with similar opportunities to turn access into power. The task of cooking for the foreman would have likely provided him access to higher quality cuts of meat and other foods than those given to the manual laborers. Like African American domestic workers, the cook probably fed himself or supplemented his meals with these better foodstuffs. The ability to cook extra food, provide select access to desirable foods or condiments, and the ability to request specific foods on behalf of the laborers would have given the cook considerable social capital and power in relations with fellow lime workers. The cooks were in a position to do favors for the workers, a position that would have worked to gain them favor in a potentially tenuous and racialized social landscape. In many substantive ways, the cook was a material broker between the lime laborers and the company – he was the access point at which workers received the company provided goods promised in their labor contract. The ability to provide or withhold these goods, within reason, gave the cook leverage and power in relations with other workers. Therefore, while Chinese laborers in industrial contexts are often seen as some of the least powerful and most susceptible individuals, one must consider the wider context of material relations, their potential for agency, and the ways in which power can emerge from particular relations and material-discursive practices.

This power also likely insulated the cook from potential threats to which other Chinese immigrants would have been susceptible during the late-nineteenth century, a period marked by rampant anti-Chinese sentiments. Having control over the preparation of food would have been critical in the context of hard manual labor, where access to adequate calories could have been the difference between being content or tortured. The workers would have known that if they upset the individual in charge of preparing meals he might choose to not make enough, burn one of the roasts, or otherwise find a way to penalize his potential adversary. If congenial relations were maintained with the cook, he also had the ability to make a couple extra pies, order an extra side of quality cuts, or otherwise improve the daily dining experience of the workers (Wilkie 2010). This material configuration entangled the manual laborers in a tenuous relationship with the cook. The particular ways in which the lone Chinese cook utilized his position and power to navigate these social-material relations, however, may be the reason that no direct conflicts with Chinese domestic workers were documented anywhere in the Santa Cruz lime industry (Perry et al. 2007).

Cutting Against the Grain: Modified Bottle Glass as Negotiations of Access

A relatively large quantity (n=541) of edge modified (knapped) bottle glass artifacts were recovered from across the Samuel Adams site (Figure 8.4). An additional 823 glass production flakes/debitage recovered provides direct evidence that glass was being modified by the lime laborers themselves at the industrial site, rather than being acquired already shaped from an outside producer. The recovered glass cutting artifacts were rarely knapped into identifiable formal tools. Only a single formal tool was identified within this assemblage – a serrated “knife” edge made from olive green bottle glass recovered at the mess hall (Locus B) (Figure 8.5). All other modified glass remains were edge used or edge retouched flakes that would have served as simple scrapers or blades. These modified flakes were generally asymmetrical, inconsistent in size and shape, and overall crudely formed (Figure 8.6). The overall nature of this assemblage indicates that the modified glass artifacts served as expedient tools, created by knowledgeable but non-expert producers to address likely daily and routine cutting, scraping, and shaving needs. The question that arises, however, is why, at a mid- to late-nineteenth century industrial site where metal tools would have presumably been commonplace, is there significant evidence for the creation of glass cutting implements?

The knapping of bottle glass has long been a focus of contact-period archaeological studies, with modified glass serving as evidence for the persistence or continuation of traditional indigenous stone tool production techniques into post-contact and colonial periods. In colonial contexts, this persistence of lithic technology is often framed as resistance, an affirmation of tradition during a period in which colonial efforts were attempting the systematic eradication of indigenous lifeways. Recent considerations of contact-period glass knapping, however, have explored how the persistence of this tool-making technique goes beyond limited understandings of resistance, and should instead be considered as being entangled in broader understandings and negotiations of power, gender relations, and identity formation (Flexner and Morgan 2013; Harrison 2002, 2003; Lightfoot et al. 1998; Lindauer 2009; Silliman 2001).

For example, Harrison (2002) compellingly illustrates how post-contact Aboriginal Australian men made changes to stone tool production techniques and incorporated new materials like glass that both reflected their colonial history and reconfigured the ways in which Kimberley spear points were entangles in both Aboriginal and Western conceptions of masculinity. The practice of producing these points, Harrison (2002) argues, was intimately tied to the construction and negotiation of Aboriginal identity in the colonial period. Lindauer (2009), in his analysis of chipped glass and ceramic remains from a nineteenth- and twentieth-century Arizona Indian School, argues that the practice is not simply a modification of traditional indigenous practices, but a material trace of active resistance that allowed individuals to maintain connections to their cultural traditions within an institution designed to destroy those very lifeways. Similarly, Silliman (2001b) suggests that evidence for glass knapping at the early-nineteenth century Rancho Petaluma in Northern California is evidence for the daily and active negotiation of colonialism. While the production of glass tools with traditional techniques may have done little to substantively subvert rancho labor power structures, it was an active political choice that worked to construct a colonial period Native identity, actively creating their own spaces and meanings in a colonial world (Silliman 2001a:203).

Studies that have explored glass knapping in non-native and/or non-contact settings are far fewer. Wilkie's (1996) exploration of modified glass at a nineteenth century Louisiana plantation is one exception. Extending a detailed lithic technology analysis to the modified glass artifacts, Wilkie identifies a number of manufactured glass tools and contextualizes these findings within the realities of plantation life for African Americans. Her findings suggest the glass was modified to serve primarily as razors or small blades, otherwise expensive materials for the purposes of grooming and other daily tasks that had important social implications for African Americans regarding things like respectability, class, access, and social mobility (Wilkie 1996).

Industrial wage workers shared many common experiences with African American laborers in the post-bellum American South. Having a shared origin in the agricultural estates of Europe, both the plantation system and company towns employed similar strategies of tying workers to the site of production and exploiting their labor through a paternalistic approach to worker provisioning (Mosher 2004; Porteous 1970). In daily life, lime workers would have shared with African American agricultural workers an experience of hard manual labor in a controlled and hierarchically structured environment created, maintained, and controlled by economic interests and hegemonic powers. Likewise, the presence of bottle glass modified into expedient tools by laborers at the Samuel Adams kilns is similarly entangled in issues of control, access, power, and negotiation (Silliman 2001a:203).

The significant presence of modified glass cutting implements at the Samuel Adams Lime Kilns stands in contrast to a notable lack of metal knives and other formal metal cutting tools recovered archaeologically. This material patterning indicates that access to metal cutting implements was limited and/or controlled. This limitation may have been either a purposeful strategy employed by the company owners and managers, or a structural reality of economic inaccessibility. SALK excavations recovered only four metal cutting tools from across the site – a knife tang, two dinner knife handles, and a pocket knife handle – none of which were recovered in spaces associated with manual laborers (including, surprisingly, the mess hall). Given the overall abundance of material reflecting daily life from across the site, this is a relatively small number of artifacts associated with a tool that would have been critical to a wide range of daily activities surrounding cutting, scraping, and/or shaving. Knives and other cutting implements would have been necessary for routine domestic activities such as eating and shaving, but also for work activities such as maintaining or modifying wood handled tools, cutting ropes, and any other number of activities that industrial labor and lime production would have demanded.

The lack of evidence for personal knives and razors for grooming can be interpreted two ways. The first interpretation is that, like the situation outlined by Wilkie (1996), metal cutting and shaving tools were cost prohibitive for industrial wage workers or were otherwise inaccessible and they were not a part of their material consumption and use patterns. The knapped glass remains, therefore, could be evidence of resourcefulness and thrift on the part of industrial wage workers as they developed a way to meet their personal cutting needs despite the inability to purchase such formal metal tools. There was no company store at the Samuel Adams site, but it is likely that there were mechanisms in place for workers to purchase goods from the company, either at the Samuel Adams site, or from the nearby Cowell Ranch (Bay Street Kilns). The avoidance of purchasing materials through company channels and the creation of one's own tools, therefore, may have been a strategic choice aimed at limiting the amount of wages that were returned to the company and negotiating exploitive policies that sought to exploit and disenfranchise wage workers.

The second interpretation for the abundance of knapped glass and dearth of metal cutting tools is that access to formal cutting implements was purposefully limited and controlled by the company. While no historical documentation for such a formal policy was discovered, it is not unfathomable that, during a period of increased regional labor unrest and collective action, the lime company owners and their agents would have worked to limit the power of labor groups to resist violently through the restricting of access to things like knives, razors, and guns. Of the knife-related items recovered from SALK excavations, all were recovered from the cookhouse (Locus C) or the Foreman's residence (Locus T), and no razors were recovered anywhere at the site. Of a total of 15-gun related objects recovered, only six of these objects were found in association with manual labor work spaces, and at least two of these objects post-date the period of historic occupation. In total, the general lack of tools that could have been used in formal resistance efforts and/or used to give laborers power through threatened violence and collective action suggest this potential threat was recognized and managed by the company through the controlled access to such items. The expedient production of cutting edges made from reclaimed bottle glass, then, may have been a strategy employed by workers to address their daily cutting needs within a context of controlled access. As laborers creatively negotiated these issues of access in an effort to meet their needs and make a life for themselves, they would have transformed a licit and common object (glass bottle) into an illicit and powerful tool (cutting implement).

In either case, this transformation may not have been an overt strategy of resistance or subversion of company control. There are no documented accounts of Samuel Adams laborers using these materials to violently threaten or overthrow managers or otherwise resist company power structures. Instead, the patterned traces of glass knapping indicate they were used as everyday tools towards being effective lime workers, responses that allowed them to be productive and effective workers within the strictures of industrial lime work in the late-nineteenth and early-twentieth centuries. As such, these modified glass artifacts stand as evidence of laborers acting agentively, making a life, meeting their needs, and creating residence (Metheny 2007; Morris 2015). Having recovered these artifacts from a number of spaces across the site, knapping glass appears to have been an emergent strategy shared and employed by a wide range of laborers towards working and living within and between the parameters of control and access exerted by the company.

As discussed above, archaeological discussions of knapped bottle glass are almost always undertaken within a focus on Native American persistence (Hayden and Deal 1987; McEwan 1991; Pedrotta and Bagaloni 2005; Rodríguez-Alegría 2008; Ulm et al. 2009; Lightfoot et al. 1998; Silliman 2001a) or African American resistance (Mintz and Price 1976; Wilkie 1996). A review of the archaeological literature, however, returned no discussions of lithic or glass tool manufacturing by Euro-American populations in the nineteenth century. It is possible that the Euro-American Samuel Adams work force could have picked up knapping skills through prior cultural encounters with Native Americans or African Americans in some other place or industry, but the sustained engagements necessary would make this unlikely. Instead, it is possible that glass knapping was part of the broader expedient tool kit utilized by an emerging transient industrial workforce (Walker 2017).

The emergence of a large population of transient labor in the nineteenth century was a direct product of the expanding but often temporary, insecure, or extremely difficult wage labor opportunities that took shape as part of the industrialization of the American West. This unique labor group comprised a significant portion of the working-class in California during the nineteenth and early-twentieth centuries, and the lime industry undoubtedly employed many workers who might have self-identified as tramps or hobos. Individually, these traveling laborers lived and worked at the margins of capitalism, but as a collective they served as its very foundation (Black 1926; Walker 2017). Over time, shared experiences and hardships led to the emergence of a distinct way of life and code of ethics amongst these mobile wage workers. By extension, a distinct material culture also took shape – one characterized by a preference for portable and expedient material culture (Walker 2017).

Mark Walker (2017) is one of the few archaeologists that has examined the material culture of transient wage workers as traces of distinct practices and lifeways. Of particular interest is his focus on metal cans, and the ways in which mobile workers creatively reclaimed and reworked these ubiquitous, affordable, light-weight, and malleable objects into a wide range of other necessary implements and tools. I believe the same logic can be extended to understandings of knapped or otherwise modified bottle glass recovered in contexts of wage labor. Rather than investing in expensive and heavy metal cutting tools, the practices of glass knapping may have emerged as a shared skill among transient wage laborers in the American West. As such, the modified glass remains recovered at the Samuel Adams complex are another material trace of the enactment, performance, and participation in an emergent community of labor – one that valued thrift, ingenuity, transportability, flexibility, and resourcefulness.

It is likely that many of the workers employed at the Samuel Adams Lime Kilns had previously spent time at other industrial work camps, living and working with other transient wage laborers. This is a reminder that the history, legacy, and "immanent enfolding" of encounters in the American West served to continually contaminate and (re)entangled social relations throughout the nineteenth century (Dolphijn and van der Tuin 2012:49). These qualities, characteristics, and shared practices of transient labor were some of the core experiences and practices around which a working-class identity took shape in the late-nineteenth century (McGuire and Reckner 2002; Walker 2017). Edge modified glass artifacts were found across the Samuel Adams site, but were recovered in the highest quantities at the company mess hall – the communal gathering space for the diverse workforce and the area of most direct social interaction and negotiation (Figure 8.4). It is easy to imagine workers sitting on the mess hall benches casually knapping glass, sharing techniques, materials, and finished edges as they also shared a drink, a smoke, and stories from the day and used the glass flakes to touch up the wooden handles of their tools. The recovery of these artifacts across multiple spaces and in the highest quantities at the shared communal space illustrates that these glass knapping practices were not confined to one ethnic group or one labor occupation.

Like many other material examples presented here, the chipped glass assemblage can be seen as an emergent phenomenon born of complex histories of intra-action. The chipped glass objects reflect traces of contaminated diversity – connections and commonalities born of the entangled histories of encounter as a result of global production, trade, and migration in the modern period. Glass knapping appears to have been a unique but collective response from workers to the particularities and strictures of life in industrial lime production. In its shared enactment the practice of making and using glass cutting implements would have worked to connect the diverse population of lime workers, serving as one of the threads that entangled them in a community of practice(s). Critically, these commonalities, collaborations, shared experiences, and communal social-material practices would have facilitated connections between workers in ways that would have afforded later unionization and collective action.

The nature of the chipped glass assemblage also highlights the materials' liveliness. Not only does the glass take shape in a new form, with a new purpose, but the chipped glass objects themselves acted beyond their intended and fairly limited functional purpose(s). The knapped glass flake may have been produced to shave one's face in the absence of a metal razor, but it also worked as a negotiation and leveraging of labor power, a manifestation of worker agency, a creative solution to company control, a "queer use" of a common and unregulated material (glass bottles) (Ahmed 2018). The knapped glass is an ambiguous and fluid material-object. It is not a Native American, African, or European object, nor is it simply a bottle or sherd, or a scraper, razor, or knife. The mobilization of this practice in the context of the Samuel Adams Lime Kilns situates it as a novel, emergent tactic that worked not only to connect workers in a community of practice, but also, in its communal enactment and lively material agentiveness, engaged an emerging landscape of labor exploitation, unionization, and conflict situated within the tendrils of corporate power and industrial capitalism.

Of Glass Shards and Bottles

Chipped glass objects should not be considered in isolation or as static, finished products. These material-objects emerged from a particular history of intra-action and movement across the landscape. They are a momentary manifestation of matter in transformation – a particular assemblage of material intra-actions that did and meant different things, in different times, in various entanglements. These chipped glass artifacts, therefore, are traces of glass materials in constant motion, in perpetual transformation. In this section I will attempt to trace these material movements, transformations, and enfolding entanglements, illustrating the ways in which glass material-objects in their various forms acted agentively and facilitated particular social relations throughout their life at the Samuel Adams Lime Kilns.

The malleable nature of molten glass makes it an exceptional material for the production of vessels that contain liquids and quasi-solids. Vessels of all shapes and sizes can be fashioned relatively easily, along with decorations and text – facilitating the storage, transportation, sale, and consumption of various goods. In most cases, however, the bottle was purchased for the material it contained, not the bottle itself. The bottle gained a second life after the contents it held were consumed. While often re-used, the bottle also had the potential to be freed from being only a holder of liquids, it became open to countless alternative uses and material-manifestations.

Glass bottles were ubiquitous by the mid-nineteenth century, and they could have made their way to the Samuel Adams site by any number of processes. Alcohol, soda water, milk, sauces, condiments, preserved foods, medicines, poisons, and cleaning agents may have all been brought to the site in glass vessels in small numbers as part of the workers' personal belongings. Alternatively, these same materials may have been provided routinely by the company and its agents, as part of the worker's board. Both of these scenarios would have entangled the various glass objects with particular meanings and social relations. The ownership and consumption of items acquired personally might have important implications for the performance and participation in various aspect of one's identity, as the alcohol consumed, condiments added, and medicines used, can all be important materialities of ethnicity, class, gender, and religion, among other things. When provided by the company, the same objects would have become embroiled in power relations, and their consumption – when, how, and with whom – become socially important in the practical politics of everyday life (Silliman 2001a).

For example, a bottle of red wine provided by the company may have been intended to keep laborers happy and productive by dulling the pain of manual work, helping them feel warm on the late-night shifts, and providing familiarity by evoking memories and practices of homelands and families far away. Unintentionally, the bottle of red wine, in its shared communal consumption at a mess hall table or the front porch of a cabin, may have facilitated intra-action between workers, contributed to group cohesion, and promoted the emergence of a sense of community amongst an otherwise diverse collection of workers. As the wine was drunk, stories would have been told, hardships commiserated, the trials and tribulations of the day relived in embellished exaggerations that worked to highlight the heroic masculine nature of lime work. In doing this, the shared materials of consumption would have become entangled with an emergent collective identity and consciousness – the materiality of labor camaraderie.

These entanglements would not disappear when the last drops of wine were drained from the bottle, but they would transform as the glass object took on a new life. Given the highly fragmented nature of glass remains across the Samuel Adams site, it appears many bottles were extensively reused. It is very likely that the empty alcohol bottles were re-used as water bottles, as the hot and physically demanding labor of lime work would have demanded constant hydration. In their re-use as water bottles, echoes of the earlier communal alcohol consumption practices – the experiences working to forge a worker community and collective identity – would have been carried through to other spaces and periods of time. This re-use would have brought "threads" of memories and sentiments from that experience with it to later engagements, entangling the object with meanings and action well beyond its storage function (Ahmed 2018; Dolphijn and van der Tuin 2012; Joyce and Gillespie 2015; Shanks 1998). As a worker quenched his thirst at the front of the blazing kiln with a swig of water from a re-used bottle, the experience of seeing the bottle color, feeling its smooth body and weight in his hand, and tasting the cool liquid – his material-discursive intra-action with the glass bottle – would connect him to previous moments and the various social-material relations in which that prior engagement was entangled. This material intra-action would work to create links across both space and time, collapsing the distances and connecting the laborers in important ways.

Eventually, however, the glass bottle would break. Accidently knocked off a kiln buttress with the butt of a shovel, or smashed against a rock out of boredom and frustration, the bottle would be transformed into shards – fragments of curved glass. The once blunt, soft, curved form of the bottle becoming sharp, jagged, piercing. No longer effective at holding liquids, this transformation would provide the bottle with a sudden capacity for a broad range of new agentive possibilities. The bottle could now cut, shave, pierce, and modify. Having been transformed it now had the ability to transform the material world in new ways, to reconfigure material relations, and to do new work.

The same physical material qualities that make glass a conducive material-object for holding liquids – being a hard, brittle, amorphous solid of silica and metal oxides – are also what make it, when broken, an effective cutting implement. This transformation, like others discussed in this dissertation, is emergent – a materiality born of causal intra-action. Edge modified, the shard is further transformed into a nascent, expedient tool with further capacity to do certain kinds of work. With each intra-action, each material-discursive engagement, each "agential-cut," each diffraction, the object "travels" through the social-material world, transforming and becoming, assembling and disassembling, acting and doing, mattering and differentiating (Barad 2007:337). When picked up by workers, the modified glass shard could be used in a wide range of tasks. As discussed above, however, these practices were entangled in relations of power that can be read as resistance, persistence, and/or negotiations of company policies and safeguards against violent worker mobilization. The glass fragments, then, do more than just cut, they also enabled workers – opening new potentials and relations with broad implications.

Eventually these shards would be lost or disposed of, assembling in new ways with other objects and materials as archaeological remains. These objects would come to matter again, as traces of past activities, their meanings entangled in relations to other objects – the matrix, artifacts, units, features, buildings, and sites. Their capacity to cut evident by bleeding fingers of volunteer excavators, these objects would do work again, as archaeological material – as an assemblage within assemblages, acting through material-discursive practices to tell stories of the past.

Negotiations in Plain Sight: Ceramic Provisioning and Supplementation

Strategic negotiation of corporate power relations can also be seen in the proportion of British-made plain whiteware and ironstone vessels compared to American made hotel wares. Because of their highly visible use in daily communal rituals, ceramic table wares were an important line of material culture for the expression of socio-economic status and identity in Victorian America, and they would have been a daily feature of material-discursive practices between the workers and the company (diZerga Wall 1994; McCarthy 2001; Praetzellis and Praetzellis 1992). While no company purchasing records exist, the majority of ceramics recovered were durable and relatively affordable plain whiteware and ironstone vessels, likely provided by the company for use by the workers at the company mess hall.

While the form and (lack of) decorative patterns are typical for nineteenth century industrial sites, the manufacturing origin of the vessels is surprising. All of the makers' marks recovered from archaeological contexts at the Samuel Adams operation were from British ceramic companies. Not a single American manufacture mark was found, despite a robust American pottery economy in operation at the time. Though foreign makers dominated the American market before the Civil War, by 1860 roughly 40% (in value) of all ceramics purchased in the United States were American made. This trend only increased, with the percentage of American made ceramics being about 70% by the turn of the twentieth century and 85% by 1929 (Myers 2016; Stratton 1932). Even if we assume unmarked hotel wares were American made, these vessels (n=14) only represent 6.6% of the total ceramic MNV assemblage recovered from the Samuel Adams site.

The prevalence of British-made ceramics over American at the Samuel Adams Lime Kilns, therefore, does not match wider ceramic consumption trends. The pattern is also at odds with economic explanations and Cowell's overriding strategy of limited/low-cost investment in goods/infrastructure that were provided for workers. Tariffs after the Civil War were designed to protect American potters from foreign imports, especially British goods. As a result, during the late-nineteenth century, comparative British ceramics were generally more expensive to acquire than those made in American. If there is no economic/market incentive for the prevalence of British-made ceramic, then it is possible that these purchasing/provisioning patterns were doing symbolic work and that a company preference for British ceramics reflects broader entangled discourses of labor, control, power, and agency at play at the lime kiln operation.

Like many industries in America and Europe, the pottery trade underwent rapid transformations during the nineteenth century, shifting from a craft-based piecemeal work system to an industrial model defined by increased specialization, mechanization, labor segmentation, wage labor, and other principles of scientific management (Miller 1984; Myers 1980; Stratton 1932; Whipp 1990). Despite the protection of American potters through tariffs on foreign ceramics, British manufacturers, especially those centered in Staffordshire County, were able to compete price-wise with American producers and maintain a foothold in the growing postbellum American market by embracing industrial manufacturing practices and anti-union activities that allowed them to keep costs low through increased economies of scale (Shotliff 1975; Soffer).

Therefore, while American-made ceramics became more popular throughout the nineteenth and twentieth centuries, a robust British ceramic export market persisted. The low-cost ceramics provided by Staffordshire companies, afforded partly through anti-labor practices, created challenges for American ceramics producers (Miller 1984; Shotliff 1975). North American ceramic producers were forced to drop prices and reduce potters' wages to remain profitable (Shotliff 1975). Labor in the American pottery industry responded with greater union activity and active resistance to a much greater degree than that seen in England, including a coordinated strike in 1894 involving both eastern and western union and non-union pottery-based labor groups (Shotliff 1975). In America this labor position was formalized in the establishment of the National Brotherhood of Operative Potters (later the National/International Brotherhood of Operative Potters), a union affiliated with the American Federation of Labor and the Congress of Industrial Organizations.

In light of this broader labor context, then, the purchasing of only British ceramics may have been a purposeful and strategic choice, one meant to communicate the lime company's broader position on industrialization and labor relations. The purchase of only British made ceramics may have been the lime company's way of tacitly approving and supporting the management position and anti-labor sentiments embodied in the Staffordshire ceramic industry. Likewise, the avoidance of American made ceramics, which were comparably priced and equally available but entangled in more visible labor disputes and unrest, may have been a purposeful choice meant to convey a message of the lime company's position on such matters – a material-discursive declaration of allegiance with capitalist owners over laborers. The notable absence and seemingly active avoidance of material culture that was a product of active labor negotiation, conflict, and union-backed production, would have also stood as a stark material signifier of the company's broader ideological allegiances and position on the value of labor in industrial systems of production.

Likewise, the select incorporation of likely American-made hotel wares by lime workers can also be seen as an agentive material-discursive practice – a material response to company ceramic purchasing practices employed by the manual laborers to subtly align themselves with and support wider working-class labor organization and collective action. As with many examples explored in this dissertation, it appears that workers engaged with materials to actively negotiate and communicate their labor allegiances and respond to the hegemonic practices employed by the company. Using a personally acquired American-made ceramic in the context of ubiquitous British-made company supplied vessels in a communal space like the mess hall may have been yet another form of practical politics, a socially weighted activity that could be seen, interpreted, and understood by other manual laborers. In its shared enactment, however, in its emergence as a communal response, this practice would have actively built connections, entanglements, and community amongst the workers in subtle ways that may have been less visible to company owners than overt resistance.

Reconfiguring Worker Agency

These readings of material-discursive intra-actions and practices across multiple material examples challenges traditional understandings of resistance in the context of industrial capitalism. Should the foreman's participation in both gentile and working-class practices be seen as a type of resistance or compliance? What are we to make of the manual laborers' strategic incorporation of genteel materials? Is this evidence of workers kowtowing to the hegemonic ideals of upward mobility, or, as I've suggested, is it the traces of agency and community-making amongst a diverse workforce that served reconfigured power relations at the site? I think any one answer would be an oversimplification of the complexity of life in the industrial frontier, the power relations at play, and the nuances of material-discursive practices in a pluralistic context. The foreman as well as the various manual laborers are all participating in tactics of strategic negotiation afforded by their particular subject positions. As Metheny (2007:xvi) argues in her analysis of a Pennsylvania coal town, "behind the brick and mortar of the industrial plant and the company town, behind the company agents and the unions, are individuals who daily made decisions about their welfare, who not only responded to but also acted upon various aspects of the industrial regimen as it related to living and working conditions and to the well-being of their families, who daily negotiated identity and place within the industrial landscape."

These material examples discussed above, I believe, highlight the limitations of traditional archaeological approaches to studying resistance, persistence, or conformance as isolated and discrete behaviors. Limiting analysis to the determination of participation in one of these actions works to limit the capacity of agents in the past and mask the multivalences of materials and practices, especially in dynamic pluralistic contexts. Limiting actions to resistance, persistence, or conformance (and no ambiguous combination of these behaviors), works to strip agency from past workers by removing the potential or capacity for strategic manipulation, or the construction of other meanings and intentions. By always framing actions in relation to hegemonic power – in this case company owners or managers – as resistance to, or persistence in spite of, we indirectly privilege that power position. This works to overshadow the ways in which laborers lived and worked agentively and strategically *within* those systems of control, exerting their own power and control in daily practices beyond just resistance or persistence. It also obscures the ways in which the same material practices may have worked as *both* resistance and persistence depending on the context of their enactment. Which categories are used to refer to these practices is less important than understanding these practices as strategic reconfigurations and assertions of power. We as archaeologists, therefore, need to know where and how to look for these more ambiguous traces of social negotiation and agency that may have worked within systems of oppressive power, rather than only overtly against them (Silliman 2001b).

In short, instead, of slotting behaviors into pre-fixed categories, I advocate for a consideration of these practices – whether it be glass flake manufacture and use, alcohol consumption patterns, clothing choices, or the supplementation of company provided goods – as emergent strategies to making life in the industrial Far West. These were novel responses that reflect both the limitations *and* affordances of life in a pluralistic context. They were new ways of operating that were not just resistive, persistent, or conforming, but all of these things and possibly none at the same time. Our job as archaeologists, I think, is not to determine the correct category for their definition, but to trace their range of social-material potentialities. In doing this we allow for the complexities of life for individuals trying to get by and make their way within the dynamic social landscape of the nineteenth century industrial Far West. Only in this way will we be able to do justice to past wage workers as agentive individuals, who, even in their largely subjected and exploited positions, were able to strategically and creatively mobilize power in some, albeit small and subtle ways.

The Materiality of Encounter, Intra-Action, and Emergence at the Samuel Adams Kilns

At the Samuel Adams Lime Kilns site we are afforded a setting of both segmentation and plurality. Some areas of the site, mainly domestic structures, would have been relatively private spaces associated with particular groups of laborers (*e.g.,* American/Irish management labor residence and office, Irish/Portuguese/Italian manual labor cabins, and Chinese domestic labor cookhouse) while other areas of the site are known to have been communal gathering places, spaces where the recovered objects were likely engaged with by a diverse range of laborers (*e.g.,* the mess hall). This allows us to explore material-discursive practices and boundary-making activities at multiple scales in in many different configurations of practice and intra-relation.

The recovery of food and beverage bottles, faunal remains, narcotics paraphernalia, modified ceramics, health and grooming materials, and personal adornment items in pluralistic contexts provide traces of these various material-discursive practices. These practices, which were shaped through novel encounters and social negotiation, would have resulted in ambiguous materials, assemblages, and relations that provided spaces for translation, reconfiguration, reimagination, and emergence. These experiences and agentive actions, then, had boundary- and community-making implications, as they continuously worked to redraw the connections and entanglements of group affiliation within the diverse Samuel Adams workforce.

In the following section, I interrogate multiple object-assemblages in an attempt to trace these emergent reconfigurations and their implications for the creation of labor communities at the Samuel Adams Lime Kilns. While objects may be discussed as being Chinese or British in origin, or traditionally associated with a particular ethnic group or social class, these are not meant to be essentializing classifications. While location of origin can be important, it is not always relevant for considerations of use and circulation that are at the core of this analysis. For this reason, these identifiers are used as starting points for the consideration of context and practice that will allow us to explore how these materials became entangled in sets of relations and agencies – how they came to mean and do new things in the diverse and dynamic context of a pluralistic industrial work site.

Emerging Tastes

Food is often seen as a culturally conservative area of material culture, resistant to change and yet socially charged (Brown and Mussell 1984; Twiss 2012). When examining materials associated with food and beverage remains at the Samuel Adams kilns, however, interesting patterns of social negotiation and meaningful exchange between labor groups are evident. For example, in both the manual laborers' cabins and in the shared mess hall we found evidence of emergent food practices that showed a blending of foods, condiments, and tastes rooted in multiple ethnic traditions. At the northern shared workers cabin (Locus G), which would have housed Irish, Portuguese/Azorean, and Italian immigrants, we recovered evidence of Chinese import ceramics that held soy sauce, liquor, pickles, or vinegar. Likewise, at the mess hall, a relatively large number (MNI=10) of these same Chinese import ceramics were also recovered. In these same contexts, however, we also recovered multiple pepper sauce bottles that could have contained a wide range of mild or hot sauces or catsups, themselves a product of long global interactions between Europe, Asia, and North America. At the same time, in the cookhouse space that would have been occupied almost exclusively by the Chinese cook, we found no Chinese brown-glaze stoneware and no glass condiment/sauce bottles.

These findings suggest European immigrant manual workers were augmenting the traditionally Euro-American company provided food (cooked in the later years by Chinese immigrants) with condiments from multiple global cuisines. In some cases there may have been existing flavor commonalities, such as those between the Portuguese *piri piri* and Italian *pilacca* chili pepper sauces, that would have facilitated worker sharing and food intra-actions – providing the foundation for emergent and re-imagined cuisines. Many of the Chinese sauces and condiments were likely provided by the cook, as historical sources suggest Cowell's cooks had relationships with Chinese merchants in Santa Cruz (Paramoure 2012; Perry et al. 2007). The presence of significant numbers of Chinese ceramics in the manual workers' cabins and mess hall, therefore, is not interpreted as the presence of a Chinese laborer in those spaces. Rather, this material patterning is being seen as a novel blending of products and flavors and the active creation of a cuisine that was particular to the social-historical relations of the Santa Cruz lime industry. Working together to reconfiguring and change the relatively basic and bland meals provided by the company, workers would have created novel commonalities and shared tastes, forging the mutual understandings around which connections and communities could be built through food modification and consumption patterns.

Shellfish Supplementation and Boundary Reconfigurations

Interestingly, evidence for the consumption of local marine shellfish, primarily California mussels (*Mytilus californianus*) but also clam and limpet, were recovered at all domestic spaces, the foreman's office, and the shared mess hall of the Samuel Adams kilns. Shellfish is a particularly interesting faunal remain because it has been identified by multiple scholars as a food that was highly contested and imbedded in ethnic and racial discourse in eighteenth and nineteenth century California. Excavations at the San Francisco Presidio by Barbara Voss (2005, 2008) uncovered a notable paucity of shellfish remains. The low frequency of shellfish was significant considering their local abundance, easy accessibility, and the prevalence of fish and other wild species in the same archaeological deposits. Voss (2008) interprets this pattern as possible evidence of an intentional tactic employed by Spanish colonists to distinguish themselves from Indigenous Californians who, in the San Francisco area, relied on shellfish as a primary food source and often occupied monumental shell mounds that dotted the coastal landscape. In doing this, Voss argues, the Spanish engaged in meaningfully pointed practices that worked to not only create a boundary between themselves and the colonized "other," but also worked to build relations and connections that tied colonists, a diverse population of mestizos and Spanish, together as a colonial body.

Patricia Paramoure (2012) in her archaeological explorations of a workers' cabin at the Bay Street (Cowell Ranch) kilns uncovered a number of shellfish remains. She argues that the presence of mussels and limpets serves as evidence for the presence of a distinctly Portuguese/Azorean and/or Italian "ethnic cuisine" at the kiln site (Paramoure 2012:158). She notes that during the nineteenth century limpets, particularly, were not common in American cuisine, but were a standard feature in Portuguese dishes like *caldeirada* – a mixed seafood stew (Paramoure 2012; Reese 2007). Paramoure (2012:161) interprets this pattern as evidence that "the culinary tastes of the immigrant workers had not completely shifted to American foods."

The recovery of shellfish at multiple contexts within the Samuel Adams kiln site associated with both Portuguese and non-Portuguese laborers adds layers to both Voss's and Paramoure's interpretations. The presence of intertidal shellfish like mussels and limpets at a works site on the Central California coast should not be surprising. Long an important food source for Indigenous Californians, mussels can be gathered relatively easily from accessible rocky intertidal patches (Jew et al. 2013; Jones et al. 2008). Seasonality studies for mussel harvesting during the historic-period have not yet been undertaken, and it is unknown if poisonous "red tide" algal blooms were a common seasonal occurrence before the twentieth century (Mudie et al. 2002). Historic palynological studies, however, have shown that increased sea surface temperatures and greater levels of pollution are both connected to increased red tide events (Mudie et al. 2002). Today, red tides are observed primarily during the summer months, as ocean temperatures rise to a level conducive to algal blooms. In an effort to avoid these increased risks, and with the added benefit of having lower daytime tide levels, the mussel gathering season today is limited to winter months (typically November to April) (Glassow and Wilcoxon 1988).

That red tides were a known historic variable is evidenced in ethno-historic accounts from the turn of the twentieth century which recount Indigenous Californians looking for bioluminescence as a sign of algal blooms and who, if it was observed, refrained from shellfish gathering for a limited period of time (Kroeber et al. 1960; Waselkov 1987). It is quite possible, then, that increased pollution associated with Gold Rush mining, agriculture, and industrialization was sufficient to cause regular summer red tides by the mid- to late-nineteenth century. While direct evidence is lacking, all of these factors suggest shellfish consumption by lime laborers was likely a more prominent diet supplementation tactic during the winter months. If not directly accessible by the consumer from the nearby shores where they grew in abundance, mussels could have been purchased from local fish mongers who, in the late-nineteenth and early-twentieth century were often Chinese, Italian, and Greek immigrants working from multiple locations along the Central California Coast (London 1905; Lyndon 1985; Peters 2013; Mendelson 2016). Depending on who was doing the purchasing, these consumption patterns may have helped to create or maintain connections to other community members living and working outside the lime company town.

The ubiquity of shellfish remains from across the Samuel Adams kiln site suggests perceived associations between indigenous Californians and shellfish consumption, as suggested by Voss

(2005), did not persist past the Mexican period. The ubiquity of marine shells recovered at the Samuel Adams site also challenges Paramoure's (2012) interpretation of shellfish as static ethnic markers of a particular cuisine. The massive influx of people and cuisines from across the globe as part of the Gold Rush would have worked to broadly reshuffle the relationships between ethnicity, identity, and shellfish consumption, along with a range of other foods. As has been argued throughout this work, ethnicity is not a fixed product of activities and interaction, but a constant and active process of material-discursive negotiation that is variable across time and space. The presence of shellfish remains, then, cannot simply be understood as the presence or absence of a particular group of people. Rather, the distribution of shellfish remains from across diverse spaces and groups suggest that they were incorporated into a cuisine that was unique to the time and space of Santa Cruz lime production – an emergent cuisine that combined elements of American, Northern European, Southern European, Chinese, and Indigenous California traditions in new ways. In essence, the presence of shellfish remains from across the site may be traces of the beginnings of what would come to be known as *ciopinno*. Commonly thought to be a transplanted Italian dish, *cioppino* is, in fact, a San Francisco invention – a re-imagined dish developed by an Italian immigrant fisherman and popularized in the 1930s, but incubated in the pluralistic intra-actions of nineteenth-century urban California (Peters 2013).

In total, the food-related remains recovered from across the Samuel Adams site indicate that these artifacts, be they soy sauce bottles or mollusk shells, are not simply material markers or reflections of a fixed and bounded ethnic or class identity. They are material-objects with particular histories and sedimented meanings that were actively used and manipulated in ambiguous contexts by agentive beings in material-discursive practices that worked to (re)negotiate and (re)shape social and physical boundaries – creating new locally meaningful traditions that existed in complicated relationships of simultaneous citation and re-formation (Mullins 2008; Upton 1996).

Fish Fridays and Religious Intra-Action

The first commercial fishermen in Santa Cruz County were Chinese immigrants. They established a small fishing camp as early as the 1850s near New Brighton beach (Pomeroy and Stevens 2008). The lack of rail and other major transportation networks, however, limited their distribution to the local Santa Cruz area. By the 1880s, Italian immigrants from Genoa came to dominate the fishing industry in Santa Cruz County. Expanded rail and infrastructure allowed for a broader reach, and as timber and lime industries in Santa Cruz began to decline in the twentieth century commercial fishing emerged as an important local industry (Lehman 2000; Pomeroy and Stevens 2008).

It appears that during the Cowell-period at least, fish was served fairly regularly as part of the company provided menu. Specifically, according to the oral historical account from John Dong, Cowell employed a practice of serving fish on Fridays (Dong 1967). Ostensibly, this practice was to meet the desires and conventions of his largely Catholic Irish, Portuguese/Azorean, and Italian employees. It is also possible that these cultural conventions were adopted enthusiastically by the company to decrease food provisioning costs. Fresh fish (as well as salted, pickled, and smoked variations) would have been both familiar and palatable to Irish, Portuguese, Italian, and Chinese workers, and been a relatively low-cost protein source when compared to animal meat products (Cutting 1955; Huelsbeck 1991; Kippel and Sichler 2004; Perry 1981; Peters 2013). It is also possible that the shellfish remains recovered from across the site are not so much evidence of selective supplementation, but of company provisioning (along with fish) to meet periodic religious dietary restrictions.

The inclusion of fish in the company menu is supported archaeologically through the recovery of a range of fish remains from multiple loci and contexts across the site. Fish remains are often underrepresented at archaeological sites due to their propensity to degrade and slip through archaeological screens. This skewing of representation is further exacerbated due to the fact that fish cuts were often acquire as fillets, or otherwise debone, salted, pickled, or smoked and packed in crates. Even given these factors, a total of 27 fish specimens were recovered from the Samuel Adams site, representing a minimum number of seven individuals. These remains were found in contexts that date to both periods of ownership at the cookhouse, mess hall, south workers' cabin, and foreman's house and office.

The short anecdote about fish Fridays in Dong's interview provides an interesting entry point for the examination of the ways in which religion, entangled with the bodily and material-discursive practices of food consumption and avoidance customs, may have been an important commonality upon which an otherwise diverse group of laborers built connections and communities. A shared Catholic faith would have been one of the few common practices by which Irish, Portuguese/Azorean, and Italian immigrants framed their various ethnic identities. These connections would have also extended beyond the work spaces of the lime operation, as catholic workers congregated at the local church for mass.

The Catholic presence in Santa Cruz extends back to the Spanish colonial period and the establishment of the mission in 1791. Mission Santa Cruz served the needs of the Catholic population until an earthquake destroyed a portion of the building in 1857. In 1858 the main mission building was replaced and this new space was used until 1889 when Holy Cross Catholic Church was constructed on the same site (Lehman 2000). This center of Catholic activity is located less than two and one-half miles from the Samuel Adams complex, and until the early twentieth century this was the only Catholic institution in the area (Harrison 1892). This suggests that all practitioners of the Catholic faith, regardless of their country of origin or ethnic identity, would have congregated periodically as a religious community at the lone Catholic church.

These religious commonalities and communities may have extended to the Samuel Adams operation where they served to draw workers together in shared practices and beliefs. Given the 24-hour, seven-day-a-week nature of lime work, at least some workers would have been forced to stay on-site and labor through their Sundays. Though we did not recover any religious medallions, paraphernalia, or other objects beyond the single fragment of a Limoges altar vase, it is not difficult to imagine the Sunday workers taking a few moments to worship, possibly together with other laborers who were a part of the broader Santa Cruz Catholic parish. Perhaps this took place at the mess hall, the communal gathering place, where the altar vase took on new meanings and importance as a religious object. In this way, the strictures of industrial labor may have afforded community creation as the diverse group of laborers, alienated from the broader religious community in which they could find their ethnic or familial niches, came together in the embodied practices and performances of religious worship.

The anecdote about serving fish on Fridays and the recovery of fish and shellfish remains from across the site provide material evidence for some Catholic conformances at the Samuel Adams kilns. Critically, religion-specifically participation in Catholicism would have been one of the single cultural commonalities shared between almost all the lime workers (Irish, Portuguese, and Italian) who otherwise would not have spoken the same native language or had many other common interests, cultural experiences, or cultural histories. This commonality, which has an inherent aspect of community (religion as a community of believers), and is entangled in a number of other daily practices that frame understandings of food, alcohol, material consumption, labor, sexuality, and gender (among other things), may have served as the initial impetus, the opening of the door to greater contact, discourses, and intra-action that spurred the sharing, transformation, and emergence of new practices, meanings, identities, and communities that cut across traditional ethnic lines (Renfrew 1994; Twiss 2012). At the very least, it would have been an important aspect of entanglement and the diffraction of labor communities.

With this in mind, the practice of serving fish on Fridays takes on new meaning. While it is possible that Cowell pursued this policy out of a genuine interest to meet the religious restrictions of a large portion of his workforce, he was also likely happy to capitulate because of the cost savings it afforded. What is important, however, is that it is unlikely that this practice was initiated by Cowell. Cowell and his family attended the Protestant First Congregational Church, with his son Harry even donating to the church upon his death (Paramoure 2012). The Cowells, therefore, were not part of the broader Catholic community. This suggests that the serving of fish on Fridays at the lime kiln mess halls was a request of the Catholic workers. Though this may seem like a minor capitulation it serves as an important example of a diverse labor force finding commonality in practices and experiences, creating different materialities by which communities and bodies could be built, and coming together to affect change within the company – laying the groundwork for later labor organization, unionization, mobilization, and collective action against exploitative company practices.

Coffee and Community

Tea consumption, as a material-discursive practice, has long been examined archaeologically as an important social activity of middle-class domesticity and gentility. The materiality of tea consumption was symbolically more important the than tea itself, as the material display and performance of decorated tea pots, cups, and saucers articulated with dress, architecture, furnishings, and other foodstuffs in the strategic negotiation of class position and status (diZerega Wall 1991, 1994, 2000).

Margaret Wood has pursued a similarly socially-framed interrogation of coffee consumption in relation to working-class households of the Colorado coal town of Berwind. She argues that rather than the highly formal and ritualized class activity of teas consumption, coffee was used more informally as a way to build working-class connections and community by providing “a way to extend their hospitality and friendship” (Wood 2004:230). Wood (2004) draws on personal accounts from other coal town workers to highlight the ways in which coffee consumption among women in private domestic spaces provided the pretext for inviting other workers, or their families, into one’s home – creating commonalities and personal links through acquaintance and building relationships across ethnic and other differences that facilitated subsequent collective action by the coal workers.

With this interpretation in mind, the large quantity of mugs recovered from the Samuel Adams company mess hall takes on new meanings. Of the minimum of 36 drinking vessels recovered from the company mess hall 25 of them (69.4%) were mugs. While these mugs could have been used to consume beer or other beverages, with their own implications for lubricating social relations, the mugs also provide evidence for coffee consumption. While metal remains were generally heavily degraded, a number of possible coffee tin fragments were recovered from the mess hall and cookhouse, and an enamel coffee pot was recovered from the exterior mess hall unit (Unit 111), providing direct evidence for this coffee consumption activity amongst manual workers. So, while providing coffee to workers would have been seen by management as a way to ensure economic productivity, it may also have facilitated intra-action and the building of community between lime laborers. Sharing a hot cup of coffee before the morning shift, workers of various backgrounds would have passed the grey-blue "Agateware" pot around the table, yawning away the fatigue of industrial manual work before heading to the kilns together where they worked in orchestrated labor towards the production of quicklime. Returning routinely for a caffeine fix throughout the day, the consumption of coffee would have become intimately tied to working-class labor and life at the lime kilns – embodied in the ritual of informal but shared consumption.

Wood (2004: 230) also acknowledges the plainness of coffee mugs as an important feature of its communal consumption: "The form and decoration of vessels from which coffee was consumed do not represent difference and competition; rather they represent similarity and commonality through an emphasis on plainness." In essence, Wood is arguing that the materiality of undecorated mugs afforded a sense of commonality upon which new relations were built, in contrast to the highly decorated and differentiated tea wares and the socially competitive context in which they were used. The plain, sturdy, miss-matched ceramics provided by the company in the Samuel Adams mess hall may have meant to strip the workers of any potential unifying aesthetic – a spartan vessel for an austere industrial existence. Out of this seemingly uninspiring haphazard collection, however, the plainness itself may have become the important identifying feature of the assemblage, the very quality that, in shared enactment, tied coffee consumption to an emerging working-class community identity at the lime kilns (Wood 2004). Wilkie (2010) recognized a similar pattern in the use of plain ceramic drinking vessels at the Zeta Psi fraternity house at UC Berkeley around the turn of the twentieth century. In contrast to the use of elaborate steins by alumni, active brothers used plain white mugs to consume beer, creating connections and solidarity in their undifferentiation.

Chemical Entanglements: Opium Pipes and Medicine

The recovery of opium products (bowls and tin) in both the cookhouse and shared work spaces also attest to the blended and emergent social-material relations at the Samuel Adams Lime Kilns. Opium and the opium trade had long been entangled in Chinese-European (specifically British) relations, so its presence and consumption in a nineteenth-century American work camp is not surprising or unique. The context of these finds, however, does provide important insights into the processes of social negotiation and change through encounter. The presence of opium bowls (n=2; one recovered by FWVAS), an opium tin, and a possible opium pipe stem (recovered by FWVAS) in the mess hall suggest that this communal eating space was also a location where opium smoking occurred. The other opium pipe recovered came from the cookhouse, the relatively private workspace of the cook, which may have doubled as his residence. No opium paraphernalia was recovered at the workers' cabins.

Although opium smoking is known to have been a practice employed by Euro-Americans throughout the American West (Fosha and Leatherman 2008), typically, Euro-American consumers of opium did so in liquid form through a wide array of tinctures and patent medicines (such as the "Perry Davis Vegetable Pain Killer" recovered in Unit 101). In contrast, Chinese immigrants tended to consume it by smoking (Wylie and Fike 1993). Furthermore, whereas opium was typically smoked in communal settings amongst the Chinese (for example, in the vilified "opium dens"), its consumption by Euro-Americans was typically done under the pretense of medical intervention, and it was not typically consumed on its own as a social and recreational drug. Though the sample is small, the pattern of consumption recovered from the Samuel Adams kilns suggests atypical opium consumption patterns were undertaken, with Chinese laborers consuming it in private spaces as well as possibly alongside non-Chinese workers in communal spaces, while non-Chinese manual laborers only consumed it in communal social and dining spaces. Furthermore, it appears non-Chinese manual laborers consumed opium by smoking it with traditional Chinese paraphernalia.

The material presence of an opium pipe and tin in the mess hall evidences that opium was at least occasionally consumed by non-Chinese workers in a communal leisure space alongside other social narcotics such as alcohol, tobacco, and coffee. Leisure activities are important because as people engage in non-work activities, they are free to pursue individually and subjectively gratifying activities. As Kelly Dixon (2005:581) notes, "people tend to express their cultural, class-based, gender-based identity during their free time, especially when living in a prejudicial social and economic context." Among the working-class, leisure activities took on additional social weight, as they offered an escape from the hegemonic values of capitalism and the perpetuation of productivity and competitiveness (Rosenzweig 1983; Wood 2004).

This suggests that opium smoking may have emerged as an activity that was, if not a truly "social drug" (due to the particular sedating effects of opium intoxication), it was at least something a potentially diverse group of workers consumed together in a social setting of communal leisure. It appears, therefore, that opium consumption was worked into the non-Chinese manual laborers' repertoire of self-medication and intoxication, emerging as a strategy for enduring the hardships of life as a manual laborer in the rural California industrial frontier, but also as a way to build relations across axes of difference through shared leisure practices. In the same way that social alcohol consumption in western saloons has been shown to have worked to build social connections between seemingly disparate groups, so to in this case does it appear that the shared practice of opium consumption may have forged communities of practice that cut across other labor, ethnic, and/or class-based divides.

The emergence of reimagined health and medical treatment strategies was not limited to opium, and it did not simply move unidirectionally from Chinese tradition to Euro-American adoption. Multiple "opium vials" were recovered from the cookhouse and mess hall spaces (Figure 8.7).

While these vials may have, on occasion, contained opium, the small and narrow shape of the bottle would have made them ill-suited for the drug in any form. More often, the bottles held a wide range of traditional Chinese herbal and mineral medicines and remedies (Fong 2013; Voss et al. 2015; Waghorn 2004).

One such Chinese medicine vial was recovered within the same cookhouse collapse as a wintergreen rice bowl (Figure 8.8). Wintergreen ceramics are a jade color of green and, as such, are often associated with the promotion of health in traditional Chinese medicine and incorporated in medicine consumption practices (Yuqun 2010). For example, wintergreen teacups have been found at other archaeological sites where they were interpreted as potentially being used in the consumption of medicinal teas (Heffner 2015; Rogers 1997). The wintergreen porcelain vessel recovered at the Samuel Adams kilns was a rice bowl, further highlighting the interconnected and intra-active relationship between food, consumption, medicine, and health in traditional Chinese thought (Yuqun 2010). While rice is not listed on the ledgers for the Cowell company, it is possible that the Chinese cook acquired it through his own channels or that he consumed other company provided foodstuffs in this vessel as a way to engage with traditional Chinese notions of healthy eating (Cowell Ranch Records 1869; Henry Cowell Lime and Cement Company 1903, 1909-1912).

The presence of an additional vial in the mess hall suggests Euro-American laborers may have incorporated traditional Chinese medicine into their pain management strategies, or, at the least, they observed the use of such medicines by the Chinese cook. That a blending of Western and Eastern health remedies was taking place is further evidenced by the recovery of an American patent medicine bottle and Jenny Lind Hair Gloss bottle in the same unit of the cookhouse as the Chinese vial (Figure 8.9). Jenny Lind Hair Gloss was a hair treatment named after a world-famous Swedish opera singer and produced in Massachusetts by H.E. Swan. The hair gloss bottle fragments were found in an intact deposit associated temporally with the deposit containing patent medicine and Chinese medicine vial fragments, suggesting these materials were in use contemporaneously and are associated with the final occupation of the structure (Hyde 2019). Functionally, the hair gloss would have served to protect the cook's hair, which was likely a queue (long braid) – the traditional style popular among Chinese men at the time. The oily gloss would have been a useful hygienic barrier to lime dust but also, along with the tight braid, may have worked to repel lice and other parasitic insects. This artifact, then, provides insights into the nature of living conditions at a semi-rural industrial site as well as potential hygienic concerns and strategies employed to mediate perceived threats. The presence of both traditional Chinese and western patent medicine suggests they were being used in tandem, in a novel configuration of self-care practices and strategies.

The hair gloss bottle is an interesting find in the primary space of a Chinese laborer because of the strongly racialized aspects of Chinese hair in the nineteenth century. The queue was a prominent feature cited in historic literature as evidence for the "otherness" and femininity of Chinese immigrant men, often drawing attention to the hair's jet-black color, straightness, and length in racist cartoons, literature, and propaganda for the anti-Chinese movement in California (Bright 2017; Williams 2008). The presence of Jenny Lind Hair Gloss in a space occupied almost exclusively by Chinese labor suggests some effort by the Chinese cooks went into not only caring for their hair, but in using a product that accentuated and protected the very racialized dimensions that marked their alterity. The fact that the particular product used to accentuate his “Chinese-ness” was American in origin and marketed with a famous Swedish figure highlights the entangled nature of objects, practice, meaning, and identity in the increasingly global world of the nineteenth century American Far West. There is nothing inherently “Chinese” about Jenny Lind Hair Gloss, and yet it emerges in a material entanglement of traditional Chinese practice by an individual living and working in a dynamic pluralistic context during a racially fraught period.

That the Chinese cook was using traditional medicine along with American patent medicines may have simply been a product of accessibility, but there is also the very real possibility that it was strategic. The use of these different products, sometimes for purposes likely not intended by their producers, would have allowed the Chinese laborer to both “maintain” his “Chinese-ness” while also incorporating some trappings of the West (for example, evidence for clothing from the cookhouse is very similar to that found at the workers’ cabins). This balancing, however, would have actively challenged and worked to change the very understandings of the materiality of Chines-ness and Western-ness, working towards unique, novel, and emergent meanings.

Pecking-Away at Boundaries: Marked and Modified Ceramics

Perhaps the most evocative material example of emergent practices – of the active processes of differentiation and boundary making – recovered from the Samuel Adams Lime Kilns is a small assemblage of peck marked ceramic vessels, recovered from the cookhouse and mess hall. As discussed earlier, the mess hall, as the primary manual workers’ social and leisure space, would have been one of the spaces of most sustained and intimate socio-cultural intra-action and entanglement. Workers of various national heritage, ethnic identity, class identities and aspirations, religions, languages, and occupations would have all converged on this space at least three times a day to eat, drink, socialize, and spend the little free-time they had available. This was facilitated, from at least 1870 to 1909, by a Chinese cook who prepared Euro-American style meals with foodstuffs provided by the company.

The practice of peck-marking vessels is a Chinese tradition that continues today. The practice involves using a sharp implement to remove small dots of glaze in a patterned way to create a symbol or design (Choy 2014; Michaels 2005). Peck-marked vessels have long been recognized as a fairly common feature of archaeological sites in California with a Chinese diaspora presence, but they are rarely investigated beyond description and translation. In all known cases in which peck-marked vessels have been recovered archaeologically the marks are used to construct Chinese characters (Brott 1982; Choy 2014; Hellmann and yang 1997; Michaels 2005).

Gina Michaels (2005) is one of the few scholars to focus specifically on peck-marked ceramic vessels. Working with 16 examples recovered from the San Jose Market Street Chinatown, she found that all 16 marks were Chinese characters. Of the sixteen, 12 of the characters could be translated and seven of those 12 characters were family names while five were wishes or blessings. Michaels (2005), in her analysis, was essentially concerned with the social function of these marks – what was their purpose and how were they used. In China today, and presumably in the past, vessels are peck-marked with signs meant to foster good luck. Michaels argues that a deviation from that practice to peck-marking vessels with names is a sign of hybridization and a product of the particularities of life in an American Chinatown. Rather than being markers of luck, Michaels argues that the peck-marks likely served as marks of ownership. These marks would have served as a way to distinguish and identify one's personal dish in the context of boarding houses, restaurants, and other crowded group living and eating arrangements. Michaels (2005) suggests that these peck-marked vessels represent the continuation of an already familiar cultural practice that was modified and used in a new way to "meet the needs of a foreign environment." I largely agree with Michaels' interpretation, but I do not think this is an example of hybridization in a post-colonial sense. The marks she discusses are a modification of a traditional Chinese practice, by a Chinese population in a diaspora context, for a Chinese "audience." A new Chinese character is used and the purpose has changed, but it is not a blending of different cultural practices, nor is it a reconfiguration or emergent phenomena born of cultural intra-action.

The peck-marked examples recovered from the Samuel Adams Lime Kiln site, however, are fundamentally different than those recovered at the San Jose Chinatown site or elsewhere across the American West (Figures 5.28, 5.29, and 5.35) (Choy 2014). The marks recovered at the Samuel Adams site are not Chinese characters, but words written in cursive Roman (or Latin) script, the lettering system we are familiar with as Americans today and the system that would have been used by European immigrant labor groups living and working at the lime kiln site in the nineteenth century.

Using the pecking practice to write a word in Roman letters rather than a Chinese character is an interesting example of blending practices in itself, but it's not just any set of words that's been pecked – the two words present are "Ah" and "Chow." According to Kelly Fong (personal communication, 2018), who assisted with translation, "Ah" is essentially an honorific similar to the English word "mister." In the 1870 census an individual living at the Samuel Adams kilns is listed as 31-year-old Ah Soy, from China. A total of six individuals working in the lime industry in Santa Cruz have their first name listed in the census as Ah between the years 1870 and 1930 (out of a total of 14 individuals from China), so it is likely that Ah became a stand-in, generic, or a racialized Euro-American provided and/or used name for many Chinese immigrants. The peck-marked "Ah" is found on both sides of a plain greyed British-made ironstone plate that was recovered from an intact deposit of the cookhouse. The ceramic's manufacturer and registration mark identifies it as a T.&R. Boote "Grenade Shape" pattern produced between 1858 and 1867. Interestingly, the Grenade Shape was one of two registered versions of the ceramic company's "Chinese Shape" profile, which was inspired stylistically by Chinese export ceramics (White Ironstone China Association 2005).

On the face of the plate the "Ah" appears to roughly precede the "Chow," although an intermediate fragment is missing (Figure 5.28). The "Chow" mark shows up again on another vessel recovered from the mess hall (Figure 5.35). Both "Chow" marks are almost identical in size, form, and script, and were undoubtedly produced by the same individual. On the vessel that also has "Ah" marks – the greyed British ironstone recovered in the cookhouse – the "Chow" mark is on the face of the plate, just off-center. The second vessel – the one recovered from the mess hall – is a plain blued British whiteware plate and the "Chow" mark is on the back of the plate, slightly off-center. A maker's mark identifies this second plate as a "Lafayette Shape" pattern produced by J. Clementson between 1850 and 1864. The presence and location of these marks, along with their location of recovery, might initially suggest the mark represents a name, and thus the marking practice was following Michaels' (2005) functional interpretation of their use as a material identifier and mark of property that allowed one to located and maintain use of their personal vessel in a shared eating context. When we further examine these artifacts, however, and consider historically contextual meanings of the word "Chow," we are confronted with alternative possibilities.

The word chow was a common slang word for mixed food in the mid- to late-nineteenth century that emerged specifically out of Chinese and Euro-American encounters throughout the American West, especially in mining and industrial camps and towns. The anglicize word chow is derived from chow chop suey (炒 雜 碎) pronounced "chau tsap sui" in Cantonese and "chao za sui" in Mandarin (Coe 2009; Mendelson 2016). Chow chop suey was a uniquely Chinese-American food, and the name derives from the method and nature of the dish – stir-fried (炒) jumbled (雜) fragments (碎) (Mendelson 2016). In the late nineteenth century, chow chop suey referred to a class of Cantonese stir-fried dishes, but at the time, stir-frying was a foreign cooking technique for most Euro-Americans and it defied translation, as English words did not yet exist to describe the stir-frying method (Mendelson 2016). Out of this history of intra-action, translation, and change, therefore, the word "chow" emerged as the Chinese pinyin word for stir-fried food.

Typically, stir-fried dishes referred to as chow chop suey served in Chinese-American restaurants around the turn of the century had meat or seafood with aromatics (usually ginger) and various vegetables, cooked quickly over high heat with a small amount of soy sauce, broth, and rice wine (Mendelson 2016). Over time in America, the word "Chow" was dropped, and the cuisine became known simply as chop suey, a misnomer because most American chop suey dishes did not contain "jumbled fragments" (雜 碎, "chop suey"), but they were stir-fried (炒, "chow"). While historical translation errors and miscommunication are likely to blame, it would have been more accurate to call the class of food "chow" (*i.e.*, stir-fried dishes, such as chow mein, which is stir fried wheat noodles) rather than chop suey ("odds and ends" or "jumbled fragments) (Mendelson 2016).

Most discussions of Chinese cooks in nineteenth century America begin with a discussion of the historically racialized and gendered attitudes that pushed many Chinese immigrant laborers into cooking and domestic work. While these are important factors, many Chinese immigrants came to the United States already having experience cooking for Westerners, and the cooking occupations were likely seen as a fairly desirable alternative to the difficult and dangerous manual labor options in mining, infrastructure, and even laundry work (Coe 2009; Mendelson 2016). The majority of Chinese immigrants to America in the nineteenth century came from the Guangzhou or Pearl River Delta region of Guangdong Province in southeastern China. Prior to large-scale emigration from this area to California following the discovery of gold, the Guangzhou area had a long history of European colonial intervention that led to sustained intra-actions with a diverse group of European and American merchants and expatriates (Voss 2015). From the time Portuguese explorers first made contact with China's eastern seaboard around 1500, to the subsequent establishments of a Portuguese trading port at Macau and British trading port (and later colony) at Hong Kong, the Chinese and Western worlds began influencing each other in substantive ways (Mendelson 2016; Voss 2015; Voss and Allen 2008).

At the center of these Chinese-European encounters in Guangzhou emerged an important local service economy that catered to the needs, desires, and tastes of European merchants that traveled to and lived in the Pearl River Delta. While this resulted in the development of things like pidgin English as *lingua franca*, it also led to many local Chinese learning the techniques, processes, tastes, and presentations of Western cuisine. This had important implications for later migrations to the American West because, as Mendelson (2016:22) notes, "it would be a mistake to think of the Toisanese and their Four Counties neighbors [Guangzhou residents] as hapless yokels with no understanding of the modern world… local people already had a history of turning their hand to other trades… after 1849 they would set out for Hong Kong and America not as unworldly naïfs but as possessors of survival skills on several different levels." In Anna Tsing's (2015) words, the Chinese, Portuguese, and others emigrating to California in the nineteenth century were already "contaminated" by a history of diversity and global intra-action, a history that would position them well to strategically negotiate various pressures and opportunities afforded by life in California. So when, at the Samuel Adam Lime Kilns in 1880, a Chinese cook is preparing a Euro-American meal for a Portuguese laborer, that encounter, though it may be novel for the individuals, was entangled in long genealogies, or "cartographies," of social-material intra-action (Barad 2001; Dolphijn and van der Tuin 2012:112). These intra-actions at the lime kiln, then, are the continued on-going enfolding of materialities in the emergent global-industrial world of the nineteenth century.

Returning to the peck-marked ceramic vessels, these artifacts appear as an assemblage of these overlapping cartographies, of histories of encounter, and of practices and meanings that emerged through intra-action. Their materiality is an entangled assemblage of matter and meaning – a creative engagement that creates ambiguity in its blending of characteristics. These qualities allow the objects to have multiple meanings and to act fluidly and agentively in ways that extend beyond and even against the initial intentions of the object's creators.

The entangled nature of these assemblage-objects becomes apparent in attempts to describe them: In these objects we have a pinyon word/name ("Chow"), written in Roman letters and cursive script, using a traditional Chinese ceramic marking practice, on British-made ceramics, discovered at an industrial work site on the coast of California. Diving into these various aspects only further illustrates the complexity of these entanglements. As discussed earlier, the concept and word "Chow" itself was born of sustained Chinese and Euro-American intra-actions in the nineteenth century American West, as new cuisines emerged amidst the long lingering echoes of global European colonialism. Similarly, at least one of the British ceramics, the "Grenade Shape" plate, even though it was manufactured in Staffordshire, England, was part of the producer's "Chinese Shape" line of vessels that were intentionally designed to index Chinese export porcelains, themselves entangled in emergent global networks of trade, taste, aesthetics, and status. Furthermore, the peck-mark designs are relatively large, and the individual marks are rough-edged, a product of their production on semi-vitreous ceramics instead of the traditional Chinese porcelain. So, while these marks are similar to the traditional Chinese peck-marks, they are also substantively different in almost every way. These differences are not isolated or segmented anomalies, either. None of the material qualities that distinguish these marked vessels as unique can be separated from each other, they are emergent assemblages born of global intra-actions in a particular social and historical context. They are a true materialization – an emergent phenomenon – of the meeting of global and local histories and practices.

Critically, these examples show that this blending and blurring of practices are not restricted to the realm of language. These traces of intra-action are not limited to the word "Chow." The peck marks are not just words, not only symbols – they are not simply representations of these intra-actions. The act of assembling these objects, the inscribing of the word into matter, works to link meaning, practice, and material in new, creative, and emergent ways that go beyond language and words. With the act of pecking, the word becomes inseparable from the material object, itself. It is in its materialization that the word ("Chow") matters and attains a capacity to act, to affect the social world in which it is a part.

These complex entanglements make the peck-marked artifacts difficult to classify, as they resist essentialization. It becomes impossible to identify what parts are Chinese, what parts are European, even who was doing the inscribing, and who was doing the viewing. Beyond that, it is impossible to classify each object in narrowly functional terms as an eating implement, plate, or ceramic artifact. This unclassifiable nature, this ambiguity, this "deterritorializing" quality, however, is the important feature (Dolphijn and van der Tuin 2012:113). A new materialist orientation that conceptualizes matter and meaning as fluid and emergent provides an opportunity to explore this resistance to categorization as a capacity to act agentively and be lively in the world. These artifacts are neither Chinese nor Euro-American, nor simply a combination of both. These object-assemblages are something entirely new, an ambiguous reimagined creation emerging from the sustained entanglements and contaminated diversity of various overlapping genealogies and communities – acting, doing, and effecting the emerging California industrial landscape.

The "Chow" and "Ah" marks become even more ambiguous when they are considered in association with an additional peck-marked artifact. In an intact deposit from the cookhouse we also recovered a greyed ironstone hour-glass mug that had on the underside of the base, just off-center, a collection of crude, clumped, but non-patterned peck-marks (Figure 5.30). The marks appear to be attempts to peck-mark the vessel, but the chips are deep, wide, and non-uniform.

As Michaels (2005:130) and others have noted, "the creation of a peck mark on a porcelain bowl or plate is not a quick and easy task. Porcelain is an extremely hard, rigid material, and to etch a character through the glaze and into the paste of a vessel one would have needed to apply a hard object with enough force to chip away at its surface, but not so much as to crack the whole vessel. There seems to be something of an art to creating clean legible characters." The crude nature of the pecking on the mug suggests these marks were made by a novice, or someone learning the technique of ceramic peck-marking. Since all historical records indicate there was always only one Chinese laborer working in the cookhouse at the Samuel Adams operation, this peck-marking may reflect the sharing of different practices and traditions between the lone Chinese cook at the site and other Euro-American laborers.

As discussed in Chapter 7, scholars have explored the ways in which situated learning and the sharing of practices through doing are inherently social activities that frame understandings of individual and group identity and affiliation (Crown 2014; Lave 1991; Sassman and Rudolphi 2001; Wallaert 2013). The traces of this activity, therefore, suggest that meaningful intra-actions across ethnic groups took place at the Samuel Adams kilns. The sharing and enactment of this peck-marking practice, itself a reimagined and emergent phenomenon, would have worked to redraw boundaries and create connections between Chinese and Euro-American workers.

This intra-action and possible collaboration may be a product of the social and historical particularities in which the Chinese cook found himself. After 1870 at the Samuel Adam kilns different cooks would have worked as the lone Chinese at the lime operation. The 1870s through the early 20th century was also a period of heightened anti-Chinese sentiment, with vitriolic public and political discourse, legislation, and violence aimed at Chinese immigrants and Chinese-American communities (Chen 2002; Coe 2009; Lew-Williams 2018). Within this context, making connections with other workers and ingratiating himself into the wider labor communities of the lime operation may have been a survival tactic actively employed by the Chinese cook. Separated from the broader Chinese diaspora communities, the cook would have likely looked for new ways to build connections to facilitate access to resources, for protection, and/or for camaraderie. The sharing, shifting, blurring, and hybridization of peck-marking practices suggests this is one way in which these new connections were made and relations were formed. In this sense, the peck-marked vessels were active in the creation of these relations, they did things in the social world beyond their use and even beyond their possible intended function, which may have been multiple.

If these marks are, in fact, traces of intra-ethnic relations, it forces us to confront our assumptions about who is doing the "Ah" and "Chow" peck-marking, and for what end? Was it the Chinese cook participating in a familiar practice but adapting the nature and script of the words so that it could be read by non-Chinese workers that occupied the mess hall alongside of him, as has been assumed thus far? Is this crude peck marking evidence of the Chinese cook teaching that practice to other non-Chinese laborers? Or, are the "Ah" and "Chow" marks evidence of a European immigrant laborer having learned a new practice (peck-marking) and implementing it in a way to produce words and a script they are familiar with, but in a way that plays with and indexes the history of Chinese-European interaction in the west and pecking as a Chinese tradition (pecking "Chow" instead of food, adopting "Ah" for mister instead of Mr.)? Or, perhaps, is it a European immigrant marker adopting and adapting these terms and techniques for his own strategic purposes, but doing so in a way that it could be understood by the Chinese cook handling this object multiple times a day?

It is impossible to answer these questions with any degree of certainty, but they are also not the right questions. These marks are not being examined as static markers of ethnicity. Instead they are being explored as traces of active social-material intra-relation – entanglement, negotiation, emergence, and community-making (Agbe-Davis 2018). Nor does the interpretive weight of these marks depend on the directionality of sharing, as this promotes a sense of adoption, diffusion, imitation, or reproduction. Instead, the critical aspects of these artifacts are their material-discursive capacities. Rather than analyzing which group adopted which practices and for what end, we can instead explore them as materialities of co-constitutive mimicry.

Bhabha (1984, 2004), drawing on Lacan's (1978) notion of camouflage, presents an understanding of mimicry as strategic imitation that allows subaltern groups to safely navigate colonial structures, while subtly resisting by never quite "succeeding" at true reproduction. Fahlander (2007) takes this idea further and argues that mimicry can also be strategic subversion.

As “the subaltern seems to adjust and assimilate to a dominate discourse (*e.g.,* behaving and looking European) it gives a false impression that the colonized is pacified and harmless, while actually opening up a space for hidden agendas” (Fahlander 2007:27). In the complex pluralistic context of the Samuel Adams kilns there were not clear boundaries of colonizer/colonized. Workers who came from across the globe, however, were haunted by colonial histories as they came into contact in life and work at the industrial kiln site. These histories and genealogies were not mapped directly onto labor relations at the site, but they would have worked to frame, inform, and structure emergent power relations that intra-sected in complex ways with notions of ethnicity, immigration history, labor, gender, religion, and other shifting categories of identity and identification. The mimicry that is evidenced in the “Chow” and “Ah” marks then, regardless of who was doing the marking, is nestled in an ambiguous and complex assemblage of relations that was indexed and framed by long colonial histories, contemporary racialized discourses, labor relations, and corporate industrial power hierarchies. The mimicry, as a material-discursive practice, then, is multi-directional, or even trans-directional, as its entanglement and ambiguity provided opportunities for diverse and even conflicting strategies of social negotiation, by all agentive bodies involved.

The chronology of the peck-marked vessels is also important, and a consideration of the temporality of these objects adds interesting dimensions to their stories. The vessels with peck-markings are chronologically anomalous in that their date of manufacture is notably earlier than the ceramic assemblage with which they were recovered and associated. At the cookhouse (Locus C, Unit 110), the “Ah” and “Chow” marks were pecked into a T. & R. Boote “Grenade Shape” ceramic plate that was produced between 1858 and 1867. This provides an average manufacture date of 1862.5. Comparatively, the average ceramic date for the unit is 1870.5, and for the context in which the plate was recovered (context 6) the average ceramic date is 1889.6. Similarly, at the mess hall (Locus B, Unit 109) the peck-marked “Chow” was on a Joseph Clementson “Lafayette Shape” plate manufactured between 1850 and 1864. The average date of 1857 for this vessel is substantially earlier than the 1884.3 average date for the unit, and the 1885 average date for the context (6) in which the vessel was recovered.

Given the transitory nature of the workforce, these objects would have had lives of their own. Objects, through their mattering in the world, have the capacity to act agentively and speak volumes – to tell different stories, do different things, and have different meanings based on the particularity of their engagements, assemblage, and entanglements. The object chronology outlined above allows for the possibility that the peck-marked vessels were curated or salvaged objects, and it is possible that the markings were not done at the Samuel Adams Lime Kilns at all, but that they came to the site pre-modified as part of someone’s assemblage of personal belongings. The ceramic dates also make it possible that the peck-marked vessels were abandoned at the site and later re-used and re-engaged with by subsequent laborers.

The mystery and the ambiguity of the marks may have made their original meanings just as elusive and captivating to later workers as they are to us as twenty-first century archaeologists. The marks may have inspired myths and legends, “passed down” (by being left behind) by generations of laborers huddled together by the warmth of the stove in the corner of the mess hall after finishing a meal, outlining the peck-marked words with their fingers as they recalled stories from the days before. These stories would not have served solely as entertainment, they would have worked to create a collective memory "composed of the fragmented stories that surround specific places and events, that are passed around, within, and between generations" of workers (Jones and Russell 2012). Social groups mediate, negotiate, and engage with individual memories to form a shared understanding of the past and mobilize it as features of their identity (Shackel 2000b). These memories, then, and the materials in which they were entangled, would have served as yet another material-discursive intra-action that worked to tie the diverse community of laborers together through the construction of particular historical narratives (Delle 2008; Jones and Russel 2012; Shackel 2000b; Wertsch 2002).

For the lone Chinese immigrant who took on the position of company cook at the Samuel Adams complex, these marks entangled them in engagements with a broader Chinese-American community separated by distances of time and space. It is possible that these objects circulated for many years at the site as peck-marked vessels, separate from the action and experience of being pecked and removed from any individual with knowledge or experience of how the peck-marks were made. As successive cooks became entangled in the materiality of the cookhouse, they would have necessarily engaged with a wide range of abandoned, forgotten, and inherited objects – the ghosts, echoes, and traces of past Chinese immigrant cooks. This is worth noting, because it highlights the potential for social-material intra-action across temporalities. In this context, the peck-marks and the marked vessels may have done and meant very different things than that which was intended by the original producer. In these novel entanglements, new meanings may have emerged as later laborers intra-acted with these materials.

If these peck-marked objects were in fact curated or salvaged materials, it is possible that the crude peck-marking observed on the mug base was accomplished by a later Chinese laborer (rather than a Euro-American laborer as suggested earlier) who did not have expertise in peck-marking ceramics. If this is the case, the crude marks are a product of engagement with cultural traditions and histories by someone who identified as part of the very community in which the peck-marking tradition emerged. By engaging with the material object and attempting to create one himself, the cook would have been creating social-material connections to the wider diasporic Chinese community, both past and present, while "alone" at an industrial operation. In attempted mimicry, experimentation, and reproduction of the peck-marked objects, the individual could have created novel cultural-historic ties and meaningful connections – engaging in material-discursive intra-actions across multiple entangled temporalities and genealogies.

In this material-discursive intra-action, communication may not be between multiple people, but between multiple agentive object-bodies. In this case, the intra-actions are between the Chinese cook and the peck-marked object – both lively assemblages of overlapping histories, genealogies, encounters, and experiences. The object, however, is not dependent on its use by humans to be meaningful or active. In its very material being it is entangled in meaning and has the capacity to act agentively. As this object circulated throughout the Samuel Adams site, this engagement and material-discursive meaning making would have taken shape differently, variously working and doing action in socially important ways depending on the context of its engagement and entanglements. The ways in which objects move across space and time has been variously explored in archaeology as use-life (Shanks 1998), itineraries (Joyce and Gillespie 2015), queer use (Ahmed 2018), and genealogies (Dolphijn and van der Tuin 2012), to name just a few. These approaches, while diverse, share a recognition that as objects move through the world they act and are acted upon, transforming morphologically and meaningfully. These object experiences through space and time leave traces – on the landscape and on the object – that archaeologists can follow and piece together, exploring their entanglements and the multitude of potential social and material effects.

The materiality of these markings, therefore, is critical to understanding their potential meanings and social relevancy. The peck-markings are on mobile yet highly visible objects used during the social situation of consuming food in a shared mess hall, where a diverse group of men would have come together and interacted multiple times a day. These marked ceramic plates would have circulated between different people at different times within the Samuel Adams mess hall and cookhouse, and these markings may have meant and did something different in each moment and engagement (Phillippi 2018b; Silliman 2010). The location of the marks on the plates is a significant feature. One of the "Ah" marks is on the back, where it would have been seen only if it was being looked for, perhaps by the vessels' owner as they sifted through a collection of otherwise very similar looking ironstone and whiteware vessels. The "Chow" mark on at least one vessel, however, is on the face of the plate – a peculiar location that demands we consider the viewer and potential meaning of this mark for different viewers in a dynamic and diverse context such as the company mess hall.

A new materialist engagement with these objects necessitates we move beyond simply an analysis of representation and function to consider what these objects did as matter in the world – their liveliness and performative nature as materials. It is not just the word "Chow" or "Ah" that is important. It is the location of the word, the mark's physical form, its method of inscription, its meanings, and what these materials did in the context of this labor community. The word cannot be separated from the matter in its mattering (Barad 2003). The mark's particular manifestation is not simply citational, it is not just a persistence of traditional Chinese practices or an index to traditional Chinese meanings, it is a set of emergent phenomena (Barad 2007). Rather than thinking of these marks as a product or outcome of interaction we should be seeing them as the active material morphogenesis of intra-action in a particular time and place.

Again, Barad (2007) is explicit in the distinction between inter- and intra-action. Intra-action involves the mutual constitution of entangle agencies, where entities materialize in co-constitutive ways, emerging through the relationship of intra-acting. As discussed, the Chinese cook, the European immigrant, and American migrant laborers were operating within an already existing history of cultural entanglement. They did not come together at the Samuel Adams lime kiln site as fixed and "pure" entities of "Chinese-ness" or "Irish-ness" or "Portuguese-ness." These ethnic categories were themselves in a constant state of negotiation, becoming, and mattering – the crest of long entangled genealogies and complex cartographies of intra-action (Barth 1969; Hoerder 2002; Ingold 2007; Jones 1997). Neither is peck-marking being implemented in California in a static traditional way. As the "Chow" slang suggests, these ethnic categories are already blurred and entangled when they come into contact at the Samuel Adams kiln site.

In the creation of this new materiality through intra-action, meaning emerges in historically and socially contingent ways. The matter and the meaning are inseparable, they are co-generative. Mobilizing a Peircean understanding of semiotics, Sowa (2007:80) argues that "meanings grow as new information is received, new implications are derived, and new actions become possible." Similarly, Barad (2003:821) notes that "meaning is not a property of individual words or groups of words but an ongoing performance of the world in its differential intelligibility." As archaeologists attempting to explore the multiplicity of material-discursive practices, we must look for the potential of meaning not "in essential qualities of material culture or persons or in pure contexts, but in observations of the traces of people at work on the world, trying to get something done, trying, in fact, to solve their own problems" (Agbe-Davis 2018:136). The "Chow" marked plates defy essentialization and categorization precisely because of the various work they do. The ambiguous and polyvalent nature of the marks as indexical signs, that is, as signs that point to histories (or cartographies) of action and relations, affords them power to do a multiplicity of things based on the particularities of their various entanglements through time (Agbe-Davis 2018; Peirce 2013). These objects did not serve one function, but instead were in a constant dynamic of doing and becoming, mattering differently and continuously making meaning in the dynamic context of an emerging industrial California.

Archaeology has a critical role to play in these discussions because of the fundamentally material nature of encounter, intra-action, and emergence. The peck-marked vessels discussed here illustrate the ways in which material objects in pluralistic settings become ambiguous, are differentially translated, can have multiple meanings, are used to create new meaning, and, as a result, facilitate cultural entanglement and emergence. Much like chow chop suey, the indexed dish that consists of an assemblage of mixed stir-fried ingredients that was never set or fixed, the Samuel Adams community was a complex, fluid, emergent, and ever shifting assemblage of diverse bodies, thrown together into the heat of a nineteenth century California industrial work camp where there was intra-action and transformation. The "Chow" mark is itself an assemblage of these entangled agencies and genealogies, indexing these complex relations, and working to further build connections and re-draw social boundaries, emerging anew in this reconfigured milieu to act again in a perpetual process of entangled social negotiation between human and non-human actants. These objects, I think, are as much at work in these processes of intra-action and diffraction as the laborers toiling in the kitchens and the kilns.

The Many Faces of a Rooster Button

Another ambiguous object that likely worked to navigate and reconfigure the complex pluralistic entanglements of the Samuel Adams kilns was an embossed iron "Can't Bust 'Em" overall button. This object was recovered in an intact context associated with the floor joists of the company cold room (Locus V). This is a space that would have been frequented by the cook in his line of work, but may not have been exclusively used by him. Similar to the peck-marked vessels, this object is being interpreted as doing work within the Samuel Adams community, reshuffling relations and meanings in its ambiguity and multivalency.

The relatively large overall button measures about 2cm (or 32 lignes). On the face of the button are the embossed words "Can't Bust 'Em" arched over a rooster, chest puffed-out in full crow, wearing denim working overalls (Figure 5.24). "Can't Bust 'Em" was the name of a line of workwear clothing owned by the Eloesser-Heynemann Co. of San Francisco. While the company was started in 1851 as a competitor of Levi-Strauss, the "Can't Bust 'Em" brand began in 1876 (Amin-Patel 2018; Psota 2002).

While the “Can’t Bust ‘Em” name and slogan was purported to refer to the durable nature of their workwear products, it also indexed union activity, labor strife, and working-class collectivity and identity, important issues in the California social, political, and economic landscape of the late-nineteenth century. Union-busting was a way in which industrial capitalists regained power in labor relations and collective bargaining negotiations beginning in the mid-nineteenth century. By naming the workwear brand “Can’t Bust ‘Em” the company was aligning itself with working class interests of the time, signaling its position to potential consumers. If there was any confusion on their labor position in the brand name, it was clarified in advertising and on clothing badges, as the words “Union Made” were proudly displayed in large bold font below the slogan (Figure 8.10).

There was also a racial dimension to union activity in the nineteenth-century, especially in San Francisco where Dennis Kearney’s Workingmen’s Party in the late 1870s worked to draw direct connections between Chinese immigration and labor and the plight of the white working man in America (Glass 2016; Kanazawa 2005; Kauer 1944; Ngai 2015; Wang 2004). In the early years after the discovery of gold, labor shortages kept demand for workers in emerging industrial, infrastructure, and extractive mining jobs high, and as a result, the Chinese occupation of labor positions in domestic services, cooking, and laundry were relatively unchallenged by white workers (Amin-Patel 2018; Ngai 2015). Developments like the transcontinental railroad, which made access to goods and labor more accessible for Californians, and a nationwide economic depression between 1873 and 1878 unsettled the California labor landscape and decreased labor demand. Previously overlooked low-paying and difficult service sectors jobs occupied by Chinese labor became desired by the white working-class (Amin-Patel 2018; Kanazawa 2005; Olmstead 1971; Wang 2004). As the Overseas Chinese population was forced to work for lower wages to maintain their positions, they drew the ire of white workers who, fueled by pointed political rhetoric, saw Chinese immigration as the primary reason for their labor strife (Kauer 1944; Mendelson 2016).

These tensions often erupted in violence, as is evidenced in the burning of Chinatowns in Los Angeles in 1871 and San Jose in 1887 and the labor riots that killed four Chinese men in San Francisco in 1877. But the discrimination and collective exclusion and marginalization of Chinese labor also took more subtle and organizational forms. One of these forms was through union activity, which often systematically excluded Chinese laborers. Going a step further, these unions often explicitly promoted segregation, race-based labor discrimination, the expulsion of Chinese, and even outright violence. These sentiments manifested in legislation in 1882 as the Chinese Exclusion Act which prohibited all immigration of Chinese laborers to America, a law that was not overturned until the Magnuson Act of 1943.

There is evidence that this anti-Chinese sentiment extended to the Santa Cruz lime industry. In 1885 workers at the H.T. Holmes Lime Company threatened to boycott if the Chinese cook was not replaced. A month later the cook was fired and replaced with a white cook. Henry Cowell allegedly faced similar pressures by some of his workers and the broader community, but he continued to employ Chinese immigrants as cooks at his various kiln operations throughout the nineteenth century and into the middle of the twentieth century. This choice was likely rooted in pragmatic economic reasons rather than moral principles, however, as he could pay Chinese workers considerably less and he is said to have found them skilled and highly dependable (Perry et al. 2007)

Seen in this broader racialized labor context, overt material signs of union activity or allegiance would have had multiple dimensions and real implications for both building community connections and boundaries within a diverse workforce at the Samuel Adams kilns. Ceramic pipes, often embossed with political or national motifs, have been explored by a number of archaeologists for the ways in which they signaled various allegiances, built relations, negotiated power hierarches, and were used to perform identity (Agbe-Davis 2015, 2018; Beaudry and Mrozowski 2001; Metheny 2007; Yamin 2001). For example, Beaudry and Mrozowski (2001) working at the Boott Mills company boardinghouses in Lowell, Massachusetts argue that the presence of pipes with Irish republican sentiments would have been a way for workers to signal ethnic solidarity in a pluralistic work context and would have served as an expression of emerging working-class culture that intersected with the immigrant experience. Yamin (2001), exploring working-class life in New York's Five Points neighborhood found a different situation whereby Irish immigrants used pipes to distinguish themselves from native born people, but out of concern for potential discrimination or mistreatment they did so in a way that did not use overt Irish symbology that drew attention to their Irish origins. Other examples include the recovery of pipes with Masonic imagery across nineteenth century American sites (White and Beaudry 2009). These finds are interesting because, while the idea of Freemasonry was constructed as a bastion for elite males it was, in fact, characterized by considerable pluralism (Clawson 1989). Therefore, as Dallal (2000:128) argues, membership in the organization worked "as an integrative mechanism which helped to pull all of these disparate groups into a cohesive nation." As these clay pipe examples illustrate, highly visible and differentiated personal objects provide the opportunity for consumer choice, active manipulation, and the performance of one's bodily-assemblage to present ideologies, affiliations, and identities that had the potential to both transgress and reinforce group boundaries (White and Beaudry 2009).

If there was any question as to the racialized ideologies winked at by the inclusion of "Union Made" on "Can't Bust 'Em" tabs and advertising, it was made explicit by the often-included sub-slogan "Made By White Labor Only" (Figure 8.11). This overt labeling made it clear where the Eloesser-Heynemann Company stood in the discourse of race and labor in nineteenth century California. But the overt racial advertising and symbolism could also be mobilized by consumers, as their material choices for workwear could announce to an informed viewer their position on the "Chinese Question" (Ngai 2015). For this reason, it is interesting that the "Can't Bust 'Em" rooster button was recovered in the cold room, a primary work space for the Chinese cook.

On the one hand, the button could have been worn by a non-Chinese worker and it was lost or purposely placed in a primary Chinese work space. If this is the case, this object could provide insights into antagonisms between groups at the Samuel Adams kilns that mirrored racialized labor relations elsewhere in California in the late-nineteenth and early-twentieth centuries. The Workingman's Party had a large Irish base, so it is possible that the button was worn by an Irish lime worker to show his allegiance to the movement and his position towards Chinese labor.

Although Levi-Strauss & Company followed similar race-based discriminatory hiring practices in the late-nineteenth century, its declaration and advertising of using only white labor was less ubiquitous and overt. Levi's workwear would have been as accessible to the lime workers as the Eloesser-Heynemann clothing, if not more so, as is evidenced by the recovery of a number of their patented copper rivets from across the site. The choice of "Can't Bust 'Em" clothing, then, with large logos on overall buttons that would have been highly visible on the chest of the wearer, may have been a purposeful choice meant to convey information about the wearer and his position on contemporary sociopolitical issues that would have been actively negotiated at the kiln site.

This wearing of the button my not have simply been directed towards Chinese viewers, it may have alternatively (or also) signaled and worked to build connections between European immigrant workers. We must remember that not all immigrants from Europe were considered racially white upon their arrival in America (Brodkin 1998; Jacobson 1999). As Morris (2017) argues, race is a materiality, an embodied material reality born of practice situated within a complex racializing nexus of social, economic, and political relations. At various points during the nineteenth century both Irish and Portuguese laborers were considered not quite white, or were ranked at the lower echelons on the scales of whiteness (Jacobson 1999; Kenny 2003; Paramoure 2012; Roediger 1991). At various points in time and in particular places, this resulted in their systematic exclusion from organized labor and collective bargaining efforts. The historical and social particularities of California, however, reconfigured many social relations and challenged boundaries of whiteness that had become entrenched in other areas of the country. With the Irish in particular, when placed in contrast to Chinese immigrants, their differences that categorized them as non-white in other times and places seemed minimal, and they were largely considered part of a wider white populace (Campbell 2002). Portuguese immigrants, however, with a typically darker complexion and non-English language would have occupied a liminal position, less other than the Chinese, but also not so ambiguously white as the Irish (Avendaño 1982; Paramoure 2012). Some have argued, however, the large presence of a Chinese "Other" in California actually fueled the amalgamation of previously disparate immigrant groups from across Europe as a white race (Jacobson 1999). Given that Irish immigrants comprised a large portion of the social base behind unions and The Workingmen's Party, it is possible that the button was worn by a Portuguese, Italian, or other marginalized European immigrant laborer to strategically signal affiliation, real or desired, with the popular labor movements of the time, and in this way actively work to (re)define themselves as part of the white working-class in California. In this way, the button may have been active in the racialized discourses of the period, working agentively within a wider material assemblage (including the worker's body and other bodily-materials) towards the blurring of ethnic and racial lines – creating new relations amongst industrial workers based on shared working experiences that fueled a nascent but emerging labor community in California (McGuire and Reckner 2002).

This rooster button and its context are ambiguous, however, and other interpretations must be entertained. Given the recovery of the artifact in a primary workspace of the Chinese cook, it is also possible that the button was being worn by the Chinese laborer himself. Given the racialized implications that wearing such a button suggests, as discussed above, it may at first seem illogical that a Chinese worker would wear an emblem of anti-Chinese and pro-white labor unionization. We must remember, however, that the cook at the Samuel Adams kilns operated as the sole Chinese worker, alienated from the broader Chinese diasporic community, living and working with an otherwise all European immigrant and native-born workforce. Wearing clothing associated with unions and white labor movements may have been a strategic tactic employed to not only survive what may have been a potentially volatile social situation as a single Chinese man, but to also build material-discursive connections to the broader labor force.

In this case the wearing of the rooster button may be doing double-speak, or double-work, where symbols are used or presented in novel ways (through mimicry) to create ambiguous presentations that allow actants to strategically navigate tenuous social situations. Laurie Wilkie (2000) explores this idea when considering the ways in which African Americans actively navigated postbellum racial tensions in the American South by buying pro-white marketed goods. Shopping, Wilkie (2000) argues, would have been a potentially dangerous activity as African Americans had to enter white owned stores outside of the protective structures of African American communities and neighborhoods. This danger was navigated, in one way, by using consumption as a material-discursive practice that worked to manipulate the white racist perceptions and stereotypes of African Americans.

For example, Wilkie (2000) found that the most commonly recovered medicine bottle from postbellum contexts at Oakley Plantation were Dr. Tichenor's Antiseptic. On the surface, this is surprising, as Dr. Tichenor was a Confederate surgeon and the product had close ties to white supremacy in broad popular imagination – the label shows Confederate soldiers, holding the Dixie flag proudly and boldly in the center of the image, standing over dead and defeated Union soldiers. Wilkie argues that the presence of this material in deposits associated with African American plantation workers reflects an active strategy of black consumerism in the postbellum American South. Seeing an African American buying this product would suggest to white viewers that the individual "was recognizing and acquiescing to these same values" of white supremacy and other and racist ideologies (Wilkie 2000:236). African American consumers were aware of the white perceptions and material meanings in which this object was entangled. Through strategic consumer practices African Americans played with perceptions, manipulating social situations through an active engagement with the object-sign relationship in material-discursive practices.

This allowed the African American consumer to not only navigate a potentially fraught shopping experience at a white operated store, but mask the ways in which the medicine was used as part of an ethnomedical tradition. With peppermint and alcohol as the main ingredients, Dr. Tichenor's patent medicine was marketed as helping to address a wide range of maladies including headaches, sore throats, colds, burns, and stomach issues. Mint tea was an established cure for fevers, chills, and diarrhea among the African American community in Louisiana and the Caribbean during the same time. The purchasing of this item, therefore, allowed African Americans to pursue traditional ethnomedical practices under the guise of racialized consumption patterns. In effect, African Americans were able to work with and between the strictures of a highly racialized landscape through strategic material-discursive practices. In a similar way the rooster button, when worn by a Chinese cook, signaled indexically that he understood the broader contemporary racialized-labor tensions in which he was living and working. This material wink may have allowed him to actively navigate the potentially hostile landscape without overtly siding with one group or another (Chinese immigrant laborers or pro-white and/or pro-union European immigrant/American migrant laborers).

The ambiguous nature of the rooster button makes it possible that the union and racialized labor context of the company slogan were not the most important aspects of the object. Instead, the rooster imagery itself may have had more meaning and social weight. The rooster is an important Chinese zodiac symbol, serving as the sign for the tenth year in the 12-year zodiac cycle. Years of the rooster in the Chinese zodiac calendar were 1861, 1873, 1885, and 1897 – the last two years overlapping with periods in which the Can't Bust 'Em company was in operation. It is possible then, that the workwear was chosen and worn by the Chinese cook because of the rooster imagery associations with the zodiac calendar. It is also entirely possible that the button was used separate from the clothing as a personal keepsake, talisman, or charm, as no other clothing material was found within the excavated area of the cold storage room.

Much like the "Chow" mark, the button defies a single interpretation and classification, or a clear understanding of the potential owner, use, and meaning. This is because it likely served many purposes and meant many things for different people at the site. For example, the rooster is also an important symbol of Portugal and Portuguese identity. This association between Portuguese national identity and symbolic rooster imagery – specifically a colorful black, red, and yellow bird motif known as the Galo de Barcelos – stems from a pre-seventeenth century Portuguese folk story. In the story, a man wrongly accused of theft and sentenced to death uses a dead rooster's timely (and unexplained) crow to prove his innocence, forever linking the bird to notions of virtue, honor, and fairness (Orlin 2001; Rendeiro 2016). From this story, the Galo de Barcelos became a national symbol thought to bring good luck and honesty. It is not hard to imagine that a Portuguese immigrant, finding himself in the precarious situation of attempting to find work and survive in a foreign land, may have been attracted to clothing that displayed a symbol of luck and fairness.

The details of the Galo de Barcelos story, however, provide the potential for meaningful reach beyond only Portuguese laborers. Between the lines, the story of the Galo de Barcelos is one of power – what happens to those without it when on the wrong side of those that have it. The protagonist of the story is often described as a humble pilgrim from the neighboring community of Galicia, powerless and penniless as he traveled through the countryside. As a passerby, it is only due to poor timing and luck, rather than means or status, that he finds himself at the celebration of a wealthy local landowner. As is often the case, when a piece of silver goes missing from the landowner's home it is the outsider, the poor and powerless pilgrim, that becomes the scapegoat and draws the ire and accusation of the landowner. Because of the social position of the landowner, the pilgrim was immediately imprisoned and sentenced to hang, despite his protestations of innocence. It is only through the miraculous intervention of a dead rooster that the man's life is spared.

The rooster, therefore, is not just a symbol of luck. The rooster is the savior of an individual wronged, exploited, and made voiceless by those in power. The landowner not only controlled the local agricultural resources, he controlled popular opinion, the process of determining guilt and innocence, even the judge brought to weigh in on the subject. The pilgrim on the other hand controlled nothing, and when embroiled in relations with the landowner had to rely on divine intervention to level the playing field. One can imagine this story being shared by Portuguese wage workers with other laborers, toiling for meager pay at a lime operation while Cowell was amassing great fortune, resources, and power in Santa Cruz. The deeper symbolism of this story, I believe, would have resonated with all lime laborers during a period where labor injustices and power imbalances were being highlighted through increased collective action and unionization. The rooster imagery, therefore, may have been entangled in stories, ideas, and sentiments of the virtues and honor of the poor, powerless, and exploited and in this way it may have come to serve as a powerful symbol for the emerging community of lime laborers. Shared between immigrant groups, the symbols and underlying themes may have served as yet another emergent phenomenon though which mutual understandings and social connections were built.

So, with the "Can't Bust 'Em" rooster button we have a culturally charged symbol with various different meanings that may, or may not, align with the intended marketing of a pro-white labor clothing company based in nineteenth century California. It is this very ambiguity and potential for multiple interpretations and meanings that makes this button and the rooster a powerful symbol and potentially valuable object in the past for negotiating the complex social landscape at the Samuel Adams site. It is likely that the different laboring groups would have been aware of the various cultural meanings and importance, and that these may have been variously incorporated, negotiated, or used by the owner of this object based on the particular social situation or encounter they found themselves in. The particular meanings of the button, therefore, would have emerged through the particularities of intra-action.

The ambiguity of the button makes it impossible to identity the single "correct" interpretation in any positivist sense. And, we must consider the banal idea that the button may have just been a button – a functional clasp and nothing more. In the context of dynamic labor unrest and ethno-racial negotiation, however, and in association with the wealth of other materials presented previously, we must at least consider the possible alternative meanings and agentive capacities of this object and others like it. Regardless of the interpretation, I think this artifact and the others discussed above, illustrate the ways in which objects in pluralistic settings are active material-bodies, can become ambiguous, are differentially translated, can have multiple meanings, are used to create new meaning, and, as a result, facilitate cultural entanglement, reimaginings, and emergence. This suggests that our goals as historical archaeologists should not be to identify the changes to a particular group through cultural encounter, but to trace the threads of social-material entanglement that weave together an entirely new fabric of relations, matter, meanings, connections, boundaries, and identity.

Piecing it Together, Connecting the Threads

In this chapter I have attempted to explore numerous material examples – multiple lines of entangled evidence – to highlight the active and lively role of materials in creating connections within the diverse labor force of the Samuel Adams kilns. These examples have illustrated how both materials and workers were agentive and strategic, using ambiguity and fluidity in form and meaning to reconfigure relations and create novel constructions of self, other, and community. In following these various material entanglements, I have attempted to show how different objects and assemblages were both products of, and active in, the reconfiguring of social boundaries in a dynamic and pluralistic setting. While these material examples and the social and historical context are particular to the Samuel Adams site, it is hoped that this provides a framework for approaching pluralism and culture change regardless of the time or place under investigation.

A number of other studies have aimed to explore the ways in which diverse groups of laborers in industrial production contexts came together as a strategic survival tactic, or as a way to mobilize collectively against the company for which they work. For example Sunseri (2015:416) shows how food and material sharing can be seen as “interethnic coalitions” between marginalized Chinese immigrant and native Paiute laborers at the frontier mining town of Mono Mills. McGuire and Reckner (2002:51) are concerned with the ways in which similarities of life and labor in the Colorado coal fields of the early-twentieth century “crosscut ethnic and cultural difference within the community” creating the basis of a shared class consciousness that allowed for collective action. Wood (2004), also working in the coal fields of Colorado, shifts attention to domestic spaces to highlight how women built connections with other women across ethnic communities through household labor and social gatherings, which played an important role in fostering relations amongst diverse workers that would later come together in collective action.

While these studies are foundational in highlighting historical examples of worker unity across diversity, and the ways in which archaeological analysis can provide insights into these processes, they all work from rigid and static understandings of ethnicity and class as fixed identity categories. In this way, workers are seen as *overcoming* their ethnic differences, willing to silo these aspects of their identity in the construction of a unifying class consciousness (McGuire and Reckner 2002; Pan 1994). Even for Wood (2004), who advocates for an understanding of ethnicity as a unifying factor, she is arguing for a consideration of how different ethnic groups, as discrete entities, united as a multi-ethnic class conglomerate. In all of these approaches, ethnicity and class as well as gender, age, and occupation, are seen as discrete and segmented categories of ones being, rather than intersecting, intra-acting, and entangled nodes of shifting and emerging identities.

What is missing from these previous studies, and what I have hoped to explore in this work, is the role of contact and change – of encounter, entanglement, and intra-action – in the building of connections across traditional axes of difference and the creation of novel communities. These community connections, I argue, were rooted in the very experiences of cultural negotiation and the shared participation in emergent practices. From this perspective, workers did not mask their ethnic diversity or identities, they did not push them aside in the construction of a class consciousness. Rather, novel communities of practice emerged through daily efforts towards negotiating alterity and navigating different understandings, practices, performances, and perceptions of ethnicity, class, and gender (themselves intra-connected) as laborers worked towards making a life for themselves in the industrial frontier. These intra-actions led to social-material diffractions – the emergence of novel configurations of differences that matter. In this approach, it is the processes of forming connections and commonalities through material-discursive intra-actions and a blurring of traditional ethnic and/or class distinctions that becomes the focus.

We know that life at the kilns was not always convivial, and it would be naïve to assume negotiations of difference were always peaceful and productive. But collaboration and community making need not be harmonious. In fact, the contention here is that it is the very negotiation of alterity and conflict – the shared struggle of working *through* differences – that served to connect diverse people together as a community of industrial laborers in interesting and important ways. The inter-ethnic conflict between Portuguese and Italian laborers at the I.X.L. kilns in 1889, discussed earlier, stands as an example of the ways in which moments of conflict created schisms along particular lines, in this case ethnic identity rooted in national ties (*Santa Cruz Surf* 1889). But the fact remains that by the early-twentieth century, Santa Cruz lime workers originally from diverse places across the world were coming together across ethnic divisions and uniting in unions (*Santa Cruz Surf* 1904).

This work has attempted to explore how this labor unity in the Santa Cruz lime industry came to be. It is not simply that a shared class experience united ethnically diverse workers. A bounded and fixed understanding of class did not simply overcome a bounded and fixed understanding of ethnicity in the creation of organized labor. Nor am I arguing that ethnically diverse workers created a new homogeneous and harmonious "culture." This argument is not a call to return to a melting pot model of change – this is not about assimilation or the wholehearted abandonment of particular heritage and traditions – it is about attempting to trace on-going development and change, it is about examining the ways in which the emergent co-creation of material practices also worked to co-create novel communities that overlapped and intra-acted with other contemporary communities of practice. What I am arguing, and what I believe the multiple examples presented above illustrate, is that the daily intra-actions of diverse workers actively created connections and commonalities that reconfigured understandings and boundaries of difference, reshaping the very connections and understandings of ethnicity, class, and gender upon which these identity categories were historically based. In working together to create something new – in the co-creation of a novel community of practice (as lime laborers), itself a heterogenous collective – workers would have *themselves* constructed the social-material conditions necessary for unification in collective action.

CHAPTER 9. CONCLUSIONS

Industrial sites of the American West are often imagined as places of control and exploitation, of limits and boundaries. They are seen as apparatuses of deconstruction, where vibrant humans are converted into mechanistic pawns in the wage labor of industrial production. What I have hoped to show, however, is that this is one-dimensional view of industrial places and industrial labor that does not account for the multitude of experiences and the nuances of life in these contexts. While the establishment of industrial capitalism and scientific management practices in the nineteenth century did fundamentally alter the social-material relations of labor and production, these changes did not strip laborers of their humanity and their agency.

Rather, I have attempted to show that the particularities of life in nineteenth century industrial sites in the American Far West afforded novel encounters and relations that encouraged the emergence of novel practices, identities, and communities. The particular configurations of life and labor in these places created opportunities for the confrontation and negotiation of alterity, for sustained entanglements and intra-actions, and, as a result, for the creation of emergent communities of practice that cut across traditional axes of difference and reconfigured their intra-relations. Industrial sites, therefore, were places of creativity and production as much as control and exploitation.

Sarah Cowie (2011), in her examination of industrial capitalism at a Michigan iron-smelting town eloquently outlines the "plurality of power" at work in a nineteenth century industrial operation, highlighting the different ways in which power was made manifest by workers and owners and in various forms of material culture and built environment features. The material assemblages presented in this dissertation, however, also highlight the *power of plurality*. Early industrial sites were, indeed, places of struggle and conflict, and as such they were places of encounter, ambiguity, negotiation, and transformation. Experiencing and actively participating in these negotiations of difference, I argue, would have worked towards the communal co-creation of new ways of doing and being. In doing so, boundaries of differentiation would have been reconfigured, reimagined, and remade, and novel communities of practice would have emerged – communities that afforded union formation and the possibilities that a diverse workforce could unite in organized resistance to exploitive company policies.

The Samuel Adams Lime Kiln operation was a dynamic, pluralistic site from its very conception. Throughout its history, the face of the workforce shifted along with broader demographic trends as successive waves of immigrants came to occupy the manual labor positions within the kiln complex. These broad changes would have worked to constantly reconfigure social relations at the operation, necessitating a constant redrawing and reimagining of social boundaries. This understanding, then, situates nineteenth century industrial sites as important places of cultural contact and change. Industrial spaces were frontiers in and of themselves, they were ambiguous and fraught places where the very definitions of fundamental social categories such as ethnicity, class, gender, self, and other were contested in the daily practices of making a life and making oneself within the strictures of industrial life.

At the Samuel Adams lime kiln site, laborers lived and worked in close, intimate, and sustained ways. As I argue in Chapter 7, the very act of making lime, the entangled nature of tasks and production, created connections and relations that would have linked people and materials in important and productive ways. Outside of work, diverse laborers shared sleeping quarters in small communal cabins, meals together at a company mess hall, and bottles of alcohol around the warmth of a wood-burning stove. These configurations of life would have facilitated the creation of novel social ties, the sharing of cultural traditions, and the blending of practices and meaning. It is these relations and connections, emergent in the practices of daily life at a pluralistic site, I argue, that formed the social fabric at the core of later labor organization and mobilization efforts.

Other archaeological studies have explored the ways in which working-class labor has come together in collective labor movements, despite their differences and despite the concerted efforts of capitalist-class company owners (McGuire and Reckoner 2002; Sunseri 2015; Woods 2004). These studies, however, are framed by discussions of how the lived experiences of class led to the creation of a shared class consciousness that cut across ethnic difference. As I discuss previously, this understanding relies on a segmented and static understanding of class and ethnicity as discrete and separate aspects of one's identity. Instead, I have drawn on theories of practice, intra-action, emergence, and culture change to examine the complex entanglements and co-relational qualities of various intra-relations. The focus shifts then, from how class consciousness emerged to unite workers, to how the negotiation of differences more broadly led to the reconfiguration of relations – re-entanglements that afforded the creation of novel materials, practices, and meanings that formed the basis of an emergent community..

A bounded and fixed understanding of class did not simply overcome bounded and fixed understandings of ethnicity in the creation of organized labor. The very relationships that entangled notions and understandings of class, ethnicity, gender, power, and labor were being (re)shuffled and (re)imagined at pluralistic industrial sites. This work has attempted to forefront the ways in which labor communities emerged as communities of practice. It is argued that labor communities were assembled through the daily practices and social negotiations of a diverse workforce, intra-acting with other overlapping and fluid communities of practice conceptualized self-reflexively as ethnic, class, and gender groups. It was in the very processes of negotiating the entanglements of these communities, of building novel connections and relations across, between, and throughout these identity categories, that particular communities of labor practice emerged. These communities were not simply socio-economic classes of people, but shifting, fluid, and boundless entanglements of connections and relations that could be mobilized differentially based on the particularities of the social and labor situation. Collective labor action in the Santa Cruz lime industry, then, was one such social-material manifestation – a particular assemblage of social relations, the emergence of a particular community of practice, the connections of which had been forged in the shared experiences of labor, cultural negotiation, and community-making practices of nineteenth century industrial lime work.

This work, then, proposes a conception of worker relations that is fundamentally different than most other historical archaeological investigations of industrial life. Whereas previous studies have various arguments for the reasons and mechanisms through which workers united as a class *despite* ethnic or cultural differences, I have attempted to illustrate that workers formed various communities precisely *because of* their cultural differences. It was the very processes of negotiating otherness through material-discursive practice, of forging relations across language, religious, food, and other material differences, that resulted in the emergence of novel materials, practices, and meanings – new ways of doing and being that were co-created and shared, the social-material realities of life that came to unite people in fluid and ever shifting communities. It is not, therefore, just about having common "class" experiences. Communities of laborers were forged in the active creation of commonalities *through* the negotiation of difference – through the blending, reconfiguring, and re-entanglement of material-discursive practices.

This understanding and approach to studying pluralistic sites is framed by new materialist perspectives that conceptualize matter and materials as vibrant, active, lively, and agentive. From an archaeological perspective, this presents a powerful framework for exploring materials not simply as traces of human action, but as agentive phenomena with capacities to affect the social-material world. Meanings, therefore, emerge from particular material-discursive practices – from matter in action. In this light, I have attempted to investigate the ways in which materials were not only used, but were themselves active in building connections, relations, and communities within the industrial workforce. Whether it was a peck-marked circulating through the mess hall, or a modified shard of glass from a shared bottle of wine, the materials themselves, as agentive assemblages, did work across the industrial landscape – forging relations and framing practices, assembling meanings, shaping identities, and creating communities.

Approaching the materiality of industrial work life in this way serves to not only shed light on the daily lived experiences of a diverse group of laborers, but also challenges oversimplified approaches to the study of social interaction that work to strip laborers of their power and agency. Engaging with new materialist ideas of emergence through intra-action allows for an investigation of material-bodies (human and nonhuman) in pluralistic contexts as lively, agentive, diffractive, and capable of negotiation in ways that frees them from static and fixed boundary definitions. Framed in this way, and illustrated through multiple material examples, I have aimed to present an archaeological approach to the study of material-discursive practices that focuses on tracing the complex entanglements and emergent nature of social-material life. In this way, material phenomena can be seen in all their multivalences and ambiguity, and the power of plurality can begin to be explored and appreciated.

In the end, I am proposing a consideration of industrial labor relations that explicitly considers the potential for cooperation and creativity – for agentive co-production. This is fundamentally at odds with the principles of conflict, competition, and struggle that frame traditional Marxist-oriented investigations of labor in the industrial period. Conflict and contestation were undoubtedly a part of industrial wage work in the American West. The violent conflict between Portuguese and Irish lime workers at the I.X.L. kilns serve as one documented example. Labor relations at early industrial were often framed by struggle and conflict, but these contestations and negotiations did not simply cement pre-exiting divisions along ethnic and class lines. These realities of industrial life also afforded opportunities for connection, collaboration, and creation. Examples of conflict just highlight that these processes of intra-action, change, and community building were not linear, seamless, or always harmonious.

These processes of intra-action and emergence were likely not intentional or conscious – they were slowly aggregating and entangling relations and practices, emerging from within everyday encounters and relations. While this process may not have been visible or realized by the workers themselves, the benefits of historical hindsight and the insights of archaeological analysis allow us to identify the traces of these processes at work. The materials examples discussed above show that the very understandings of ethnicity, class, gender and labor – of self and other, and of us and them – were being actively negotiated in the material-discursive practices of everyday life at these pluralistic industrial operations. These categories and understandings were not coming into contact and conflict fully formed and bounded, but were being shaped through their very intra-action – co-constituted in their intra-relation. It was in the negotiation and reconfiguration of differences that mattered that new boundaries were drawn, new communities emerged, and solidarity and collective action were fostered. Diversity and difference are momentary representations, particular configurations within the ever-shifting entanglements of the material world, masquerading as fixed boundaries when they are in fact continually (re)shaped in the routine encounters of daily pluralistic life – in the continued reconfiguration of overlapping communities of practice. In this way, cultural diversity and difference, *in both the past and the present*, should not be examined solely as the basis for division and conflict – they also provide opportunities for collaboration, strategic creations, and novel emergences. Instead, it is hoped that the materials and discussion presented here highlight that diversity and difference are the very foundation upon which novel connections are built, shared realities are constructed, communities are formed, and unity is created.

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APPENDIX A: FIGURES

Chapter 1 Figures

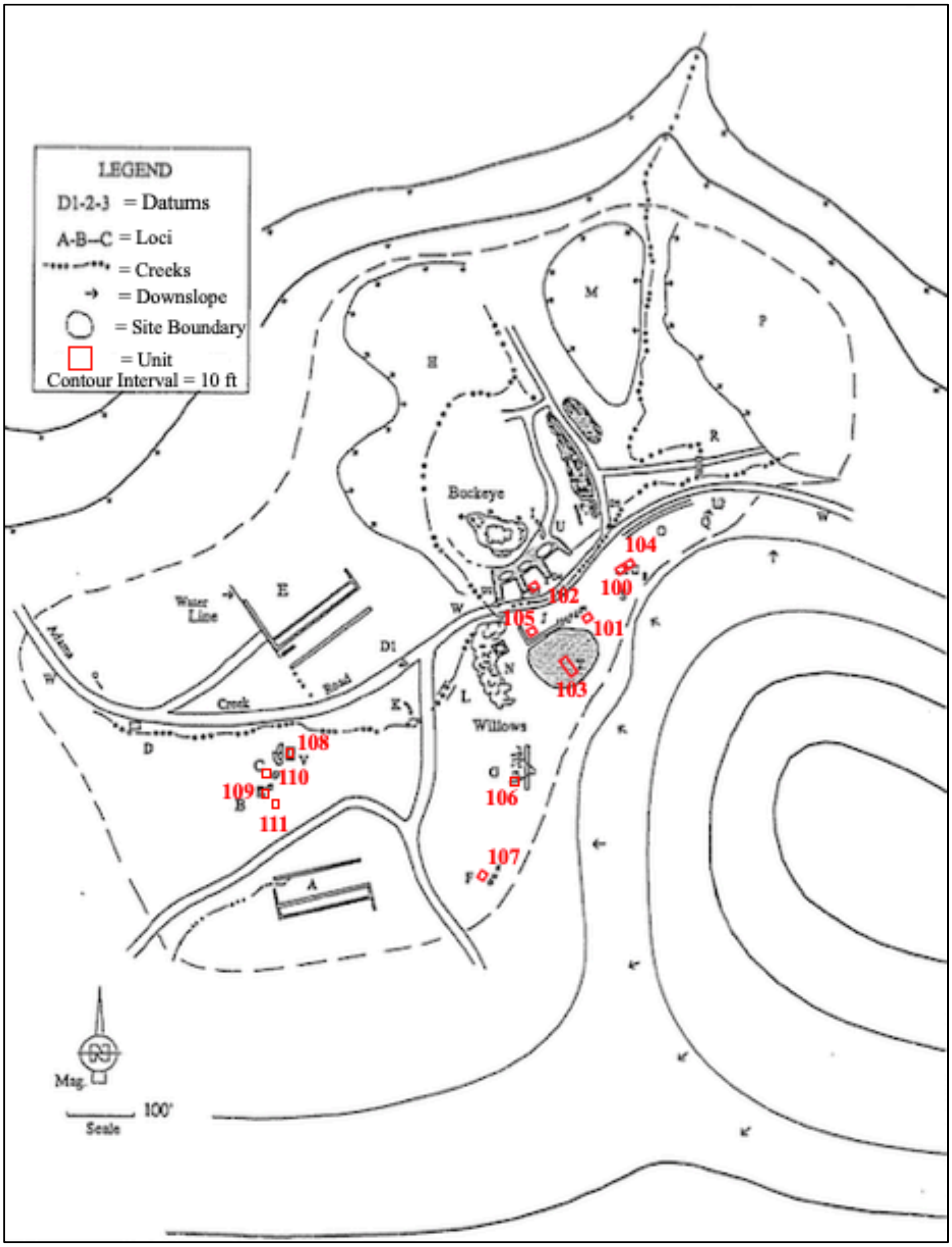

Figure 1.1 Map of excavation unit locations (basemap adapted from Wheeler 1998)

Chapter 2 Figures

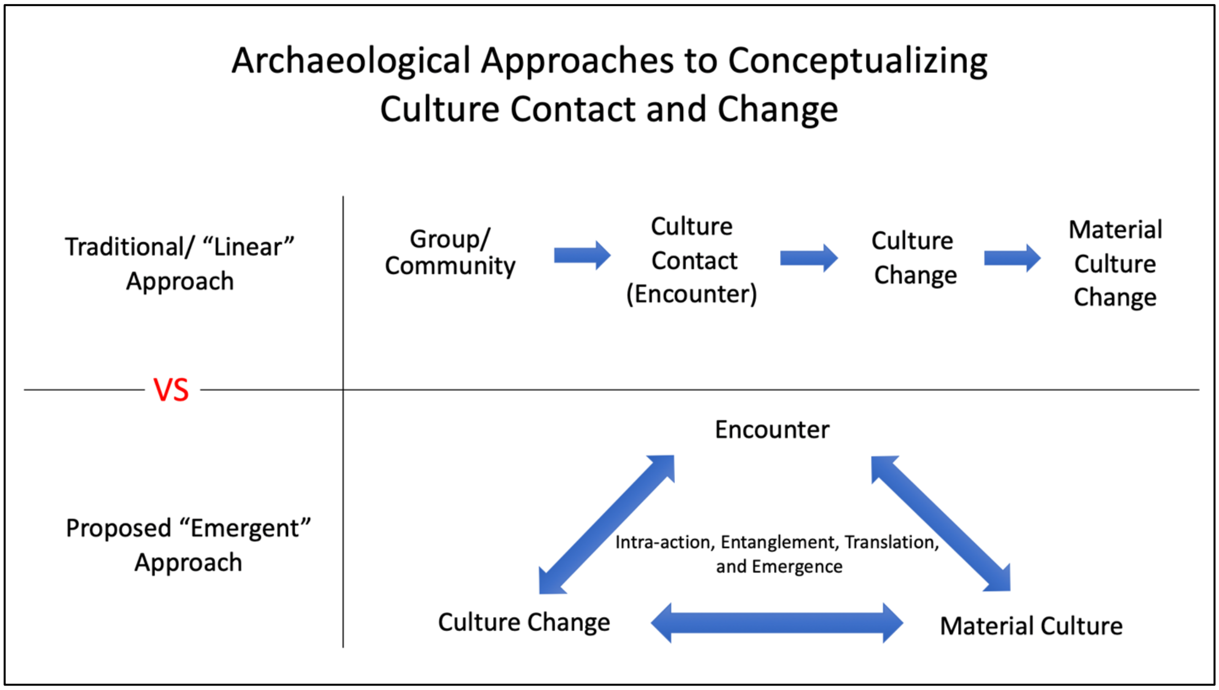

Figure 2.1 Differing archaeological approaches to conceptualizing culture contact and change

Chapter 3 Figures

Figure 3.1 The location of the Samuel Adams lime kilns (CA-SCR-339H)

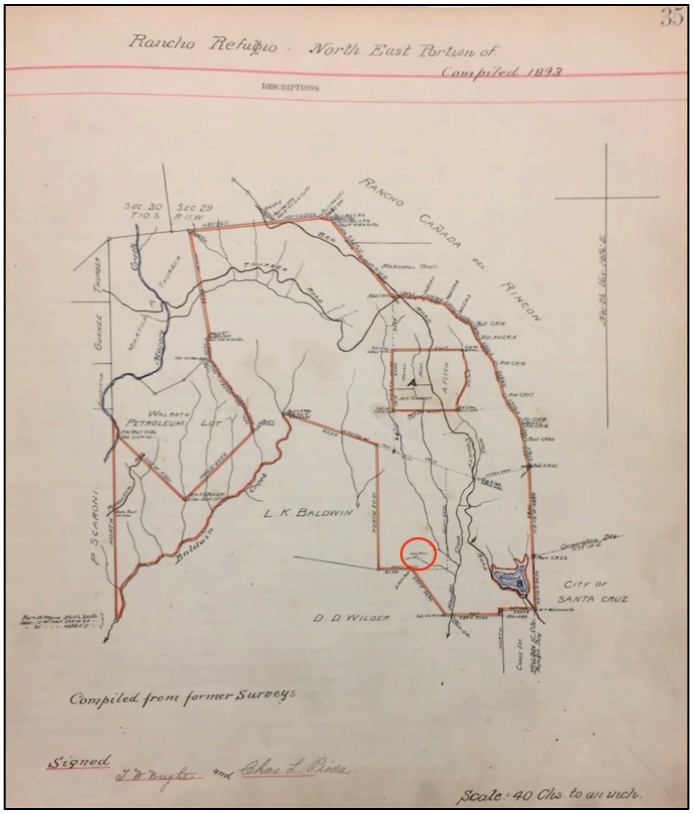

Figure 3.2 1893 Plat map of Cowell's Rancho Refugio Property. Samuel Adams lime kiln site highlighted in red. (McHenry Library Special Collection, University of California, Santa Cruz)

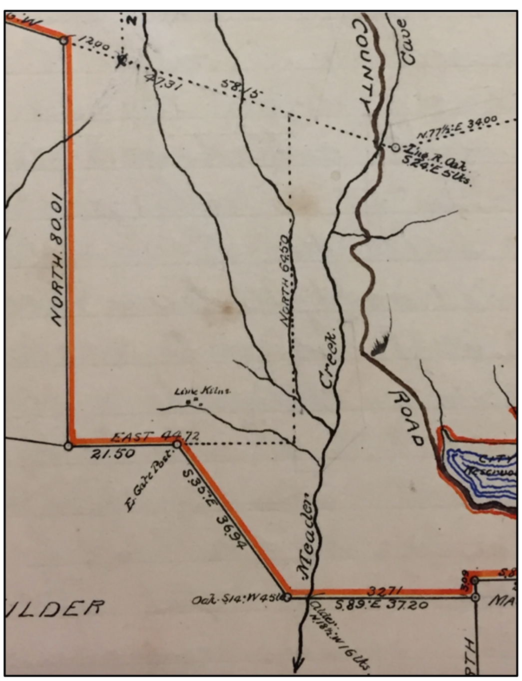

Figure 3.3 Detail of 1893 Rancho Refugio Plat map showing Samuel Adams Lime Kilns along a western tributary of Meder (Meader) Creek (now Wilder Creek). (McHenry Library Special Collection, University of California, Santa Cruz)

Figure 3.4 Relationship between the Samuel Adams lime kilns (red) and Cowell Ranch/Bay Street kilns (yellow)

Chapter 4 Figures

Figure 4.1 Unit locations across the site on satellite imagery, showing vegetation and topography

Chapter 5 Figures

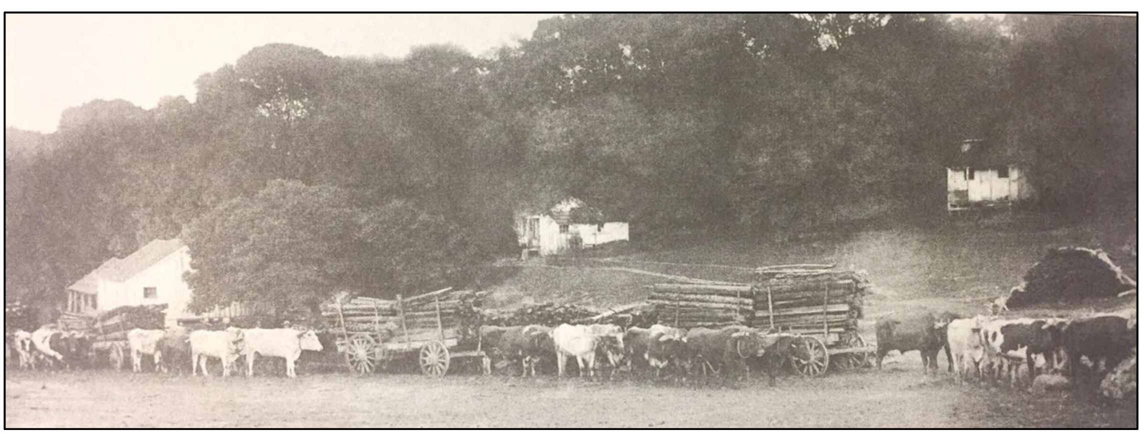
Figure 5.1 Oxen team in front of (from left to right) the cooperage (Locus J), foreman's residence (Locus T), and northern workers' cabin (Locus G). (Santa Cruz Museum of Art and History)

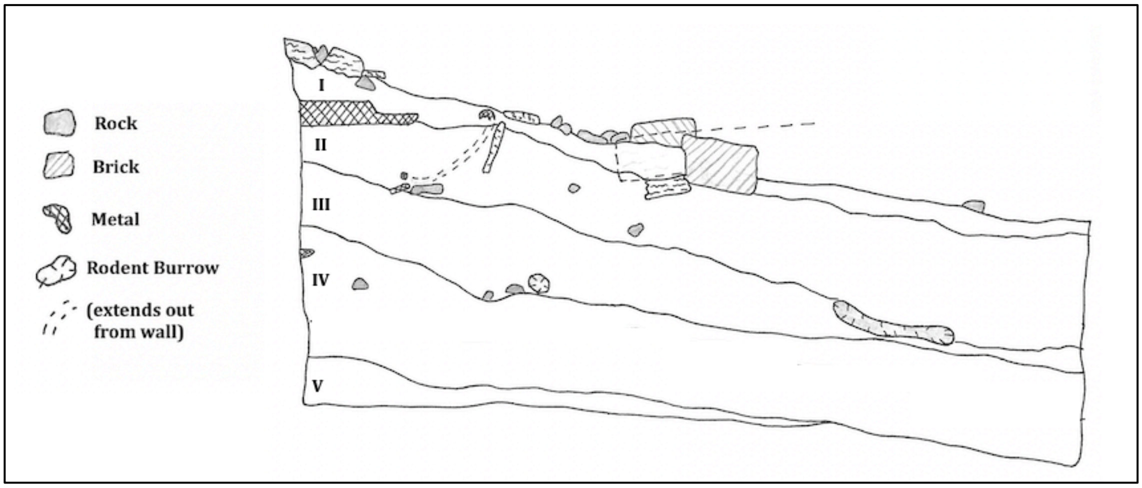

Figure 5.2 Locus T, Unit 103 West Profile

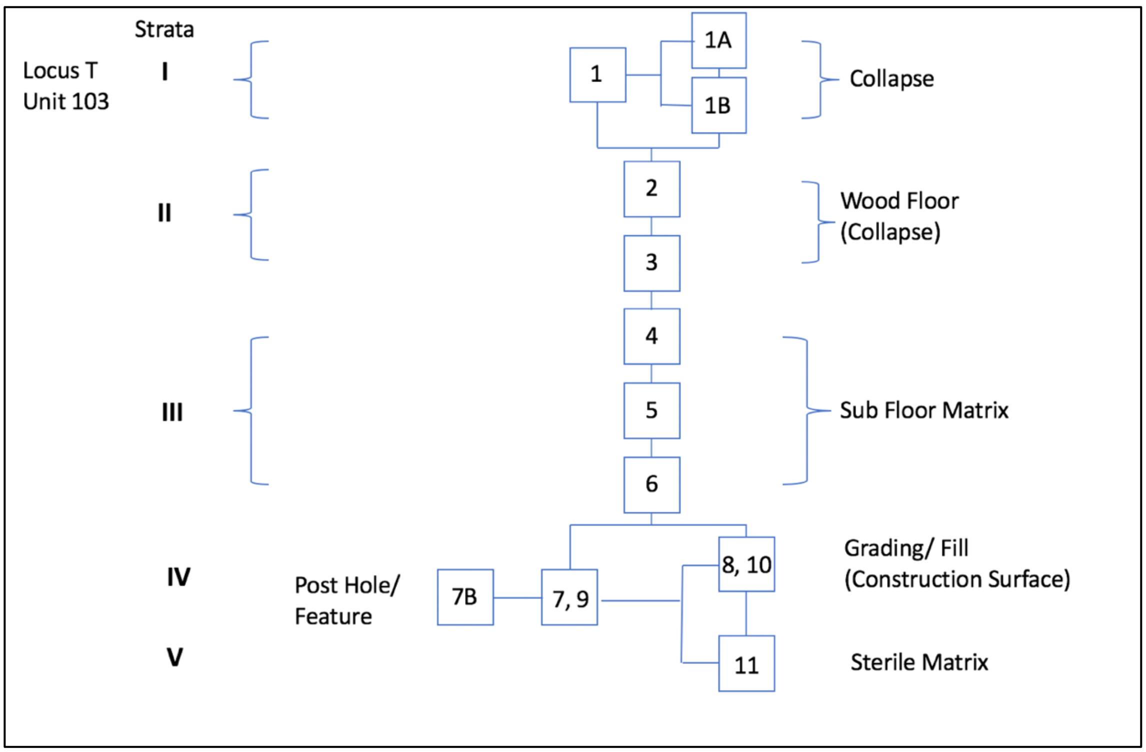

Figure 5.3 Locus T, Unit 103 Harris Matrix

Figure 5.4 Baby bottle fragments from Locus T

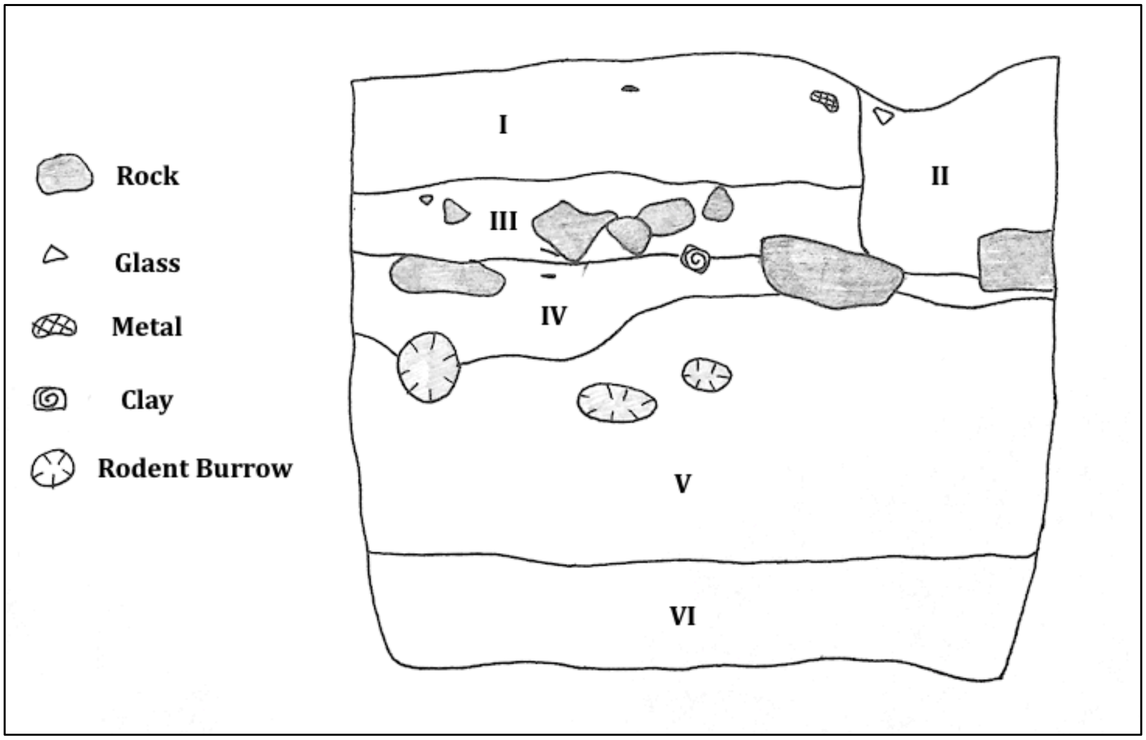

Figure 5.5 Locus T/J, Unit 101 East Profile

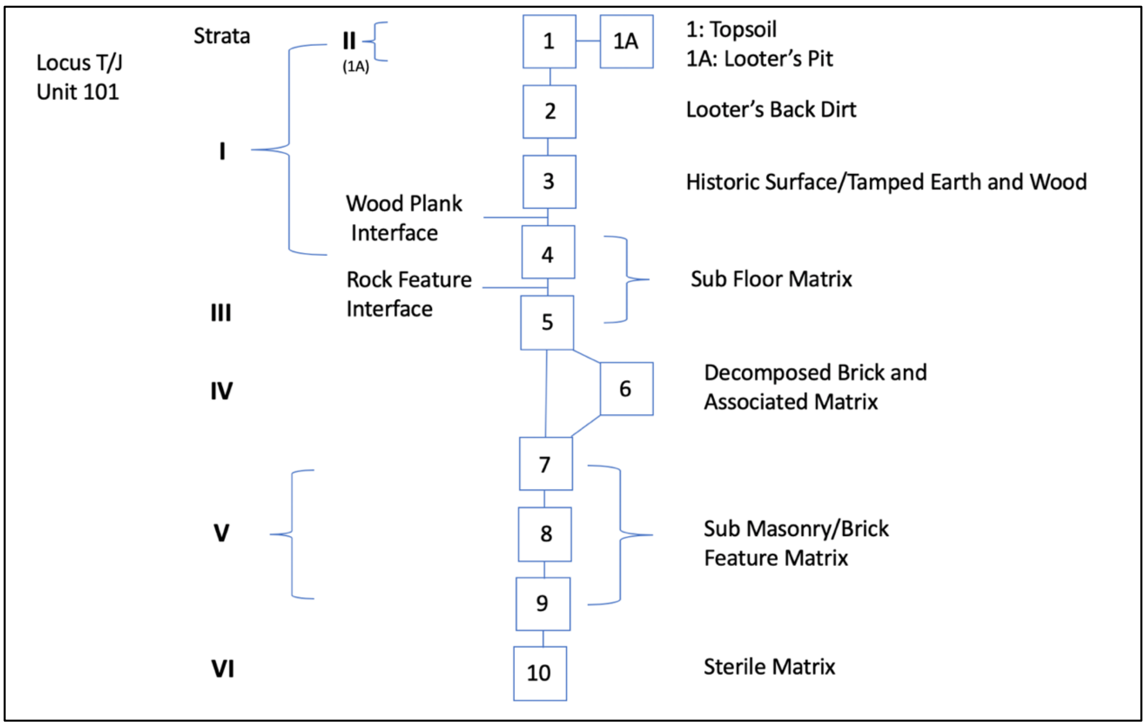

Figure 5.6 Locus T/J, Unit 101 Harris Matrix

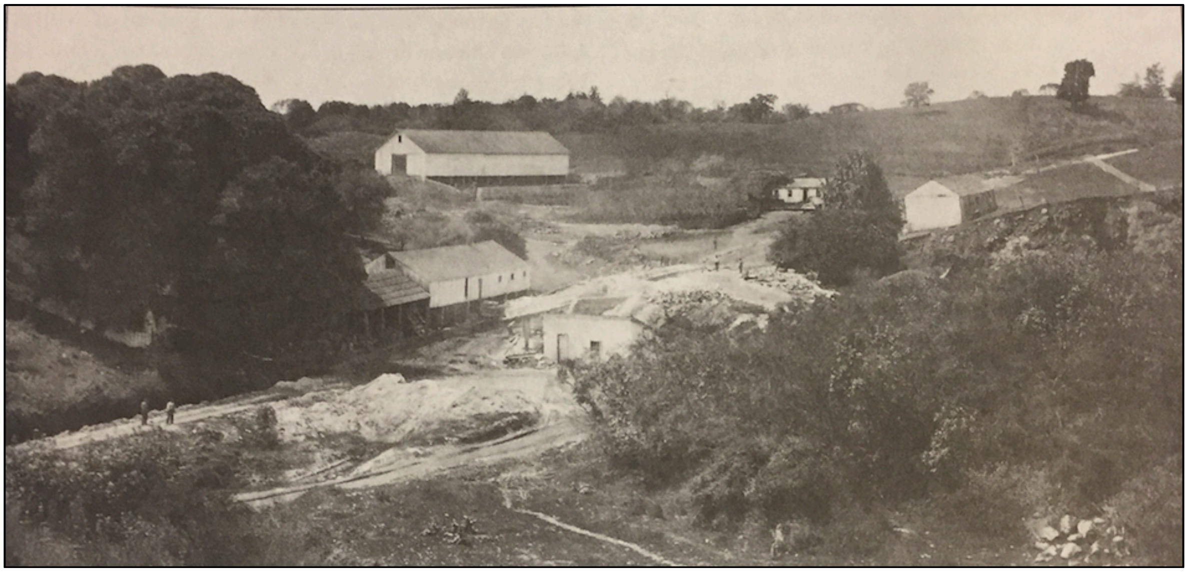

Figure 5.7 The Samuel Adams lime kilns looking southwest, circa 1900. Showing the fence surrounding the foreman's office (far left), cooperage (center-left), kilns (center-right), south barn (top-left), cookhouse/mess hall (top-center), and north barn (top-right). (Santa Cruz Museum of Art and History).

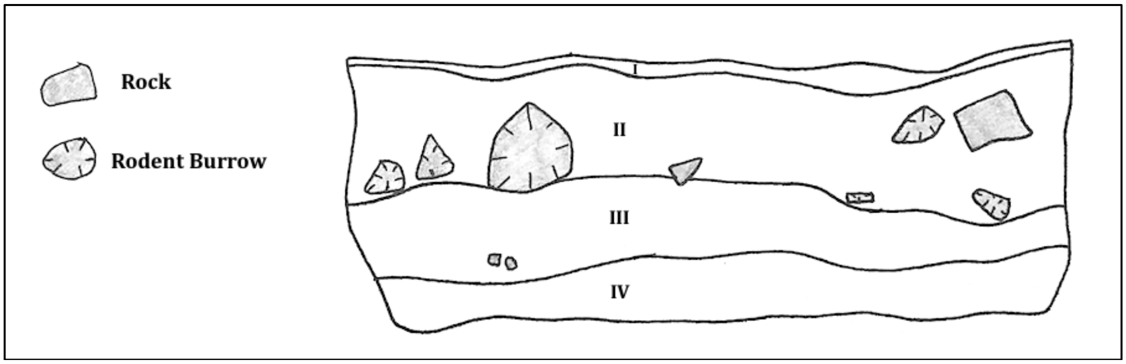

Figure 5.8 Locus G, Unit 106 West Profile

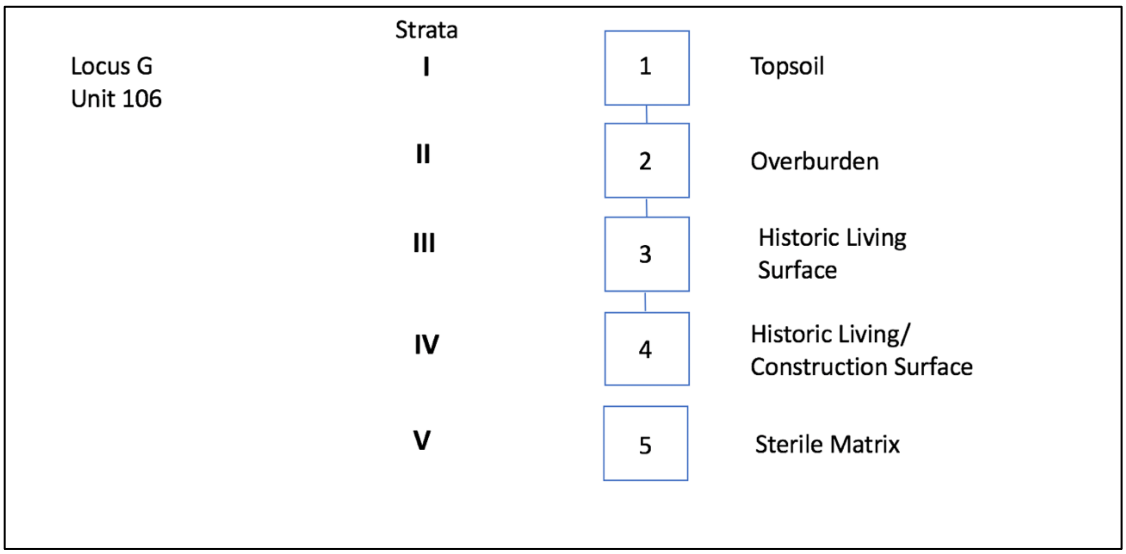

Figure 5.9 Locus G, Unit 106 Harris Matrix

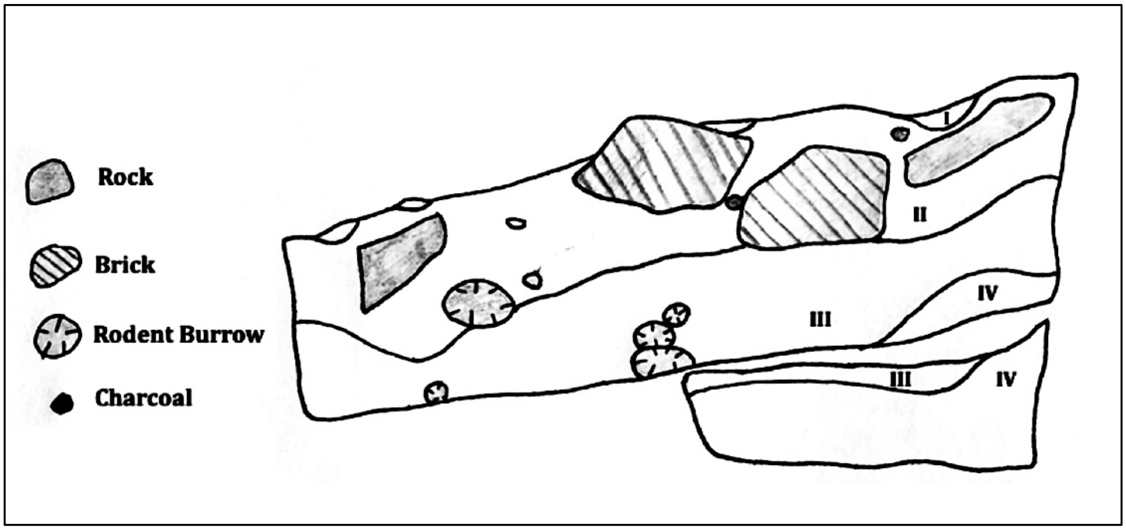

Figure 5.10 Locus F, Unit 107 North Profile

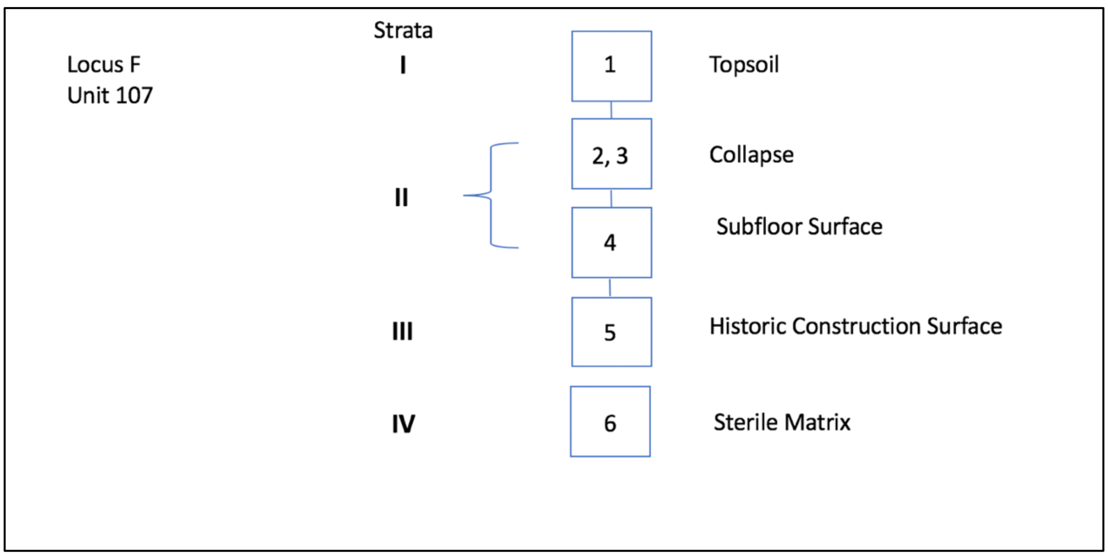

Figure 5.11 Locus F, Unit 107 Harris Matrix

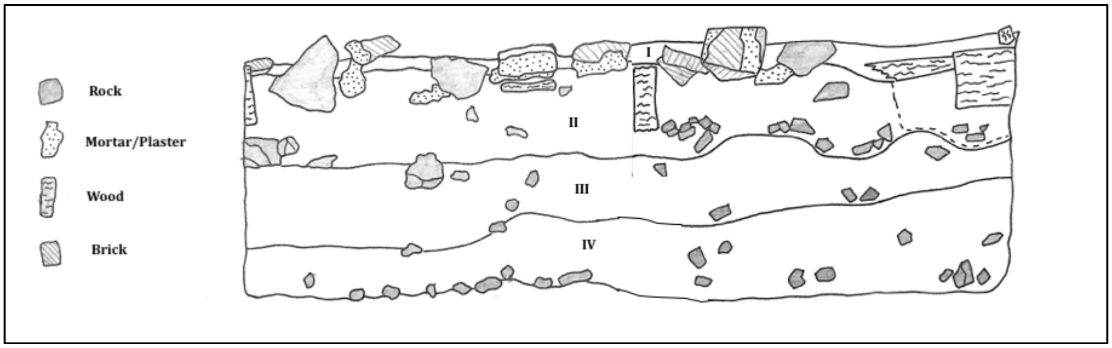

Figure 5.12 Locus S, Unit 100/104 Southeast Profile

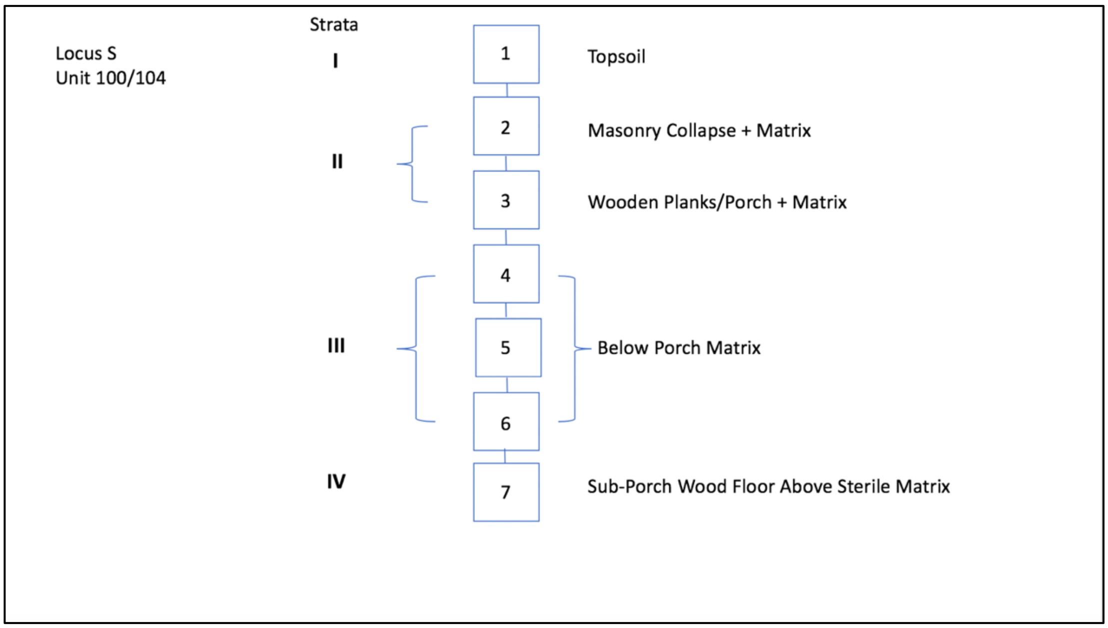

Figure 5.13 Locus S, Unit 100/104 Harris Matrix

Figure 5.14 Gambier pipe fragment from Locus S


Figure 5.15 A pair of leather shoes/boots recovered from Locus S

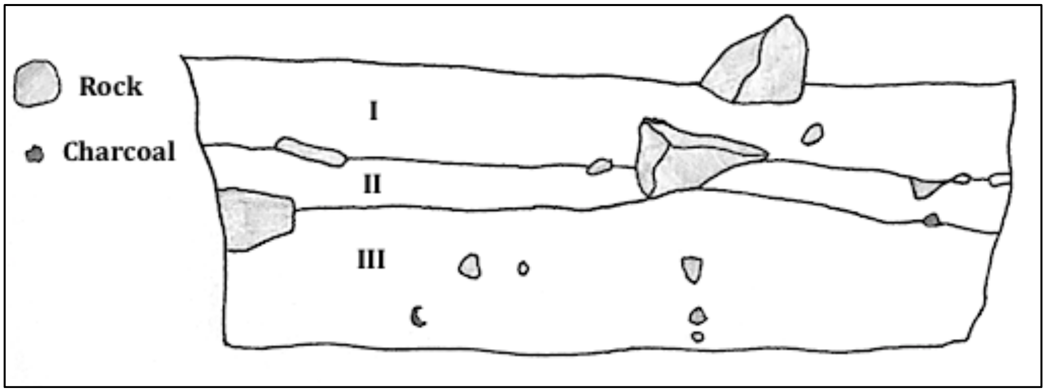

Figure 5.16 Locus J, Unit 105 Southeast Profile

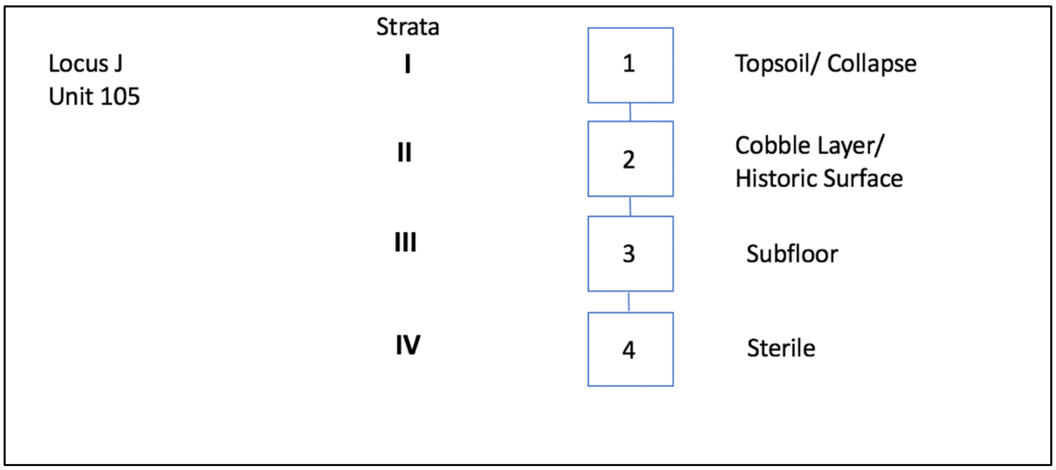

Figure 5.17 Locus J, Unit 105 Harris Matrix

Figure 5.18 Locus I, Pot 1 lime kiln

Figure 5.19 Interior fire chamber and raw lime arch, Pot 2

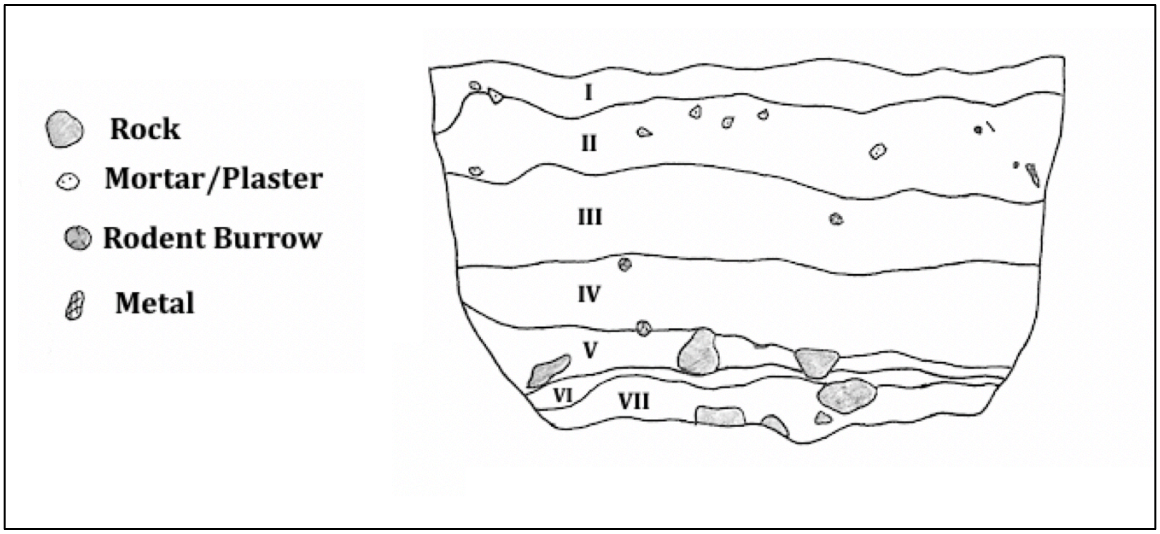

Figure 5.20 Locus I, Unit 102 Northwest Profile

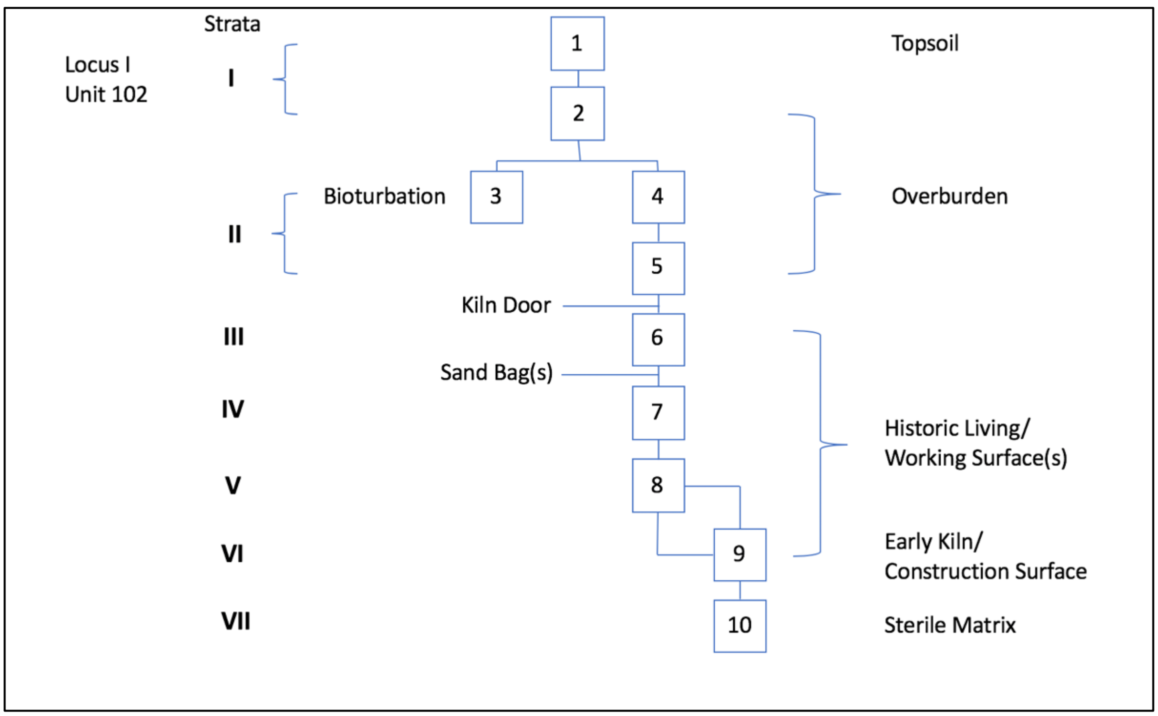

Figure 5.21 Locus I, Unit 102 Harris Matrix

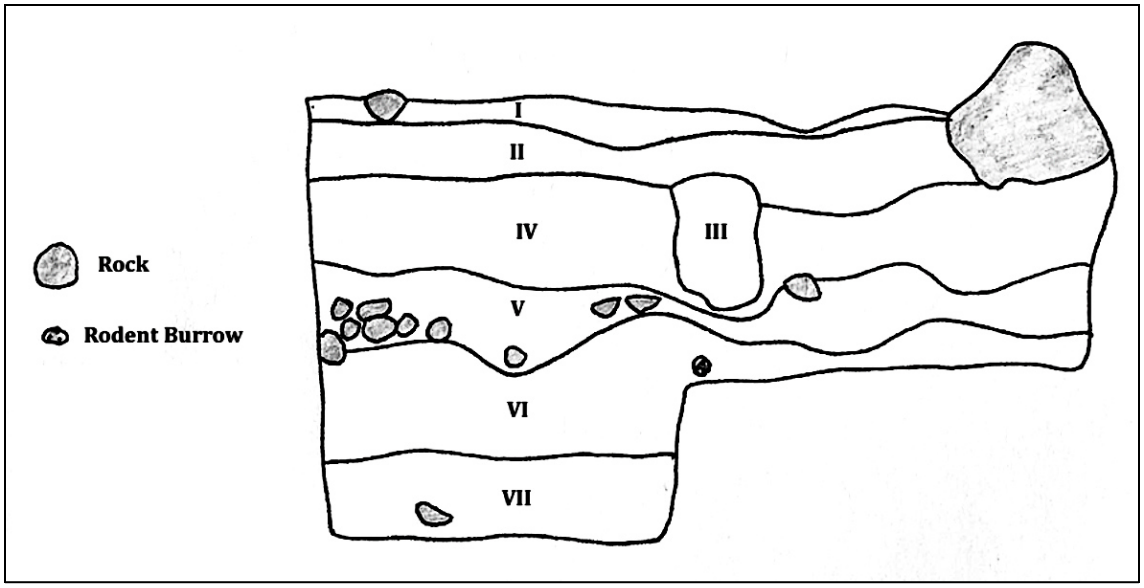

Figure 5.22 Locus V, Unit 108 Northeast Profile

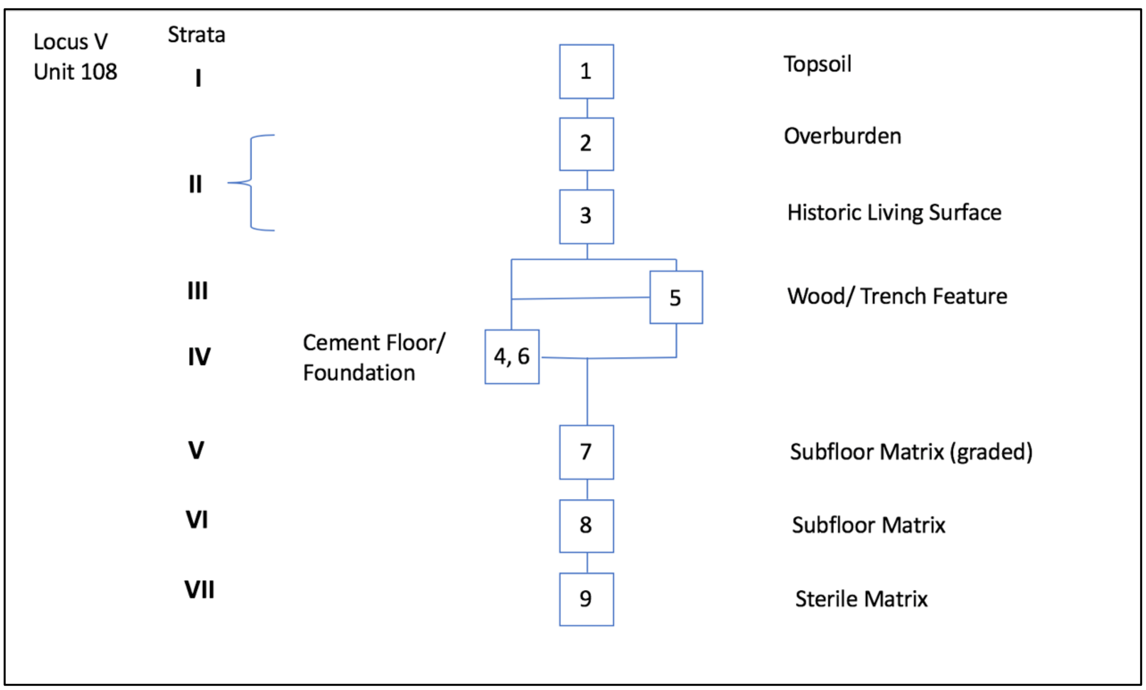

Figure 5.23 Locus V, Unit 108 Harris Matrix

Figure 5.24 “Can’t Bust ‘Em” button from the Eloesser-Heynemann Company

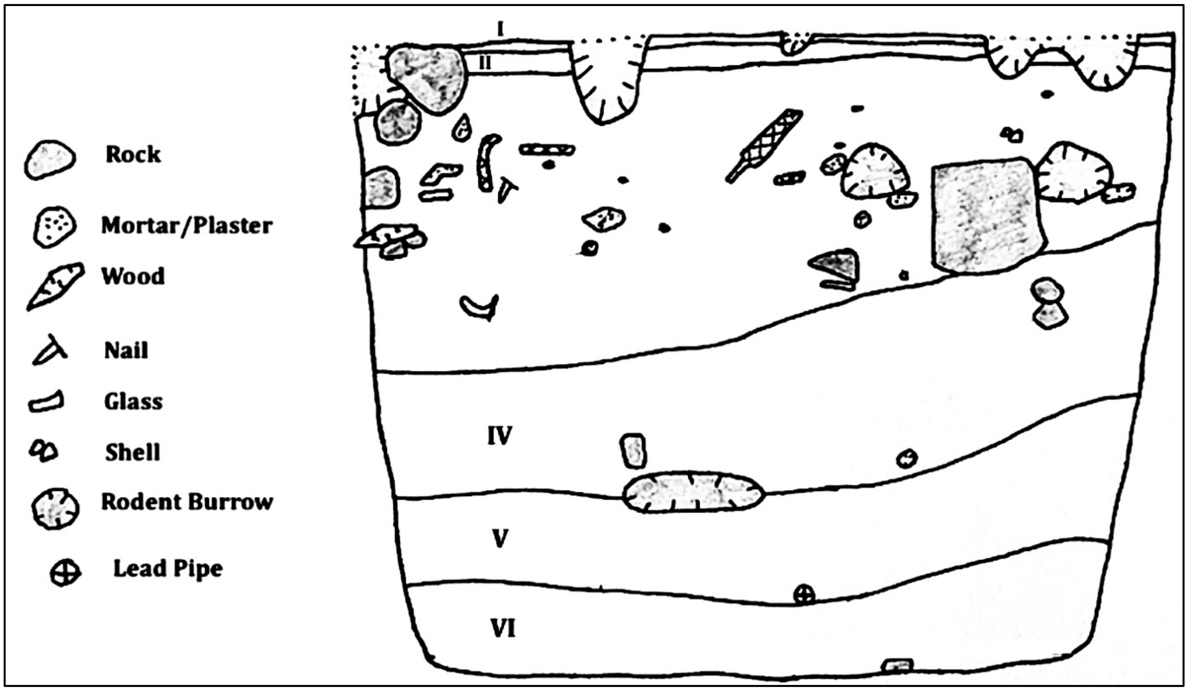

Figure 5.25 Locus C, Unit 110 Southeast Profile

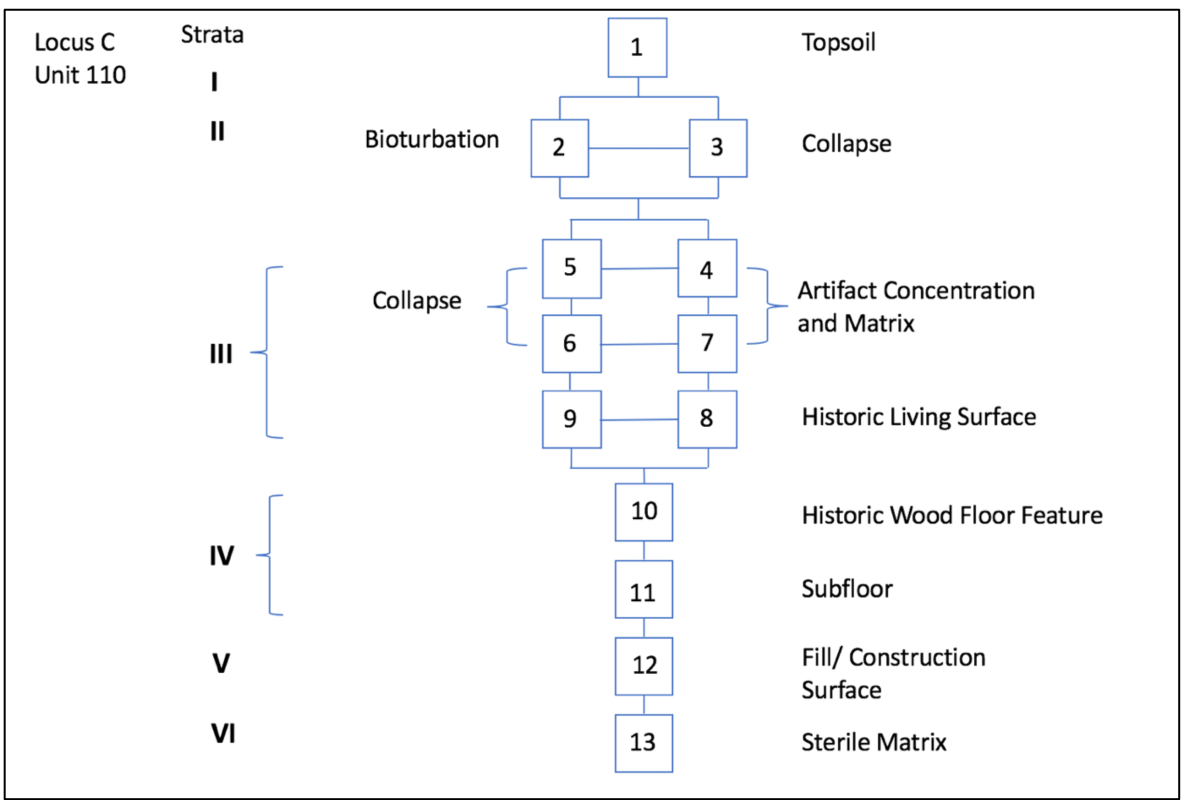

Figure 5.26 Locus C, Unit 110 Harris matrix


Figure 5.27. Whole Chinese Glazed Stone Ware Liquor Bottle

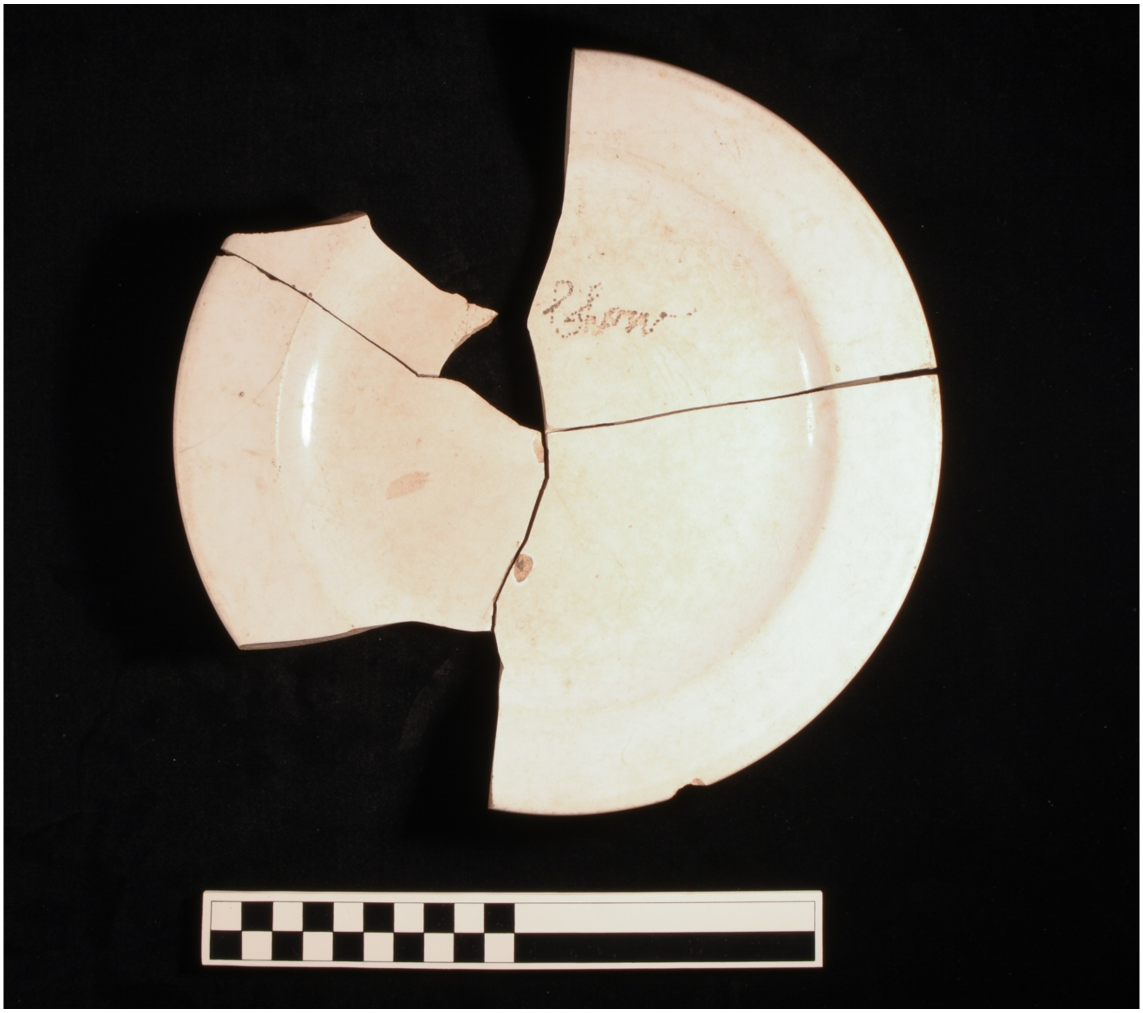

Figure 5.28 “Ah” and “Chow” peck-marks on the face of blued whiteware plate

Figure 5.29 “Ah” peck-mark on the back of a blued whiteware plate

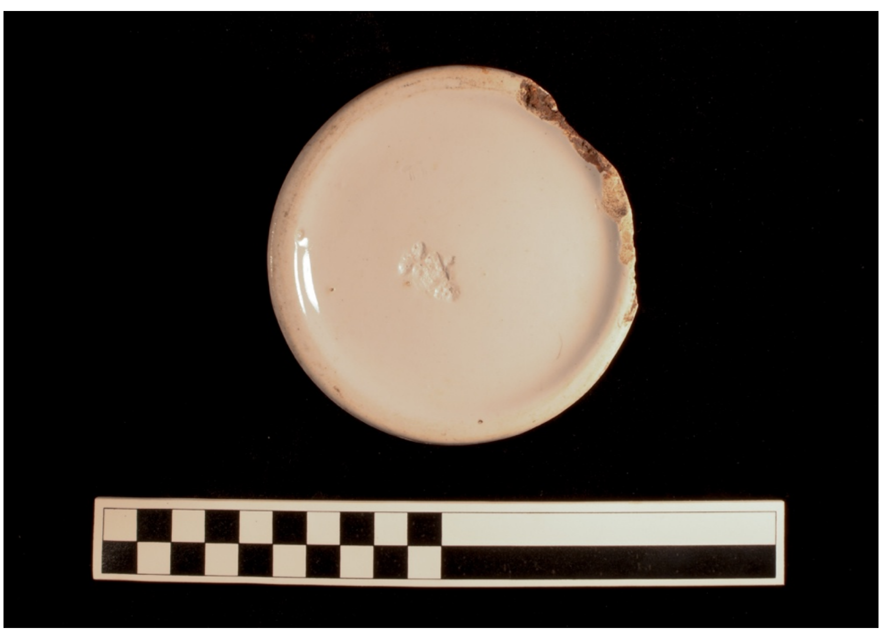

Figure 5.30 Crude peck marking on the base of a greyed ironstone mug

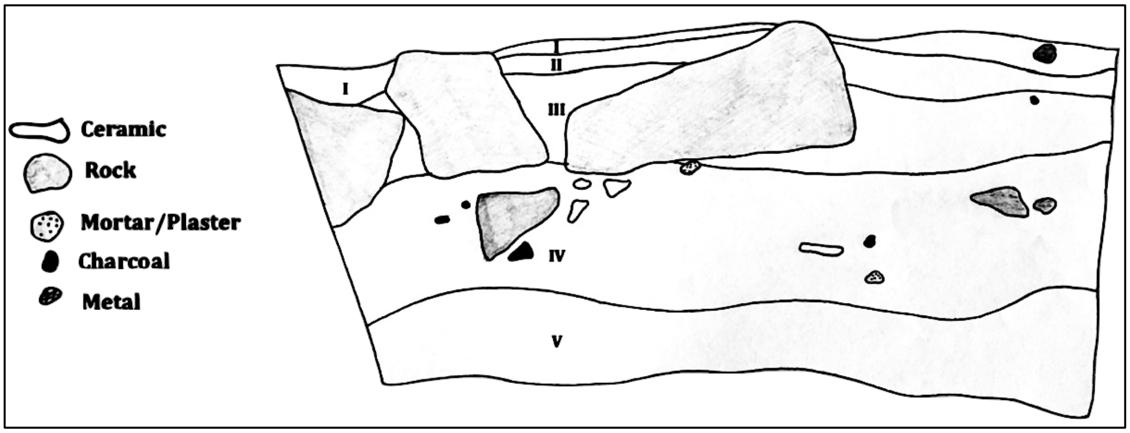

Figure 5.31 Locus B, Unit 109 Northwest Profile

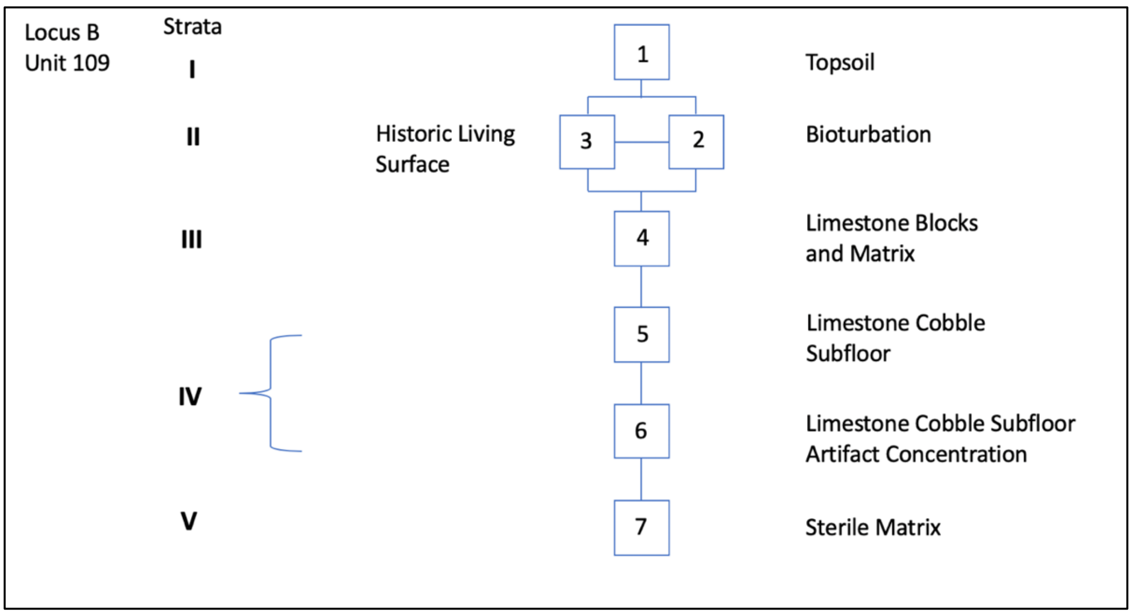

Figure 5.32 Locus B, Unit 109 Harris Matrix

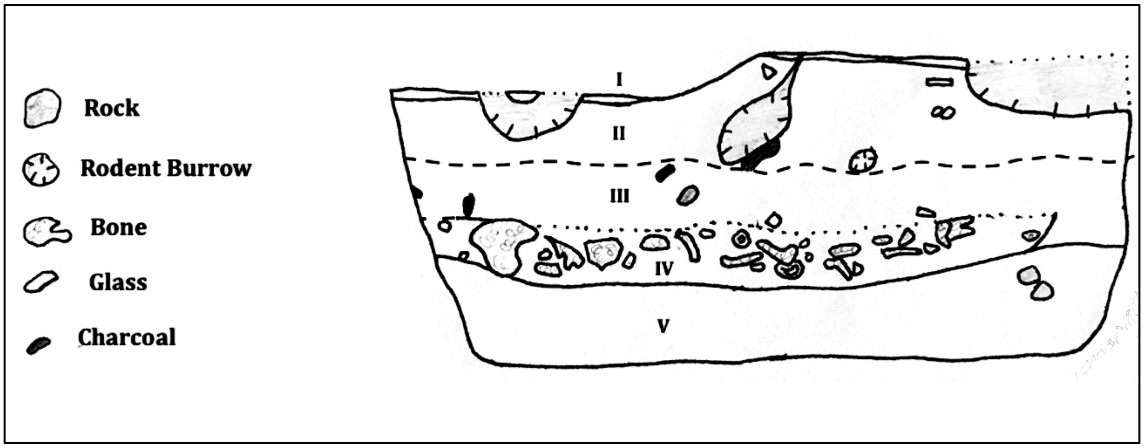

Figure 5.33 Locus B, Unit 111 Northeast Profile

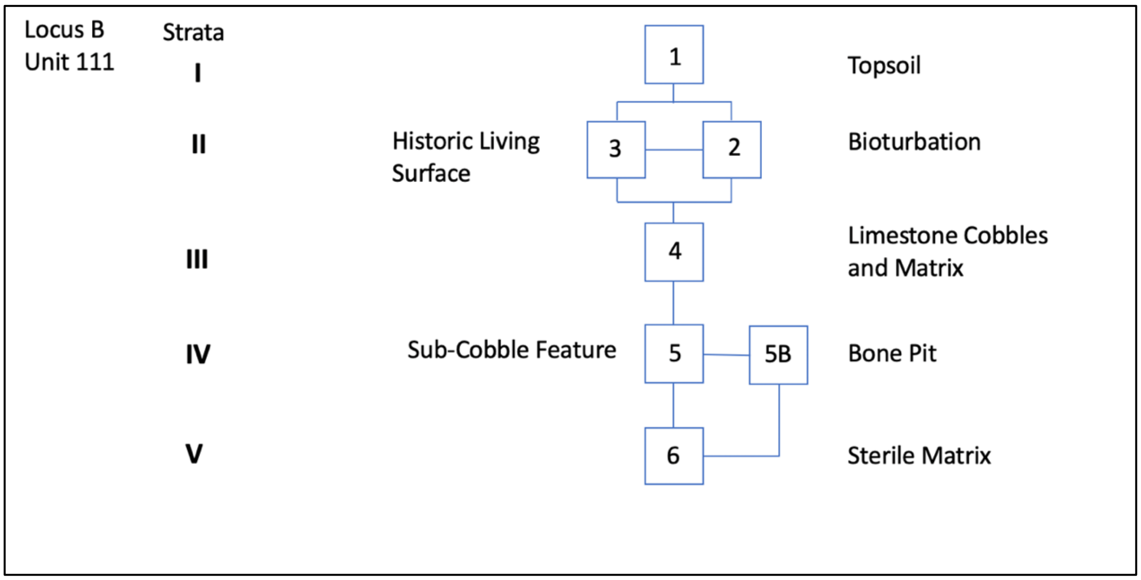

Figure 5.34 Locus B, Unit 111 Harris Matrix

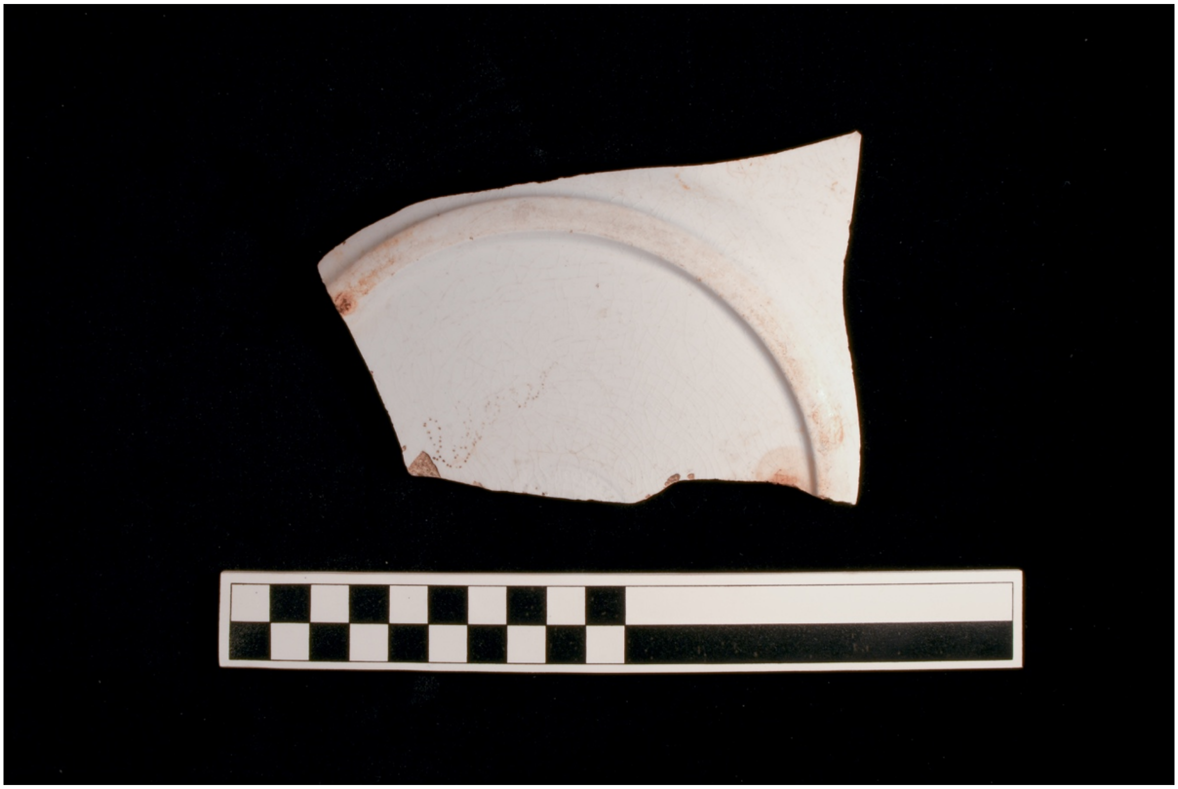

Figure 5.35 “Chow” peck-mark on the back of a blued whiteware plate

Chapter 6 Figures

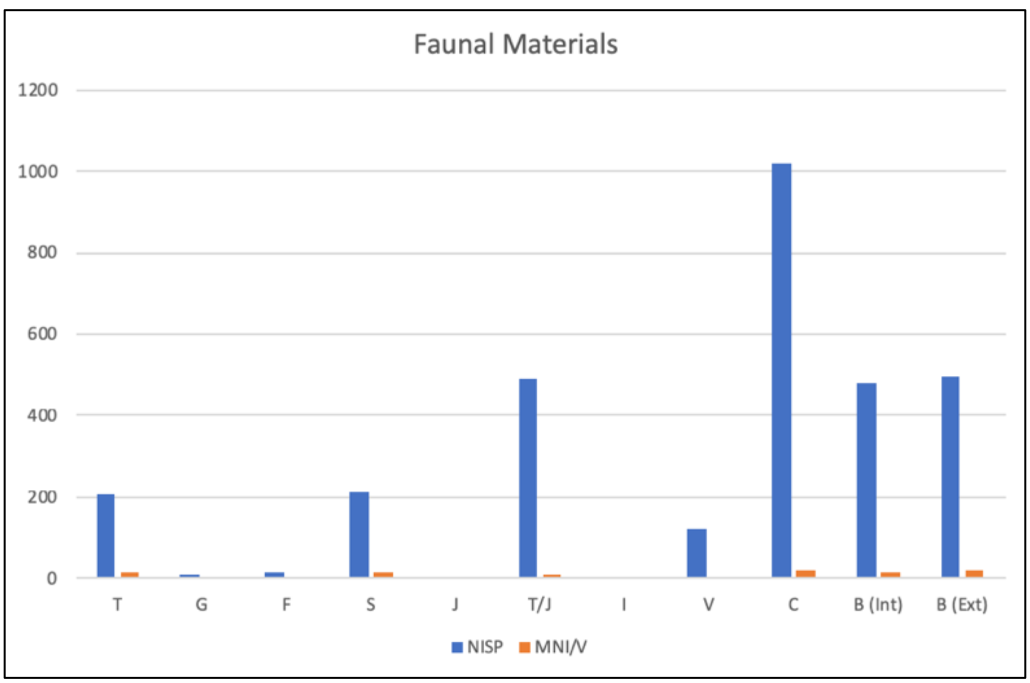

Figure 6.1 Faunal materials across site loci

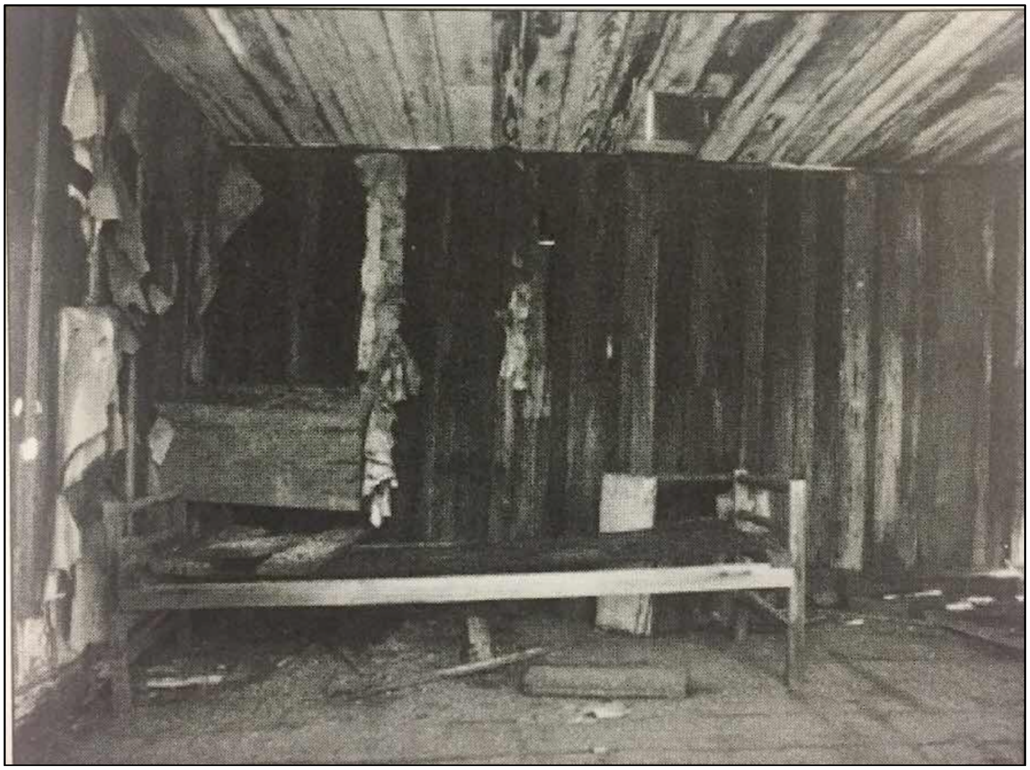

Figure 6.2 Lime worker cabin (from Perry et al. 2007:126)

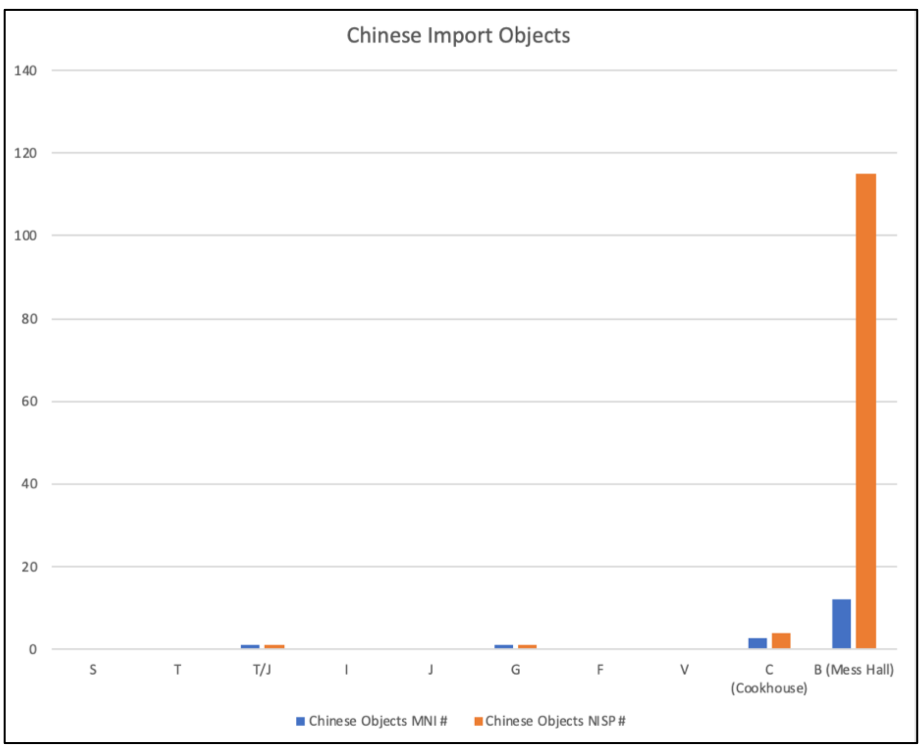

Figure 6.3 Chinese import objects across site loci

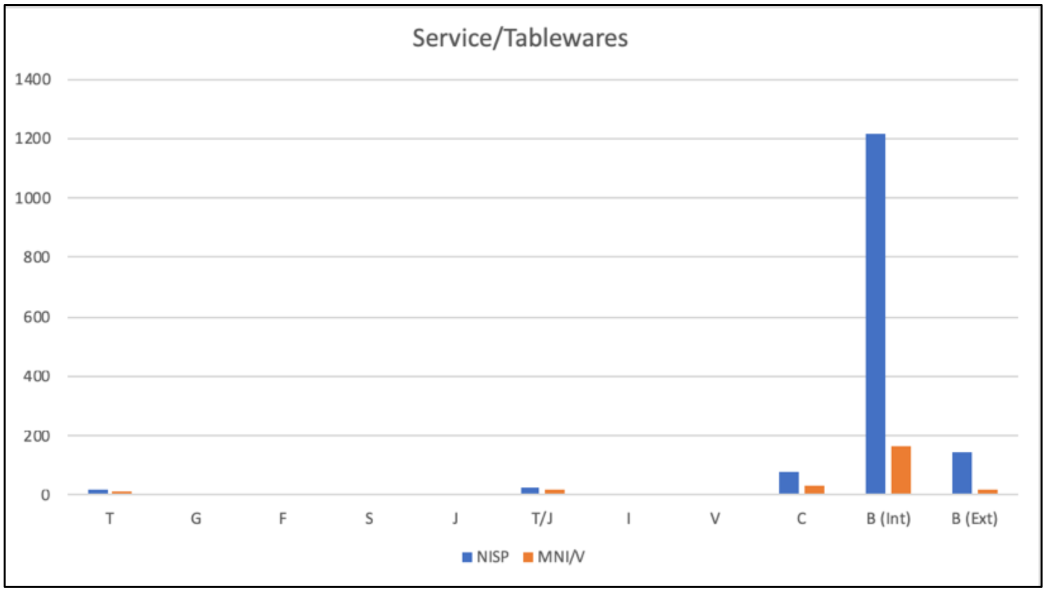

Figure 6.4 Service/Tablewares across site loci.

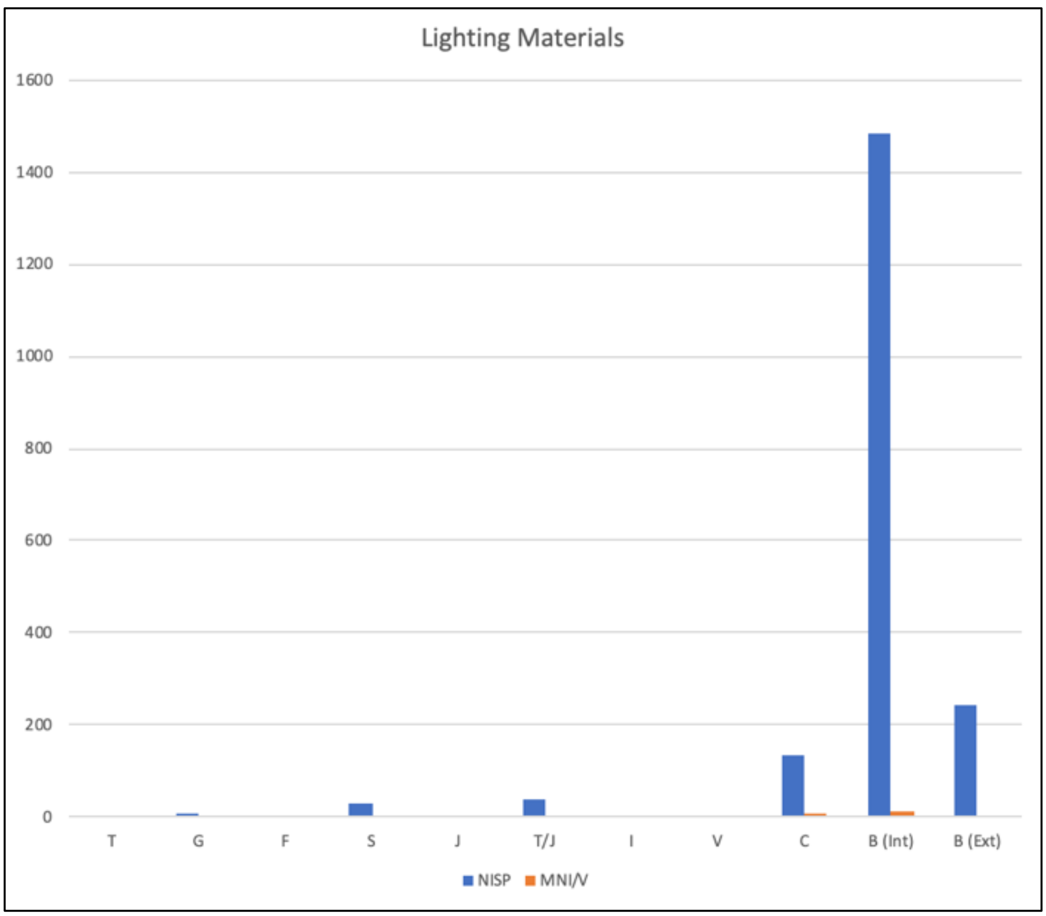

Figure 6.5 Lighting materials across site loci

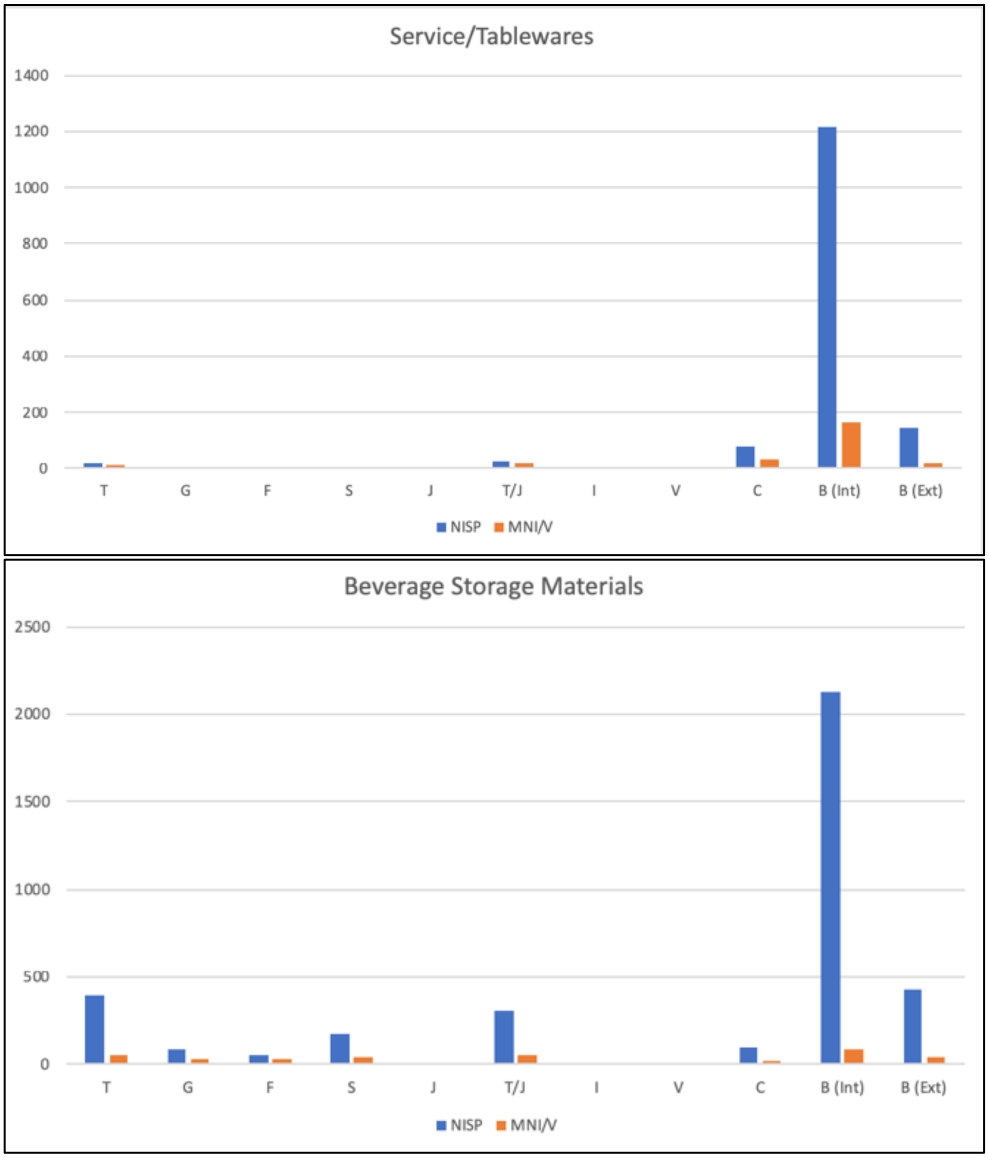

Figure 6.6. Service/tablewares and beverage storage materials across site loci

Chapter 7 Figures

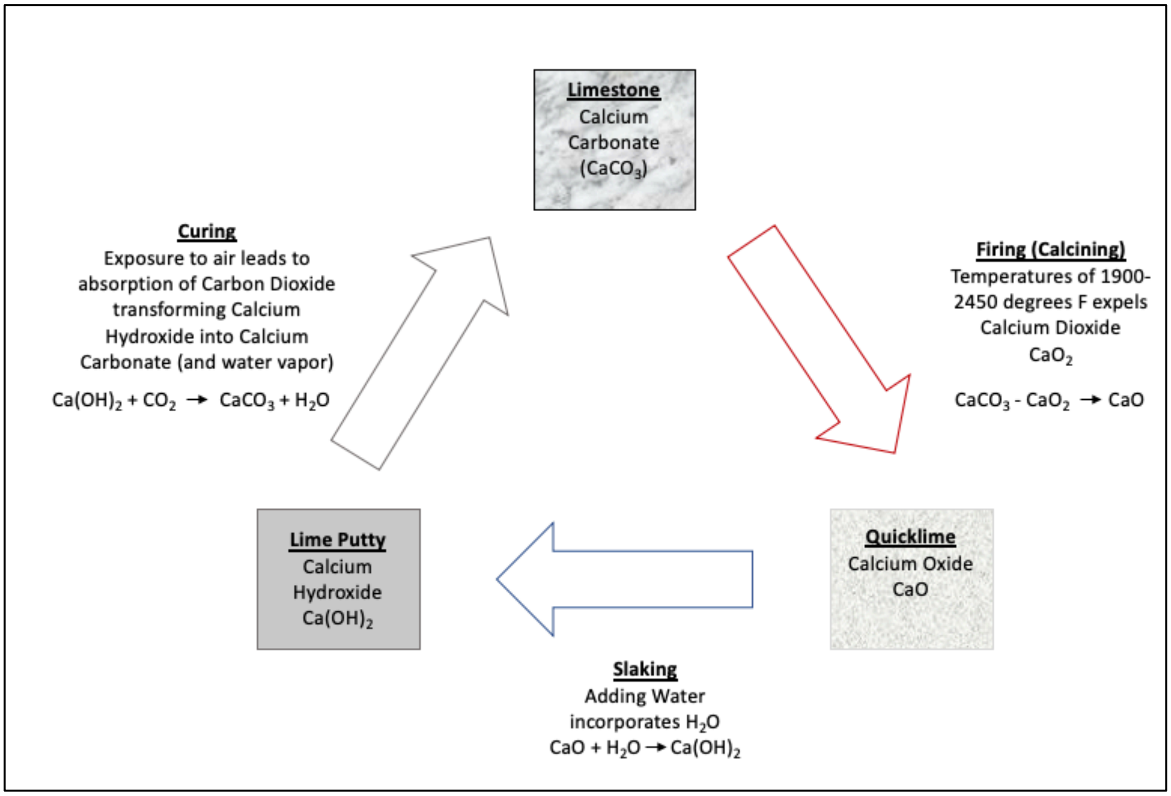

Figure 7.1 The "life-cycle" of lime (quicklime production process) (adapted from Kindon 2017)

Chapter 8 Figures

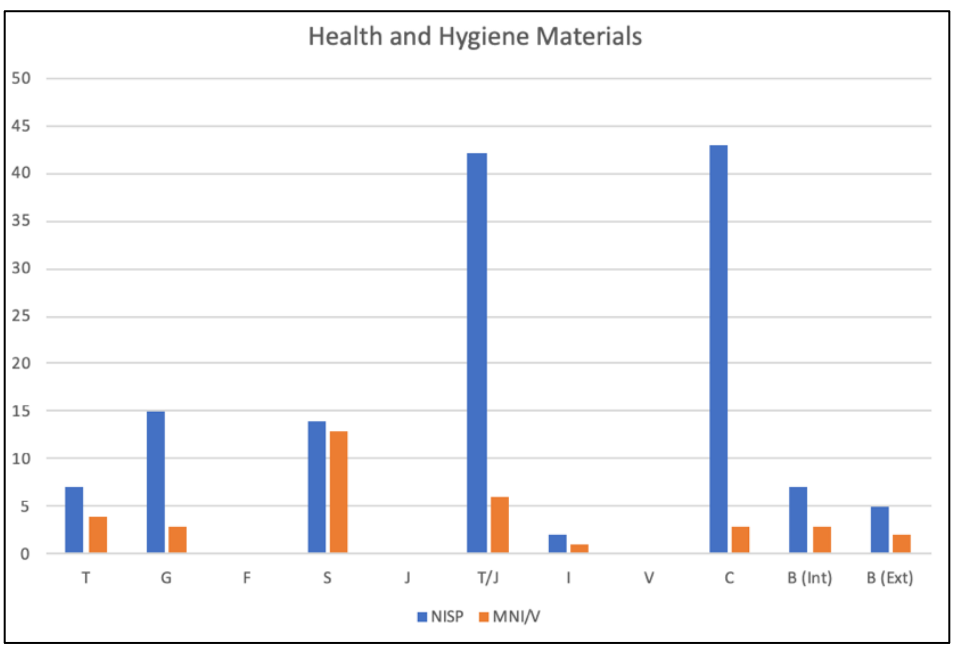

Figure 8.1 Health and hygiene materials across site loci.

Figure 8.2. Samuel Adams lime kiln workers, circa 1890s. Santa Cruz Museum of Art and History.

Figure 8.3 Gold plated jacket button and bone cuff/collar stud from the foreman’s office

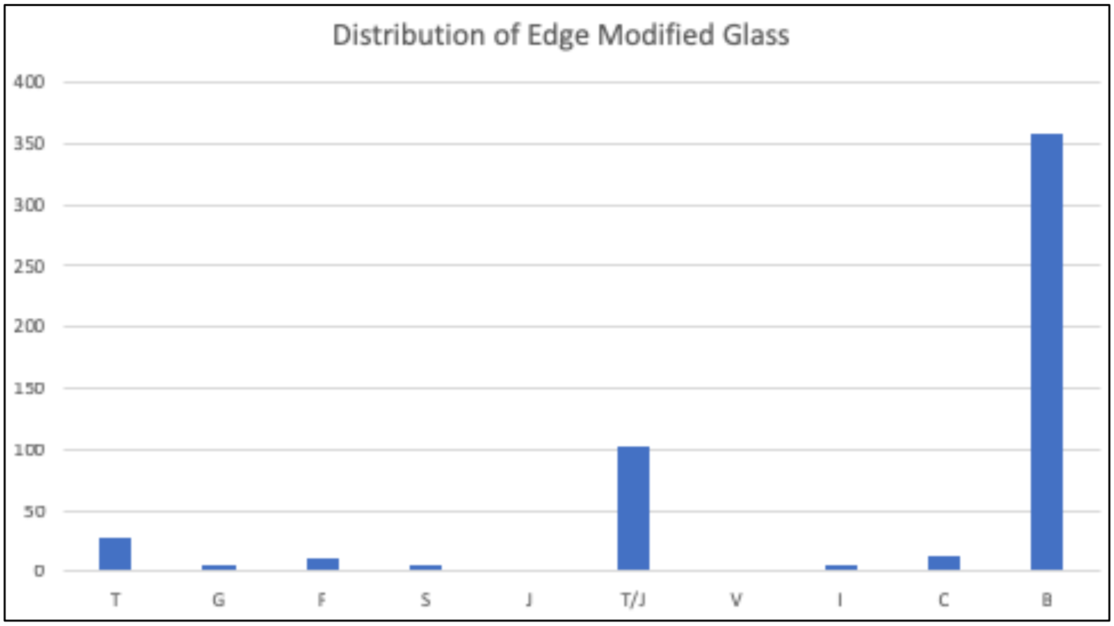

Figure 8.4 Distribution of knapped glass objects from across site loci

Figure 8.5 Olive bottle glass edge modified into serrated "knife"

Figure 8.6 Example of expedient edge modified and used bottle glass flakes

Figure 8.7 Chinese medicine vial fragments

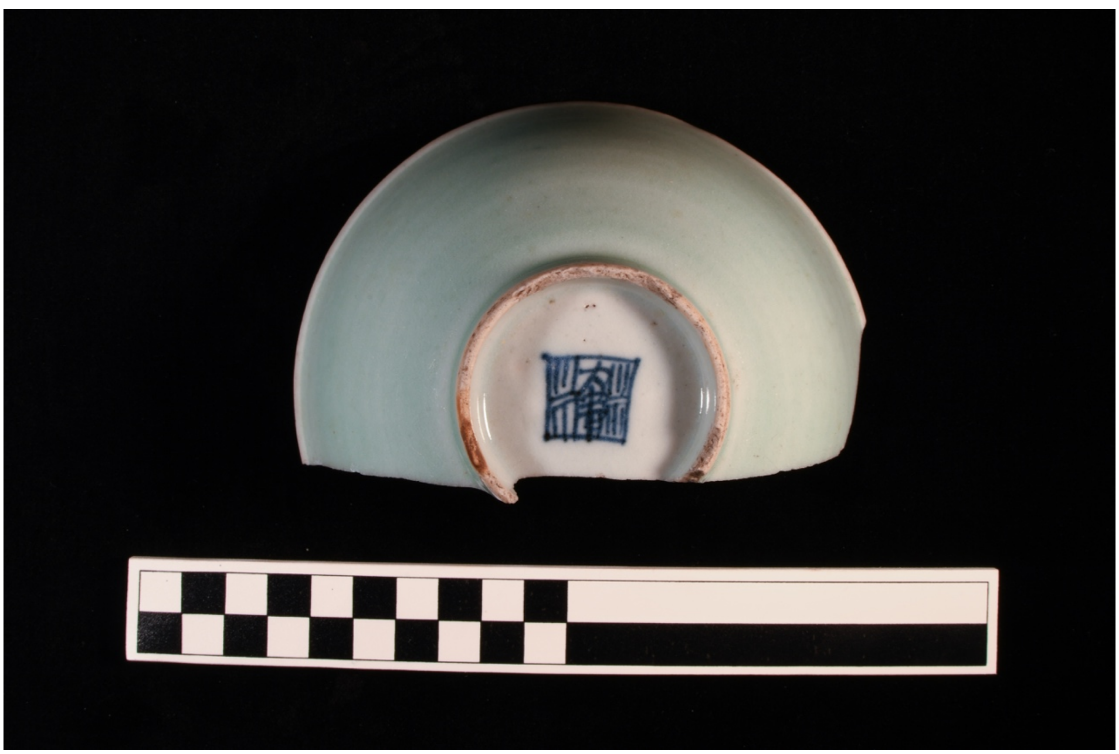
Figure 8.8 Wintergreen rice bowl

Figure 8.9 Jenny Lind Hair Gloss Bottle

Figure 8.10 “Can’t Bust ‘Em” Workwear Advertisement (Photo: Lisa Kayaks).

Figure 8.11 “Can’t Bust ‘Em” Workwear clothing tab identifying “Made By White Labor Only” (Photo: vintageworkwear.com)

APPENDIX B: TABLES

Chapter 4 Tables

Table 4.1 Summary of completed excavation units

Location (feature/structure)	**Unit Number**	**Unit Size**
S (Foreman's Office)	100	1x1 m
	104	1x1 m
T (Foreman's Residence)	101	1x1 m
T/J (Intermediate Domestic/Work Space)	103	1x2 m
I (Lime Kilns)	102	1x1 m
J (Cooperage)	105	1x1 m
G (Shared Worker's Cabin)	106	1x1 m
F (Shared Worker's Cabin)	107	1x1 m
V (Cold Storage)	108	1x1 m
B (Mess Hall)	109	1x1 m
	111	1x1 m
C (Cookhouse)	110	1x1 m
Total	**12 units**	**13 square meters**

Chapter 5 Tables

Table 5.1 Period of company ownership for buildings and archaeological deposits.

Building (Locus)	Unit(s)	Company/ Owner Period	Date(s)	Contexts (Deposits)	Description
Foreman's Residence (T)	103	Adams/ Cowell	1869-1909	1-3	Architectural collapse and final occupation materials
		Adams/ Cowell	1858-1909	4-6	Aggregate living materials- sub floor
		Adams/ Cowell	1858-1869	7-11	Building construction
Foreman's Office (S)	100, 104	Cowell	1869-1909	1-2	Architectural collapse
		Cowell	1869-1909	3	Historic living surface
		Cowell	1869-1909	4-6	Sub-porch space
		Cowell	1869-1909	7	Sub-porch floor
Intermediate Domestic/Work Space (T/J)	101	Adams/ Cowell	1858-1909	1-2	Looter's back Dirt
		Cowell	1869-1909	3	Tamped earth surface
		Adams/ Cowell	1858-1909	4-6	Walkway feature
		Adams	1858-1869	7-9	Walkway subsurface construction elements
Cooperage/Storage (J)	105	Adams/ Cowell	1858-1909	1-3	Historic floor, subfloor
Lime Kilns (I)	102	Cowell +	1909 +	1-5	Overburden
		Adams/ Cowell	1858-1909	6-8	Historic living/work surfaces
		Adams	1858-1869	9	Kiln construction
Northern Shared Workers' Cabin (G)	106	Cowell	1869-1909	1-3	Historic living surface/collapse
		Cowell	1869-1909	4	Construction surface/ elements
Southern Shared Workers' Cabin (F)	107	Adams/ Cowell	1858-1909	1-4	Historic living surface/collapse
		Adams	1858-1869	5	Building construction
Cold Storage (V)	108	Cowell +	1909 +	1-2	Overburden
		Cowell	1869-1909	3	Historic living/work surfaces
		Cowell	1859-1909	4-8	Building construction
Cookhouse (C)	110	Cowell +	1909 +	1-2	Overburden
		Cowell	1869-1909	3-7	Architectural collapse and final occupation materials
		Adams/ Cowell	1858-1909	9-10	Aggregate living/ working materials- sub floor
		Adams	1858-1869	11-12	Building construction
Mess Hall (B)	109, 111	Cowell +	1909 +	1-2	Overburden
		Cowell	1869-1909	3-4	Later living surface and floor elements
		Adams	1858-1869	5-6	Earlier living surface and floor elements

Locus T, Unit 103

Table 5.2 Locus T, Unit 103: Nails

Locus	Context	Type	MNI
T	1	Machine Cut	52
	1	Wire	3
	1	Hand Forged	1
	1	Hand Forges- Tack	1
	1	Staple	2
	1	Bolt	1
	1	Screw	1
	1	Finishing Nail- Machine Cut	1
	1A	Machine Cut	24
	1A	Hand Forged	3
	1B	Machine Cut	67
	1B	Wire	2
	1B	Hand Forged	2
	1B	Unidentified	1
	1B	Screw	1
	1B	Bolt/Rivet	1
	2	Machine Cut	60
	2	Wire	4
	2	Hand Forged	1
	3	Machine Cut	39
	3	Wire	2
	3	Hand Forged	1
	4	Machine Cut	56
	4	Wire	1
	4	Fence Staple	1
	5	Machine Cut	73
	5	Wire	1
	6	Machine Cut	27
	6	Wire	3
	7	Machine Cut	11
	8	Machine Cut	8
	10	Machine Cut	9
	Wall Fall	Machine Cut	4
		Total MNI	**452**

Table 5.3 Locus T, Unit 103: Architectural Remains (*Not all collected, only sample)

Locus	Unit	Context	Material	Object	Minimum Number	Color
T	103	S, 1, 1A, 1B, 2	Wood	Plank/Beam	1*	
		S, 1, 1A, 1B, 2, 3, 6	Wood	Piece	1*	
		S, 1, 1B, 2, 5, 7	Brick	Fire Brick	1*	
		1, 1A, 1B, 4, 5	Lime	Mortar Plaster	1*	
		1	Iron	Stove Pipe	1	
		1, 2, 3, 4, WF	Glass	Window	1	Colorless
		1B, 3, 6	Glass	Window	1	Very Light Natural Blue Green
		2, 4, 5	Glass	Window	1	Light Natural Blue Green
		1A, WF	Iron	Pipe	1	
		2	Iron	Stove Top*	1	
		3	Wood	Floor/Siding	1	

Table 5.4 Locus T, Unit 103: Food Storage

Locus	Unit	Context	Material	Type/Ware	Form/Shape	Vessel Size	NISP	MNV
T	103	1, 1A, 1B, 2, 3, 4, 5, 6, 7, 8, WF	Iron	Simple Rolled	Can		48	5
		1B	Iron	Sanitary Can	Can		1	1
		1, 1A, 1B, 2, 3, 4, 5, 6, 7, 8, 10, WF	Iron	Flat	Unidentified		833	0
		1, 1A, 1B, 3, 5, 6	Glass	Bottle	Sauce/Pickle Bottle		18	1
		1	Glass	Bottle	Condiment		1	1

Table 5.5 Locus T, Unit 103: Beverage Storage

Locus	Unit	Context	Color	Manufacture	Form/Shape	Finish	NISP	MNV
T	103	0, 1, 4, 5	Light Natural Blue	Mold Blown	Square/Rectangle, Paneled		16	1
		1	Light Natural Blue	Mold Blown	Cylindrical		1	1
		1	Light Natural Blue	Unidentified	Unidentified		2	0
		1, 1A, 1B, 2, 3, 5, 6	Colorless	3 Piece Mold	Cylindrical		30	1
		1, 3, 5, 7, 8	Colorless	Unidentified	Unidentified		11	0
		1, 2, 3, 5, 6, 7	Olive	Mold Blown	Wine/Champagne		16	1

		S, 1, 2, 4, 5, WF	Light Olive	Mold Blown	Square/Rectangle		17	1
		S, 1, 1A, 1B, 3, 5, 7	Dark Olive	3 Piece Mold	Cylindrical		21	1
		1, 5	Light Green	Mold Blown	Square/Rectangle		2	1
		1, 10	Amber	Mold Blown	Flask, Oval		2	1
		1	Amber	At Least 2 Piece Mold	Square/Rectangle		1	1
		1B	Amber	Unidentified	Unidentified		1	0
		1, 1A	Light Natural Blue Green	At Least 2 Piece Mold	Flask		9	1
		1, 2, 3, 5, 7	Light Olive	At Least 2 Piece Mold	Wine/Champagne		7	1
		1, 1A, 1B,	Light Olive	At Least 2 Piece Mold	Flask		12	1
		1A, 2, 6	Light Olive	Unidentified	Unidentified		3	0
		1, 2, 5	Dark Olive	Mold Blown	Square/Rectangle, Rounded Corners		5	1
		1B, 4, 6, 8, WF	Dark Olive	Mold Blown	Square/Rectangle		13	1
		1, 3, 5	Brown	3 Piece Mold	Cylindrical		6	1
		1, 1A, 1B	Natural Blue	Mold Blown	Flask		15	1
		1A, 1B, 3, 4, 6, 7, 8, 10, WF	Very Light Natural Blue	At Least 2 Piece Mold	Flask		70	1
		1A, 4, 5	Olive Green	Mold Blown	Flask		8	1
		5	Olive Green	Unidentified	Unidentified		1	0
		1, 1A, 1B, 2, 6, 10	Olive Amber	Mold Blown	Cylindrical		15	1
		1	Olive Amber	Unidentified	Unidentified		1	0
		1A	Olive	Mold Blown	Flask		2	1
		1A	Emerald Green	Mold Blown	Flask		1	1
		1A, 5	Amethyst	2 Piece Mold	Flask		2	1
		1B, 2, 3, 5, 6, 7	Light Natural Blue	Mold Blown	Flask	Bead	12	1
		1B, 3	Amber	Mold Blown	Square/Rectangle, Chamfered Corners		2	1
		1B	Golden Amber	Mold Blown	Square/Rectangle		2	1
		1B, 7, WF	Colorless	Mold Blown	Square/Rectangle		3	1
		1B, 3, 5	Very Light Natural Blue	At Least 2 Piece Mold	Square/Rectangle, Chamfered Corners		7	1
		1B, 5	Light Natural Blue	Mold Blown	Square/Rectangle, Rounded Corners		3	1

		1B	Natural Blue Green	At Least 2 Piece Mold	Square/Rectangle, Inset Panels		1	1
		1B, 2, 5	Brown	Mold Blown	Square/Rectangle		5	1
		2	Natural Light Blue	Mold Blown	Flask		4	1
		2	Sky Blue	Mold Blown	Cylindrical		1	1
		2, 5, 6, WF	Colorless	At Least 2 Piece Mold	Flask, Pedestaled Base		8	1
		2	Very Light Natural Blue	Mold Blown	Cylindrical		1	1
		2	Natural Blue	Mold Blown	Flask		4	1
		2	Light Olive Green	Mold Blown	Square/Rectangle		1	1
		5	Light Olive Green	Unidentified	Unidentified		1	0
		2, 6, 7	Olive Green	Mold Blown	Wine/Champagne		1	3
		3, 10	Black	Mold Blown	Square/Rectangle, Rounded Chamfered Corners		2	1
		3	Light Olive Green	Mold Blown	Flask		5	1
		3, WF	Dark Amber	Mold Blown	Square/Rectangle		2	1
		3, 6	Amethyst	Mold Blown	Square/Rectangle		2	1
		4	Light Blue	At Least 2 Piece Mold	Cylindrical		1	1
		4, 5	Amber	3 Piece Mold	Cylindrical		5	1
		4, 5	Dark Amber	Mold Blown	Cylindrical		3	1
		5, 7, WF	Dark Brown	Mold Blown	Square		3	1
		5	Very Light Blue	At Least 2 Piece Mold	Flask		26	1
		5	Light Natural Blue Green	Mold Blown	Square/Rectangle, Stepped Panel		2	1
		5	Light Amber	At Least 2 Piece Mold	Cylindrical		5	1
		5	Light Amber Yellow	Mold Blown	Flask		1	1
		5	Olive	At Least 2 Piece Mold	Square/Rectangle, Chamfered Corners		5	1
		6	Natural Blue Green	Mold Blown	Cylindrical		1	1
		6	Dark Brown	Mold Blown	Cylindrical		1	1
		WF	Light Natural Blue Green	Mold Blown	Cylindrical		1	1
		1B	Red, White, Blue	Sanitary (Metal)	Cylindrical		2	1
						Total	**413**	**56**

Table 5.6 Locus T, Unit 103: Service/Tablewares

Locus	Unit	Context	Material	Ware	Vessel Form	Vessel Size	Decoration	NISP	MNV
T	103	1A	Ceramic	Whiteware (Blued)	Side Plate	20cm Rim	Undecorated	1	1
		1B, 5	Ceramic	Whiteware (Blued)	Saucer	15cm Rim, 8cm Base	Molded Braid Rim Design	4	1
		1B, 5	Ceramic	Whiteware	Unidentified		Undecorated	2	0
		1B	Ceramic	Whiteware	Buffet Plate	28cm Rim	Plain	2	1
		2	Ceramic	Hotelware	Tea Cup	3cm Base	Undecorated	1	1
		1B, 4, 5	Ceramic	Whiteware (Blued)	Bowl	16cm Rim	Plain	3	1
		4, 5	Glass	Mold Blown	Cup	7cm Rim	Colorless	1	1
		6	Ceramic	Rocking-ham Ware	Hollowware		Brown Glaze Under Lead Glaze	1	1
		6	Ceramic	Hotelware	Luncheon Plate	22cm Rim	Plain	1	1
		6	Ceramic	Hotelware	Bowl/Cup		Undecorated	1	1
		6	Ceramic	Creamware	Hollowware		Undecorated	2	1
		Wall Fall	Ceramic	Whiteware	Cup	8cm Rim	Molded, Banded Rim and Floral Pattern	1	1
							Total	**20**	**11**

Table 5.7 Locus T, Unit 103: Health and Hygiene, Small Finds

Locus	Unit	Context	Material	Object	Minimum Number
T	103	5	Pigment	Bluing Ball	1
		5	Rubber	Comb	1
		10	Pigment	Bluing Ball	1

Table 5.8 Locus T, Unit 103: Clothing and Adornment

Locus	Unit	Context	Material	Object	Size	Description	Minimum Number
T	103	1, 1A, 1B	Leather	Shoe		Sole/Insole	1
		1	Iron with Leather	Shoe Nail			1
		1	Copper Alloy with Canvas	Rivet		Levi Strauss Jeans Rivet	1
		1	Iron with Resin	Brooch		Circular Resin Brooch with Metal Backing and Fastener, Design Illegible	1
		1B, 2	Copper Alloy with Leather	Shoe Eyelet			3
		1B, 2	Iron with Copper Alloy	Jacket Button	28 Lignes	Cast Iron with Copper Alloy	1
		1b, 2	Shell (Abalone)	Shirt Button	18 Lignes	Cut, Two Hole Sew Through	1

		3	Prosser	Shirt Button	18 Lignes	White, Four Hole Sew Through	1
		3	Prosser	Jacket Button	20 Lignes	Domed, Brown Slip with Annular Band, Shank Style	1
		5	Prosser	Shirt Button	18 Lignes	White, Four Hole Sew Through	1
		5	Prosser	Shirt Button	17 Lignes	White, Four Hole Sew Through, Pie Crust Design	1
		5	Iron	Jacket Button	28 Lignes	Domed, Shank Style	1
		5	Iron	Jacket Button	28 Lignes	Flat, Shank Style	1
		6	Prosser	Underwear Button	16 Lignes	White, Four Hole Sew Through	1
		6	Prosser	Pant Button	20 Lignes	White, Two Hole Sew Through	1
		6	Prosser	Jacket Button	18 Lignes	Domed, Shank Style	1
		6	Copper Alloy with Denim	Rivet		Levi Strauss Jeans Rivet	1
		6	Rubber	Jacket Button	24 Lignes	Black, Domed and Shank Style	1
		7	Prosser	Shirt Button	18 Lignes	White, Four Hole Sew Through	1
		7	Prosser	Shirt Button	17 Lignes	White, Four Hole Sew Through	1
		WF	Copper Alloy	Aglet			1
						Total	**23**

Table 5.9 Locus T, Unit 103: Faunal

Locus	Unit	Con-text	Taxa	Element	Modification	Description	NISP	MNI
T	103	4	*Bos taurus*	Phalanx			1	1
		2	*Bos taurus*	Rib	Butchered	Hand Sawed, Full Cut, One Knife Cut	1	
		3	*Bos taurus*	Rib	Butchered	Hand Sawed, Full Cut- One End, Partial Cut, Cleaver Chop	1	
		3	*Bos taurus*	Rib			1	
		2	*Ovis aries/ Capra hircus*	Carpal/ Tarsal			1	1
		4	*Ovis aries/ Capra hircus*	Rib			2	
		4	*Gallus gallus*	Tibia			1	1
		4	*Gallus gallus*	Tarso-metatarsus			1	
		1A	Unidentified Medium Aves	Uniden-tified Long Bone			2	0
		2	Unidentified Medium Aves	Humerus			1	

		4	Unidentified Medium Aves	Rib			1	
		1, 5	Unidentified Small Aves	Femur			2	1
		5	Unidentified Small Aves	Humerus			1	
		5	Unidentified Small Aves	Tibia			1	
		5	Unidentified Small Aves	Ulna			2	
		5, 6	Unidentified Small Aves	Uniden-tified Long Bone			10	
		6	Unidentified Small Aves	Tarsal			1	
		6	Unidentified Small Aves	Tarso-metatarsus			1	
		4, 5	Unidentified Large Fish	Crania			1	1
			Unidentified Large Fish	Fin Fan			1	
			Unidentified Large Fish	Uniden-tified			1	
		3	*Sylvilagus audubonii*	Femur		Unfused Epiphysis	1	2
		4	*Sylvilagus*	Femur			1	
		WF	*Sciuridae*	Mandible			1	1
		WF	*Neotoma fuscipes*	Mandible			1	1
		2, 5	Unidentified Artiodactyla	Scapula			3	0
		1B	Unidentified Artiodactyla	Uniden-tified Long Bone	Butchered	Full Cut, Implement Unidentified	2	
		1B	Unidentified Artiodactyla	Uniden-tified Long Bone	Butchered	Knife Cut Mark	1	
		1B	Unidentified Artiodactyla	Sacrum			4	
		1	Unidentified Artiodactyla	Carpal/ Tarsal			1	
		2	Unidentified Artiodactyla	Sacrum			1	
		2	Unidentified Artiodactyla	Uniden-tified Long Bone	Diseased		1	
		2, WF	Unidentified Artiodactyla	Uniden-tified Long Bone			3	
		3, 5	Unidentified Artiodactyla	Uniden-tified			3	
		4	Unidentified Artiodactyla	Uniden-tified	Weathered		4	
		5	Unidentified Artiodactyla	Rib			1	
		5	Unidentified Artiodactyla	Vertebrae	Butchered	Implement Unidentified	1	
		WF	Unidentified Artiodactyla	Uniden-tified			1	

		1A, 2, 3	Unidentified Rodentia	Mandible			6	2
		1A,1 B, 4	Unidentified Rodentia	Humerus			3	
		1A	Unidentified Rodentia	Pelvis			1	
		1B, 2, 4	Unidentified Rodentia	Femur			3	
		1B, 2	Unidentified Rodentia	Maxilla			6	
		3	Unidentified Rodentia	Phalanx			1	
		5	Unidentified Rodentia	Scapula			1	
		1, 1B, 2, 5	Unidentified Rodentia	Tooth			4	
		6	Unidentified Rodentia	Uniden-tified Long Bone			2	
		1B, WF	Unidentified Rodentia	Uniden-tified			2	
		1B, 2, 5	Unidentifiable	Uniden-tified Long Bone			9	0
		1, 2, 3	Unidentifiable	Uniden-tified			9	
		1, 1A	Unidentifiable	Vertebrae			2	
		1A, 1B, 2, 3, 4, 6	Unidentifiable	Uniden-tified Flat Bone			20	
		1, 7	Unidentifiable	Uniden-tified	Burned		2	
		2	*Mytilus californianus*	Hinge			2	2
		1A, 1B, 2, 3, 4, 5, 6, WF	*Mytilus californianus*	Shell			109	
		1, 1A, 3	Land Snail	Shell			23	1
						Total	**269**	**14**

Table 5.10 Locus T: Chronology

Locus	Unit	Context	Date Attribution (TPQ)	Artifact	Start Date	Enda Date	Context TPQ	Average Date	Average Context Date
T	103	Surface	N/A					N/A	N/A
	103	1/1A/1 B	1840	Black Glass Bottle	1840	1880		1860	
	103	1/1A/1 B	1860	Two-Piece Mold Bottle	1860	1910		1885	
	103	1/1A/1 B	1810	Three-Piece Mold Bottle	1810	1890	1860	1850	1865

	103	2	1860	Liquid Battery Bottle	1860	1950		1905	
	103	2	1860	Two-Piece Mold Bottle	1860	1910	1860	1885	1895
	103	3	1860	Two-Piece Mold Bottle	1860	1910		1885	
	103	3	1840	Black Glass Bottle	1840	1880		1860	
	103	3	1870	Amethyst (Manganese) Bottle	1870	1915		1892.5	
	103	3	1810	Three-Piece Mold Bottle	1810	1890		1850	
	103	3	1845	Nursing Bottle	1845	1910	1870	1877.5	1873
	103	4	1860	Two-Piece Mold Bottle	1860	1910		1885	
	103	4	1810	Three-Piece Mold Bottle	1810	1890	1860	1850	1867.5
	103	5	1860	Two-Piece Mold Bottle	1860	1910		1885	
	103	5	1851	Hard-Rubber Comb	1851	1950	1860	1900.5	1892.75
	103	6	1855	Hard-Rubber Button- Novelty Rubber Co.	1855	1865		1860	
	103	6	1873	Levi's Jeans Rivet	1873	1950		1911.5	
	103	6	1860	Two-Piece Mold Bottle	1860	1910		1885	
	103	6	1870	Amethyst (Manganese) Bottle	1870	1915		1892.5	
	103	6	1830	Applied Bottle Finish	1830	1885	1870	1857.5	1881.3
	103	7/7B	1810	Three-Piece Mold Bottle	1810	1890	1810	1850	1850
	103	8	1860	Two-Piece Mold Bottle	1860	1910	1860	1885	1885
	103	9	N/A	No Dateable Artifacts				N/A	N/A
	103	10	1840	Black Glass Bottle	1840	1880	1840	1860	1860

Locus T/J, Unit 101

Table 5.11 Locus T/J, Unit 101: Nails

Locus	Unit	Context	Type	MNI
T/J	101	2	Machine Cut	24
		2	Hand Forged	2
		3	Machine Cut	77
		3	Wire	1
		3	Hand Forged	1
		3	Unidentified	1
		4	Machine Cut	15

		4	Hand Forged	2
		5	Machine Cut	23
		5	Hand Forged	5
		6	Machine Cut	20
		6	Hand Forged	13
		7	Machine Cut	3
		7	Machine Cut- Finishing Nail	4
		7	Hand Forged- Finishing Nail	2
		8	Machine Cut	11
		9	Machine Cut	1
		9	Unidentifiable	3
		Wall Fall	Machine Cut	1
		Wall Fall	Hand Forged	1

Table 5.12 Locus T/J, Unit 101: Architectural Remains (*Not all collected, only sample)

Locus	Unit	Context	Material	Object	MNI	Color
T/J	101	1, 2, 3, 5, 6, 7, 8	Brick	Fire Brick	1*	
		1, 2, 3, 4, 5, 6	Lime	Mortar/Plaster	1*	
		1, 2, 5	Clay	Nodule	1*	
		2, 3	Glass	Window	1	Light Natural Blue Green
		3	Glass	Window	1	Very Light Natural Blue Green
		3, 6	Iron	Barb Wire	1	
		4	Iron	Pipe	1	
		4	Copper Alloy	Corner Collar/Brace	1	
		3	Iron	Latch/Door Hook	1	

Table 5.13 Locus T/J, Unit 101: Lighting

Locus	Unit	Context	Material	Color	Object	Decoration	Size	MNI
T/J	101	1	Glass	Amethyst	Oil Lamp Font	Undecorated		1
		1	Glass	Amethyst	Lamp Chimney	Large Scalloped Rim	4cm Base	0
		1, 2, 3, 6	Glass	Colorless	Lamp Chimney			1
		4	Glass	Light Natural Blue Green	Lamp Chimney			1
							Total	**3**

Table 5.14 Locus T/J, Unit 101: Food Storage

Locus	Unit	Context	Material	Type/Ware	Form/Shape	Vessel Size	Decoration	NISP	MNV
T/J	101	1, WF	Iron	Simple Rolled	Unidentifiable			2	1
		1, 2, 3, 4, 5, 6, 7	Iron	Flat	Unidentifiable			186	0
		3	Ceramic	Glazed Stoneware	Soy Sauce Bottle			1	1
							Total	**189**	**2**

Table 5.15 Locus T/J, Unit 101: Beverage Storage

Locus	Unit	Context	Color	Manufacture	Form/Shape	Finish	NISP	MNV
T/J	101	S, 4	Olive	Mold Blown	Square/Rectangle		2	1
		1, 3	Olive Amber	Mold Blown	Unidentified		2	1
		1, 2, 3, 8	Amber	Mold Blown	Square/Rectangle		7	1
		1, 2, 3, 4, 5, 8	Light Olive Green	Mold Blown	Cylindrical		12	1
		1, 4	Black	Mold Blown	Square/Rectangle		2	1
		1, 2, 3, 4, 5, 6	Light Natural Blue	Cup Bottom Mold	Cylindrical		21	1
		2	Light Olive	Mold Blown	Square/Rectangle, Chamfered Corners		1	1
		2	Citron	Mold Blown	Wine/Champagne		1	1
		2	Natural Blue Green	Mold Blown	Cylindrical		1	1
		2, 3, 5, 6, WF	Light Natural Blue Green	Mold Blown	Cylindrical	Mineral/Oil	15	1
		2	Blue Green	Mold Blown	Cylindrical		1	1
		1, 2	Light Sapphire Blue	Mold Blown	Square/Rectangle, Chamfered Corners		2	1
		2	Natural Blue	Mold Blown	Cylindrical		1	1
		2, 3, 4, 5	Amethyst	At Least 2 Piece Mold	Cylindrical		11	1
		2, 3	Reddish Amethyst	Mold Blown	Cylindrical		4	1
		2, 3	Amethyst	Mold Blown	Square/Rectangle		8	1
		2	Brown	At Least 2 Piece Mold	Jug		1	1
		2, 3, 4, 7	Dark Olive	Mold Blown	Cylindrical		8	1
		2	Yellow Amber	Mold Blown	Square/Rectangle		3	1
		2, 3, 4, 5, 6, 8, 9, WF	Light Olive	At least 2 Piece Mold	Wine/Champagne	Champagne	38	1
		2	Light Natural Blue	Dip Molded	Cylindrical		1	1
		2	Light Natural Blue	Mold Blown	Cylindrical Pepper Sauce		1	1
		2	Light Natural Blue	Mold Blown	Octagonal Pepper Sauce		1	1

		2, WF	Light Natural Blue	Mold Blown	Flask		2	1
		2, 3, 6	Light Natural Blue	Mold Blown	Square/Rectangle, Paneled, Rounded Corners		5	1
		2	Colorless	Mold Blown	Jar		1	1
		2, 3, 5, 6	Colorless	At Least 2 Piece Mold	Cylindrical		36	1
		2	Colorless	Turn Paste	Cylindrical		2	2
		4	Colorless	Unidentified	Unidentified		5	0
		3, 4, 5	Light Natural Blue Green	Mold Blown	Square/Rectangle, Paneled, Chamfered Corners		11	1
		3, 4, 5	Brown	At Least 2 Piece Mold	Cylindrical	Oil	8	1
		2, 3, 4, 5, 8	Light Amber	Mold Blown	Cylindrical		17	1
		2, 4, 5, 6, 8	Amber	At Least 2 Piece Mold	Cylindrical		23	1
		2, 3, 4, 8	Amber	At Least 2 Piece Mold	Flask		4	1
		4	Amber	Unidentified	Unidentified		4	0
		3, 5, 6, WF	Olive	Mold Blown	Cylindrical		24	1
		3	Dark Brown	At Least 2 Piece Mold	Cylindrical		9	1
		3, 4	Golden Amber	Mold Blown	Cylindrical		5	1
		4	Light Emerald Green	Mold Blown	Square/Rectangle		2	1
		3	Sapphire Blue	2 Piece Mold	Rectangle, Concave Chamfered Corners		6	1
		3, 4	Light Olive Green	Turn Paste	Cylindrical		3	1
		3	Green	Mold Blown	Cylindrical		1	1
		5	Dark Amber	Mold Blown	Cylindrical		1	1
		5, 6	Dark Brown	Mold Blown	Square/Rectangle, Chamfered Corners		5	1
		5	Amethyst	At Least 2 Piece Mold	Flask		1	1
		5	Very Light Natural Blue	Mold Blown	Cylindrical		3	1
		5	Olive Green	Mold Blown	Cylindrical		1	1
		5	Light Amber	Mold Blown	Square/Rectangle		1	1
		5	Colorless	Mold Blown	Flask		2	1
		6	Cornflower Blue	Mold Blown	Cylindrical		1	1
		6	Brown	At Least 2 Piece Mold	Flask		1	1
		6	Very Light Natural Blue	Mold Blown	Square/Rectangle		1	1
		7	Light Amber	Mold Blown	Flask		1	1
		3	Light Olive	Mold Blown	Flask		4	1

		3	Dark Olive	Mold Blown	Square/Rectangle		1	1
		3	Very Light Olive	Mold Blown	Square/Rectangle		1	1
						Total	**336**	**55**

Table 5.16 Locus T/J, Unit 101: Ceramic Service/Tableware

Locus	Unit	Context	Ware	Vessel Form	Vessel Size	Decoration	NISP	MNV
T/J	101	2, 3	Whiteware (Blued)	Dinner Plate	30cm Rim	Undecorated	1	1
		2	Whiteware (Blued)	Luncheon Plate	20cm Rim, 10cm Base	Molded Scalloped Interior Body Panels, Molded Braid Rim Design	3	1
		2, 3, 5, 8	Whiteware (Blued)	Hollowware		Undecorated	7	0
		3	Whiteware	Hollowware		Undecorated	3	0
		3	Whiteware	Soup Bowl	8cm Base	Undecorated	1	1
		3	Whiteware	Hollowware	12cm Base	Molded Brim	1	1
		3	Hotelware	Hollowware	12cm Rim	Undecorated	1	1
		3	Hotelware	Teacup		Thumb Rest Handle	1	1
		3	Ironstone	Bowl	16cm Rim	Grayed	1	1
		3, 5, 8	Whiteware (Blued)	Luncheon Plate	22cm Rim	Undecorated	1	1
		3	Rockingham Ware	Hollowware		Molded (Design Unidentifiable), Brown Slip Under Lead Glaze	1	1
		5	Ironstone	Plate		Grayed	1	1
		8	Whiteware (Blued)	Dinner Plate	28cm Rim	Undecorated	1	1
						Total	**23**	**11**

Table 5.17 Locus T/J, Unit 101: Glass Service/Tableware

Locus	Unit	Context	Manufacture	Form	Decoration	Color	Size	MNV
T/J	101	2	Press Molded	Cup/Glass	Geometric Design	Colorless		1
		3	Mold Blown	Shot Glass	Paneled Base	Amethyst	4cm Base	1
		3	Mold Blown	Pitcher (Handle)	Undecorated	Amethyst		1
		6	Press Molded	Bowl	Paneled Scallops	Colorless	14cm Rim	1
		6	Press Molded	Unidentifiable Hollowware	Paneled Scallops	Amethyst		1
							Total	**5**

Table 5.18 Locus T/J, Unit 101: Health and Hygiene (Glass and Ceramic Material)

Locus	Unit	Context	Material	Shape	Color	Finish	Marks	Content	NISP	MNV
T/J	101	1	Glass	Square/ Rectangle	Cobalt			Medicine/ Poison	2	1
		1, 2, 3, 4, 7	Glass	Square/ Rectangle, Paneled, Chamfered Corners	Light Natural Blue		Embossed "VEG…", Perry Davis Vegetable Pain Killer	Medicine/ Pain Killer	13	1
		2, 3	Glass	Cylindrical	Cobalt			Medicine/ Pain Killer	3	1
		3	Glass	Cylindrical	Light Natural Blue Green	Patent		Medicine/ Poison	1	1
		2, 3, 4, 5, 6, 7, 8	Glass	Square/ Rectangle, Chamfered Corners	Color-less	Patent	Embossed, Illegible	Medicine/ Poison	22	1
		2	Ceramic	Basin	White-ware (Blued)		Plain		1	1
								Total	**42**	**6**

Table 5.19 Locus T/J, Unit 101: Health and Hygiene (Small Finds)

Locus	Unit	Context	Material	Object	MNI
T/J	101	3	Rubber	Comb (Tooth)	1
		3	Rubber	Beard Comb (Tooth)	1
		3	Rubber	Beard Comb (Tooth)	1
		8	Rubber	Comb (Tooth)	1

Table 5.20 Locus T/J, Unit 101: Clothing (*All Leather and Shoe parts likely represent one shoe)

Locus	Unit	Context	Material	Object	Size	Description	MNI
T/J	101	2, 3	Leather	Shoe		Sole/Insole	1
		3	Iron	Jacket Button	28 Lignes	Concave Center, Banded, Box Shank Style	1
		3	White Metal, Enamel	Shirt Button	18 Lignes	Black Enamel, Cast White Metal, Four Hole Sew Through	1
		3, 4	Copper Alloy with Leather	Shoe Screw			0
		1, 2, 3, 4, 6	Iron	Shoe Tack			0
		3	Iron	Shoe Nail			0
		4, 5	Copper Alloy with Leather	Shoe Eyelet			0
		5	Copper Alloy, Iron	Jacket Button	28 Lignes	Shank Style	1

		5	Copper Alloy with Denim	Jeans Rivet		Levi Strauss Jeans Rivet, Marked "Pat May 1873, LS&Co"	1
		6	Prosser	Shirt Button	17 Lignes	White, Four Hole Sew Through	1
		6	Leather with Metal	Shoe		Shoe Leather with Nail Fragment Attached	0
		1	Bone	Pant Button		Oval, Four Hole Sew Through, South Type 22	1
		7	Leather with Metal	Shoe Heel		Leather and Nails Forming Shoe Heel	0

Table 5.21 Locus T/J, Unit 101: Faunal

Locus	Unit	Context	Taxa	Element	Modification	Description	NISP	MNI
T/J	101	2	*Bos taurus*	Patella			1	2
		2	*Bos Taurus*	Rib	Butchered	Chop, Partial Cut	1	
		2	*Bos Taurus*	Rib	Butchered	Sawed, Full Cuts- Both Ends, One Partial Cut	1	
		2	*Bos Taurus*	Rib	Butchered	Hand Sawed, Full Cut- One End	1	
		2	*Bos Taurus*	Tibia	Butchered	Cleaver Chopped	2	
		2	*Bos Taurus*	Unidentified Flat Bone	Butchered	Sawed, One Side	1	
		3	*Bos Taurus*	Carpal/ Tarsal	Butchered	Two Knife (Disarticulation) Cuts	1	
		3, 4	*Bos Taurus*	Carpal/ Tarsal			3	
		3	*Bos Taurus*	Fibula			1	
		3	*Bos Taurus*	Rib	Butchered	Sawed, Full Cut- Distal End, Additional Knife Cuts Distal End, Unfused Epiphysis	1	
		3	*Bos Taurus*	Rib	Butchered	Hand Sawed, Multiple Partial Cuts	1	
		3	*Bos Taurus*	Scapula			1	
		3	*Bos Taurus*	Scapula	Butchered	Sawed	1	
		3	*Bos Taurus*	Ulna	Butchered	Hand Sawed, Full Cut- One End, Unfused Epiphysis	1	
		3	*Bos Taurus*	Vertebrae	Butchered	Sawed, Two Directions, Unfused Epiphysis	1	
		3	*Bos Taurus*	Vertebrae	Butchered	Hand Sawed	1	

		3	*Bos Taurus*	Vertebrae	Butchered	Unidentified Cut Mark	1	
		3	*Bos Taurus*	Vertebrae			1	
		3	*Bos Taurus*	Tibia	Butchered	Cleaver Chopped, Disarticulation Marks	1	
		4	*Bos Taurus*	Femur	Butchered	Chopped, Hand Sawed- Full Cut, Additional Chop Mar at Lateral Epicondyle, Multiple Knife Cuts on Posterior Shaft	1	
		4	*Bos Taurus*	Rib	Butchered	Hand Sawed, Full Cut- One End, Multiple Partial Cuts	1	
		4	*Bos Taurus*	Tibia	Butchered	Cleaver Chopped, Unfused Epiphysis	1	
		4	*Bos Taurus*	Tibia	Butchered	Multiple Cleaver Chops, Unfused Epiphysis	1	
		6	*Bos Taurus*	Rib	Butchered	Hand Sawed, Full Cut- One End, Two Partial Cuts	1	
		6	*Bos taurus*	Carpal/Tarsal	Butchered	Multiple Scrape Marks (De-fleshing)	1	
		3	*Ovis aries/ Capra hircus*	Vertebrae			4	1
			Ovis aries/ Capra hircus	Femur			1	
			Ovis aries/ Capra hircus	Metapodial			1	
		3, 7, 8	Unidentified Medium Fish	Vertebrae			5	1
		2	*Sylvilagus audubonii*	Femur			1	1
		2	*Sylvilagus audubonii*	Humerus			1	
		1	*Sciuridae*	Femur			1	1
		5	*Anas*	Coracoid			1	1
		5	*Anas*	Unidentified Long Bone	Burned	Burned Gray	1	
		2	Unidentified Artiodactyla	Unidentified			1	0
		1	Unidentified Artiodactyla	Unidentified Long Bone	Butchered	Hand Sawed, Full Cut- Both Ends	1	
		1	Unidentified Artiodactyla	Unidentified Long Bone	Butchered	Hand Sawed, Full Cut- Both Ends	1	
		1	Unidentified Artiodactyla	Unidentified Long Bone	Butchered	Implement Unidentified	1	

		1	Unidentified Artiodactyla	Unidentified Long Bone	Burned	Burned Black	1	
		1, 2, 3, 4, 5, WF, 7	Unidentified Artiodactyla	Unidentified Long Bone			26	
		2	Unidentified Artiodactyla	Unidentified Long Bone	Butchered	Hand Sawed, Full Cut- Both Ends, Two Partial Cuts	1	
		2, 7	Unidentified Artiodactyla	Unidentified Long Bone			3	
		2	Unidentified Artiodactyla	Rib	Butchered	Hand Sawed, 3 Full Cut- Making a Square	1	
		2, 3, 8	Unidentified Artiodactyla	Rib			4	
		2	Unidentified Artiodactyla	Unidentifiable	Butchered	Hand Sawed, Two Partial Cuts	1	
		2	Unidentified Artiodactyla	Carpal/Tarsal			1	
		2, 5, 7	Unidentified Artiodactyla	Rib			4	
		2	Unidentified Artiodactyla	Calcaneous			1	
		2	Unidentified Artiodactyla	Metapodial			1	
		2	Unidentified Artiodactyla	Phalange			1	
		2	Unidentified Artiodactyla	Unidentified Long Bone	Butchered	Sawed, One Side	1	
		2	Unidentified Artiodactyla	Unidentified Long Bone	Butchered	Sawed, One Side		
		3	Unidentified Artiodactyla	Unidentified Long Bone	Butchered	Hand Sawed, Full Cut- Both Ends	1	
		3	Unidentified Artiodactyla	Unidentified Long Bone	Butchered	Hand Sawed, Full Cut- Both Ends, One Partial Cut (2 Tools)	1	
		3	Unidentified Artiodactyla	Unidentified Long Bone	Butchered	Hand Sawed, Full Cut- Both Ends	1	
		3	Unidentified Artiodactyla	Unidentified Long Bone	Butchered	Hand Sawed, Full Cut- One Side, Partial Cut One Side, Chop Mark	1	
		3	Unidentified Artiodactyla	Unidentified Long Bone	Weathered	Heavily Weathered	1	
		3	Unidentified Artiodactyla	Unidentified Long Bone	Butchered	Sawed, One Side	1	
		3	Unidentified Artiodactyla	Unidentified Long Bone	Butchered	Hand Sawed, Full Cut- Both Ends, Knife Mark on Shaft	2	
		3	Unidentified Artiodactyla	Unidentified Long Bone	Butchered	Implement Unidentified	1	
		3	Unidentified Artiodactyla	Unidentified Long Bone	Butchered	Partial Cut, Implement Unidentified	1	
		3	Unidentified Artiodactyla	Unidentified Long Bone	Butchered	Sawed or Choppd	1	
		4, 5	Unidentified Artiodactyla	Vertebrae			3	

		4, 5, 6	Unidentified Artiodactyla	Unidentified Long Bone	Burned	Burned White	68	
		5	Unidentified Artiodactyla	Unidentified Long Bone	Butchered	Full Cut, Implement Unidentified	1	
		5	Unidentified Artiodactyla	Unidentified Long Bone	Butchered	Hand Sawed, Full Cut- One Side, Partial Cut One Side	1	
		5	Unidentified Artiodactyla	Unidentified Long Bone	Butchered, Burned	Implement Unidentified	1	
		5	Unidentified Artiodactyla	Unidentified Long Bone	Butchered	Hand Sawed, Full Cut- Both Ends, Knife Mark on Shaft	1	
		5	Unidentified Artiodactyla	Unidentified Long Bone	Burned	Burned White	1	
		5	Unidentified Artiodactyla	Rib	Butchered	Multiple Knife Marks	1	
		5	Unidentified Artiodactyla	Rib	Butchered, Burned	Sawed One End, Burned White	1	
		5	Unidentified Artiodactyla	Scapula	Burned	Burned White	1	
		5	Unidentified Artiodactyla	Unidentified Flat Bone	Butchered, Burned	Hand Sawed, Full Cut-One Side, Burned White	1	
		5	Unidentified Artiodactyla	Unidentified Flat Bone		One Unfused Epiphysis	4	
		5	Unidentified Artiodactyla	Unidentified Long Bone	Butchered, Burned	Hand Sawed, Full Cut-One Side, Burned Tan	1	
		5	Unidentified Artiodactyla	Unidentified Long Bone	Butchered, Burned	Hand Sawed, Full Cut-One Side, Burned White	1	
		5	Unidentified Artiodactyla	Unidentified Long Bone	Burned	Burned Black	1	
		5	Unidentified Artiodactyla	Rib	Butchered, Burned	Hand Sawed, Full Cut-One Side, Partial Cut, Burned White	1	
		5	Unidentified Artiodactyla	Rib	Burned	Burned White, Unfused Epiphysis	1	
		5	Unidentified Artiodactyla	Unidentified Long Bone	Butchered, Burned	Hand Sawed, Full Cut-One Side, Burned White	1	
		5	Unidentified Artiodactyla	Unidentified Long Bone	Butchered, Burned	Multiple Partial Chop Marks, Burned White	1	
		5	Unidentified Artiodactyla	Unidentified Long Bone	Butchered, Burned	Sawed, Full Cut- One Side, Burned White	1	
		5, 6	Unidentified Artiodactyla	Unidentified Flat Bone	Burned	Burned White	40	
		6	Unidentified Artiodactyla	Unidentified Long Bone	Butchered, Burned	Hand Sawed, Multiple Partial Cuts, Burned Brown-Blue-White	1	

		6	Unidentified Artiodactyla	Flat Bone	Burned	Burned White	18	
		6	Unidentified Artiodactyla	Unidentified Long Bone	Butchered, Burned	Sawed One End, Burned White	2	
		6	Unidentified Artiodactyla	Unidentified Long Bone	Butchered, Burned	Sawed One End, Burned Blue-Black	1	
		6	Unidentified Artiodactyla	Rib	Butchered, Burned	Sawed One End, Burned Brown	1	
		6	Unidentified Artiodactyla	Rib	Diseased		1	
		6	Unidentified Artiodactyla	Vertebrae		Unfused Epiphysis	2	
		7	Unidentified Artiodactyla	Unidentified Long Bone	Butchered	Hand Sawed, Full Cut- One Side, Partial Cut One Side, Chop Mark (opposing Direction)	1	
		1	Uniden-tifiable	Sacrum			1	0
		1, 2, 3, 4, 6, , 8, 9, WF	Uniden-tifiable	Unidentified			184	
		2, 6, 5	Uniden-tifiable	Unidentified	Burned	Burned White	60	
		5	Uniden-tifiable	Unidentified	Butchered, Burned	Hand Sawed, One Side, burned White	1	
		5	Uniden-tifiable	Carpal/Tarsal			1	
		2, 3, 8	Unidentified Rodentia	Phalanx			5	1
			Unidentified Rodentia	Rib			1	
			Unidentified Rodentia	Ulna	Burned	Burned White	2	
			Unidentified Rodentia	Unidentified Long Bone	Burned	Burned White	1	
		1, 2, ,3, 4, 5, 6, 7	*Mytilus californ-ianus*	Shell			27	1
		6	Unidentified Clam	Shell	Burned		1	1
		1, 6, 7	Unidentified Marine Shell	Shell			6	0
						Total	**554**	**10**

Table 5.22 Locus T/J: Chronology

Locus	Unit	Context	Date Attribution (TPQ)	Artifact	Start Date	End Date	Context TPQ	Average Date	Average Context Date
T/J	101	Surface	N/A					N/A	N/A
	101	1	1870	Amethyst (Manganese) Bottle	1870	1915	1870	1892.5	1892.5
	101	2	1894	Shotgun Shell- Winchester Blue Rival No. 12	1894	1904		1899	

	101	2	1840	Reddish Amethyst Bottle	1840	1900		1870	
	101	2	1870	Amethyst (Manganese) Bottle	1870	1915		1892.5	
	101	2	1880	Turn Paste Mold Bottle	1880	1915		1897.5	
	101	2	1860	Cup Bottom Mold, Dyottville Glass Works Bottle	1860	1870		1865	
	101	2	1885	Tooled Bottle Finish	1885	1915		1900	
	101	2	1860	Two-Piece Mold Bottle	1860	1910	1894	1885	1887
	101	3	1894	Shotgun Shell-Winchester Blue Rival No. 12	1894	1904		1899	
	101	3	1851	Hard-Rubber Comb	1851	1950		1900.5	
	101	3	1837	Enameled Black Button	1837	1865		1851	
	101	3	1880	Turn Paste Mold Bottle	1880	1915		1897.5	
	101	3	1885	Tooled Bottle Finish	1885	1915		1900	
	101	3	1853	William Adams Ceramic	1853	1865		1859	
	101	3	1860	Two-Piece Mold Bottle	1860	1910		1885	
	101	3	1870	Amethyst (Manganese) Bottle	1870	1915		1892.5	
	101	3	1840	Reddish Amethyst Bottle	1840	1900		1870	
	101	3	1850	Rockingham Ware	1850	1935	1894	1892.5	1884.7
	101	4	1880	Turn Paste Mold Bottle	1880	1915		1897.5	
	101	4	1870	Amethyst (Manganese) Bottle	1870	1915		1892.5	
	101	4	1840	Black Glass Bottle	1840	1880	1880	1860	1883.333
	101	5	1840	Black Glass Bottle	1840	1880		1860	
	101	5	1860	Two-Piece Mold Bottle	1860	1910		1885	
	101	5	1885	Tooled Bottle Finish	1885	1915		1900	
	101	5	1870	Amethyst (Manganese) Bottle	1870	1915	1885	1892.5	1884.375
	101	6	1870	Amethyst (Manganese) Bottle	1870	1915	1870	1892.5	1892.5
	101	7	1845	Perry Davis Vegetable Pain Killer Bottle	1845	1920	1845	1882.5	1882.5

	101	8	1870	Amethyst (Manganese) Bottle	1870	1915		1892.5	
	101	8	1851	Hard-Rubber Comb	1851	1950	1870	1900.5	1896.5
	101	9	1870	Amethyst (Manganese) Bottle	1870	1915	1870	1892.5	1892.5
	101	10	N/A					N/A	N/A

Locus G, Unit 106

Table 5.23 Locus G, Unit 106: Architectural Remains (*Not all collected, only sample)

Locus	Unit	Context	Material	Object	Minimum Number	Color
G	106	1, 2	Lime	Mortar/Plaster	1*	
		1, 2, 3	Brick	Fire Brick	1*	
		3, 4	Glass	Window	1	Light Natural Blue Green

Table 5.24 Locus G, Unit 106: Nails

Locus	Unit	Context	Type	MNI
G	106	2	Machine Cut	10
		2	Wire	1
		2	Unidentified	1
		3	Machine Cut	20
		4	Machine Cut	6
		4	Screw	2
		4	Unidentified	1
			Total	**41**

Table 5.25 Locus G, Unit 106: Beverage Storage

Locus	Unit	Con-text	Color	Manufacture	Form/Shape	Finish	NISP	MNV
G	106	1, 3	Light Natural Blue Green	2 Piece Mold	Square/Rectangle, Inset Panel		4	1
		1, 4	Colorless	Mold Blown	Cylindrical		6	1
		1, 2, 3	Colorless	Unidentified	Unidentified		9	0
		1	Natural Blue Green	Mold Blown	Square/Rectangle		1	1
		1, 3, 4	Light Natural Blue	Mold Blown	Flask	Double Ring	5	1
		1	Light Olive	Mold Blown	Square/Rectangle		1	1
		2	Light Olive	Mold Blown	Unidentified		2	0
		1	Amber	Mold Blown	Flask		1	1

		1	Golden Amber	Mold Blown	Square/Rectangle, Chamfered Corners		3	1
		1	Dark Amber	Mold Blown	Flask		1	1
		1, 4	Amethyst	Mold Blown	Square/Rectangle		2	1
		1	Amethyst	Mold Blown	Flask		2	1
		2, 3, 4	Blue Green	Mold Blown	Flask		7	1
		2	Light Olive Green	Mold Blown	Cylindrical		1	1
		2	Dark Amber	Mold Blown	Square/Rectangle, Rounded Corners		1	1
		2, 3, 4	Amber	2 Piece Mold	Square/Rectangle, Rounded Corners		4	1
		2	Light Amber	Mold Blown	Flask		4	1
		2	Selenium	2 Piece Mold	Square/Rectangle, Inset Panel		2	1
		2, 3, 4	Colorless	Mold Blown	Flask		16	1
		2, 3	Colorless	2 Piece Mold	Square/Rectangle, Inset Panel		6	1
		3	Amber	2 Piece Mold	Cylindrical		1	1
		3	Yellow	Mold Blown	Cylindrical		1	1
		3	Olive	Mold Blown	Square/Rectangle		1	1
		3	Forest Green	Mold Blown	Cylindrical		1	1
		3, 4	Light Natural Blue	Mold Blown	Cylindrical		2	1
		3	Very Light Natural Blue	Mold Blown	Square/Rectangle, Rounded Corners		1	1
		3	Very Light Natural Blue	Mold Blown	Square/Rectangle, Chamfered Corners		1	1
		4	Light Olive	Mold Blown	Cylindrical		1	1
		3	Olive	Mold Blown	Cylindrical		1	1
		3	Natural Blue Green	Mold Blown	Flask		5	1
		3	Amethyst	Mold Blown	Cylindrical		1	1
		4	Amber	Mold Blown	Unidentified		1	0
						Total	**95**	**29**

Table 5.26 Locus G, Unit 106: Health and Hygiene (Glass Material)

Locus	Unit	Context	Shape	Color	Finish	Marks	Content	NISP	MNV
G	106	2	Paneled, Chamfered Corners	Light Natural Blue		Embossed "…68…"	Medicine/ Chemical	2	1
		2	Paneled	Very Light Natural Blue		Embossed "…VE…"	Medicine/ Chemical	4	1
		3, 4, 5	Square/ Rectangle, Inset Panel, Chamfered Corners	Light Natural Blue		Embossed "…LOR…"	Patent/ Extract	9	1
							Total	**15**	**3**

Table 5.27 Locus G, Unit 106: Clothing and Adornment

Locus	Unit	Context	Material	Object	Size	Description	Minimum Number
G	106	2	Copper Alloy and Denim	Rivet		Levi Strauss Jeans Rivet	1
		3	Leather and Metal	Shoe		Sole/ Insole	1
		3, 4	Leather and Metal	Shoe		Heel and Sole	1
		3	Iron	Shoe Tack			1
		3	Iron	Jacket Button	24 Lignes	Shank Style	1
		3	Iron	Jacket Button	24 Lignes	Shank Style	1
		3	Iron	Jacket Button	28 Lignes	Cone Shank Style	1
		4	Iron	Pant Button	22 Lignes	Four Hole Sew Through	1
						Total	**8**

Table 5.28 Locus G, Unit 106: Faunal

Locus	Unit	Context	Taxa	Element	Modification	Description	NISP	MNI
G	106	3	*Sus scrofa*	Pelvis			1	1
		3	Unidentified Artiodactyla	Rib	Butchered	Knife Cut Marks	1	0
		3	Unidentified Artiodactyla	Unidentified Flat Bones			6	
		3	Unidentified	Unidentified	Weathered		2	0
						Total	**10**	**1**

Table 5.29 Locus G: Chronology

Locus	Unit	Context	Date Attribution (TPQ)	Artifact	Start Date	End Date	Context TPQ	Average Date	Average Context Date
G	106	Surface	N/A						N/A
	106	1	1860	Two-Piece Mold Bottle	1860	1910		1885	
	106	1	1870	Amethyst (Manganese) Bottle	1870	1915	1870	1892.5	1888.75
	106	2	1860	Two-Piece Mold Bottle	1860	1910		1885	
	106	2	1873	Levi's Jeans Rivet	1873	1950	1873	1911.5	1898.25
	106	3	1860	Two-Piece Mold Bottle	1860	1910		1885	
	106	3	1870	Amethyst (Manganese) Bottle	1870	1915	1870	1892.5	1888.75
	106	4	1860	Two-Piece Mold Bottle	1860	1910		1885	
	106	4	1870	Amethyst Bottle	1870	1915	1870	1892.5	1888.75
	106	5	N/A						N/A

Locus F, Unit 107

Table 5.30 Locus F, Unit 107: Architectural Remains (*Not all collected, only sample)

Locus	Unit	Context	Material	Object	Color	Minimum Number
F	107	S, 1, 2, 3	Brick	Fire Brick		1*
		S, 1, 2, 3	Limestone	Block		1*
		1, 4	Lime	Mortar/Plaster		1*
		1	Wood	Plank/Beam		1
		2	Iron	Beam		1
		4	Wood	Plank/Beam		1
		1, 2, 3	Glass	Window	Very Light Natural Blue Green	1
		2, 5	Glass	Window	Colorless	1
		2, 5	Glass	Window	Light Natural Blue Green	1
		2, 3	Glass	Window	Light Natural Blue	1
		4	Clay	Nodule		1

Table 5.31 Locus F, Unit 107: Nails

Locus	Unit	Context	Type	MNI
F	107	1	Machine Cut	7
		2	Machine Cut	6
		3	Machine Cut	21
		3	Wire	2
		4	Machine Cut	17
		4	Wire	4
		5	Machine Cut	8

Table 5.32 Locus F, Unit 107: Beverage Storage

Locus	Unit	Context	Color	Manufacture	Form/Shape	Finish	NISP	MNV
F	107	1, 2, 4	Colorless	Mold Blown	Square/ Rectangle	Oil/Packer	6	1
		1, 5	Colorless	Mold Blown	Cylindrical		4	1
		1, 2	Amethyst	Mold Blown	Cylindrical		3	1
		1	Light Natural Blue	Mold Blown	Cylindrical		1	1
		1, 2	Light Natural Blue	Mold Blown	Square/ Rectangle		3	1
		1, 2, 3	Light Olive	Mold Blown	Unidentified		5	0
		2, 3, 4	Olive Amber	3 Piece Mold	Flask		6	1
		2	Light Olive Green	Mold Blown	Cylindrical		2	1
		2	Amber	Mold Blown	Unidentified		1	0

		2, 3	Selenium	Mold Blown	Cylindrical		3	1
		2, 3, 5	Colorless	Mold Blown	Unidentified		13	0
		3	Brown	At Least 2 Piece Mold	Cylindrical		2	1
		3	Amethyst	At Least 2 Piece Mold	Flask	Small Mouth External Thread	3	1
		3	Amber	2 Piece Mold	Square/Rectangle		1	1
		3	Dark Olive	Mold Blown	Flask		1	1
		3	Light Olive	Mold Blown	Square/Rectangle		1	1
		4	Natural Blue	2 Piece Post Mold	Flask, Narrow Oval		1	1
		4	Amber	At Least 2 Piece Mold	Flask		2	1
		4	Yellow	Mold Blown	Flask		1	1
		4	Light Olive	Mold Blown	Flask		2	1
		4, 5	Light Natural Blue	Mold Blown	Flask		3	1
		4	Very Light Natural Blue	Mold Blown	Square/Rectangle Rounded Corners		1	1
		4	Very Light Natural Blue	Mold Blown	Flask		1	1
		4	Light Natural Blue Green	Mold Blown	Cylindrical		1	1
		4, 5	Dark Olive	Mold Blown	Cylindrical		2	1
		3	Dark Olive	Mold Blown	Unidentified		1	0
		5	Dark Olive Amber	2 Piece Mold	Cylindrical		1	1
		5	Olive Amber	Mold Blown	Cylindrical		3	1
		5	Amber	Mold Blown	Cylindrical		1	1
		5	Brown	Mold Blown	Square/Rectangle		1	1
		5	Metal	Rolled	Pull Tab		1	1
						Total	**77**	**27**

Table 5.33 Locus F, Unit 107: Faunal

Locus	Unit	Context	Taxa	Element	Modification	Description	NISP	MNI
F	107	1	*Sylvilagus audubonii*	Maxilla			1	1
		3	*Sylvilagus audubonii*	Mandible			1	
		3, 4	Unidentified Rodentia	Femur			3	2
		4	Unidentified Rodentia	Humerus			1	
		2	Unidentified Rodentia	Tooth			1	
		2	Unidentified Rodentia	Vertebrae			2	
		3	Unidentified Rodentia	Mandible			1	
		2	Unidentified Rodentia	Clavicle			1	

		2	Unidentified Fish	Mandible			1	1
		2, 3	*Mytilus californianus*	Shell			2	1
		4	*Mytilus californianus*	Shell	Burned	Burned Blue White	1	
		4	*Mytilus californianus*	Shell	Burned	Burned White	1	
		2	Land Snail	Shell			2	1
		2, 3, 5	Unidentified	Unidentified			11	0
						Total	**29**	**6**

Table 5.34 Locus F: Chronology

Locus	Unit	Context	Date Attribution (TPQ)	Artifact	Start Date	End Date	Context TPQ	Average Date	Average Context Date
F	107	Surface	N/A						N/A
	107	1	1870	Amethyst (Manganese) Bottle	1870	1915	1870	1892.5	1892.5
	107	2	1810	Three-Piece Mold Bottle	1810	1890		1850	
	107	2	1870	Amethyst (Manganese) Bottle	1870	1915	1870	1892.5	1871.25
	107	3	1860	Two-Piece Mold Bottle	1860	1910		1885	
	107	3	1870	Amethyst (Manganese) Bottle	1870	1915		1892.5	
	107	3	1875	External Thread Bottle Finish	1875	1950		1912.5	
	107	3	1873	Levi's Jeans Rivet	1873	1950	1875	1911.5	1900.375
	107	4	1850	Two-Piece Post Mold	1850	1895		1872.5	
	107	4	1810	Three-Piece Mold Bottle	1810	1890	1850	1850	1861.25
	107	5	1860	Two-Piece Mold Bottle	1860	1910	1860	1885	1885

Locus S, Unit 100, 104

Table 5.35 Locus S, Units 100, 104: Architectural Remains (*Not all collected, only sample)

Locus	Unit	Context	Material	Object	Color	Minimum Number
S	100, 104	S, 1	Brick	Fire Brick		1*
	100, 104	S, 1, 2, 3, 4, 5	Lime	Mortar/Plaster		1*
	100, 104	S, 1, 2, 3, 4, 5, 6, 7	Limestone	Cobble		1*
	100	1	Iron, White Metal	Lock		1
	104	1, 2, 3, 4	Wood	Post		1*

	104	1, 2, 3	Wood	Plank/Beam		1*
		2	Iron	Brace		1
	100, 104	2, 3, 4, 5, WF	Glass	Window	Light Natural Blue Green	1
	100, 104	3	Glass	Window	Very Light Natural Blue	2
	100	3, 4	Wood	Plank/ Board		1
	100	5	Clay	Nodule		1
	100	7	Wood	Plank/ Board, Nails Attached		1

Table 5.36 Locus S, Units 100, 104: Nails

Locus	Context	Type	MNI
S	Surface	Machine Cut	1
	1	Machine Cut	7
	1	Fence Staple	4
	2	Machine Cut	62
	2	Hand Forged	1
	2	Wire	2
	2	Unidentified	1
	3	Machine Cut	163
	3	Wire	8
	3	Fence Staple	2
	4	Machine Cut	89
	4	Wire	3
	5	Machine Cut	20
	5	Unidentified	5
	6	Unidentifiable	4
	6	Machine Cut	6
	Wall Fall/ Boot	Machine Cut	5
	Wall Fall	Wire	2
	Wall Fall	Machine Cut	18

Table 5.37 Locus S, Units 100, 104: Food Storage

Locus	Unit	Context	Material	Type/Ware	Form/Shape	Vessel Size	NISP	MNV
S	100	3, WF	Iron, White Metal	Key Opened	Round	5.5cm Rim	2	1
	100, 104	2, 3, 4, 6, WF	Iron	Simple Rolled	Unidentified		5	1
	100, 104	1, 2, 3, 4, 6, WF	Iron	Flat Metal	Unidentified		126	0
	100	1, 2, 3, 4	Ceramic	Whiteware	Jar (Meat Paste)	5cm Rim	4	1
						Total	**137**	**3**

Table 5.38 Locus S, Units 100, 104: Beverage Storage

Locus	Context	Color	Manufacture	Form/Shape	Finish	NISP	MNV
S	1, 2	Olive Green	Turn Paste	Wine/Champagne		3	1
	1	Natural Blue Green	Mold Blown	Flask		1	1
	1	Olive	Mold Blown	Wine/Champagne		1	1
	1, 2, 3, 4, WF	Yellow Amber	Mold Blown	Square/Rectangle, Chamfered Corners, Rounded Shoulders		12	1
	1	Natural Blue Green	Mold Blown	Square/Rectangle		1	1
	1	Dark Amber	Mold Blown	Unidentified		2	1
	1, 3, 4, 5, WF	Colorless	Mold Blown	Cylindrical		31	1
	2	Colorless	Mold Blown	Flask		6	1
	2	Olive Amber	Mold Blown	Flask		2	1
	2	Light Green	Mold Blown	Cylindrical		1	1
	2	Dark Olive	Mold Blown	Cylindrical		2	1
	2	Natural Blue Green	Mold Blown	Cylindrical		1	1
	2	Clear Green	Mold Blown	Cylindrical		1	1
	2, 3	Amber	At Least 2 Piece Mold	Flask		2	1
	2, 3, 4	Light Natural Blue	At Least 2 Piece Mold	Square/Rectangle, Outset Paneled		5	1
	2, 3, WF	Light Natural Blue Green	Mold Blown	Square/Rectangle, Chamfered Corners		4	1
	3	Light Natural Blue	Mold Blown	Soda Mineral Water	Blob	2	1
	3	Olive Amber	Mold Blown	Wine/Champagne	Champagne	1	1
	3	Black	Mold Blown	Unidentified	Oil	1	1
	3	Light Olive Green	Mold Blown	Wine/Champagne		4	1
	3	Dark Olive	Mold Blown	Square/Rectangle, Paneled		5	1
	3	Light Natural Blue	Mold Blown	Kidney Flask		1	1
	3	Light Natural Blue Green	Mold Blown	Flask		1	1
	3	Natural Blue Green	Mold Blown	Flask		1	1
	3	Amber	At Least 2 Piece Mold	Cylindrical		1	1
	3	Golden Amber	At Least 2 Piece Mold	Cylindrical		1	1
	3	Colorless	Mold Blown	Square/Rectangle		3	1
	3	Very Dark Olive	2 Piece Post Bottom Mold, Domed Kick Up	Square/Rectangle	Mineral/ Double Oil	2	1

	3	Brown	2 Piece Mold	Flask		1	1
	3, 6, WF	Light Natural Blue Green	Square/Rectangle, Rounded Corners	Flask		9	1
	3, 4, 5	Olive	Mold Blown	Wine/Champagne	Champagne	3	1
	3, 4	Olive Green	Mold Blown	Wine/Champagne		8	1
	3, 4, 5	Light Natural Blue Green	Mold Blown	Cylindrical		4	1
	3, 4, 5, WF	Light Natural Blue	Mold Blown	Square/Rectangle, Concave, Paneled, Chamfered Corners		12	1
	3, WF	Olive Amber	Mold Blown	Square/Rectangle, Chamfered Corners		4	1
	4	Light Olive	Mold Blown	Cylindrical		1	1
	4	Amethyst	Mold Blown	Cylindrical		1	1
	4	Dark Natural Blue	Mold Blown	Flask		1	1
	4, WF	Selenium	Mold Blown	Cylindrical		2	1
	6	Olive	Mold Blown	Square/Rectangle, Chamfered Corners, Arched Front Panel		3	1
					Total	**147**	**40**

Table 5.39 Locus S, Units 100, 104: Service/Tablewares

Locus	Unit	Context	Material	Manufacture	Form	Decoration	Color	Size	NISP	MNV
S	100	3	Glass	Press Molded	Plate	Embossed Stars and Spheres	Color-less		1	1
	100	3	Ironstone		Hollowware	Undecorated			1	1
	100	3	Whiteware (Blued)		Hollowware	Undecorated			1	1
								Total	**3**	**3**

Table 5.40 Locus S, Units 100, 104: Health and Hygiene (Ceramics)

Locus	Unit	Context	Material	Type	Object	Content	Design	MNV
S	100	1, 2	Ceramic	Whiteware	Basin, Rim		Transfer Print-Tyroleon Pattern, Scalloped Edge	1
							Total	**1**

Table 5.41 Locus S, Units 100, 104: Health and Hygiene, Glass

Locus	Unit	Context	Shape	Color	Finish	Marks	Content	NISP	MNV
S	100	1	Square/ Rectangle	Milk			Cosmetic/ Toiletry	1	1
	100, 104	2	Square/ RectangleR	Light Natural Blue	Double Ring		Patent Medicine	2	1

			ounded Shoulders						
	104	2	Blake	Light Amber			Medicine	1	1
	100	3	Patent Medicine	Light Natural Blue	Patent/ Extract		Patent Medicine	1	1
	100	3	Patent Medicine	Light Natural Blue	Double Ring		Patent Medicine	1	1
	100	3	Paneled	Light Natural Blue Green			Patent Medicine/ Toiletry	2	1
	100	4	Cylindrical	Cobalt	Patent	"262"	Bromo Seltzer	1	1
	104	5	Square/ Rectangle, Rounded Shoulders	Light Natural Blue	Double Ring		Medicine	1	1
	100	WF	Cylindrical	Cobalt			Bromo Seltzer	1	1
							Total	**11**	**9**

Table 5.42 Locus S, Units 100, 104: Tobacco and Narcotics Materials

Locus	Unit	Context	Material	Object	Description	Manufacturer	MNI
S	100	2, 3	Ball Clay	Tobacco Pipe	Bowl and Stem, Scalloped Bowl, Abstract Design, Embossed with "…A Paris"	Gambier Company, France	1
	104	3	Ball Clay	Tobacco Pipe	Stem, White, Makers Mark	Duncan McDougall, Glasgow, Scotland	1
	104	3	Iron	Tobacco Tin Top	Embossed (…AC…)		1
	100	4	Redware	Tobacco Pipe	Black Slip		1
	100	5	Redware	Tobacco Pipe	Elbow/Reed Style, "Weil and Co", "296"	Weil and Company	1
						Total	**5**

Table 5.43 Locus S, Units 100, 104: Clothing and Adornment Items: Buttons

Locus	Unit	Context	Material	Object	Size	Description	MNI
S	100	3	Shell	Jacket Button	N/A	4 Hole Sew Through, Cut, Iridescent	1
	100	3	Iron	Suspender Button	32 Lignes	2 Piece Pressed	1
	100	3	Iron and Composite	Pant Button	26 Lignes	2 Piece Pressed, Cross Hatch Design with Composite Interior	1
	100	3	Prosser	Pant Button	26 Lignes	White, Four Hole Sew Through	1
	100	3	Prosser	Underwear Button	16 Lignes	White, Two Hole Sew Through	1
	100	3	Bone	Jacket or Pant Button	26 Lignes	Cut, Two Hole Sew Through Plus Center Venter Hole	1

	104	3	Copper Alloy and Gold	Jacket Button	20 Lignes	Gold Plated, Slightly Domed	1
	104	3	Iron	Jacket Button	28 Lignes	Cast, Inset Four Hole Sew Through	1
	104	3	Shell (Abalone)	Shirt Button	22 Lignes	Cut, Two Hole Sew Through	1
	100	3	Rubber	Shirt Button	17 Lignes	Shank Style	1
	100	4	Iron	Jacket Button	22 Lignes	Cast Iron, Shank Style	1
	104	4	Bone	Collar Button Stud	22 Lignes	Cut, Polished Stud	1
	100	5	Bone	Jacket Button	26 Lignes	Hand Cut, Four Hole Sew Through	1
	100	5, 6	Prosser	Shirt Button	18 Lignes	White, Four Hole Sew Through	2
	100	6	Prosser	Shirt Button	18 Lignes	White, Four Hole Sew Through	1
	100	6	Shell	Jacket Button	26 Lignes	4 Hole Sew Through, Cut, Iridescent	1
						Total	**17**

Table 5.44 Locus S, Units 100, 104: Faunal

Locus	Unit	Context	Taxa	Element	Modification	Description	NISP	MNI
S	100	Surface	*Bos taurus*	Astragalus			1	1
	100	1	*Bos Taurus*	Radio-Ulna	Knife Cuts	Cuts on Articular Surface	1	
	104	1	*Bos Taurus*	Rib	Butchered	Cleaver Chopped	1	
	104	1	*Bos Taurus*	Vertebrae	Butchered	Implement Unidentified	1	
	100	3	*Bos Taurus*	Rib	Hand Sawed	Distal Full Cut, Multiple Partail Cuts	1	
	100	4	*Bos Taurus*	Humerus	Hand Sawed	Full Cut	1	
	100	4	*Bos taurus*	Sacrum		Unfused Epiphysis	3	
	104	3	*Sus scrofa domestica*	Vertebrae	Butchered	Implement Unidentified	1	1
	100	3	*Callipepla californica*	Coracoid			1	1
	100	3	*Callipepla californica*	Humerus			1	
	100, 104	2, 3	Unidentified Small Bird	Humerus			6	2
	104	2	Unidentified Small Bird	Tibia			1	
	100, 104	3	Unidentified Small Bird	Rib			6	
	100	3	Unidentified Small Bird	Synsacrum			1	
	100	3	Unidentified Small Bird	Sternum			1	
	100	3	Unidentified Small Bird	Coracoid			4	
	100	3	Unidentified Small Bird	Ulna			1	
	100	3	Unidentified Small Bird	Radius			1	

	100, 104	3	Unidentified Small Bird	Tibiotarsus			2	
	104	3	Unidentified Small Bird	Tarso-metatarsus			1	
	104	3	Unidentified Small Bird	Pelvis			1	
	104	3	Unidentified Small Bird	Unidentified Long Bone	Burned		1	
	100, 104	3, 4	Unidentified Small Bird	Coracoid			3	
	100, 104	3, 4	Unidentified Small Bird	Femur			2	
	100	4	Unidentified Small Bird	Metatarsus			1	
	100	5	Unidentified Small Bird	Unidentified Long Bone			1	
	100	1	Unidentified Medium Bird	Tarso-metatarsus			1	0
	104	2	Unidentified Medium Bird	Fibula			1	
	104	2	Unidentified Medium Bird	Rib			1	
	104	2	Unidentified Medium Bird	Tibia			1	
	104	2	Unidentified Medium Bird	Unidentified Long Bone			1	
	100	3	Unidentified Medium Bird	Synsacrum			1	
	100	3	Unidentified Medium Bird	Femur			2	
	104	3	*Gallus gallus*	Carpometacar-pus			1	1
	104	3	*Gallus gallus*	Humerus			1	
	100	3, 4	*Gallus gallus*	Metacarpal			2	
	100	4	*Gallus gallus*	Tarso-metatarsus			1	
	100	4	*Gallus gallus*	Ulna			1	
	100	4	*Gallus gallus*	Femur			1	
	100	2, 4, WF	*Gallus gallus*	Ulna			3	
	100	4	*Gallus gallus*	Illium			1	
	100	3, 4, WF	Unidentified Bird	Unidentifiable			7	0
	100	1, 5	Unidentified Bird	Tibia			2	
	100	6	Unidentified Bird	Tarsometatar-sus			1	

	100	1,WF	Unidentified Fish	Cranial			2	1
	100, 104	3, 4, WF	*Sylvilagus audubonii*	Mandible			6	6
	100, 104	2, 3, 4, 5	*Sylvilagus audubonii*	Tibia	Knife Marks	Cut Marks (on one element)	10	
	100, 104	3, 4	*Sylvilagus audubonii*	Pelvis			1	
	100	3	*Sylvilagus audubonii*	Ulna			2	
	100	3, 4	*Sylvilagus audubonii*	Humerus			2	
	100	3, 4, 5	*Sylvilagus audubonii*	Scapula			4	
	100	3	*Sylvilagus audubonii*	Tooth			1	
	100	3	*Sylvilagus audubonii*	Humerus			3	
	100	3	*Sylvilagus audubonii*	Femur			9	
	100	3, 4, 5	*Sylvilagus audubonii*	Vertebrae		1 Frag Burned	5	
	104	2	*Ovis aries/ Capra hircus*	Vertebrae	Butchered	Implement Unidentified	1	1
	100	3	*Ovis aries/ Capra hircus*	Rib	Hand Sawed	Both Ends + Partial Cut	1	
	100	3	*Ovis aries/ Capra hircus*	Rib			1	
	100	3	*Ovis aries/ Capra hircus*	Unidentified Long Bone	Hand Sawed	One Full Cut, One Partial Cut	2	
	100	3	*Ovis aries/ Capra hircus*	Vertebrae	Sawed		1	
	100	4	*Ovis aries/ Capra hircus*	Rib	Hand Sawed	One Full Cut, Four Partial Cuts	1	
	100	4	*Ovis aries/ Capra hircus*	Rib	Hand Sawed	One Full Cut, One Partial Anterior Cut, Three Partial Cuts on Posterior	1	
	100	WF	*Ovis aries/ Capra hircus*	Tooth			1	
	100	3	*Sciuridae*	Crania			1	2
	100	3, 6	*Sciuridae*	Mandible			3	
	100	3	*Sciuridae*	Fibula			1	
	100	4	*Sciuridae*	Tibia			1	
	104	1	Unidentified Rodentia	Mandible			1	0
	100	2, 3, 4	Unidentified Rodentia	Tooth			5	
	104	2	Unidentified Rodentia	Phalanx			1	
	100, 104	3	Unidentified Rodentia	Ulna			2	

	100	3	Unidentified Rodentia	Unidentified Long Bone			5	
	104	3	Unidentified Rodentia	Humerus			1	
	100	4	Unidentified Rodentia	Femur			1	
	100, 104	1, 2, 3, 4	Unidentified Rodentia	Rib			7	
	100	3	Unidentified Artiodactyla	Scapula			1	0
	104	3	Unidentified Artiodactyla	Phalanx		Unfused Epiphysis	1	
	100	3, 4	Unidentified Artiodactyla	Unidentified Long Bone			2	
	104	3, 4	Unidentified Artiodactyla	Unidentified Flat Bone	Butchered	Method Unidentifiable	1	
	104	2	Unidentified	Unidentified Flat Bone			5	0
	100, 104	2, 3	Unidentified	Unidentified Long Bone			6	
	100	3, 7	Unidentified	Rib			2	
	100	3	Unidentified	Tibia			5	
	100	3	Unidentified	Ulna			1	
	100, 104	1, 2, 3, 4, 6	Unidentified	Unidentified			66	
	100	4	Unidentified	Rib	Butchered	Method Unidentifiable	1	
	100	4	Unidentified	Unidentified Long Bone	Butchered	Hand Sawed, One Full and Partial Cut	1	
	100	WF	Unidentified	Clavicle	Burned	Lightly Burned	1	
	100	3	Limpet	Shell			1	1
	104	5, 6	*Mytilus califor-nianus*	Hinge, Shell			8	1
	100	4, 5	*Mytilus califor-nianus*	Shell			12	
	100	3	Unidentified Shell	Shell			7	0
	100	1, 2, 3, 4, 6	Land Snail	Shell			46	1
						Total	**324**	**19**

Table 5.45 Locus S: Chronology

Locus	Unit	Context	Date Attribution (TPQ)	Artifact	Start Date	End Date	Context TPQ	Average Date	Average Context Date
S	100	Surface	N/A					N/A	
	100	Surface	N/A					N/A	N/A
	100	1	1836	Brick- R. Browns & Sons	1836	1938		1887	
	100	1	1880	Turn Paste Bottle	1880	1915	1880	1897.5	1892.25
	100	2	1834	Transfer Print (Tyroleon Pattern,	1834	1854		1844	

				William Ridgeway and Co.)					
	104	2	1844	Dyottville Glass Works Bottle	1844	1870		1857	
	104	2	1860	Two-Piece Mold Bottle	1860	1910	1860	1885	1862
	100	3	1866	Turn-Key Can	1866	1950		1908	
	100	3	1837	Cross Hatch Button	1837	1865		1851	
	100	3	1885	Tooled Bottle Finish	1885	1915		1900	
	100	3	1860	Two-Piece Mold Bottle	1860	1910		1885	
	104	3	1846	Duncan McDougal Pipe	1846	1891		1868.5	
	104	3	1860	Two-Piece Mold Bottle	1860	1910	1885	1885	1882.917
	100	4	1880	Cup Bottom Mold Bottle	1880	1910		1895	
	100	4	1896	Cartridge- Peters Cartridge Co.	1896	1911		1903.5	
	100	4	1870	Amethyst (Manganese) Bottle	1870	1915		1892.5	
	104	4	1860	Two-Piece Mold Bottle	1860	1910	1896	1885	1894
	100	5	1810	Three-Piece Mold Bottle	1810	1890		1850	
	104	5	1840	Plate-Mold Bottle	1840	1910		1875	
	104	5	1851	Hard-Rubber Comb	1851	1950	1851	1900.5	1875.167
	104	6	1849	Udolpho Wolf Schnapps Bottle	1849	1910	1849	1879.5	1879.5
	104	7	1867	Shield Nickel (Coin)	1867	1883	1867	1875	1875

Locus J, Unit 105

Table 5.46 Locus J, Unit 105: Nails

Locus	Unit	Context	Type	MNI
J	105	1	Machine Cut	21
		1	Hand Forged	9
		1	Wire	1
		1	Stake- Machine cut	1
		1	Stake- Wire	1

		1	Staple- hand forged	1
		1	Unidentifiable	1
		2	Machine Cut	10
		2	Hand Forged	4
		3	Unidentifiable	3

Table 5.47 Locus J, Unit 105: Architectural Remains (*Not all collected, only sample)

Locus	Unit	Context	Material	Object	Minimum Number
J	105	1, 2	Limestone	Block	1*
		1, 2	Limestone	Cobble	1*
		1	Lime	Mortar/Plaster	1*
		1, 2	Wood	Plank/Beam	1*

Table 5.48 Locus J, Unit 105: Beverage Storage

Locus	Unit	Context	Color	Manufacture	Form/Shape	Finish	NISP	MNV
J	105	1	Light Olive Green	Turn Paste Mold	Cylindrical		2	1
		1	Light Natural Blue Green	Mold Blown	Square/Rectangle		2	1
		1	Light Natural Blue Green	Mold Blown	Flask		1	1
		1, 2	Light Natural Blue	Mold Blown	Square/Rectangle		4	1
		1	Colorless	Mold Blown	Square/Rectangle		2	1
		2	Colorless	Unidentified	Unidentified		1	0
		1	Very Light Natural Blue Green	Mold Blown	Square/Rectangle		1	1
		2	Dark Amber	Mold Blown	Flask		1	1
						Total	14	7

Table 5.49 Locus J: Chronology

Locus	Unit	Context	Date Attribution (TPQ)	Artifact	Start Date	End Date	Context TPQ	Average Date	Average Context Date
J	105	Surface	N/A						N/A
	105	1	1880	Turn Paste Mold Bottle	1880	1915	1880	1897.5	1897.5
	105	2	1870	Mold Blown Bottle	1870	1910	1870	1890	1890
	105	3	N/A						N/A
	105	4	N/A						N/A

Locus I, Unit 102

Table 5.50 Locus I, Unit 102: Nails

Locus	Unit	Context	Type	MNI
I	102	4	Hand Forged	4
		4	Machine Cut	1
		5	Machine Cut	1
		6	Machine Cut	3
		6	Hand Forged	1
		7	Machine Cut	4
		7	Wire	3
		8	Machine Cut	13
		8	Hand Forged	1
		9	Machine Cut	8
		9	Hand Forged	2

Table 5.51 Locus I, Unit 102: Architectural Remains (*Not all collected, only sample)

Locus	Unit	Context	Material	Object	Minimum Number
I	102	1	Limestone	Block	1
		1, 2, 6, 9	Limestone	Nodule	2*
		2, 7	Lime	Mortar/ Plaster	1
		2, 4, 5	Brick	Fire Brick	1
		4	Clay	Nodule	1
		6	Iron	Kiln Door	1
		6	Iron	Door Latch	1
		6, 7	Cloth, Sand	Sand Bag	1

Table 5.52 Locus I, Unit 102: Beverage Storage

Locus	Unit	Context	Color	Manufacture	Form/Shape	Finish	NISP	MNV
I	102	4	Colorless	Mold Blown	Square/ Rectangle		1	1
		5	Amber	At Least 2 Piece Mold	Square/ Rectangle, Paneled		1	1
		6	Light Natural Blue Green	Mold Blown	Square/ Rectangle		1	1
		7, 9	Olive	Mold Blown	Unidentifiable		3	1
		10	Light Olive	Mold Blown	Unidentifiable		1	1
						Total	**7**	**5**

Table 5.53 Locus I, Unit 102: Faunal

Locus	Unit	Context	Taxa	Element	Modification	Description	NISP	MNI
I	102	5	Unidentified Artiodactyla	Unidentified			1	1
		2, 5, 6	Unidentified	Unidentified			10	0
		5	Unidentified Bird	Unidentified			1	1
		5, 6	*Mytilus califor-nianus*	Shell			2	1
		2	Unidentified Marine Shell	Shell			1	0
		2, 6	Land Snail	Shell			5	1
						Total	**20**	**4**

Table 5.54 Locus I: Chronology

Locus	Unit	Context	Date Attribution (TPQ)	Artifact	Start Date	End Date	Context TPQ	Average Date	Average Context Date
I	102	Surface	N/A						N/A
	102	1	N/A						N/A
	102	2	N/A						N/A
	102	3	N/A						N/A
	102	4	1857	Cartridge-Unmarked	1857	1950	1857	1903.5	1903.5
	102	5	1860	Two-Piece Mold Bottle	1860	1910	1860	1885	1885
	102	6	1858	Kiln Door	1858	1900	1858	1879	1879
	102	7	1810	Three-Piece Mold Bottle	1810	1890	1810	1850	1850
	102	8	N/A						N/A
	102	9	N/A						N/A
	102	10	N/A						N/A

Locus V, Unit 108

Table 5.55 Locus V, Unit 108: Nails

Locus	Unit	Context	Type	MNI
V	108	1	Machine Cut	25
		1	Wire	19
		1	Unidentifiable	1
		1	Hand Forged-Nail	1
		2	Machine Cut	60
		2	Wire	33
		2	Cast	2
		2	Cast-Spike	1

		2	Hand Forged-Tack	3
		2	Hand Forged-Nail	1
		3	Machine Cut	28
		3	Wire	24
		3	Screw	1
		4	Machine Cut	12
		4	Wire	9
		5	Machine Cut	2
		5	Wire	3
		6	Machine Cut	1
		7	Machine Cut	3

Table 5.56 Locus V, Unit 108: Architectural Remains (*Not all collected, only sample)

Locus	Unit	Context	Material	Object	MNI
V	108	S, 1, 2, 3, 4	Limestone	Cobble	1*
		1, 2, 3, 4, 5, 6	Lime	Mortar/Plaster	1*
		1	Wood	Plank/Beam	1
		1	Iron	Washer	2
		4	Iron	Barb Wire	1
		4	Iron	Pipe	1

Table 5.57 Locus V, Unit 108: Tools

Locus	Unit	Context	Material	Object	Description	MNI
V	108	1, 2, 3, 4	Iron	Wire	Bailing Wire	1
		1	Iron	Plow Blade	Cast Iron	1
		2, 3	Iron	Bucket	Edge Fragment	1
		2	Iron	Wedge	Cast Iron Splitting Wedge	1

Table 5.58 Locus V, Unit 108: Faunal

Locus	Unit	Context	Taxa	Element	Modification	Description	NISP	MNI
V	108	1	Unidentified Artiodactyla	Rib	Burned	Burned White	1	1
		1	Unidentified Artiodactyla	Unidentified Long Bone	Burned	Burned Black	1	
		1	Unidentified Artiodactyla	Unidentified			3	
		2, 4	Unidentified Artiodactyla	Unidentified Long Bone		Small Bone Chips	14	
		2, 3, 4	Unidentified Artiodactyla	Unidentified Long Bone	Burned	Small Bone Chips, Burned	35	
		4	Unidentified Artiodactyla	Unidentified Long Bone	Butchered	Sawed, Both Ends	1	
		2, 4	Unidentified Artiodactyla	Metapodial			2	

		4	Unidentified Artiodactyla	Unidentified Long Bone	Burned	Burned White	10	
		4	Unidentified Artiodactyla	Rib	Butchered	Hand Sawed, Both Sides	1	
		5	Unidentified Artiodactyla	Unidentified Flat Bone			2	
		5	Unidentified Artiodactyla	Unidentified	Burned	Burned Gray	1	
		2	*Gallus gallus*	Vertebrae			1	1
		2	*Gallus gallus*	Vertebrae	Burned	Burned White	1	
		1	*Sylvilagus audubonii*	Pelvis			1	1
		1	*Sciuridae*	Humerus			1	1
		2	*Sciuridae*	Ulna	Burned	Burned White	1	
		1	*Sciuridae*	Maxilla			1	
		2	Unidentified Small Bird	Tarso-metatarsus	Burned	Burned Gray	1	1
		3	Unidentified Small Bird	Coracoid			2	
		3	Unidentified Small Bird	Unidentified			5	
		4	Unidentified Small Bird	Rib	Burned	Burned White	1	
		1, 2, 9	Land Snail	Shell			6	1
		1	Unidentified Rodentia	Unidentified Long Bone			1	1
		2, 4	Unidentified Rodentia	Mandible			2	
		3	Unidentified Rodentia	Unidentified Long Bone	Burned	Small Bone Chips, Burned	16	
		3, 7	Unidentified Rodentia	Cranium			2	
		3, 6	Unidentified Rodentia	Tooth			4	
		3	Unidentified Rodentia	Ulna			1	
		4	Unidentified Rodentia	Rib			4	
		4	Unidentified Rodentia	Femur	Burned	Burned White	1	
		4	Unidentified Rodentia	Maxilla	Burned		1	
		4	Unidentified Rodentia	Vertebrae	Burned		1	
		9	Unidentified Rodentia	Phalanges			1	
		2, 3	Unidentified	Unidentified Long Bone		Small Bone Chips	12	0
		2	Unidentified	Unidentified			64	
		3	Unidentified	Unidentified Long Bone	Butchered	Hand Sawed, One Side	1	
		6	Unidentified	Unidentified Long Bone	Burned	Burned Brown	1	
		6	Unidentified	Unidentified Flat Bone	Burned	Lightly Burned	1	
						Total	**205**	**7**

Table 5.59 Locus V: Chronology

Locus	Unit	Context	Date Attribution (TPQ)	Artifact	Start Date	End Date	Context TPQ	Average Date	Average Context Date
V	108	Surface	N/A						N/A
	108	1	N/A						N/A
	108	2	1860	Two-Piece Mold Bottle	1860	1910	1860	1885	1885
	108	3	1860	Two-Piece Mold Bottle	1860	1910		1885	
	108	3	1880	Lightning Style Canning Jar	1875	1950	1875	1912.5	1898.75
	108	4	1877	Burnell Four Point Barb Wire	1877	1950	1877	1913.5	1913.5
	108	5	1876	Can't Bust 'Em Overall Button	1876	1920	1876	1898	1898
	108	6	No Dateable Artifacts						N/A
	108	7	No Dateable Artifacts						N/A
	108	8	No Dateable Artifacts						N/A

Locus C, Unit 110

Table 5.60 Locus C, Unit 110: Nails

Locus	Unit	Context	Type	MNI
C	110	1	Machine Cut	2
		2	Hand Forged	1
		3	Hand forged-Finishing Nail	3
		3	Hand Forged	1
		3	Machine Cut	4
		3	Unidentified	1
		4	Hand Forged	6
		4	Machine Cut	11
		4	Wire	3
		4	Unidentified	8
		5	Hand Forged	1
		5	Machine Cut	14
		5	Wire	2
		5	Unidentified	1
		6	Hand Forged	3
		6	Machine Cut	4
		7	Machine Cut	8

		7	Wire	1
		8	Machine Cut	1
		9	Hand Forged	3
		9	Machine Cut	2
		9	Wire	1
		9	Hand Forged-Tack	1
		10	Wire	1
		11	Machine Cut	2
		11	Hand Forged	1
		12	Machine Cut	2
		13	Hand Forged	1
		WF	Machine	1
			Total	**90**

Table 5.61 Locus C, Unit 110: Architectural Remains (*Not all collected, only sample)

Locus	Unit	Context	Material	Object	MNI	Color
C	110	1	Glass	Window	1	Colorless
		3	Iron	Bracket-Stamped	1	
		3, 4, 5, 6, 7, 9, 11, 13	Glass	Window	1	Very Light Natural Blue Green
		4	White	Bar	1	
		4, 5	Iron	Bar	1	
		4, 5	Iron	Cast Bar	1	
		4, 7	Iron	Wind Stake	2	
		4, 10	Wood	Board/ Plank	2*	
		4, WF	Iron	Spike	1	
		4, 5, 6, 7, 8, 9, 13, WF	Lime	Mortar/ Plaster	1*	
		5	Wood	Board/ Plank with Nail	0	
		7	Mortar/Plaster	Chunk	1*	
		7	Iron	Door Latch	1	
		7, 10	Iron	Pipe/Chimney	1	
		6, 8, 9	Brick	Fire Brick	1*	
		12	Iron	S Hook	1	
		WF	Glass	Window	1	Light Natural Blue Green

Table 5.62 Locus C, Unit 110: Lighting

Locus	Unit	Context	Material	Color	Object	Decoration	Size	NISP	MNI
C	110	4	Glass	Colorless	Lamp Chimney	Scalloped	N/A	1	1
		5	Glass	Colorless	Lamp Chimney	Deep Scallops	N/A	1	1

		WF	Glass	Colorless	Lamp Chimney	Scalloped Conical Beads	N/A	1	1
		4	Glass	Light Natural Blue	Lamp Chimney			1	1
		6	Glass	Amethyst	Lamp Chimney			1	1
		3	Glass	Light Yellow	Lamp Shade			1	1
		5	Glass	Yellow	Lamp Shade			1	1
		6	Glass	Very Light Natural Blue Green	Lamp Chimney			3	1
		9	Glass	Colorless	Lamp Shade	Oval		3	1
		1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 13, WF	Glass	Colorless	Lamp Chimney			155	0
		11	Metal	Iron	Lamp Burner			1	0
							Total	**169**	**9**

Table 5.63 Locus C, Unit 110: Beverage Storage

Locus	Unit	Con-text	Color	Manufacture Type	Form/ Shape	Frag Type	Finish	NISP	MNI
C	110	2	Amber	Mold Blown	Cylindrical	Body		9	1
		4, 5	Amber	Unidentified	Flake	Body		2	
		5	Amber	Mold Blown	Flask	Body		1	1
		4, 5, 6	Amethyst	Mold Blown	Square/ Rectangle	Body		11	
		5	Amethyst	2 Piece Mold	Square/ Rectangle, Rounded Corners	Body, Corner		1	1
		5	Brown	Applied/ Tooled	Cylindrical	Finish	Mineral	1	1
		3, 4, 5	Brown	Mold Blown	Cylindrical	Body		3	
		4	Brown	Turn Paste	Cylindrical	Body		1	
		7	Dark Olive	Mold Blown	Cylindrical	Body		1	1
		4	Emerald Green	Mold Blown	Square/ Rectangle, Chamfered Corners	Body, Corner		1	1
		WF	Light Natural Blue	Mold Blown	Cylindrical	Body		1	1
		4	Light Natural Blue	Unidentified	Flake	Body		1	
		3	Light Natural Blue	Mold Blown	Flask	Body		3	1
		4	Light Natural Blue	Mold Blown	Flask, Flat Face	Body		1	

		6	Light Natural Blue	Mold Blown	Kidney Flask	Body		1	1
		10	Light Natural Blue	Mold Blown	Square/ Rectangle with Rounded Corners	Body		2	1
		7	Light Natural Blue	Mold Blown	Square/ Rectangle, Chamfered Corners	Body		1	1
		11, 12	Light Natural Blue Green	Mold Blown	Cylindrical	Body		2	1
		3	Light Natural Blue Green	Mold Blown	Square/ Rectangle	Body		13	
		5	Light Natural Blue Green	Mold Blown	Square/ Rectangle, Chamfered Corners	Body		2	
		4	Light Natural Blue Green	Mold Blown	Square/ Rectangle, Chamfered Corners, Paneled	Body, Corner		1	1
		4, 5, 7	Light Olive	Mold Blown	Cylindrical	Body		7	1
		4, 8	Light Olive	Unidentifiable	Flake	Body		2	
		WF	Light Olive Green	Mold Blown	Cylindrical	Body		1	1
		3, WF	Olive	Mold Blown	Cylindrical	Body		3	1
		7	Olive			Shoulder		1	
		9	Olive Yellow	Mold Blown	Cylindrical	Base		1	1
		7	Olive Yellow		Cylindrical	Body		1	
		7	Colorless	At Least 3 Piece Mold	Cylindrical	Body		1	1
		4, 6, 7, 10	Colorless	Mold Blown	Cylindrical	Body		4	
		3	Colorless	Unidentified	Flake	Body		1	
		11	Colorless	Mold Blown	Flask	Body		1	1
		11	Colorless	Mold Blown	Square/ Rectangle, Rounded Corner	Body		1	1
		10	Colorless	Mold Blown	Square/ Rectangle with Rounded Corners	Body, Corner		1	1
		5	Colorless	Mold Blown	Square/ Rectangle	Body		1	
		6	Very Light	Molded	Cylindrical	Body		1	1

			Natural Blue						
		3	Very Light Natural Blue	Mold Blown	Square/ Rectangle	Body		5	
		4	Very Light Natural Blue	Mold Blown	Square/ Rectangle, Paneled	Body		1	1
		4	Very Light Natural Blue	2 Piece Mold	Unidentified, Concave	Body		1	
		4	Very Light Natural Blue	Dip Molded	Cylindrical	Body		1	
							Total	**94**	**23**

Table 5.64 Locus C, Unit 110: Ceramic Service/Tablewares

Locus	Unit	Con-text	Type	Form	Dec-oration	Rim Diam. (cm)	Base Diam. (cm)	Rim	Manu-factur	NISP	MNI
C	110	4	Hotel-Ware	Dinner Plate	Plain	26		Narrow		1	1
		7	Hotel-Ware	Pedestaled Rice Bowl	Plain	15	8	Rounded		1	1
		9	Hotel-Ware	Pedestaled Rice Bowl	Plain	15	8	Rounded		1	0
		3, 4, 7	Iron-stone	Hollow	Undec-orated					6	0
		4	Iron-stone	Plate	Undec-orated					1	
		6	Iron-stone	Mug	Plain	9	9.5	Rounded, Flat Interior, Slight Outward Flare		1	1
		6	Iron-stone	Dinner Plate	Plain	25	14		T. & R. Boote	2	1
		7	Iron-stone	Flat Ware	Undec-orated					1	0
		7	Iron-stone	Mug	Plain	9	9.5	Narrow, Slight Outward Flare		1	1
		7	Iron-stone	Mug	Plain	9	9.5	Narrow, Slight Outward Flare		1	1
		7	Iron-stone	Rectan-gular Pitcher/ Cannister	Undec-orated					1	1
		7	Iron-stone	Rectan-gular	Molded					1	

				Pitcher/ Cannister							
		8	Iron-stone	Cup	Plain	9.5		Rounded, Flared Outward		1	1
		9	Iron-stone	Mug	Molded	9.5	10	Rounded, Flat Exterior, Molded Annular Band		1	1
		9	Iron-stone	Mug	Plain	10	11	Rounded, Flared Outward		1	1
		9	Iron-stone	Luncheon Plate	Plain	24	14		Edward Clarke	1	1
		9	Iron-stone	Bowl	Plain	11.5	7	Rounded, Flat Exterior		2	1
		4, 5, WF	Iron-stone	Unidentifie d	Undec-orated					3	
		3	Pearl-ware	Mug/Cup	Undec-orated		6			1	1
		3, 6	Pearl-ware	Flat Ware	Undec-orated				Hope and Carter	4	0
		4	Pearl-ware	Flat Ware	Undec-orated				Unident-ified	1	0
		4	Pearl-ware	Mug	Molded		10		John-son Bros	1	1
		4	Pearl-ware	Mug/Cup	Undec-orated	10				1	0
		4	Pearl-ware	Mug/Cup	Undec-orated	10		Rounded, Flat Exterior		1	0
		4	Pearl-ware	Plate	Undec-orated		14			1	
		4	Pearl-ware	Dinner Plate	Undec-orated	26		Rounde, Flat Exterior		1	1
		4	Pearl-ware	Luncheon Plate	Undec-orated	24		Narrow		1	1
		4	Pearl-ware	Salad Plate	Molded	16		Squared, Stepped, Flared Outward		1	1
		4	Pearl-ware	Side Plate	Undec-orated	10		Narrow		1	1
		4, 5, 6, 7, 9, 10, 12	Pearl-ware	Hollow	Undec-orated				John Wedg-wood	9	0
		5	Pearl-ware	Dinner Plate	Plain	25	14	Rounded		1	0
		6	Pearl-ware	Cup	Plain	9		Narrow, Flat Exterior		1	1
		6	Pearl-ware	Plate	Undec-orated					1	

		7	Pearl-ware	Cup	Undec-orated	9		Narrow		1	1
		7	Pearl-ware	Luncheon Plate	Plain	25	16	Rounded		1	1
		7	Pearl-ware	Luncheon Plate	Plain	24.5	16	Rounded, Flared Outward	Thomas Hughes	1	1
		7	Pearl-ware	Salad Plate	Plain	21	13	Rounded, Flat Exterior	Unident -ified	2	1
		7	Pearl-ware	Luncheon Plate	Plain	25	14		Edward Clarke	1	1
		7	Pearl-ware	Luncheon Plate	Plain	25	16		Alfred Meakin	1	1
		7	Pearl-ware	Salad Plate	Plain	20	14	Rounded, Tapered		1	1
		7	Pearl-ware	Salad Plate	Molded Rim	16		Narrow, Squared, Stepped		1	1
		8	Pearl-ware	Luncheon Plate	Plain	25	17	Rounded	Alfred Meakin	1	1
		8	Pearl-ware	Luncheon Plate	Plain	24.5	16	Rounded, Flared Outward	Thomas Hughes	1	
		8	Pearl-ware	Bowl	Undec-orated		14	(Blank)		1	1
		9	Pearl-ware	Dinner Plate	Plain	25.5	17	Rounded		1	0
		6	Por-celain	Rice Bowl (Winter-green)	Plain	14	5.5	Narrow, Flared Outward	Uniden-tified Jing-dezhen Kilns	1	1
		12	Red-ware	Hollow	Molded		6			2	1
		3, 4, 5, 7, 13	White-ware	Hollow	Undec-orated					8	0
		4	White-ware	Mug	Undec-orated		10			1	1
		8	White-ware	Bowl/ Soup Bowl	Molded		9			1	1
									Total	**79**	**33**

Table 5.65 Locus C, Unit 110: Health and Hygiene, Glass Material

Locus	Unit	Context	Shape	Color	Finish	Content	NISP	MNV
C	110	5	Square/Rectangle	Amethyst	Prescription	Medicine	1	1
		5	Vial- "Opium Bottle"	Very Light Natural Blue Green		Medicine	1	1
		10	Paneled	Colorless	Flare	H.E. Swan, Jenny Lind Hair Gloss	41	1
						Total	**43**	**3**

Table 5.66 Locus C, Unit 110: Tobacco and Narcotics Materials

Locus	Unit	Context	Material	Object	Description	NISP	MNI
C	110	5, 6	Iron	Tobacco Tin		2	1
		6	Stoneware	Opium Pipe	Gray Polished and Incised Opium Pipe Bowl	1	1
		10	Ball Clay	Tobacco Pipe Stem	Plain Stem	1	1

Table 5.67 Locus C, Unit 110: Clothing and Adornment

Locus	Unit	Context	Material	Object	Size	Description	MNI
C	110	3	Iron	Jacket Button	28 Lignes	Shank Style	1
		4	Prosser	Unidentified Button	N/A	Black	1
		4	Shell	Shirt Button	N/A	Two Hole Sew Through	1
		7	Iron	Pant Button	26 Lignes		1
		8	Prosser	Shirt Button	17 Lignes	Four Hole Sew Through- Pie Crust Design	1
		12	Wood	Jacket Button	26 Lignes	Four Hole Sew Through	1

Table 5.68 Locus C, Unit 110: Faunal

Locus	Unit	Context	Taxa	Element	Modification	Description	NISP	MNI
C	110	2	*Bos taurus*	Vertebrae	Butchered	Knife Mark	1	2
		4	*Bos taurus*	Long Bone			1	
		4	*Bos taurus*	Patella	Butchered	Implement Unidentified	1	
		4	*Bos taurus*	Pelivis	Butchered	Hand Sawed, Chopped 45 Degree Perpendicular To Saw Mark	1	
		4	*Bos taurus*	Rib	Burned, Butchered	Chopped (Cleaver)	1	
		4	*Bos taurus*	Rib	Butchered	Hand Sawed Distal End, Chopped Proximal End, Plus One Partial Chop Mark	1	
		4	*Bos taurus*	Rib	Butchered	Hand Sawed	4	
		4	*Bos taurus*	Rib	Butchered	Hand Sawed, Mutliple (6+) Knife Cuts On Rib Face	1	
		4	*Bos taurus*	Rib	Butchered	Shattered	1	
		4	*Bos taurus*	Rib			1	
		4	*Bos taurus*	Rib	Butchered	Knife Cut/Scrape Marks	1	
		4	*Bos taurus*	Rib			1	
		4	*Bos taurus*	Scaphoid			1	
		4	*Bos taurus*	Tibia	Butchered	Chopped (Cleaver), Knife Cut Marks	1	
		4	*Bos taurus*	Vertebrae	Butchered	Implement Unidentified	1	
		4	*Bos taurus*	Vertebrae			3	
		4	*Bos taurus*	Vertebrae			1	
		4	*Bos taurus*	Vertebrae	Butchered	Chopped (Cleaver), Knife Cut Marks	1	

		4, 6, 7, 8, 10, 11	*Bos taurus*	Rib			23	
		5	*Bos taurus*	Rib	Butchered	Hand Sawed	1	
		5	*Bos taurus*	Rib	Butchered	Chopped (Cleaver)	1	
		5	*Bos taurus*	Vertebrae			1	
		6	*Bos taurus*	Rib			1	
		6	*Bos taurus*	Rib	Butchered	Hand Sawed	1	
		6	*Bos taurus*	Rib	Butchered	Implement Unidentified, + 1 Knife Cut Mark	1	
		6	*Bos taurus*	Rib	Butchered	Chopped (Cleaver), Knife Cut Marks	1	
		6	*Bos taurus*	Rib	Butchered	Implement Unidentified, + 1 Knife Cut Mark	1	
		6	*Bos taurus*	Vertebrae			1	
		7	*Bos taurus*	Innominate			1	
		7	*Bos taurus*	Rib	Butchered	Both Sides. Hand Sawed.	1	
		7	*Bos taurus*	Rib	Butchered	Both Sides. Hand Sawed. Multiple Parralel Knife Cuts On Bone Surface	1	
		7	*Bos taurus*	Rib	Butchered	Chopped (Cleaver) (Partial Cut)	1	
		7	*Bos taurus*	Rib	Butchered	Hand Sawed	1	
		7	*Bos taurus*	Rib	Butchered	Hand Sawed (One Full Cut And One Partial Cut)	1	
		7	*Bos taurus*	Rib	Butchered	Lengthwise, Hand Sawed. Cut Marks On Face.	1	
		7	*Bos taurus*	Tibia	Butchered	Knife Mark	1	
		7	*Bos taurus*	Vertebrae			2	
		7	*Bos taurus*	Vertebrae	Butchered	Hand Sawed, Rodent Gnawing	1	
		7, 10	*Bos taurus*	Rib	Butchered	Knife Mark	4	
		7, 12	*Bos taurus*	Carpal/ Tarsal			2	
		7, WF	*Bos taurus*	Pelvis			1	
		8	*Bos taurus*	Scapula	Butchered	Hand Sawed (One Full Cut And One Partial Cut)	1	
		9	*Bos taurus*	Femur	Butchered	Hand Sawed, Both Sides	1	
		9	*Bos taurus*	Femur			1	
		9	*Bos taurus*	Patella	Butchered	Chopped (Cleaver)	1	
		10	*Bos taurus*	Long Bone	Butchered	Chopped (Cleaver)	1	
		10	*Bos taurus*	Long Bone	Butchered	Shattered	2	
		10	*Bos taurus*	Rib	Butchered	Both Sides. Hand Sawed + 1 Partial Cut	1	
		10	*Bos taurus*	Rib	Butchered	Hand Sawed, Knife Cut, Lenghtwise	1	
		10	*Bos taurus*	Rib	Butchered	Hand Sawed, Mutliple (6+) Knife Cuts On Rib Face, Both Side	1	
		10	*Bos taurus*	Tibia	Butchered	Both Sides. Hand Sawed + 1 Partial Cut	1	

		10, 11	*Bos taurus*	Rib	Butchered	Hand Sawed, Mutiple Cut Marks On Rib Face	2	
		11	*Bos taurus*	Femur	Butchered	Both Sides. Hand Sawed	1	
		11	*Bos taurus*	Rib	Butchered	Chopped (Cleaver)	1	
		11	*Bos taurus*	Rib	Butchered	Hand Sawed	1	
		11	*Bos taurus*	Rib	Butchered	Hand Sawed, Partial Cut	1	
		11	*Bos taurus*	Rib	Butchered	Multiple Parallel Knife Marks	1	
		12	*Bos taurus*	Rib	Butchered	Hand Sawed	1	
		12	*Bos taurus*	Rib	Butchered	Chopped (Cleaver)	1	
		12	*Bos taurus*	Vertebrae	Butchered	Hand Sawed	1	
		WF	*Bos taurus*	Rib	Butchered	Both Sides. Hand Sawed. Multiple Puncture Marks	1	
		WF	*Bos taurus*	Rib	Butchered	Multiple Parallel Knife Marks	1	
		4	*Gallus gallus*	Carpometa-carpus			1	1
		7	*Gallus gallus*	Femur			1	
		7	*Gallus gallus*	Humerus			1	
		9	*Phocoena phocoena*	Radius			1	1
		3	Large Bird	Long Bone			1	1
		5	Medium Bird	Ulna			1	1
		3, 6	Medium Fish	Vertebrae			2	
		7	Medium Fish	Cranial			1	
		5	Medium Fish	Unidenti-fied			2	
		4	*Talpidae*	Scapula			1	1
		7	*Mytilus califor-nianus*	Tooth			2	2
		8, 12	*Mytilus califor-nianus*	Shell			2	
		6	*Neotoma Fuscipes*	Humerus			1	1
		4	*Odo-coileus*	Patella	Butchered	Punctured, Knife Cut Mark	1	1
		4	*Odo-coileus*	Tibia			1	
		4, 11	*Odo-coileus*	Rib			6	
		11	*Odo-coileus*	Radius	Butchered	Knife Dislocation Mark	1	
		WF	*Odo-coileus*	Rib			1	
		WF	*Odo-coileus*	Rib	Butchered	Hand Sawed	1	
		3	*Otosperm-ophilus Beecheyi*	Atlas Vertebrae			1	

		5	*Otosperm-ophilus Beecheyi*	Femur			1	
		5	*Otosperm-ophilus Beecheyi*	Mandible			1	
		12	*Otosperm-ophilus Beecheyi*	Cranial			1	
		7	*Otosperm-ophilus Beecheyi*	Mandible			1	2
		3	*Rattus*	Mandible			1	1
		7	*Eumetopias jubatus*	Rib	Butchered	Distal End. Implement Unidentified	1	1
		3	*Ovis aries/ Capra hircus*	Carpal/ Tarsal			1	
		4	*Ovis aries/ Capra hircus*	Long Bone			1	
		4	*Ovis aries/ Capra hircus*	Metapodial			1	
		WF	*Ovis aries/ Capra hircus*	Rib			1	
		3	*Ovis aries/ Capra hircus*	Tibia			1	
		5	*Ovis aries/ Capra hircus*	Vertebrae			1	
		5	*Ovis aries/ Capra hircus*	Vertebrae			1	
		7	*Ovis aries/ Capra hircus*	2nd Tarsal			1	1
		9	*Ovis aries/ Capra hircus*	Vertebrae	Butchered	Chopped (Cleaver)	1	
		3	Small Bird	Tarsometa-tarsus	(Blank)		1	1
		5	Small Bird	Vertebrae	(Blank)		1	
		4	Small Bird	Long Bone			1	
		4	Small/ Med Bird	Long Bone	(Blank)		1	1
		9, 10	Small/ Med Fish	Vertebrae	(Blank)		2	
		2	*Sus scrofa domestica*	Canine	(Blank)		1	
		3	*Sus scrofa domestica*	Vertebrae	Butchered	Hand Sawed, 1 Full Cut, 1 Partial Cut	1	1
		4	*Sus scrofa domestica*	Tibia			2	
		4	*Sus scrofa domestica*	Ulna			1	
		5	*Sus scrofa domestica*	Metapodial			1	

		6	*Sus scrofa domestica*	Vertebrae	Butchered	Implement Unidentified	1	
		6	*Sus scrofa domestica*	Vertebrae	Butchered	Hand Sawed, Knife Cut Marks	1	
		7	*Sus scrofa domestica*	Rib	Butchered	Chopped (Cleaver) (At Least 3 Partial Cuts)	1	
		7	*Sus scrofa domestica*	Rib			1	
		7	*Sus scrofa domestica*	Vertebrae	Butchered	Both Sides. Implement Unidentified	1	
		8	*Sus scrofa domestica*	Humerus	Butchered	Chopped (Cleaver)	1	
		8	*Sus scrofa domestica*	Metapodial	Butchered	Chopped (Cleaver)	1	
		10	*Sus scrofa domestica*	Phalanx			1	
		11	*Sus scrofa domestica*	Carpal			1	
		WF	*Sus scrofa domestica*	Tooth	Butchered	Knife Marks	1	
		1	Unidenti-fiable	Long Bone	Burned	Black And Brown	1	0
		1, 6	Unidenti-fiable	Long Bone	Burned, Butchered	Hand Sawed	2	
		2	Unidenti-fiable	Flat Bone	Burned	White And Gray	6	
		2, 4, 7, 10	Unidenti-fiable	Long Bone	Burned	Black And Brown	12	
		2, 3, 4, 5, 6, 7, 9, 10, 12	Unidenti-fiable	Flat Bone			196	
		3	Unidenti-fiable	Long Bone	Butchered	Axe/Cleaver Partial Cut	1	
		3, 4, 5, 6, 7	Unidenti-fiable	Long Bone			70	
		3, 6	Unidenti-fiable	Long Bone	Burned	White	15	
		3, 6, 7, 8, 9	Unidenti-fiable	Long Bone	Burned	White And Black	57	
		4	Unidenti-fiable	Cranial			1	
		4	Unidenti-fiable	Long Bone	Butchered	Hand Sawed	1	
		3, 4, 5, 6, 7, 9, 10, 11, 12, WF	Unidenti-fiable	Unidenti-fied	Burned	White	90	
		4, 7, 8, 11	Unidenti-fiable	Unidenti-fied			112	
		4, 12	Unidenti-fiable	Unidenti-fied	Burned	Black And Brown	18	
		4, WF	Unidenti-fiable	Unidenti-fied			26	
		6	Unidenti-fiable	Flat Bone	Burned	White	3	
		6	Unidenti-fiable	Flat Bone	Butchered	Both Sides. Implement Unidentified	1	
		6	Unidenti-fiable	Flat Bone	Butchered	Hand Sawed, Both Times	1	

		6	Unidenti-fiable	Flat Bone	Butchered	Multiple Parallel Knife Marks	1	
		6	Unidenti-fiable	Long Bone	Butchered	Hand Sawed	1	
		6	Unidenti-fiable	Long Bone			1	
		3, 4, 5, 6, 7, 8, 9, 10, 13, WF	Unidenti-fiable	Unidenti-fied			81	
		7	Unidenti-fiable	Flat Bone	Burned	White And Gray	16	
		7	Unidenti-fiable	Long Bone	Butchered	Chopped (Cleaver)	1	
		7	Unidenti-fiable	Long Bone	Butchered	Shattered	3	
		7	Unidenti-fiable	Unidenti-fied	Butchered	Knife Mark	1	
		7, 10	Unidenti-fiable	Unidenti-fied	Butchered	Implement Unidentified	2	
		8	Unidenti-fiable	Long Bone	Burned	Brown	1	
		9	Unidenti-fiable	Patella			1	
		12	Unidenti-fiable	Flat Bone	Butchered	Hand Sawed	1	
		10	Unidenti-fiable	Flat Bone	Butchered	Implement Unidentified	2	
		10	Unidenti-fiable	Flat Bone	Butchered	Knife Mark	4	
		10	Unidenti-fiable	Flat Bone	Butchered	Hand Sawed, Knife Cut Designs	1	
		10, 11	Unidenti-fiable	Flat Bone	Butchered	Chopped (Cleaver)	2	
		11	Unidenti-fiable	Unidenti-fied	Butchered	Hand Sawed	1	
		11, 12	Unidenti-fiable	Unidenti-fied	Burned	White And Gray	20	
		3, 4, 5, 6, 7, 12, 13, WF	Unidenti-fiable	Unidenti-fied	Burned	Black	61	
		3, 4, 5, 6, 7, 8, 9, 10, 12, 13, WF	Unidenti-fiable	Unidenti-fied	Burned	White And Black	114	
		WF	Unidenti-fiable	Unidenti-fied	Burned	Black And Brown	4	
		WF	Unidenti-fiable	Unidenti-fied	Butchered	Hand Sawed	1	
		13	*Neotoma fuscipes*	Mandible			2	1
		8	Unidenti-fied Bird	Long Bone			1	0
		2	Unidenti-fied Artiodactyl	Long Bone	Burned	Black And Brown	3	
		2	Unidenti-fied Artiodactyl	Unidenti-fied			1	

		2	Unidenti-fied Artiodactyl	Vertebrae			1	
		2, 4, 6	Unidenti-fied Artiodactyl	Long Bone	Burned	White And Gray	16	
		3	Unidenti-fied Artiodactyl	Metapodial			1	
		3	Unidenti-fied Artiodactyl	Rib	Butchered	Hand Sawed	1	
		3	Unidenti-fied Artiodactyl	Rib	Butchered	Sawed	1	
		3	Unidenti-fied Artiodactyl	Unidenti-fied	Burned	Black And Brown	19	
		3	Unidenti-fied Artiodactyl	Unidenti-fied	Burned	White	17	
		3	Unidenti-fied Artiodactyl	Unidenti-fied			1	
		3	Unidenti-fied Artiodactyl	Vertebrae			1	
		3	Unidenti-fied Artiodactyl	Vertebrae	Burned	Lightly (Cream)	1	
		3, 4, 5, 6	Unidenti-fied Artiodactyl	Long Bone	Burned	Black And Brown	19	
		3, 4, 7, 12	Unidenti-fied Artiodactyl	Rib			12	
		4	Unidenti-fied Artiodactyl	Cranial	Butchered	Chopped (Cleaver)	1	
		4	Unidenti-fied Artiodactyl	Flat Bone	Butchered	Both Sides. Implement Unidentified	1	
		4	Unidenti-fied Artiodactyl	Flat Bone	Butchered	Hand Sawed	1	
		4	Unidenti-fied Artiodactyl	Long Bone	Butchered	Chopped (Cleaver), Knife Cut Marks	1	
		4	Unidenti-fied Artiodactyl	Long Bone	Burned, Butchered	Chopped (Cleaver)	3	
		4	Unidenti-fied Artiodactyl	Long Bone	Burned, Butchered	Hand Sawed	1	
		4	Unidenti-fied Artiodactyl	Long Bone	Butchered	Both Sides. Implement Unidentified	1	
		4	Unidenti-fied Artiodactyl	Long Bone			3	

		4	Unidenti-fied Artiodactyl	Phalanx			1	
		4	Unidenti-fied Artiodactyl	Rib	Butchered	Both Sides. Implement Unidentified	1	
		4	Unidenti-fied Artiodactyl	Rib	Butchered	Hand Sawed One End, Multiple Partial Cuts	2	
		4	Unidenti-fied Artiodactyl	Rib	Butchered	Hand Sawed One Side	1	
		4	Unidenti-fied Artiodactyl	Vertebrae			2	
		4	Unidenti-fied Artiodactyl	Vertebrae			1	
		4, 7	Unidenti-fied Artiodactyl	Cranial			4	0
		4, 7	Unidenti-fied Artiodactyl	Flat Bone			7	
		4, 7, 11	Unidenti-fied Artiodactyl	Long Bone	Butchered	Chopped (Cleaver)	4	
		4, 9, 10	Unidenti-fied Artiodactyl	Long Bone	Butchered	Hand Sawed	3	
		5	Unidenti-fied Artiodactyl	Flat Bone	Burned	Black And Brown	3	
		5	Unidenti-fied Artiodactyl	Flat Bone	Burned	White	5	
		5	Unidenti-fied Artiodactyl	Flat Bone	Butchered	Implement Unidentified	1	
		5	Unidenti-fied Artiodactyl	Long Bone	Burned	White And Black	8	
		5	Unidenti-fied Artiodactyl	Long Bone	Butchered	Chopped (Cleaver) Both Sides, Multiple Knife Marks On Body	1	
		5	Unidenti-fied Artiodactyl	Long Bone	Butchered	Implement Unidentified	1	
		5	Unidenti-fied Artiodactyl	Phalanx			1	
		5	Unidenti-fied Artiodactyl	Rib	Burned, Butchered	Knife, 5 Parallel Cut	1	
		5	Unidenti-fied Artiodactyl	Vertebrae			1	
		5	Unidenti-fied Artiodactyl	Vertebrae	Butchered	Hand Sawed	1	

		5	Unidenti-fied Artiodactyl	Vertebrae	Butchered	Hand Sawed	1	
		6	Unidenti-fied Artiodactyl	Long Bone	Burned	Black And Brown	3	
		6	Unidenti-fied Artiodactyl	Long Bone	Burned	White And Black	2	
		6	Unidenti-fied Artiodactyl	Rib			1	
		7	Unidenti-fied Artiodactyl	Long Bone	Butchered	Lengthwise. Cleaver, Chopped	1	
		7	Unidenti-fied Artiodactyl	Phalanx			1	
		7	Unidenti-fied Artiodactyl	Rib	Butchered	Knife Mark	1	
		7	Unidenti-fied Artiodactyl	Sacrum			1	
		7	Unidenti-fied Artiodactyl	Vertebrae			2	
		7, 10	Unidenti-fied Artiodactyl	Rib	Butchered	Hand Sawed	3	
		8	Unidenti-fied Artiodactyl	Illium			1	
		9	Unidenti-fied Artiodactyl	Long Bone	Butchered	Knife Mark Across Facet	1	
		9, 12	Unidenti-fied Artiodactyl	Rib	Butchered	Both Sides. Hand Sawed	2	
		11	Unidenti-fied Artiodactyl	Femur			1	
		11	Unidenti-fied Artiodactyl	Pelvis	Butchered	Chopped (Cleaver)	1	
		11	Unidenti-fied Artiodactyl	Pelvis	Butchered	Knife Mark	1	
		11	Unidenti-fied Artiodactyl	Phalanges			2	
		12	Unidenti-fied Artiodactyl	Vertebrae			1	
		WF	Unidenti-fied Artiodactyl	Vertebrae			1	
		4	Unidenti-fied Pinniped/ Cetacean	Rib			3	

		3, 6	Unidenti-fied Pinniped/ Cetacean	Rib			2	
		6	Unidenti-fied Pinniped/ Cetacean	Cranial			1	0
		7	Unidenti-fied Pinniped/ Cetacean	Flat Bone			3	
		7	Unidenti-fied Pinniped/ Cetacean	Rib	Butchered	Implement Unidentified	1	
		3, 7	Unidenti-fied Pinniped/ Cetacean	Unidenti-fied			2	
		3, 6, 7	Unidenti-fied Rodentia	Vertebrae			3	
		3, 4	Unidenti-fied Rodentia	Phalanx			2	
		4	Unidenti-fied Rodentia	Flat Bone	Burned	White And Gray	9	
		4, 6	Unidenti-fied Rodentia	Rib			2	
		4	Unidenti-fied Rodentia	Ulna			2	
		6	Unidenti-fied Rodentia	Cranial	Butchered	Knife Mark	1	0
		11, 12	Unidenti-fied Rodentia	Tooth			1	
		4, 6	Unidenti-fied Rodentia	Long Bone			3	
		4	*Sylvilagus audubonii*	Humerus			1	1
		5	*Sylvilagus audubonii*	Ulna			1	
		7	*Sylvilagus audubonii*	Innominate			1	
		10	*Sylvilagus audubonii*	Pelvis			1	
		2	*Lepus californicus*	Tibia			1	1
		3	Land Snail	Shell			4	1
						Total	**1324**	**24**

Table 5.69 Locus C: Chronology

Locus	Unit	Context	Date Attribution (TPQ)	Artifact	Start Date	End Date	Context TPQ	Average Date	Average Context Date
C	110	Surface	N/A						N/A
		1	N/A						N/A
		2	1890	Colorless Glass Bottle	1890	1950	1890	1920	1920
		3	1862	Hope and Carter Ceramic	1862	1880	1862	1871	1871
		4	1865	Edward Clarke Ceramic	1865	1877		1871	
		4	1880	Turn Paste Mold Bottle	1880	1915		1897.5	
		4	1860	Two-Piece Mold Bottle	1860	1910		1885	
		4	1870	Amethyst (Manganese) Bottle	1870	1915		1892.5	
		4	1850	Dip-Molded Bottle	1850	1870	1880	1860	1881.2
		5	1885	Tooled Bottle Finish	1885	1915		1900	
		5	1860	Two-Piece Mold Bottle	1860	1910		1885	
		5	1870	Amethyst (Manganese) Bottle	1870	1915		1892.5	
		5	1940	Cartridge-Super X	1940	2000	1940	1970	1911.88
		6	1858	T. & R. Boote, Grenade Shape Ceramic	1858	1867		1862.5	
		6	1870	Amethyst (Manganese) Bottle	1870	1915		1892.5	
		6	1879	Wing Lee Wai Kiln Glazed Stoneware	1876	1910		1893	
		6	1866	Turn-Key Can	1866	1950		1908	
		6	1873	Cartridge-Union Metallic	1873	1911	1879	1892	1889.6
		7	1865	Edward Clark Ceramic	1865	1887		1876	
		7	1891	Alfred Meakin Ceramic	1891	1897		1894	
		7	1856	Thomas Hughes Ceramic	1856	1881		1868.5	
		7	1810	Three-Piece Mold Bottle	1810	1890	1891	1850	1872.13
		8	1891	Alfred Meakin Ceramic	1891	1897		1894	
		8	1856	Thomas Hughes Ceramic	1856	1881	1891	1868.5	1881.25
		9	1870	Ellenville Glass Works Bottle	1870	1890	1870	1880	1880

		10	1841	John Wedgewood Ceramic	1841	1860		1850.5	
		10	1849	H.E. Swan's Jenny Lind Hair Gloss	1849	1861	1849	1855	1852.75
		11	1870	Mold Blown Bottle	1870	1910	1870	1890	1890
		12	N/A						N/A
		13	N/A						N/A

Locus B, Unit 109

Table 5.70 Locus B, Unit 109 (Interior): Nails

Locus	Unit	Context	Type	MNI
B	109	1	Machine Cut	2
		1	Hand Forged	2
		2	Cast- Screw	1
		2	Unidentified	1
		3	Hand Forged	5
		3	Machine Cut	9
		4	Hand Forged	1
		4	Machine Cut	3
		4	Machine Cut- Finishing Nail	3
		5	Hand Forged	2
		5	Machine Cut	27
		5	Wire	5
		6	Machine Cut	9
		6	Wire	4
		7	Hand Forged	2
		7	Machine Cut	1
		4	Hand forged- Tack	1

Table 5.71 Locus B, Unit 109 (Interior): Architectural Remains (*Not all collected, only sample)

Locus	Unit	Context	Material	Object	MNI	Color
B	109	1, 5	Glass	Window	1	Light Natural Blue Green
		1, 5	Iron	Tent Grommet	3	
		1, 4, 5	Iron	Barbed Wire	1	
		1, 2, 3, 5, 6	Mortar Plaster	Chunk	1*	
		1, 2, 3, 5, 6	Cast Iron	Bar	1	
		2, 3, 4, 5, 6, WF	Glass	Window	2	Very Light Natural Blue Green

		3	Marble	Block	1	
		3, 5	Iron	Flat Bracket	1	
		3, 4, 5	Wood	Plank/Board	1*	
		4, 5	Iron	Corner Bracket	1	
		1, 4, 5, 6	Brick	Fire Brick	1*	
		5	Iron	Door Hinge Bracket	1	
		5	Iron	Door Latch	1	
		5	Iron	Pipe	1	
		5, 6	Glass	Window	1	Colorless
		6	Iron	Tent Anchors	1	
		6	Iron	Stake	1	
		6	Iron	Door Strike/Face Plate	1	
		6	Agateware	Door Knob	1	

Table 5.72 Locus B, Unit 109 (Interior): Lighting

Locus	Unit	Context	Material	Color	Object	Decoration	Size	NISP	MNI
B	109	0	Glass	Colorless	Lamp Chimney	Scalloped Conical Beads	10cm Rim	1	1
		1, 2, 5	Glass	Colorless	Lamp Chimney	Scalloped Conical Beads	8cm Rim	6	1
		5	Glass	Colorless	Lamp Chimney	Scalloped Conical Beads	7cm Rim	3	1
		4, 5	Glass	Colorless	Lamp Chimney	Scalloped Conical Beads	N/A	2	0
		2	Glass	Colorless	Lamp Chimney	Scalloped Spaced Conical Beads	7cm Rim	1	1
		3	Glass	Colorless	Lamp Chimney	Rolled Scalloped Edge	N/A	1	1
		4, 5, 6	Glass	Colorless	Lamp Chimney	Scalloped Edge	N/A	9	1
		3	Glass	Amethyst	Lamp Chimney	Scalloped Edge	N/A	1	1
		5	Glass	Colorless	Lamp Chimney	Square Conical Beads	10cm Rim	1	1
		5	Glass	Colorless	Lamp Chimney	Sloped Conical Beads	8cm Rim	2	1
		5	Glass	Colorless	Lamp Chimney	Conical Beads	N/A	1	0
		4, 5	Glass	Colorless	Lamp Chimney	Deep Scallops	8cm Rim	3	1
		2	Glass	Amethyst	Lamp Shade	Deep Scallops	N/A	1	0
		5, 6	Glass	Colorless	Lamp Chimney	Small Scallops	8cm Rim	4	1
		5	Glass	Colorless	Lamp Chimney	Small Shallow Scallops	8cm Rim	3	1
		5	Glass	Amethyst	Lamp Font	Molded Geometric and Annular Pattern	N/A	1	0

		3, 4, 5	Glass	Very Light Natural Blue	Lamp Chimney		N/A	5	1
		0, 1, 2, 3, 4, 5, 6, 7	Glass	Colorless	Lamp Chimney			1530	0
		5	Glass	Amethyst	Lamp Chimney			1	0
							Total	**1576**	**13**

Table 5.73 Locus B, Unit 109 (Interior): Food Storage, Metal

Locus	Unit	Context	Type	Shape	Frag Type	Manufacture Type	Form	NISP	MNI
B	109	1, 2 3, 4, 5, 6, 7, WF	Iron	Flat			Flat	2814	
		3, 4, 5, 6	Iron	Can	Edge	Rolled	Can	24	
		5	Iron	Can	Edge	Rolled	Large Can	4	1
		5	Iron	Can	Edge	Rolled	Square/ Rectangle Can	1	1
		5	Iron	Can	Top	Edge	Can	4	
		5	Iron	Can	Top	Hole-In-Cap	Can	1	
		5	Iron	Can	Top	Rolled	Hole In Cap	3	1
		6	Iron	Flat	Body	Rolled		4	
		6	Iron	Flat	Chunk		Thick Flat	32	
							Total	**2887**	**3**

Table 5.74 Locus B, Unit 109 (Interior): Food Storage, Glass

Locus	Unit	Context	Type	Frag Type	Color	Form	NISP	MNI
B	109	Surface	Condiment-Pepper-sauce	Base, Body	Light Natural Blue Green		1	1
		5	Condiment-Peppersauce	Base, Body	Light Natural Blue Green		5	1
		5	Condiment	Finish- Club Sauce	Olive		1	1
		5	Condiment-Pepper-sauce	Body, Corner	Colorless		1	1
		5	Jar	Rim	Light Natural Blue Green	Jar	1	1
		5	Jar	Finish-Groove Ring Wax Seal	Colorless	Canning Jar	1	1
		3	Jar	Finish- Flare	Colorless	Jar	1	1
		5	Jar	Finish-Straight	Colorless	Jar	1	1
						Total	**12**	**8**

Table 5.75 Locus B, Unit 109 (Interior): Food Storage, Ceramic

Locus	Unit	Context	Type	Frag Type	Form	Rim Dia-meter (CM)	Rim Thick-ness (CM)	Rim Description	NISP	MNI
B	109	1	BGSW	Body, Shoulder	Jar				1	1
		2	BGSW	Body	Jar				2	

		4	Ironstone	Body	Cannister				1	1
		5, 6	Whiteware (Blued)	Body	Cannister				2	1
		3	Stoneware	Body	Hollow				1	1
		3	Whiteware	Rim	Canister	20	0.58	Rounded	1	1
		5	Whiteware	Body	Cannister/ Jar				2	
								Total	**10**	**5**

Table 5.76 Locus B, Unit 109 (Interior): Beverage Storage, Glass

Locus	Unit	Con-text	Color	Manu-facture Type	Form	Frag Type	Finish	Base Diam	Marks	NISP	MNI
B	109	5	Amber	Mold Blown	Cylindrical	Base		8		1	1
		5	Amber	Mold Blown	Cylindrical	Base				1	
		Sur-face 4, 5, 6, 7	Amber	Mold Blown	Cylindrical	Body				20	
		3, 4	Amber	Mold Blown	Cylindrical	Neck				2	
		3	Amber	Mold Blown	Cylindrical	Shoulder				1	
		1, 4, 5	Amber	Turn Paste	Cylindrical	Body				11	
		Sur-face	Amber	Mold Blown	Cylindrical/ Paneled	Body				1	1
		1, 3, 6	Amber	Mold Blown	Flake	Body				6	
		4, 5, 6	Amber	Unidentified	Flake	Body				31	
		2	Amber	Unidentified	Flake	Flake				5	
		2	Amber	Mold Blown	Flask	Base				1	1
		2, 4, 5	Amber	Mold Blown	Flask	Body				4	
		5	Amber	Mold Blown	Flask	Shoulder / Neck				1	
		6	Amber	Mold Blown	Flask, Flat Outset Narrow Edge	Body				1	
		6	Amber	Mold Blown	Flask, Flat Outset Narrow Edge	Body, Corner				1	1
		5	Amber	Mold Blown	Flask, Outset Panel	Body				1	
		5	Amber	Mold Blown	Square/ Rectangle	Body				1	1
		5	Amber	Mold Blown	Unidentified	Finish	Unid.			1	0
		4	Amber	Tooled	Unidentified	Finish	Min-eral			1	0
		1, 3, 4, 5, 6, 7	Amber	Unidentified	Unidentified					17	
		1	Ame-thyst	2 Piece Mold	Cylindrical	Body				1	

		3	Ame-thyst	3 Piece Mold	Cylindrical	Shoulder				1	1
		Sur-face 2, 3, 5, 6	Ame-thyst	Mold Blown	Cylindrical	Body				9	
		5	Ame-thyst	Mold Blown	Flask	Body				2	
		5	Ame-thyst	Mold Blown	Flask, Concave, Rounded Corners	Body, Corner				1	1
		3	Ame-thyst	Mold Blown	Square/ Rectangle	Body				3	1
		5	Ame-thyst	Mold Blown		Neck				1	
		6	Black	Mold Blown	Cylindrical	Base		7		1	1
		6	Black	Mold Blown	Cylindrical	Base, Body		8		0	1
		5, 6	Black	Mold Blown	Cylindrical	Body				2	
		4	Black	Mold Blown	Unidentified	Finish	Unid.			1	
		4	Black	Tooled		Finish	Min-eral			1	0
		3, 4, 5, 6	Brown	Mold Blown	Cylindrical	Body				18	
		5	Brown	Turn Paste		Shoulder				1	1
		1, 2	Brown	Mold Blown	Square/ Rectangle	Body				2	1
		6	Brown	Mold Blown	Unidentified	Neck				1	
		2	Dark Amber	Mold Blown	Cylindrical	Shoulder				1	1
		3	Dark Amber	Mold Blown	Square/ Rectangle	Body				2	1
		5	Dark Amber	Mold Blown	Cylindrical	Body				4	
		5	Dark Amber	Unidentified	Flake	Body				1	
		5	Dark Brown	Mold Blown	Cylindrical	Base, Body				1	1
		3, 4, 5, 6	Dark Brown	Mold Blown	Cylindrical	Body				10	
		6	Dark Brown	Turn Paste		Body				1	
		2, 4	Dark Brown	Mold Blown	Flask	Body				4	1
		5	Dark Brown	Mold Blown	Square/ Rectangle	Body				1	1
		5	Dark Olive	2 Or 3 Piece Mold	Applied Finish	Finish	Oil			1	0
		4	Dark Olive	2 Or 3 Piece Mold	Cylindrical	Neck				1	
		5	Dark Olive	3 Piece Mold	Cylindrical	Body				1	
		6	Dark Olive	4 Piece Mold	Cylindrical	Body, Shoulder				1	
		7	Dark Olive	5 Piece Mold	Cylindrical	Neck				1	

		5, 7	Dark Olive	6 Piece Mold	Cylindrical	Shoulder				2	
		5	Dark Olive	Mold Blown	Cylindrical	Base		7		2	1
		6	Dark Olive	Mold Blown	Cylindrical	Base				1	1
		5	Dark Olive	Mold Blown	Cylindrical	Base, Kick Up		7		1	1
		5	Dark Olive	Mold Blown	Cylindrical	Base, Kick Up		8		1	1
		1, 2, 3, 4, 5, 6	Dark Olive	Mold Blown	Cylindrical	Body				87	
		1, 3	Dark Olive	Mold Blown	Cylindrical	Neck				2	
		5	Dark Olive	Turn Paste	Cylindrical	Body				2	
		3, 5	Dark Olive	Mold Blown	Flake	Body				2	
		5	Dark Olive	Unidentified	Flake	Body				5	
		1	Dark Olive	Mold Blown	Flask	Body				1	1
		5, 7	Dark Olive	Mold Blown	Flask	Body			Em-bossed	3	
		3	Dark Olive	Mold Blown	Square/ Rectangle	Body				1	1
		4	Dark Olive	Mold Blown	Torpedo Bottle	Base		3		1	1
		4	Dark Olive	Applied/ Tooled	Unidentified	Finish	Min-eral			1	
		5	Dark Olive	Mold Blown	Unidentified	Neck				1	
		5	Dark Olive	Mold Blown	Wine/ Champagne Bottle	Base		8		1	0
		4	Dark Olive	Mold Blown	Wine/ Champagne Bottle	Body				8	
		Sur-face, 5	Dark Olive	Mold Blown	Wine/ Champagne Bottle	Neck				2	
		4	Dark Olive	Turn Paste	Wine/ Champagne Bottle	Body				2	
		2, 4, 6	Dark Olive	Unidentified	Unidentified					5	
		5	Dark Olive Amber	Mold Blown	Cylindrical	Body				1	1
		2, 4, 5, 6	Dark Olive Green	Mold Blown	Cylindrical	Body				20	
		5	Dark Olive Green	Mold Blown	Cylindrical	Shoulder				1	
		6	Dark Olive Green	Mold Blown	Cylindrical	Neck, Shoulder				1	

		6	Dark Olive Green	Mold Blown	Flake	Body				6	
		6	Dark Olive Green	Mold Blown	Unidentified	Neck, Finish				1	
		4	Dark Olive Green	3 Piece Mold	Wine/ Champagne Bottle	Body				1	1
		5	Dark Olive Yellow	Turn Paste	Cylindrical	Body				3	1
		Sur-face, 1, 2, 3, 4, 5, 6	Eme-rald Green	Mold Blown	Cylindrical	Body				17	
		1, 2, 5, 6	Eme-rald Green	Turn Paste	Cylindrical	Body				12	1
		3, 5	Eme-rald Green	Mold Blown	Flake	Body				5	
		4, 5	Eme-rald Green	Unidentified	Flake	Body				6	
		4	Eme-rald Green	Unidentified	Unidentified	Uniden-tified				2	
		2	Light Olive Green	Mold Blown	Flask	Body				2	1
		3, 4, 5	Light Olive Green	Mold Blown	Cylindrical	Body				30	
		3, 4	Light Olive Green	Turn Paste	Cylindrical	Body				7	
		5	Light Olive Green	Unidentified	Flake	Body				7	
		6	Light Olive Green	Mold Blown	Wine/ Champagne Bottle	Base, Kick Up				1	1
		5	Light Olive Green	Mold Blown	Wine/ Champagne Bottle	Neck				1	
		3	Light Olive Green	Turn Paste	Wine/ Champagne Bottle	Body				1	
		3, 6	Light Amber	Unidentified	Flake	Body				4	1
		1, 3, 4, 5, 6	Light Green	Mold Blown	Cylindrical	Body				64	
		5	Light Green	Mold Blown	Cylindrical	Neck, Shoulder				1	
		5, 6	Light Green	Turn Paste	Cylindrical	Body				16	
		5	Light Green	Mold Blown	Flake	Body				1	

		5, 6	Light Green	Unidentified	Flake	Body				33	
		2	Light Green	Unidentified	Flake	Flake				2	
		6	Light Green	Mold Blown	Flask	Body				7	1
		6	Light Green	Applied/Tooled	Unidentified	Finish	Champagne			1	0
		6	Light Green	Mold Blown	Unidentified	Neck				2	
		4	Light Green	Turn Paste	Wine/ Champagne/ Oil Bottle	Base		9		3	1
		4, 5, 6	Light Green	Unidentified	Unidentified					35	
		5	Light Natural Blue	Molded	Applied/ Tooled Finish	Finish	Mineral			1	
		5	Light Natural Blue	2 Or 3 Piece Mold	Cylindrical	Body				2	
		1	Light Natural Blue	2 Piece Mold	Cylindrical	Body				1	
		2	Light Natural Blue	Applied	Cylindrical	Finish	Bead			1	0
		1, 2, 3, 4, 5, 6	Light Natural Blue	Mold Blown	Cylindrical	Body				63	
		5	Light Natural Blue	Mold Blown	Cylindrical	Neck				1	
		1	Light Natural Blue	Molded	Cylindrical	Body				1	
		3, 4	Light Natural Blue	Mold Blown	Flake	Body				5	
		3, 4, 5, 7	Light Natural Blue	Unidentified	Flake	Body				7	
		2	Light Natural Blue	Unidentified	Flake	Flake				2	
		5	Light Natural Blue	2 Piece Mold	Flask	Body				1	1
		Surface, 4, 5, 6	Light Natural Blue	Mold Blown	Flask	Body				15	
		5	Light Natural Blue	Mold Blown	Flask	Body, Corner				1	
		6	Light Natural Blue	Mold Blown	Flask	Body				1	

		3, 5	Light Natural Blue	Mold Blown	Square/ Rectangle	Body				10	
		5	Light Natural Blue	Mold Blown	Square/ Rectangle	Body, Corner				1	
		4	Light Natural Blue	3 Piece Mold	Square/ Rectangle, Chamfered Corners	Body, Corner				1	1
		3, 5, 6	Light Natural Blue	Mold Blown	Square/ Rectangle, Chamfered Corners	Body, Corner				11	
		5	Light Natural Blue	Mold Blown	Square/ Rectangle, Chamfered Corners, Inset Panel	Body, Corner				1	1
		4	Light Natural Blue	2 Piece Mold	Square/ Rectangle, Concave	Body			Em-bossed “FA”	1	1
		4	Light Natural Blue	3 Piece Mold	Square/ Rectangle, Concave	Body			Em-bossed "NA"	1	
		4	Light Natural Blue	Mold Blown	Square/ Rectangle, Concave	Body				1	
		4, 5	Light Natural Blue	Mold Blown	Square/ Rectangle, Concave, Chamfered Corners	Body, Corner				5	0
		6	Light Natural Blue	Mold Blown	Square/ Rectangle, Rounded Corners	Body, Corner				1	1
		3	Light Natural Blue	Mold Blown	Square/Rect angular	Body				5	
		5	Light Natural Blue	Applied/ Tooled	Unidentified	Finish	Patent			1	0
		4	Light Natural Blue	Mold Blown	Unidentified	Neck, Finish	Rolled			1	0
		5	Light Natural Blue	Unidentified	Unidentified	Finish				1	0
		4, 5, 6	Light Natural Blue	Unidentified	Unidentified					5	
		2, 3, 4, 5	Light Natural Blue Green	Mold Blown	Cylindrical	Body				18	1
		5	Light Natural Blue Green	Unidentified	Flake	Body				4	

		2	Light Natural Blue Green	Unidentified	Flake	Flake				1	
		5	Light Natural Blue Green	Mold Blown	Flask	Base				1	1
		1, 5	Light Natural Blue Green	Mold Blown	Flask	Body				4	
		1	Light Natural Blue Green	Mold Blown	Flask	Shoulder				1	
		5	Light Natural Blue Green	Mold Blown	Flask, Concave, Rounded Corners	Body				1	1
		Sur-face, 5	Light Natural Blue Green	Mold Blown	Peppersauce Square/ Rectangle, Concave, Concave Chamfered Corners	Body, Corner				2	0
		5, 6	Light Natural Blue Green	Mold Blown	Square/ Rectangle	Body				6	
		5	Light Natural Blue Green	Mold Blown	Square/ Rectangle	Body, Corner				1	
		3	Light Natural Blue Green	Mold Blown	Unidentified	Body				7	
		4	Light Natural Green	Mold Blown	Flake	Body				7	
		4	Light Natural Green	At Least 3 Piece Mold	Unidentified	Neck				1	1
		5	Light Olive	Mold Blown	Applied/ Tooled Finish	Finish	Min-eral			1	
		2	Light Olive	Mold Blown	Cylindrical	Base				1	
		5	Light Olive	Mold Blown	Cylindrical	Base				1	1
		5	Light Olive	Mold Blown	Cylindrical	Base, Body		8		1	1
		1, 2, 3, 4, 5, 6, 7	Light Olive	Mold Blown	Cylindrical	Body				153	
		2	Light Olive	Mold Blown	Cylindrical	Neck, Finish				1	0

		2, 4, 5, 6, WF	Light Olive	Turn Paste	Cylindrical	Body				29	
		2, 4, 6	Light Olive	Mold Blown	Flake	Body				35	
		4, 5, 6, 7	Light Olive	Unidentified	Flake	Body				51	
		2	Light Olive	Unidentified	Flake	Flake				8	
		4	Light Olive	Mold Blown	Flask	Body				10	1
		4	Light Olive	Applied/ Tooled	Unidentified	Finish	Oil			1	0
		4	Light Olive	Mold Blown	Unidentified	Finish	Packer			1	
		5	Light Olive	2 Or 3 Piece Mold	Wine/ Champagne Bottle	Body				1	1
		3	Light Olive	Mold Blown	Wine/ Champagne Bottle	Body				2	
		6	Light Olive	Mold Blown	Wine/ Champagne Bottle	Finish	Cham-pagne			1	0
		5	Light Olive	Mold Blown	Wine/ Champagne Bottle	Neck				1	
		Sur-face	Light Olive	Turn Paste	Wine/ Champagne Bottle	Body				1	
		1, 2, 3, 4, 5, 6	Light Olive	Unidentified	Unidentified					44	
		5	Light Olive Green	Mold Blown	Cylindrical	Base		6		1	1
		5	Light Olive Green	Mold Blown	Cylindrical	Base		8		1	1
		Sur-face, 2, 3, 4, 5, 6	Light Olive Green	Mold Blown	Cylindrical	Body				75	
		2	Light Olive Green	Mold Blown	Cylindrical	Neck				1	
		3	Light Olive Green	Turn Paste	Cylindrical	Base				1	
		2, 3, 5, 6	Light Olive Green	Turn Paste	Cylindrical	Body				7	
		2	Light Olive Green	Mold Blown	Flake	Body				1	
		5	Light Olive Green	Unidentified	Flake	Body				29	

		2	Light Olive Green	Unidentified	Flake	Flake				3	
		5	Light Olive Green	Unidentified	Unidentified	Body				30	
		3	Light Olive Green	Unidentified	Unidentified	Finish	Min-eral			1	0
		5	Light Olive Green	Mold Blown	Wine/ Champagne Bottle	Body				5	
		6	Light Olive Green	Turn Paste	Wine/ Champagne Bottle	Base		8		1	1
		6	Light Olive Green	Turn Paste	Wine/ Champagne Bottle	Body				4	
		1, 4	Light Olive Yellow	Mold Blown	Cylindrical	Body				7	
		5, 6	Light Olive Yellow	Turn Paste	Cylindrical	Body				6	1
		3, 4	Natural Blue	Mold Blown	Cylindrical	Body				7	1
		2	Natural Blue	Mold Blown	Flake	Body				6	
		4	Natural Blue	Mold Blown	Flask	Body				1	1
		2	Natural Blue	Mold Blown	Flask	Body, Corner				2	
		3	Natural Blue	Mold Blown	Square/ Rectangle, Concave, Chamfered Corners	Body				5	1
		3	Natural Blue	Mold Blown	Square/ Rectangle, Rounded Corners	Body				1	1
		4	Natural Blue Green	Mold Blown	Flask	Body				1	1
		2, 5	Natural Blue Green	Mold Blown	Square/ Rectangle	Body				2	
		4	Natural Blue Green	Mold Blown	Square/ Rectangle, Chamfered Corners	Body				1	1
		2	Natural Blue Green	Mold Blown	Square/ Rectangle, Concave, Chamfered Corners	Body, Corner				1	1
		Sur-face	Natural Blue Green	Unidentified	Unidentified	Finish	Collar ed Ring			1	

		1, 3, 5	Natural Blue Green	Unidentified	Unidentified	Body				2	
		3	Natural Green	Unidentified	Flake	Body				2	1
		5	Olive	3 Piece Mold	Cylindrical	Body				3	
		1	Olive	Mold Blown	Cylindrical	Base				1	
		6	Olive	Mold Blown	Cylindrical	Base		8		1	1
		Sur-face, 1, 2, 3, 4, 5, 6, 7	Olive	Mold Blown	Cylindrical	Body				190	
		3	Olive	Mold Blown	Cylindrical	Kick Up				1	0
		4	Olive	Mold Blown	Cylindrical	Neck				1	
		2	Olive	Mold Blown	Cylindrical	Neck, Finish	Packer			1	0
		1, 3, 5	Olive	Mold Blown	Cylindrical	Shoulder				4	
		5, 6	Olive	Mold Blown	Cylindrical	Shoulder /Neck				4	
		1, 3, 4, 5, 6	Olive	Turn Paste	Cylindrical	Body				23	1
		5	Olive	Turn Paste	Cylindrical	Shoulder /Neck				1	
		2, 4, 5	Olive	Mold Blown	Flake	Body				24	
		3, 4, 5, 6	Olive	Unidentified	Flake	Body				125	
		6	Olive	Mold Blown	Flask	Body				2	1
		WF	Olive	Mold Blown	Square/ Rectangle	Body				1	1
		4	Olive	Mold Blown	Square/ Rectangle	Neck				1	
		Sur-face	Olive	Mold Blown	Wine/ Champagne Bottle	Shoulder				3	
		5	Olive	Turn Paste	Wine/ Champagne Bottle	Body				20	
		5	Olive	Turn Paste	Wine/ Champagne Bottle	Shoulder /Neck				1	0
		1, 2, 3, 4, 5, 6	Olive	Unidentified	Unidentified					42	
		1, 3, 5	Olive Amber	Mold Blown	Cylindrical	Body				8	
		2	Olive Amber	Mold Blown	Cylindrical	Neck				1	
		Sur-face, 3	Olive Amber	Turn Paste	Cylindrical	Body				2	1
		2, 3	Olive Amber	Unidentified	Flake	Body				5	

		6	Olive Amber	Mold Blown	Unidentified	Neck				1	
		1, 2, 3, 4, 5, 6, 7	Olive Green	Mold Blown	Cylindrical	Body				41	
		3	Olive Green	Mold Blown	Cylindrical	Neck				1	
		5	Olive Green	Turn Paste		Base		8		1	1
		5	Olive Green	Mold Blown	Square/ Rectangle, Chamfered Corners	Body, Corner				1	1
		4	Olive Green	Mold Blown	Unidentified	Neck, Finish	Oil			1	
		5	Olive Green	Mold Blown	Unidentified	Shoulder				1	
		Sur-face, 5	Olive Green	Turn Paste	Wine/Cham pagne Bottle	Body				2	
		5	Olive Yellow	2 Or 3 Piece Mold	Cylindrical	Shoulder				1	
		4	Olive Yellow	3 Piece Mold	Cylindrical	Body				1	1
		3, 4, 5	Olive Yellow	Mold Blown	Cylindrical	Body				11	
		3, 4, 5, 6	Olive Yellow	Turn Paste	Cylindrical	Body				8	1
		3	Olive Yellow	Unidentified	Flake	Body				5	
		5	Olive Yellow	Mold Blown	Flask	Body				2	1
		5	Olive Yellow	Applied/ Tooled	Unidentified	Finish	Min-eral			1	
		5	Color-less	2 Piece Mold	Cylindrical	Body				2	
		1	Color-less	Mold Blown	Cylindrical	Base		7		1	1
		1, 2, 3, 4, 5, 6, 7	Color-less	Mold Blown	Cylindrical	Body				139	
		3	Color-less	Mold Blown	Cylindrical	Neck				2	
		Sur-face, 1	Color-less	Mold Blown	Cylindrical	Shoulder /Neck				2	
		5	Color-less	Turn Paste	Cylindrical	Body				1	
		5	Color-less	Mold Blown	Flake	Body				1	
		3, 4, 5, 7	Color-less	Unidentified	Flake	Body				72	
		2	Color-less	Unidentified	Flake	Flake				3	
		2	Color-less	At Least 3 Piece Mold	Flask	Shoulder				1	
		5	Color-less	Mold Blown	Flask	Base				1	1

		2, 3	Color-less	Mold Blown	Flask	Body				5	
		2, 5	Color-less	Mold Blown	Flask	Body, Corner				2	
		WF	Color-less	Turn Paste	Flask	Body				1	
		6	Color-less	At Least 3 Piece Mold	Flask, Flat Face	Body, Seam				1	1
		1	Color-less	Mold Blown	Kidney Flask	Body, Corner				1	1
		3	Color-less	Mold Blown	Paneled	Body				1	1
		2, 3, 4, 6	Color-less	Mold Blown	Square/ Rectangle	Body				14	
		6	Colo-rless	Mold Blown	Square/ Rectangle, Chamfered Corners	Body				1	
		5	Color-less	Mold Blown	Square/ Rectangle, Chamfered Corners	Body, Corner				2	1
		5	Color-less	Mold Blown	Square/ Rectangle, Concave, Chamfered Corners	Body				1	0
		4, 6	Color-less	Mold Blown	Unidentified	Body				2	
		5	Very Dark Brown	Turn Paste	Cylindrical	Body				1	1
		1	Very Dark Olive	Dip Molded	Cylindrical	Shoulder				1	1
		2, 6	Very Dark Olive	Mold Blown	Cylindrical	Body				14	
		1	Very Dark Olive	Mold Blown	Cylindrical	Neck				1	
		1	Very Dark Olive	Mold Blown	Flask	Body				1	1
		5	Very Dark Olive	3 Piece Mold	Wine/ Oil Bottle	Body, Seam				2	1
		5	Very Dark Olive	Mold Blown	Wine/ Oil Bottle	Body				20	
		6	Very Light Green	Mold Blown	Flake	Body				7	1
		5	Very Light Natural Blue	Molded	Applied/ Tooled Finish	Finish	Bead			1	0
		5	Very Light Natural Blue	Mold Blown	Cylindrical	Body				6	1

		4, 5	Very Light Natural Blue	Unidentified	Flake	Body				6	
		5	Very Light Natural Blue	2 Or 3 Piece Mold	Flask	Body				1	1
		6	Very Light Natural Blue	Mold Blown	Flask	Body				6	
		5	Very Light Natural Blue	Mold Blown	Flask	Neck, Shoulder				1	
		2, 5	Very Light Natural Blue	Mold Blown	Square/ Rectangle	Body				6	
		6	Very Light Natural Blue	Mold Blown	Square/ Rectangle, Chamfered Corners	Body, Corner				1	1
		5	Very Light Natural Blue	Mold Blown	Square/ Rectangle, Concave, Chamfered Corners	Body, Corner				1	0
		6	Very Light Natural Blue	Applied/ Tooled	Unidentified	Finish	Bead			1	
		6	Very Light Natural Blue	2 Piece Mold	Unidentified Concave	Body, Corner			Em-bossed "…D …"	1	
		3, 4, 5	Very Light Natural Blue Green	Mold Blown	Cylindrical	Body				3	1
		4	Very Light Natural Blue Green	Mold Blown	Flask	Body				2	1
		3, 4	Very Light Olive	Mold Blown	Cylindrical	Body				23	1
		4	Very Light Olive	Unidentified	Flake	Body				4	
		2	Very Light Olive	Unidentified	Flake	Flake				3	
									Total	**2270**	**85**

Table 5.77 Locus B, Unit 109 (Interior): Beverage Storage, Ceramic

Locus	Unit	Context	Type	Frag Type	Form	Rim Diam (CM)	Rim Thickness (CM)	Rim Description	Base Diam	Base Thickness	NISP	MNI
B	109	1, 2, 3, 4, 5, 6, 7	BGSW	Body	Hollow						66	
		4	BGSW	Base	Liquor Bottle				8	0.37	1	1
		4	BGSW	Rim	Liquor Bottle	6	0.35	Flared Outward, Narrow, Sloped Exterior	N/A		1	1
		5	BGSW	Base	Bottle				10	0.4	1	1
		5	BGSW	Body	Bottle						3	
		5	BGSW	Neck	Bottle						1	
		5, 6	BGSW	Unid.	Unid.						2	
										Total	**75**	**3**

Table 5.78 Locus B, Unit 109 (Interior): Service/Tableware, Ceramic

Locus	Unit	Context	Type	Form	Decoration	Rim Diam (CM)	Rim Thickness (CM)	Base Diam	Manuf.	NISP	MNV
B	109	5	Creamware	Flat Ware	Undecorated					1	1
		Surface	Hotel Ware	Salad Plate	Undecorated			8		1	1
		1	Hotel Ware	Mug	Undecorated	8	0.7			1	1
		1	Hotel Ware	Luncheon Plate	Plain	22	0.45			1	
		2	Hotel Ware	Flat Ware	Undecorated	22	0.5			1	
		2	Hotel Ware	Flat Ware	Undecorated	20	0.43			1	
		2	Hotel Ware	Mug	Undecorated	10	0.7			1	1
		3	Hotel Ware	Mug	Undecorated	6	0.6			1	1
		3	Hotel Ware	Plate	Plain			14		1	1
		3	Hotel Ware	Sugar Bowl	Undecorated			8		1	1
		3, 4, 5, 6	Hotel Ware	Hollow	Molded					11	
		5	Hotel Ware	Flat Ware	Undecorated					4	
		5	Hotel Ware	Mug	Plain					1	
		5	Hotel Ware	Luncheon Plate	Plain	22	0.45			1	
		6	Hotel Ware	Plate	Plain			12		1	1
		6	Hotel Ware	Plate	Undecorated			14		1	1
		WF	Hotel Ware	Teacup	Undecorated					1	1
		Surface	Ironstone	Bowl	Plain	11				1	

		1, 2, 4	Ironstone	Bowl						4	
		2	Ironstone	Bowl	Plain					1	
		3, 5	Ironstone	Bowl	Undecorated			6		2	
		4	Ironstone	Bowl		11	0.3			1	1
		5	Ironstone	Bowl, Ped-estalled	Undecorated			14		1	1
		5	Ironstone	Bowl	Undecorated					1	
		5	Ironstone	Bowl	Undecorated	12	0.45			1	
		5	Ironstone	Bowl		18	0.5			1	1
		5	Ironstone	Bowl	Undecorated	12	0.35			1	1
		5	Ironstone	Bowl		12	0.35			1	
		5	Ironstone	Bowl	Plain			5.5		1	
		6	Ironstone	Cup	Undecorated			5		1	
		6	Ironstone	Cup	Undecorated	4.5	0.25			1	1
		5	Ironstone	Platter	Undecorated					1	1
		5	Ironstone	Vege-table Dish	Molded					1	1
		1	Ironstone	Flat Ware	Undecorated				Illegible	1	1
		1, 2, 4, 5, 6	Ironstone	Flat Ware	Undecorated					43	
		2	Ironstone	Flat Ware	Undecorated	22	0.5			1	1
		5	Ironstone	Flat Ware	Undecorated				Uniden-tified	1	1
		Sur-face, 3, 4, 5, 6, 7	Ironstone	Hollow	Undecorated					62	
		1	Ironstone	Hollow	Undecorated					3	
		3	Ironstone	Hollow	Undecorated				Thomas Hughes	1	
		3	Ironstone	Hollow	Undecorated				Uniden-tifiable	1	
		3	Ironstone	Hollow	Undecorated	5	NA			1	
		4	Ironstone	Hollow	Undecorated				Uniden-tified	1	
		4	Ironstone	Hollow	Undecorated				Uniden-tified	1	
		4	Ironstone	Hollow	Undecorated				Henry Burgess	1	
		5	Ironstone	Hollow	Undecorated				Meakin	1	
		5	Ironstone	Hollow	Undecorated				Uniden-tified	1	
		5	Ironstone	Hollow	Undecorated				John Mad-dock & Sons	1	
		5	Ironstone	Hollow	Undecorated				Edward Clarke	1	
		5	Ironstone	Hollow	Undecorated				Uniden-tified	1	
		6	Ironstone	Hollow	Molded					2	
		2	Ironstone	Mug	Undecorated	8	0.27			1	1

		2	Ironstone	Mug	Undecorated	8	0.2			1	1
		3	Ironstone	Mug	Molded			6		1	
		3	Ironstone	Mug	Undecorated	8	0.6			1	1
		4	Ironstone	Mug	Undecorated			10		1	
		4	Ironstone	Mug	Plain	10	0.6			1	1
		5	Ironstone	Mug	Undecorated			8		1	
		5	Ironstone	Bowl	Undecorated					1	
		5	Ironstone	Mug	Plain	9	0.8			2	1
		5	Ironstone	Mug	Plain	9	0.8			1	
		5	Ironstone	Mug	Plain	10	0.35			1	1
		5	Ironstone	Mug	Plain	9	0.6			1	1
		5	Ironstone	Mug	Plain	10	0.7			1	1
		5	Ironstone	Mug	Plain	9	0.75			2	1
		5	Ironstone	Mug	Plain	9	0.65			1	1
		5	Ironstone	Mug	Plain	9	0.3			1	1
		5	Ironstone	Mug	Plain					1	
		5	Ironstone	Mug	Undecorated	8	0.35			1	1
		5	Ironstone	Mug	Undecorated	10	0.35			2	1
		5	Ironstone	Mug	Molded			6		1	
		6	Ironstone	Mug	Molded Base			5.5		1	
		6	Ironstone	Mug/ Cup	Undecorated	5.5				1	1
		1, 5, 6	Ironstone	Pitcher	Molded					3	1
		5	Ironstone	Plate	Undecorated			12		1	
		6	Ironstone	Plate	Plain			14		1	
		5	Ironstone	Bread Plate	Undecorated	11	0.35			1	1
		4	Ironstone	Buffet Plate	Plain	28	0.65			1	1
		4	Ironstone	Buffet Plate	Plain	28	0.75			1	1
		5	Ironstone	Buffet Plate	Undecorated	28	0.55			1	1
		5	Ironstone	Buffet Plate	Undecorated	28	0.6			1	1
		4	Ironstone	Dinner Plate	Plain	26	0.65			1	1
		1	Ironstone	Dinner Plate	Undecorated	26	0.5			1	1
		2	Ironstone	Dinner Plate	Undecorated	26	0.75			1	1
		4	Ironstone	Dinner Plate	Undecorated		0.5			1	
		5	Ironstone	Dinner Plate	Undecorated	26	0.6			1	1
		5	Ironstone	Dinner Plate	Undecorated	26	0.4			1	1
		5	Ironstone	Dinner Plate	Undecorated	26	0.4			1	1
		5	Ironstone	Dinner Plate	Undecorated		0.55			1	1
		6	Ironstone	Dinner Plate	Undecorated	26	0.55			1	1
		6	Ironstone	Lun-cheon Plate	Plain	24	0.65			1	1

		2	Ironstone	Luncheon Plate	Undecorated		0.5			1	1
		2	Ironstone	Luncheon Plate	Undecorated	22	0.6			1	1
		5	Ironstone	Luncheon Plate	Plain	24	0.45			1	1
		5	Ironstone	Luncheon Plate	Undecorated	24	0.5			1	1
		6	Ironstone	Luncheon Plate	Undecorated	22	0.45			1	1
		6	Ironstone	Luncheon Plate	Undecorated	22	0.4			1	1
		4	Ironstone	Salad Plate	Undecorated	22	0.4			1	
		5	Ironstone	Salad Plate	Undecorated	20	0.35			1	1
		5	Ironstone	Salad Plate	Undecorated	18	0.35			1	1
		5	Ironstone	Salad Plate	Undecorated	16	0.25			1	1
		3	Ironstone	Teacup	Plain			5		1	1
		3	Ironstone	Teacup	Undecorated	10	0.25			2	
		4	Ironstone	Teacup	Undecorated			6		1	1
		3, 4, 5	Ironstone	Unidentified	Undecorated					38	
		5	Whiteware (Blued)	Bowl	Undecorated			10		1	1
		5	Whiteware (Blued)	Bowl	Undecorated			14		1	1
		5	Whiteware (Blued)	Bowl	Undecorated	16	0.5			1	
		5	Whiteware (Blued)	Bowl	Undecorated			6		1	1
		5	Whiteware (Blued)	Bowl	Undecorated			14		1	1
		5	Whiteware (Blued)	Bowl	Undecorated			10		1	1
		5	Whiteware (Blued)	Bowl	Undecorated			6		1	1
		5	Whiteware (Blued)	Bowl	Undecorated			5		1	1
		2	Whiteware (Blued)	Bowl	Undecorated					2	
		6	Whiteware (Blued)	Bowl	Molded					1	
		5	Whiteware (Blued)	Bowl	Plain	20	0.55			2	
		Surface	Whiteware (Blued)	Bowl	Undecorated	14				1	
		Surface	Whiteware (Blued)	Bowl	Undecorated	20				1	
		5	Whiteware (Blued)	Bowl	Undecorated	14	0.28			1	

		6	Whiteware (Blued)	Bowl	Undecorated	11	0.3			1	
		6	Whiteware (Blued)	Bowl	Undecorated	9	0.8			1	
		3	Whiteware (Blued)	Cup	Undecorated	10	0.25			1	
		5	Whiteware (Blued)	Cup	Plain	9	0.4			1	1
		5	Whiteware (Blued)	Cup	Undecorated	10	0.32			1	1
		5	Whiteware (Blued)	Cup	Undecorated	9	0.35			1	1
		5	Whiteware (Blued)	Cup	Plain	10	0.3			1	1
		6	Whiteware (Blued)	Cup	Undecorated	9	0.4			1	
		6	Whiteware (Blued)	Cup	Undecorated	9	0.25			1	1
		2, 3, 4, 5, 6	Whiteware (Blued)	Flat Ware	Undecorated				Uniden-tifiable	226	
		5	Whiteware (Blued)	Flat Ware	Undecorated			18		1	
		5	Whiteware (Blued)	Flat Ware	Undecorated			12		1	
		5	Whiteware (Blued)	Flat Ware	Undecorated					1	
		5	Whiteware (Blued)	Flat Ware	Undecorated			14		1	
		5	Whiteware (Blued)	Flat Ware	Undecorated			16		1	
		5	Whiteware (Blued)	Flat Ware	Undecorated			12		1	
		Sur-face	Whiteware (Blued)	Uniden-tifiable	Undecorated				T&R Boote	1	
		Sur-face, 5	Whiteware (Blued)	Uniden-tifiable	Undecorated				Uniden-tified	4	
		1, 3, 4, 5, 6, 7, WF	Whiteware (Blued)	Hollow	Undecorated					316	
		5	Whiteware (Blued)	Hollow	Undecorated			16		1	
		5	Whiteware (Blued)	Hollow	Undecorated			8		1	
		5	Whiteware (Blued)	Hollow	Undecorated			12		1	
		5	Whiteware (Blued)	Hollow	Molded					6	
		5	Whiteware (Blued)	Hollow	Scalloped					1	
		5	Whiteware (Blued)	Hollow	Undecorated	24	0.6			1	1
		1, 2	Whiteware (Blued)	Mug	Undecorated					4	
		4	Whiteware (Blued)	Mug	Undecorated	10	0.85			1	1
		5	Whiteware (Blued)	Mug	Plain			6		1	

		5	Whiteware (Blued)	Mug	Undecorated			6		1	
		5	Whiteware (Blued)	Mug	Plain	10	0.4			1	1
		5	Whiteware (Blued)	Mug	Plain	10	0.4			1	
		5	Whiteware (Blued)	Mug	Plain	10	0.35			1	1
		5	Whiteware (Blued)	Mug	Plain	10	0.85			1	1
		5	Whiteware (Blued)	Mug	Undecorated	10	0.3			1	
		5	Whiteware (Blued)	Mug	Undecorated	10	0.65			1	1
		5	Whiteware (Blued)	Mug/ Stein	Undecorated	12	0.55			1	1
		6	Whiteware (Blued)	Mug	Undecorated					1	
		6	Whiteware (Blued)	Mug/ Bowl	Plain					1	
		5	Whiteware (Blued)	Pitcher	Undecorated					1	
		5	Whiteware (Blued)	Pitcher	Molded	9	0.35			1	1
		5	Whiteware (Blued)	Pitcher	Molded	9	0.4			1	
		5	Whiteware (Blued)	Pitcher	Molded					1	1
		5, 6	Whiteware (Blued)	Pitcher	Undecorated					3	
		Sur-face	Whiteware (Blued)	Plate	Undecorated			14		1	
		Sur-face	Whiteware (Blued)	Plate	Undecorated			16		1	
		Sur-face	Whiteware (Blued)	Uniden-tifiable	Undecorated			14		1	
		Sur-face	Whiteware (Blued)	Plate	Undecorated			20		1	
		Sur-face	Whiteware (Blued)	Plate	Undecorated					1	
		1	Whiteware (Blued)	Plate	Undecorated					2	
		1	Whiteware (Blued)	Dinner Plate	Undecorated	26	0.33			1	
		2	Whiteware (Blued)	Plate	Undecorated			16		1	
		2	Whiteware (Blued)	Plate	Undecorated				Uniden-tified	1	
		2	Whiteware (Blued)	Plate	Undecorated					1	
		2	Whiteware (Blued)	Plate	Undecorated					1	
		2	Whiteware (Blued)	Plate	Undecorated					1	
		2	Whiteware (Blued)	Buffet Plate	Plain	28	0.8			1	1
		2	Whiteware (Blued)	Dinner Plate	Undecorated		0.78			1	1
		2	Whiteware (Blued)	Dinner Plate	Undecorated	26	0.4			1	

		2	Whiteware (Blued)	Plate	Undecorated	26	0.45			1	
		2	Whiteware (Blued)	Salad Plate	Molded	18	0.37			1	1
		2	Whiteware (Blued)	Salad Plate	Undecorated	12	0.4			1	1
		2	Whiteware (Blued)	Salad Plate	Undecorated	16	0.57			1	1
		3	Whiteware (Blued)	Plate	Undecorated			12		1	
		3	Whiteware (Blued)	Plate	Undecorated					1	
		3	Whiteware (Blued)	Plate	Molded			10		1	
		3	Whiteware (Blued)	Buffet Plate	Undecorated	32	0.42			1	1
		3	Whiteware (Blued)	Dinner Plate	Plain	26	0.65			1	1
		3	Whiteware (Blued)	Dinner Plate	Plain	28	0.54			1	
		3	Whiteware (Blued)	Salad Plate	Undecorated		0.54			1	1
		4	Whiteware (Blued)	Plate	Undecorated	26	0.45			1	
		4	Whiteware (Blued)	Plate	Undecorated			14		1	
		4	Whiteware (Blued)	Plate	Undecorated			10		1	
		4	Whiteware (Blued)	Plate	Undecorated			10		1	
		4	Whiteware (Blued)	Plate	Undecorated			14		1	
		4	Whiteware (Blued)	Plate	Undecorated			14		2	
		4	Whiteware (Blued)	Plate	Undecorated					1	
		4	Whiteware (Blued)	Dinner Plate	Plain		0.55			1	1
		4	Whiteware (Blued)	Lunche on Plate	Undecorated		0.55			1	1
		5	Whiteware (Blued)	Plate	Undecorated			14		1	
		5	Whiteware (Blued)	Plate	Undecorated					1	
		5	Whiteware (Blued)	Plate	Undecorated			10		1	
		5	Whiteware (Blued)	Plate	Undecorated			14		1	
		5	Whiteware (Blued)	Plate	Undecorated			22		1	
		5	Whiteware (Blued)	Plate	Undecorated			14		1	
		5	Whiteware (Blued)	Plate	Undecorated			16		1	
		5	Whiteware (Blued)	Plate	Undecorated					1	
		5	Whiteware (Blued)	Plate	Undecorated			20		1	
		5	Whiteware (Blued)	Plate	Undecorated	12	0.3		Uniden-tified	1	

		5	Whiteware (Blued)	Plate	Undecorated	14	0.15			1	
		5	Whiteware (Blued)	Plate	Undecorated			22		1	
		5	Whiteware (Blued)	Plate	Undecorated			12		1	
		5	Whiteware (Blued)	Plate	Undecorated			16		1	
		5	Whiteware (Blued)	Plate	Undecorated			18	Uniden- tified	1	
		5	Whiteware (Blued)	Plate	Undecorated			16		1	
		5	Whiteware (Blued)	Plate	Undecorated			14		2	
		5	Whiteware (Blued)	Buffet Plate	Plain	28	0.4			1	1
		5	Whiteware (Blued)	Buffet Plate	Plain	30	0.6			1	1
		5	Whiteware (Blued)	Buffet Plate	Plain	28	0.4			1	
		5	Whiteware (Blued)	Buffet Plate	Plain	30	0.8			1	1
		5	Whiteware (Blued)	Buffet Plate	Plain	28	0.8			1	
		5	Whiteware (Blued)	Buffet Plate	Undecorated	28	0.45			1	
		5	Whiteware (Blued)	Dinner Plate	Plain	26	0.45			1	1
		5	Whiteware (Blued)	Dinner Plate	Plain	26	0.35			1	1
		5	Whiteware (Blued)	Dinner Plate	Plain	26	0.5			1	
		5	Whiteware (Blued)	Dinner Plate	Plain	26	0.35			1	
		5	Whiteware (Blued)	Dinner Plate	Plain	26	0.6			1	
		5	Whiteware (Blued)	Dinner Plate	Plain	26	0.5			2	
		5	Whiteware (Blued)	Dinner Plate	Plain	26	0.55			1	1
		5	Whiteware (Blued)	Dinner Plate	Undecorated	26	0.5			1	
		5	Whiteware (Blued)	Dinner Plate	Undecorated	26	0.35			1	1
		5	Whiteware (Blued)	Dinner Plate	Undecorated		0.45			1	1
		5	Whiteware (Blued)	Dinner Plate	Undecorated	26	0.3			1	1
		5	Whiteware (Blued)	Lun- cheon Plate	Plain	24	0.45			1	1
		5	Whiteware (Blued)	Lun- cheon Plate	Plain	24	0.35			1	1
		5	Whiteware (Blued)	Lun- cheon Plate	Plain	24	0.6			1	1
		5	Whiteware (Blued)	Lun- cheon Plate	Plain		0.65			1	

		5	Whiteware (Blued)	Lun-cheon Plate	Plain	24	0.8			1	1
		5	Whiteware (Blued)	Lun-cheon Plate	Undecorated	22	0.45			1	1
		5	Whiteware (Blued)	Lun-cheon Plate	Undecorated		0.55			1	1
		5	Whiteware (Blued)	Lun-cheon Plate	Undecorated	24	0.3			1	
		5	Whiteware (Blued)	Lun-cheon Plate	Undecorated	24	0.35			1	
		5	Whiteware (Blued)	Salad Plate	Plain	22	0.55			1	1
		5	Whiteware (Blued)	Salad Plate	Plain	20	0.4			1	1
		5	Whiteware (Blued)	Salad Plate	Plain	22	0.4			1	1
		5	Whiteware (Blued)	Salad Plate	Plain	22	0.6			1	1
		5	Whiteware (Blued)	Salad Plate	Undecorated	20	0.4			1	1
		5	Whiteware (Blued)	Salad Plate	Undecorated	22	0.4			1	
		5	Whiteware (Blued)	Salad Plate	Undecorated		0.6			1	
		5	Whiteware (Blued)	Salad Plate	Undecorated	20	0.35			1	
		5	Whiteware (Blued)	Salad Plate	Undecorated	22	0.55			1	
		5	Whiteware (Blued)	Salad Plate	Undecorated	18	0.4			1	1
		5	Whiteware (Blued)	Salad Plate	Undecorated	20	0.45			1	
		5	Whiteware (Blued)	Salad Plate	Undecorated					1	1
		5	Whiteware (Blued)	Salad Plate	Undecorated	20	0.4			1	
		5	Whiteware (Blued)	Salad Plate	Undecorated		0.55			1	
		5	Whiteware (Blued)	Salad Plate	Undecorated	22	0.5			1	
		5	Whiteware (Blued)	Salad Plate	Undecorated	22	0.65			1	1
		6	Whiteware (Blued)	Plate	Plain			15	Joseph Clemen-tson	1	
		6	Whiteware (Blued)	Plate	Undecorated			14		1	
		6	Whiteware (Blued)	Plate	Undecorated					1	
		6	Whiteware (Blued)	Plate	Undecorated			12		1	
		6	Whiteware (Blued)	Salad Plate	Undecorated	22	0.6			1	
		6	Whiteware (Blued)	Plate	Plain			14		1	

		6	Whiteware (Blued)	Plate	Undecorated			14		1	
		6	Whiteware (Blued)	Plate	Undecorated				Unidentified	1	
		6	Whiteware (Blued)	Buffet Plate	Undecorated	28	0.65			1	1
		6	Whiteware (Blued)	Dinner Plate	Plain	26	0.55			1	
		6	Whiteware (Blued)	Dinner Plate	Undecorated		0.5			1	
		6	Whiteware (Blued)	Dinner Plate	Undecorated	26	0.55			1	
		6	Whiteware (Blued)	Luncheon Plate	Molded	24	0.4			1	1
		6	Whiteware (Blued)	Luncheon Plate	Plain	23	0.65			1	1
		6	Whiteware (Blued)	Luncheon Plate	Undecorated	24	0.65			1	
		6	Whiteware (Blued)	Luncheon Plate	Undecorated	24	0.3			1	
		6	Whiteware (Blued)	Salad Plate	Undecorated	20	0.3			1	1
		6	Whiteware (Blued)	Salad Plate	Undecorated	16	0.25			1	1
		6	Whiteware (Blued)	Salad Plate	Undecorated	18	0.5			1	1
		6	Whiteware (Blued)	Salad Plate	Undecorated	16	0.4			1	1
		6	Whiteware (Blued)	Plate	Plain			15	Unidentified	1	
		7	Whiteware (Blued)	Salad Plate	Undecorated	16	0.5			1	1
		5	Whiteware (Blued)	Plate/ Platter	Undecorated			20		1	
		5	Whiteware (Blued)	Saucer	Molded			9	Unidentified	1	1
		5	Whiteware (Blued)	Plate	Undecorated	12	0.15			1	1
		5	Whiteware (Blued)	Soup Plate	Undecorated			18		1	
		5	Whiteware (Blued)	Soup Plate	Undecorated			12		1	
		5	Whiteware (Blued)	Soup Plate	Undecorated			16		1	
		5	Whiteware (Blued)	Soup Plate	Plain			14		1	
		1	Whiteware (Blued)	Soup Plate	Undecorated			10		1	
		5	Whiteware (Blued)	Soup Plate	Plain	24	0.5			1	
		4	Porcelain	Bowl	Gilded	14	0.2	7		1	
		4	Porcelain	Bowl	Hand Painted					3	1
		5	Porcelain	Bowl	Gilded	15	0.25			2	1
		5	Porcelain	Bowl	Gilded	15	0.25			2	
		6	Porcelain	Bowl	Hand Painted					1	1

		6	Porcelain	Bowl	Hand Painted					1	
		5	Redware	Cooking Vessel	Undecorated	7	N/A			2	1
		2	Whiteware	Bowl	Molded			10		1	1
		2	Whiteware	Bowl	Undecorated			8		1	1
		2	Whiteware	Bowl	Undecorated			10		1	1
		2	Whiteware	Bowl	Undecorated					1	
		3	Whiteware	Bowl	Molded			10		1	1
		3	Whiteware	Bowl	Undecorated			10		1	
		3	Whiteware	Bowl	Undecorated	14	0.28			1	
		3	Whiteware	Bowl	Undecorated	24	0.6			1	
		3, 4, 5, 6	Whiteware	Body	Molded					7	
		5	Whiteware	Bowl	Molded			10		1	1
		5	Whiteware	Bowl	Molded			9		1	1
		5	Whiteware	Bowl	Molded			10		1	1
		5	Whiteware	Bowl	Molded			10		1	1
		5	Whiteware	Bowl	Undecorated			12		1	1
		5	Whiteware	Bowl	Undecorated	14	0.3			1	
		5	Whiteware	Cup	Undecorated	9	0.4			1	
		6	Whiteware	Cup	Undecorated	9	0.25			1	
		6	Whiteware	Cup	Undecorated	10	0.3			1	
		2, 3, 4, 5, 6	Whiteware	Flat Ware	Undecorated					46	
		4	Whiteware	Flat Ware	Undecorated				Unidentified	2	
		5	Whiteware	Flat Ware	Undecorated			12		1	
		5	Whiteware	Plate	Undecorated			12		1	
		4	Whiteware	Luncheon Plate	Undecorated	20	0.35			1	1
		1, 3, 4, 5, 6, WF	Whiteware	Hollow	Undecorated					94	
		Surface	Whiteware	Unidentifiable	Undecorated					9	
		1	Whiteware	Unidentifiable	Undecorated				A. J. Wilkinson	1	
		1	Whiteware	Unidentifiable	Undecorated				Unidentified	1	
		5	Whiteware	Unidentifiable	Undecorated				Henry Burgess	1	
		5	Whiteware	Unidentifiable	Undecorated				Unidentified	1	
		5	Whiteware	Unidentifiable	Undecorated				Unidentified	1	
		5	Whiteware	Unidentifiable	Undecorated				Unidentified	1	
		5	Whiteware	Unidentifiable	Undecorated				A.J. Wilkinson	1	
		1, 2, 5, 6	Whiteware	Unidentifiable	Undecorated				Unidentified	24	

		5	Whiteware	Hollow	Undecorated			14		1	
		3	Whiteware	Hollow	Undecorated	20	0.42			1	
		5	Whiteware	Hollow	Undecorated	16	0.55			1	
		5	Whiteware	Hollow	Undecorated					1	
		Surface	Whiteware	Mug	Undecorated	10				1	
		1	Whiteware	Mug	Undecorated	9	0.55			1	1
		2	Whiteware	Mug	Undecorated	8	0.82			1	1
		5	Whiteware	Mug	Undecorated	8	0.65			1	1
		5	Whiteware	Mug	Undecorated	10	0.6			1	1
		1	Whiteware	Pitcher	Plain	14	0.45			1	1
		5	Whiteware	Pitcher	Undecorated					2	
		5	Whiteware	Pitcher	Plain	11	0.55			1	1
		6	Whiteware	Pitcher/ Bowl	Undecorated	15	.6-.7			1	1
		1	Whiteware	Dinner Plate	Undecorated	26	0.7			1	1
		1	Whiteware	Salad Plate	Undecorated	18	0.68			1	1
		2	Whiteware	Buffet Plate	Plain	28	0.55			1	1
		2	Whiteware	Luncheon Plate	Plain	24	0.64			1	1
		2	Whiteware	Salad Plate	Undecorated	22	0.27			1	1
		2	Whiteware	Salad Plate	Undecorated	18	0.46			1	1
		2	Whiteware	Salad Plate	Undecorated	22	0.5			1	
		2	Whiteware	Salad Plate	Undecorated	22	0.44			1	1
		2	Whiteware	Plate	Undecorated			14		1	
		2, 6	Whiteware	Plate	Undecorated					2	
		3	Whiteware	Plate	Undecorated			12		1	
		3	Whiteware	Dinner Plate	Plain	28	0.52			1	1
		3	Whiteware	Salad Plate	Undecorated		0.33			1	1
		3	Whiteware	Salad Plate	Undecorated	16	0.6			1	1
		3	Whiteware	Salad Plate	Undecorated	20	0.55			1	
		4	Whiteware	Luncheon Plate	Plain					1	1
		4	Whiteware	Luncheon Plate	Plain	26	0.65			1	
		4	Whiteware	Luncheon Plate	Plain	24	0.65			1	
		4	Whiteware	Luncheon Plate	Undecorated	24	0.6			1	
		4	Whiteware	Salad Plate	Undecorated	20	0.57			1	1
		5	Whiteware	Buffet Plate	Undecorated	30	0.3			1	1

		5	Whiteware	Dinner Plate	Plain	26	0.7			1	1
		5	Whiteware	Dinner Plate	Undecorated	26	0.5			1	1
		5	Whiteware	Lun-cheon Plate	Plain	24	0.5			1	1
		5	Whiteware	Lun-cheon Plate	Plain	24	0.7			1	
		5	Whiteware	Lun-cheon Plate	Scalloped	22	0.5			1	1
		5	Whiteware	Lun-cheon Plate	Undecorated	24	0.55			1	
		5	Whiteware	Salad Plate	Scalloped	20	0.25			1	1
		6	Whiteware	Dinner Plate	Plain	26	0.55			1	1
		6	Whiteware	Saucer	Plain	16	0.45	8		1	1
		3	Whiteware	Soup Plate	Undecorated					1	
									Total	**1279**	**165**

Table 5.79 Locus B, Unit 109 (Interior): Clothing and Adornment

Locus	Unit	Context	Material	Object	Size	Description	MNI
B	109	1	Iron	Shoe Eyelet			1
		4	Iron	Pant Button	8 Lignes	Shank Style	1
		5	Iron	Jacket Button	12 Lignes	Shank Style	1
		5	Copper Alloy	Shoe/Gaiter Button	14 Lignes	Spherical Loop Shank	1
		6	Iron	Jacket Button	28 Lignes	Cast, Four Hole Sew Through	1
		6	Rubber	Pant Button	22 Lignes	Four Hole Sew Through	1
						Total	**6**

Table 5.80 Locus B, Unit 109 (Interior): Tools

Locus	Unit	Context	Material	Object	Description	NISP	MNI
B	109	3	Copper	Band		1	1
		1, 2, 3, 4, 5, 6	Iron	Bucket		21	1
		6	Iron	Buckel Strapping		1	1
		3	Iron	Stove Burner	Cast Iron Stove	1	1
		5	Iron	Stove	Cast Iron Stove Element	1	0
		6	Iron	Strapping		2	0
		1, 3, 4, 5, 6	Iron	Bailing Wire		16	1
		3	Nylon	Excavation String		1	1
					Total	**44**	**6**

Table 5.81 Locus B, Unit 109 (Interior): Faunal

Locus	Unit	Context	Taxa	Element	Modification	Description	NISP	MNI
B	109	3	*Bos taurus*	Pelvis	Punctured		1	1
		5	*Bos taurus*	Rib	Butchered	Implement Unidentified	1	
		5	*Bos taurus*	Rib	Butchered	Chopped (Cleaver)	1	
		6	*Bos taurus*	Rib	Burned	White And Gray	1	
		5	*Bos taurus*	Rib	Butchered	Both Sides. Hand Sawed. 2 Additional Partial Cuts	1	
		5	*Bos taurus*	Rib	Butchered	Hand Sawed	6	
		5	*Bos taurus*	Rib	Butchered	Implement Unidentified	1	
		5	*Bos taurus*	Rib			4	
		5	*Bos taurus*	Scapula			1	
		6	*Bos taurus*	Vertebrae			1	
		6	*Bos taurus*	Vertebrae	Butchered	Both Sides. Hand Sawed	1	
		6	*Bos taurus*	Vertebrae	Butchered	Implement Unidentified, Smooth Cut (Not Sawed), Plus Possible Disarticulation Knife Mark	1	
		SURFACE	*Bos taurus*	Vertebrae	Butchered	Implement Unidentified	1	
		5	*Sus scrofa domesticus*	Rib	Butchered	Hand Sawed	1	1
		3	*Sus scrofa domesticus*	Metapodial			1	1
		5	*Sus scrofa domesticus*	Pelvis	Butchered	Hand Sawed	1	
		5	*Sus scrofa domesticus*	Pelvis	Rodent Gnawing		1	
		5	*Sus scrofa domesticus*	Rib			1	
		5	*Sus scrofa domesticus*	Rib			1	
		5	*Sus scrofa domesticus*	Vertebrae	Butchered	Hand Sawed	1	
		5	Unidentified Artiodactyla	Cranial			3	0
		7	Unidentified Artiodactyla	Femur			1	
		2	Unidentified Artiodactyla	Flat Bone	Rodent Gnawing		3	
		3	Unidentified Artiodactyla	Flat Bone	Burned	Black	3	
		3	Unidentified Artiodactyla	Flat Bone	Butchered	Hand Sawed	4	
		5	Unidentified Artiodactyla	Flat Bone	Butchered	Implement Unidentified	1	
		5	Unidentified Artiodactyla	Flat Bone			50	

		1	Unidentified Artiodactyla	Long Bone	Burned	White	1	
		1	Unidentified Artiodactyla	Long Bone	Butchered	Knife Cuts, Four Parallel	1	
		2, 5	Unidentified Artiodactyla	Long Bone			8	
		3	Unidentified Artiodactyla	Long Bone	Burned	Black	2	
		5	Unidentified Artiodactyla	Long Bone	Burned	Black And Brown	1	
		5	Unidentified Artiodactyla	Long Bone	Burned	White And Gray	10	
		6	Unidentified Artiodactyla	Long Bone	Butchered	Chopped (Cleaver)	1	
		6	Unidentified Artiodactyla	Long Bone	Butchered	Knife Mark	1	
		6	Unidentified Artiodactyla	Flat Bone	Butchered	Hand Sawed, Parallel Knife Cut	1	
		5	Unidentified Artiodactyla	Uniden-tified	Butchered	Knife Mark Across Facet	1	
		6	Unidentified Artiodactyla	Uniden-tified			1	
		5, 6	Unidentified Artiodactyla	Vertebrae			2	
		5	Unidentified Artiodactyla	Vertebrae	Butchered	Implement Unidentified	2	
		5	Unidentified Artiodactyla	Vertebrae	Butchered	Knife Mark- 2	1	
		6	Unidentified Artiodactyla	Vertebrae			1	
		6	Unidentified Artiodactyla	Vertebrae			1	
		5	*Felis catus*	Mandible			1	1
		6	*Felis catus*	Vertebrae			1	
		5	*Lepus californicus*	Phalanx			1	1
		5	*Lepus californicus*	Vertebrae			1	
		5	*Lepus californicus*	Long Bone			1	
		5	*Muridae*	Mandible			1	1
		5	*Ondatrini ondatra*	Mandible			2	1
		1	*Neotoma fuscipes*	Mandible			2	2
		2	*Lepus californicus*	Femur			1	
		2	*Lepus californicus*	Mandible			1	
		5	*Lepus californicus*	Pelvis			1	
		5	*Lepus californicus*	Uniden-tified			1	
		6	*Lepus californicus*	Maxilla			2	
		6	*Otosper-mophilus Beecheyi*	Humerus			2	1

		6	*Otosper-mophilus Beecheyi*	Ulna			1	
		7	*Neotominae*	Femur			1	1
		4	*Thomomys bottae*	Mandible			1	1
		1, 2	Unidentified Rodentia	Mandible			2	0
		1, 5	Unidentified Rodentia	Cranial			2	
		5	Unidentified Rodentia	Rib			1	
		5	Unidentified Rodentia	Tooth			3	
		1, 2, 3, 4, 5	Unidentified Rodentia	Vertebrae			11	
		6	Unidentified Rodentia	Cranial-Occipital			3	
		6	Unidentified Rodentia	Maxilla			1	
		5	Unidentified Rodentia	Long Bone			4	
		5	*Mephitis mephitis*	Mandible			2	1
		5	*Sturnidae*	Humerus			1	1
		2	Small Bird	Coracoid			1	0
		3	Small Bird	Tibio-tarsus			1	
		4, 5, 7	Small Bird	Long Bone			8	
		5	Small Bird	Maxilla			1	
		5	Small Bird	Radius			1	
		6	Small Bird	Tibio-tarsus			1	
		3	Small/Med Bird	Long Bone			1	1
		5	Small/Med Bird	Long Bone			2	
		5	Small/Med Bird	Long Bone			1	
		5	Medium Bird	Coracoid			1	0
		6	Unidentified Bird	Uniden-tified			1	0
		2, 5	Small Fish	Cranial			5	1
		5	Small Fish	Vertebrae			2	
		5	Small/ Medium Fish	Vertebrae			1	0
		4	Medium Fish	Vertebrae			1	1
		5	Medium Fish	Cranial			3	
		6	Medium Fish	Cranial			3	
		1	Unidentified	Long Bone	Weathered		2	

		1, 4, 5, 6, 7	Unidentified	Flat Bone			118	
		2	Unidentified	Flat Bone	Burned	Lightly (Cream)	1	
		3	Unidentified	Cranial			1	0
		3, 6	Unidentified	Long Bone	Burned	White And Gray	27	
		3, 5, 6, WF	Unidentified	Long Bone			58	
		4, 5	Unidentified	Long Bone	Burned	White	14	
		4, 5	Unidentified	Long Bone	Burned	White And Black	18	
		5	Unidentified	Flat Bone	Burned	White	4	
		5	Unidentified	Flat Bone	Butchered	Knife Mark	1	
		5	Unidentified	Long Bone	Burned	Brown	1	
		5	Unidentified	Long Bone	Butchered	Hand Sawed	1	
		5	Unidentified	Long Bone	Butchered	Hand Sawed On End, Chop Mark Middle	1	
		5	Unidentified	Long Bone	Butchered	Implement Unidentified	2	
		5	Unidentified	Long Bone	Burned	White And Black	31	
		6	Unidentified	Long Bone	Burned, Butchered	White And Gray, Implement Unidentified	2	
		6	Unidentified	Long Bone	Butchered	Flake- Shatter	1	
		1, 2, 3, 4, 5, 6, 7	Unidentified	Uniden-tified	Burned	White	78	
		WF	Unidentified	Rib	Butchered	Knife Mark, 4 Parallel Marks	1	
		1, 2, 3, 4, 5, 6, 7	Unidentified	Uniden-tified	Unidentified		101	
		2, 3, 4	Land Snail	Shell			9	1
						Total	**685**	**18**

Table 5.82 Locus B, Unit 109 (Interior): Chronology

Locus	Unit	Context	Date Attribution (TPQ)	Artifact	Start Date	End Date	Context TPQ	Average Date	Average Context Date
B, Interior	109	Surface	N/A						N/A
	109	1	1896	A.J. Wilkinson Ceramic	1896	1920		1908	
	109	1	1880	Turn Paste Mold Bottle	1880	1915		1897.5	
	109	1	1865	Dip Molded Bottle	1865	1870		1867.5	
	109	1	1870	Amethyst (Manganese) Bottle	1870	1915		1892.5	
	109	1	1888	Barbed Wire- Rodgers Modern Flattened Strand	1888	1950	1896	1919	1897

	109	2	1880	Turn Paste Mold Bottle	1880	1915		1897.5	
	109	2	1810	Three-Piece Mold Bottle	1810	1890		1850	
	109	2	1830	Applied Finish	1830	1885		1857.5	
	109	2	1870	Amethyst (Manganese) Bottle	1870	1915	1880	1892.5	1874
	109	3	1891	Thomas Hughes Ceramic	1891	1894		1892.5	
	109	3	1880	Turn Paste Mold Bottle	1880	1915		1897.5	
	109	3	1870	Amethyst (Manganese) Bottle	1870	1915		1892.5	
	109	3	1870	Two-Piece Mold (Amethyst)	1870	1910	1891	1890	1893
	109	4	1864	Henry Burgess Ceramics	1864	1891		1877.5	
	109	4	1880	Turn Paste Mold Bottle	1880	1915		1897.5	
	109	4	1860	Two-Piece Mold Bottle	1860	1910		1885	
	109	4	1885	Tooled Finish	1885	1915		1900	
	109	4	1810	Three-Piece Mold Bottle	1810	1890		1850	
	109	4	1840	Black Glass Bottle	1840	1880		1860	
	109	4	1888	Barbed Wire-Rodgers Modern Flattened Strand	1888	1950	1888	1919	1884
	109	5	1864	Henry Burgess Ceramic	1864	1891		1877.5	
	109	5	1896	A.J. Wilkinson Ceramic	1896	1920		1908	
	109	5	1865	Edward Clarke Ceramic	1865	1877		1871	
	109	5	1875	Alfred Meakin Ceramic	1875	1883		1879	
	109	5	1880	John Maddock & Sons	1880	1896		1888	
	109	5	1880	Turn Paste Mold Bottle	1880	1915		1897.5	
	109	5	1860	Two-Piece Mold Bottle	1860	1910		1885	
	109	5	1810	Three-Piece Mold Bottle	1810	1890		1850	
	109	5	1885	Tooled Finish	1885	1915		1900	
	109	5	1870	Amethyst (Manganese) Bottle	1870	1915		1892.5	
	109	5	1858	Groove Ring/Was Seal Canning Jar	1858	1950		1904	
	109	5	1888	Barbed Wire-Rodgers Modern Flattened Strand	1888	1950	1896	1919	1889
	109	6	1850	Joseph Clementson Ceramic	1850	1864		1857	

	109	6	1880	Turn Paste Mold Bottle	1880	1915		1897.5	
	109	6	1860	Two-Piece Mold Bottle	1860	1910		1885	
	109	6	1810	Three-Piece Mold Bottle	1810	1890		1850	
	109	6	1885	Tooled Finish	1885	1915		1900	
	109	6	1840	Black Glass Bottle	1840	1880		1860	
	109	6	1837	Cast Iron Button	1837	1865		1851	
	109	6	1851	Hard-Rubber Button	1851	1950	1885	1900.5	1875
	109	7	1810	Three-Piece Mold Bottle	1810	1890	1810	1850	1850

Locus B, Unit 111

Table 5.83 Locus B, Unit 111 (Exterior): Nails

Locus	Unit	Context	Type	MNI
B	111	1	Machine Cut	1
		1	Unidentified	1
		1	Screw	1
		2	Wire	1
		2	Unidentified	1
		3	Machine Cut	3
		3	Wire	2
		3, 4, 5	Hand Forged-Tack	3
		4	Hand Forged	1
		4	Machine Cut	9
		4	Wire	1
		4	Unidentified	2
		5	Hand Forged	10
		5	Machine Cut	35
		5	Wire	6
		6	Machine Cut	5
		6	Unidentified	1

Table 5.84 Locus B, Unit 111 (Exterior): Architectural Remains (*Not all collected, only sample)

Locus	Unit	Context	Material	Object	Color	MNI
B	111	0, 1, 2, 3, 4, 5, 6	Glass	Window	Very Light Natural Blue Green	1
		2	Iron	Flat Bracket		1
		2	Iron	Door Latch		1

		3	Mortar/Plaster	Chunk		1*
		3	Glass	Window	Light Natural Blue Green	1
		3	Iron	Triangular Bar		1
		3	Iron	Barbed Wire		1
		3	Iron	Corner Bracket		1
		4	Iron	Cast Bar		1
		4	Iron	Bolt		1
		5	Iron	Door Hinge Bracket		1
		5	Iron	Tent Grommet		1
		5	Iron	Triangular Latch/Bracket		1
		5	Iron	Large Rivet		1
		5	Iron	Strapping		1
		6	Marble	Chunk		1
		WF	Iron	Concave Bar		1

Table 5.85 Locus B, Unit 111 (Exterior): Food Storage, Ceramic

Locus	Unit	Con-text	Type	Color	Frag Type	Form	Rim Diam (CM)	Rim Thick-ness (CM)	Rim Description	NISP	MNI
B	111	2	Whiteware (Blued)	Pearl	Rim	Cannister/ Jar	6	0.3	Flanged, Flared	1	1
		4	BGSW	Dark Brown	Body	Jar				1	1
		3	BGSW	Mottled Brown	Base	Jar				1	1

Table 5.86 Locus B, Unit 111 (Exterior): Beverage Storage, Glass

Locus	Unit	Con-text	Color	Manufacture Type	Form	Frag Type	Finish	Base Dia-meter	Marks	NISP	MNI
B	111	1, 2, 4, 5	Amber	Mold Blown		Body				18	
		3, 5	Amber	2 Piece Mold		Body			Em-boss. Illeg.	5	
		3, 4, 5	Amber	Unidentified		Body				18	
		4	Amber	2 Or 3 Piece Mold	Cylindrical	Body, Seam				2	
		5	Amber	Mold Blown	Flask	Body				1	1
		5	Amber	2 Or 3 Piece Mold	Ale Bottle	Neck				1	1
		1, 2, 3, 4, 5, 6	Amber	Unidentifiable	Flake	Body				12	
		1	Ame-thyst	Mold Blown	Applied/ Tooled Finish	Finish	Double Flat String Rim			1	0

		Surface	Amethyst	Mold Blown	Cylindrical	Base				1	1
		2, 4, 5	Amethyst	Mold Blown		Body				7	
		4, 5	Amethyst	Mold Blown		Body				3	
		5	Amethyst	2 Or 3 Piece Mold	Flask	Body				1	1
		5	Amethyst	Mold Blown	Square/ Rectangle	Body				1	
		5	Amethyst	2 Piece Mold	Square/ Rectangle, Chamfered Corners	Body, Seam				1	1
		3	Amethyst	2 Piece Mold	Square/ Rectangle, Rounded Corners	Body, Seam				1	1
		5	Amethyst	Mold Blown	Unidentified	Finish	Threaded			1	
		Surface	Brown	Mold Blown	Square/ Rectangle, Rounded Corners	Body, Corner				1	1
		Surface, 3, 5, 6	Brown	Mold Blown	Flask	Body				8	1
		1	Brown	Mold Blown	Square/ Rectangle	Body				3	
		2, 5	Brown	Turn Paste		Body				2	
		4	Brown	Mold Blown	Cylindrical	Body				2	
		4	Brown	Mold Blown						2	
		5	Brown	Turn Paste		Base		7.5		1	1
		Surface	Dark Olive	Mold Blown	Flake	Body				1	
		1, 4, 5, 6	Dark Olive	Mold Blown	Cylindrical	Body				8	1
		3	Dark Olive	Mold Blown	Flask	Body				3	1
		Surface	Dark Olive Green	Mold Blown	Wine/ Champagne Bottle	Base	9			1	1
		4	Dark Olive Green	Mold Blown	Cylindrical	Body				1	
		Surface	Emerald Green	Mold Blown	Flask, Flat Face	Body				1	1
		5	Light Amber	Mold Blown	Cylindrical	Body				1	1
		3, 4	Light Green	Mold Blown	Cylindrical	Body				6	1
		5	Light Green	Unidentified	Flake	Body				3	
		Surface	Light Na-	2 Piece Mold	Square/ Rectangle,	Body, Corner				1	1

			tural Blue		Rounded Corners						
		2	Light Natural Blue	Mold Blown		Body				1	
		2, 4, 5	Light Natural Blue	Mold Blown	Square/ Rectangle	Body				11	
		2, 3, 6	Light Natural Blue	Mold Blown	Flask	Body				6	1
		3	Light Natural Blue	Mold Blown	Square/ Rectangle, Chamfered Corners	Body				1	1
		4	Light Natural Blue	Mold Blown	Square/ Rectangle, Concave Chamfered Corners	Body, Corner				1	0
		4	Light Natural Blue	Applied/ Tooled	Unidentified	Finish	Bead			1	0
		5	Light Natural Blue	Mold Blown	Cylindrical	Body				1	
		6	Light Natural Blue	Mold Blown	Square/ Rectangle	Body				1	
		1, 4, 6	Light Natural Blue	Mold Blown	Unidentified	Unidentified				3	
		Surface, 3	Light Natural Blue Green	Turn Paste	Cylindrical	Body				4	1
		3	Light Natural Blue Green	Mold Blown	Flake	Body				1	
		3	Light Natural Blue Green	Mold Blown	Square/ Rectangle	Body				1	1
		5	Light Natural Blue Green	Mold Blown	Cylindrical	Body				2	
		Surface,	Light Olive	Mold Blown	Cylindrical	Body				33	

		3, 4, 5, 6									
		1, 3, 4, 5	Light Olive	Unidentified		Body				27	
		3	Light Olive	Turn Paste		Body				1	1
		1, 2, 3, 6	Light Olive	Unidentifiable	Flake	Uniden-tified				7	
		Sur-face	Light Olive Green	2 Or 3 Piece Mold	Cylindrical	Shoulder				1	1
		1	Light Olive Green	Mold Blown		Shoulder				1	
		1, 5	Light Olive Green	Turn Paste		Body				4	1
		6	Light Olive Green	Mold Blown		Body				1	
		Sur-face	Olive	Unidentified	Unidentified	Neck				1	
		Sur-face, 1, 2, 3, 4, 5, 6	Olive	Mold Blown	Cylindrical	Body				28	
		Sur-face, 1, 2, 3, 4, 5	Olive	Unidentified	Flake	Uniden-tified				18	
		Sur-face, 2, 4	Olive	Turn Paste		Body				10	1
		Sur-face	Olive Amber	Turn Paste		Body				1	1
		5	Olive Amber	Mold Blown	Cylindrical	Body				4	
		4, 5	Olive Amber	Unidentifiable	Flake	Body				4	
		Sur-face, 3, 4, 5	Olive Green	Mold Blown	Cylindrical	Body				5	
		2	Olive Green	Unidentified	Flake	Body				1	
		4	Olive Green	Mold Blown		Shoulder				1	
		5	Olive Green	Turn Paste		Body				2	1
		Sur-face	Color-less	2 Piece Mold		Body, Seam				1	1
		Sur-face	Color-less	2 Piece Mold		Base, Body				1	1
		Sur-face, 1, 2, 3, 6	Color-less	Mold Blown		Body				16	

		2, 5	Color-less	Unidentified	Flake	Body				7	
		3, 4, 5	Color-less	Mold Blown		Body				38	
		3, 5	Color-less	2 Piece Mold		Body, Seam				3	
		3	Color-less	Mold Blown	Square/ Rectangle	Body				4	
		4	Color-less	Mold Blown	Square/ Rectangle, Rounded Chamfered Corners	Body, Corner				1	1
		5	Color-less	2 or 3 Piece Mold	Flask	Neck, Finish	Double Ring			1	0
		5	Color-less	2 Piece Mold		Body				2	
		5	Color-less	Mold Blown	Flask, Flat Face	Shoulder				1	1
		5	Color-less	2 Piece Mold	Flask, Oval	Base				1	1
		5	Color-less	Mold Blown	Unidentified	Body				4	
		5	Color-less	Mold Blown	Square/ Rectangle, Rounded Corners	Body				1	1
		5	Color-less	2 Or 3 Piece Mold	Unidentified	Neck				2	
		5	Color-less	2 Or 3 Piece Mold	Cylindrical	Body				3	
		1, 5	Color-less	Mold Blown		Body				3	
		3	Very Dark Olive Green	Mold Blown	Cylindrical	Body				1	1
		Sur-face	Very Light Na-tural Blue	Unidentified		Body				1	
		3, 5	Very Light Na-tural Blue	Mold Blown		Body				3	
		3, 5	Very Light Na-tural Blue Green	Unidentified	Flake	Body				4	
		4	Very Light Na-tural Blue Green	Mold Blown	Flask	Body				16	1
		5	Very Light	Mold Blown	Cylindrical	Body				2	1

			Natural Blue								
		6	Very Light Natural Blue	Unidentifiable	Flake	Body				1	
		5	Very Light Natural Blue	2 Piece Mold	Square/ Rectangle	Body			Emboss "H"	1	1
		5	Very Light Natural Blue	Applied/ Tooled	Unidentified	Finish	Bead			1	0
									Total	**422**	**36**

Table 5.87 Locus B, Unit 111 (Exterior): Beverage Storage, Ceramic

Unit	Context	Type	Color	Frag Type	Form	Base Diameter	NISP	MNI
111	5	BGSW	Dark Blue, Light Brown	Base, Body	Liquor Bottle	8	1	1
	5, WF	BGSW	Black	Body	Bottle		3	1
	4, 5, 6, WF	BGSW	Brown, Speckled	Body	Bottle		10	1
	2, 5, WF	BGSW	Dark Blue	Body	Bottle		4	0
	1, 2, 3, 4, 5	BGSW	Dark Brown	Body	Bottle		8	1
	1, 3, 4, WF	BGSW	Dark Brown, Speckled	Body	Bottle		10	1
	1	BGSW	Mottled Brown	Body	Bottle		1	0
						Total	**37**	**5**

Table 5.88 Locus B, Unit 111 (Exterior): Service/Tablewares, Ceramic

Locus	Unit	Context	Type	Form	Decoration	Rim Diam (CM)	Rim Thickness (CM)	Base Diam	NISP	MNV
B	111	3	Hotelware	Flat	Undecorated				1	1
		Surface	Ironstone	Bowl	Molded Base			6	1	0
		Surface	Ironstone	Hollow	Undecorated			16	1	0
		2, 4, 5	Ironstone	Hollow	Undecorated				9	
		2	Ironstone	Pitcher	Molded				1	
		2	Ironstone	Salad Plate	Undecorated	21	0.45		1	1
		3, 4	Ironstone	Flat	Undecorated				6	0
		4	Ironstone	Mug/ Cup	Undecorated	11	0.35		1	1
		4	Ironstone	Salad Plate	Undecorated	18	0.4		1	1
		4, 5	Ironstone	Pitcher	Molded				2	

		5	Ironstone	Bowl	Plain	14	0.35		1	1
		5	Ironstone	Bowl	Undecorated	12	0.35		1	1
		5	Ironstone	Crock Lid	Molded	21	0.3	15	1	1
		5	Ironstone	Pitcher	Molded				6	1
		2, 4, 5	Ironstone	Unidentified	Undecorated				6	0
		Sur-face, 2, 3, 4, 5	Whiteware (Blued)	Hollow	Molded				33	
		Sur-face, 2, 4, 5	Whiteware (Blued)	Flat	Undecorated				6	
		2	Whiteware (Blued)	Bowl/ Soup Bowl	Undecorated			18	1	1
		3	Whiteware (Blued)	Mug	Molded				1	
		3	Whiteware (Blued)	Plate	Undecorated			18	1	
		3, 5	Whiteware (Blued)	Flat	Undecorated				2	0
		4	Whiteware (Blued)	Hollow	Undecorated			9	1	0
		4	Whiteware (Blued)	Dinner Plate	Plain	25	0.4		1	1
		4	Whiteware (Blued)	Dinner Plate	Plain	26	0.8		1	1
		4	Whiteware (Blued)	Luncheon Plate	Plain	22	0.4		1	1
		4	Whiteware (Blued)	Bowl	Undecorated			6	1	1
		5	Whiteware (Blued)	Mug	Molded	10	0.7		1	1
		5	Whiteware (Blued)	Dinner Plate	Undecorated	25	0.4	11	3	0
		Sur-face	Whiteware	Bowl	Undecorated	18	0.25		1	1
		Sur-face	Whiteware	Hollow	Undecorated				36	
		Sur-face, 2, 3, 4, 5	Whiteware	Hollow	Undecorated				1	
		1, 2, 3, 4	Whiteware	Flat	Undecorated				9	0
		2	Whiteware	Bowl	Undecorated	12	0.3		1	1
		3	Whiteware	Bowl	Undecorated				1	
		3	Whiteware	Hollow	Molded				1	0
		3	Whiteware	Salad Plate	Undecorated	14	0.45		1	
		4	Whiteware	Bowl	Molded			10	1	0
		4	Whiteware	Bowl	Plain	10	N/A		1	1
		4	Whiteware	Salad Plate	Plain	19	0.3		1	1
		5	Whiteware	Bowl	Plain			11	1	0

		5	Whiteware	Mug	Embossed	9	0.85	6	1	1
		5	Whiteware	Mug/ Cup	Undecorated				1	0
		5	Whiteware	Salad Plate	Molded	17	0.55		1	1
		1, 3	Whiteware	Unidentified	Undecorated				5	0
								Total	**155**	**20**

Table 5.89 Locus B, Unit 111 (Exterior): Clothing and Adornment

Locus	Unit	Context	Material	Object	Size	Description	MNI
B	111	3	Copper Alloy	Shoe Lace Hook			1
		5	Copper Alloy	Rivet		Levi's jeans rivet, denim attached	1
		5	Copper Alloy	Overall Button- "Boss of the Road"	11 Lignes	Shank Style	1
						Total	**3**

Table 5.90 Locus B, Unit 111 (Exterior): Faunal (whole unit)

Locus	Unit	Context	Taxa	Element	Modification	Description	NISP	MNI
B	111	5	*Bos taurus*	Carpal			1	1
		3	*Bos taurus*	Long Bone			2	
		3	*Bos taurus*	Rib	Butchered	Both Sides Chopped (Cleaver)	1	
		3	*Bos taurus*	Rib	Butchered	Implement Unidentified	1	
		4	*Bos taurus*	Vertebrae	Butchered	Implement Unidentified	1	
		4, 5, Bone Bed/5	*Bos taurus*	Rib	Butchered	Hand Sawed	5	
		5	*Bos taurus*	Rib	Butchered	Both Sides. Implement Unidentified. Knife Cut in Center	1	
		5	*Bos taurus*	Rib	Butchered	Hand Sawed	1	
		5	*Bos taurus*	Vertebrae	Butchered	Implement Unidentified	1	
		5	*Bos taurus*	Vertebrae			1	
		5	*Bos taurus*	Vertebrae	Butchered	Knife or Cleaver Marks (4+) On Underside Of Process	1	
		5	*Bos taurus*	Vertebrae	Butchered	Hand Sawed	2	
		5	*Bos taurus*	Vertebrae	Butchered	Hand Sawed (2 Cuts At Right Angle)	1	
		5	*Bos taurus*	Vertebrae	Butchered	Sawed, Lengthwise	1	
		5	*Bos taurus*	Vertebrae			1	
		5, Bone Bed /5	*Bos taurus*	Vertebrae			2	
		Bone Bed /5	*Bos taurus*	Patella			1	
		Bone Bed /5	*Bos taurus*	Rib	Arthritic		1	

		Bone Bed /5	*Bos taurus*	Rib	Butchered	Both Sides. Hand Sawed, Multiple Knife Cuts On Body	1	
		Bone Bed /5	*Bos taurus*	Rib	Butchered	Hand Sawed Both Sides, One Side Partial Cut, Plus Second Partial Cut	1	
		Bone Bed /5	*Bos taurus*	Rib	Butchered	Hand Sawed Both Sides, Kinfe Marks Both Sides, Scrape Marks	1	
		Bone Bed /5	*Bos taurus*	Rib	Butchered	Hand Sawed One Full Cut, 2 Partial Cuts	1	
		Bone Bed /5	*Bos taurus*	Rib	Butchered	Knife Cut Mark	1	
		Bone Bed /5	*Bos taurus*	Sacrum	Butchered	Chopped (Cleaver)	1	
		Bone Bed /5	*Bos taurus*	Scapula	Butchered	Hand Sawed	1	
		Bone Bed /5	*Bos taurus*	Ulna	Butchered	Hand Sawed	1	
		Bone Bed /5	*Bos taurus*	Vertebrae	Butchered	Implement Unidentified	1	
		Bone Bed /5	*Bos taurus*	Vertebrae			3	
		6	*Bos taurus*	Rib			1	
		4	*Felis catus*	Humerus			1	1
		5	*Didelphidae*	Femur	Butchered	Multiple Knife Marks	1	1
		5	*Didelphidae*	Femur			1	
		5	*Didelphidae*	Vertebrae			1	
		5	*Gallus gallus*	Coracoid			1	1
		6	*Gallus gallus*	Coracoid			1	
		Bone Bed /5	*Gallus gallus*	Carpometa-carpus			1	
		5	*Gallus gallus*	Rib			1	
		6	*Gallus gallus*	Ulna			3	
		2, 3	Land Snail	Shell			3	1
		6, Bone Bed /5	Med Bird (not chicken)	Long Bone			5	1
		4	*Muridae*	Tibia/ Fibula			1	
		4	*Muridae*	Ulna			1	
		6	*Muridae*	Pelvis			1	1
		3	*Mytilus califor-nianus*	Shell			2	1
		4	*Odocoileus*	Rib	Butchered	Hand Sawed, 2 Knife Marks	1	1
		5	*Odocoileus*	Rib			1	
		6	*Sciuridae*	Mandible			1	1

		5	*Ovis aries/ Capra hircus*	Carpal/ Tarsal	Burned	Black And Gray	1	1
		5	*Ovis aries/ Capra hircus*	Femur			1	
		5	*Ovis aries/ Capra hircus*	Rib			2	
		5	*Ovis aries/ Capra hircus*	Scapula	Butchered	Chopped (Cleaver)	1	
		5	*Ovis aries/ Capra hircus*	Ulna			1	
		Bone Bed /5	*Ovis aries/ Capra hircus*	Humerus	Butchered	Implement Unidentified	1	
		Bone Bed /5	*Ovis aries/ Capra hircus*	Radius			1	
		6	*Ovis aries/ Capra hircus*	Phalanx-Distal			1	
		6	*Ovis aries/ Capra hircus*	Phalanx-First			3	
		6	*Ovis aries/ Capra hircus*	Phalanx-Second			1	
		3, 4	Small Bird	Long Bone			2	
		5	Small Bird	Coracoid			1	1
		6	Small Bird	Long Bone			1	
		1	*Sus scrofa domestica*	Femur			1	
		3	*Sus scrofa domestica*	Femur	Butchered	Implement Unidentified	1	
		3	*Sus scrofa domestica*	Vertebrae	Butchered	Implement Unidentified	1	
		4	*Sus scrofa domestica*	Patella			1	
		5	*Sus scrofa domestica*	Femur			1	2
		5	*Sus scrofa domestica*	Femur	Butchered	3+ Knife Dislocation Mark	1	
		5	*Sus scrofa domestica*	Rib	Butchered	Hand Sawed Proximal End, Cleaver Chopped Distal End	1	
		5	*Sus scrofa domestica*	Tibia			1	
		Bone Bed /5	*Sus scrofa domestica*	Femur	Butchered	Hand Sawed, 1 Knife Mark	1	
		Bone Bed /5	*Sus scrofa domestica*	Humerus	Butchered	Chopped (Cleaver)	1	
		Bone Bed /5	*Sus scrofa domestica*	Humerus	Butchered	Shattered, Mutliple Knife And Scrape Marks	1	
		Bone Bed /5	*Sus scrofa domestica*	Humerus			3	

		Bone Bed /5	*Sus scrofa domestica*	Phalanx			2	
		Bone Bed /5	*Sus scrofa domestica*	Vertebrae	Butchered	Implement Unidentified	1	
		Bone Bed /5	*Sus scrofa domestica*	Vertebrae			1	
		Bone Bed /5	*Sus scrofa domestica*	Tibia	Butchered	Hand Sawed	1	
		Bone Bed /5, 6	*Sus scrofa domestica*	Phalanx			2	
		6	*Sus scrofa domestica*	Tooth-Central Incisor			1	
		1, 2, 3, 4	Unidentified	Long Bone	Burned	Black	13	
		2	Unidentified	Flat Bone			2	0
		2	Unidentified	Long Bone			1	
		1, 2, 3, 4, Bone Bed /5, 6	Unidentified	Unidentified			119	
		2, 3, 4, 5, 6	Unidentified	Unidentified	Burned	White	23	
		1, 3, 4, 5	Unidentified	Unidentified	Burned	Black And Gray	12	
		3	Unidentified	Unidentified	Butchered	Implement Unidentified, Burned White	2	
		3, 6	Unidentified	Unidentified	Burned	Black	8	
		3, 4, 5, Bone Bed /5	Unidentified	Unidentified			49	
		4	Unidentified	Rib	Butchered	Implement Unidentified	1	
		5	Unidentified	Long Bone	Butchered	Implement Unidentified, Burned White	1	
		2, 4, 5, 6	Unidentified	Long Bone			42	
		Bone Bed /5	Unidentified	Phalanx			1	
		Bone Bed /5	Unidentified	Rib			2	
		Bone Bed /5	Unidentified	Rib			1	
		Bone Bed /5	Unidentified	Unidentified	Butchered	Hand Sawed	2	
		Bone Bed /5	Unidentified	Unidentified	Butchered	Sawed	2	
		5, 6	Unidentified	Flat Bone			41	
		5, 6	Unidentified	Long Bone	Burned	White	7	
		6	Unidentified	Long Bone	Butchered	Implement Unidentified, Burned White	2	
		6	Unidentified	Long Bone			41	
		6	Unidentified	Unidentified	Burned	Black And Brown	1	
		5	Vole	Mandible			1	1
		4	Woodrat	Mandible			1	1

		3	Unidentified Marine Shell				1	0
		1	Unidentified Artiodactyla	Long Bone	Burned	Black And Brown	1	
		2	Unidentified Artiodactyla	Rib	Butchered	Hand Sawed, Multiple Partial Cuts	1	
		3	Unidentified Artiodactyla	Tooth			1	
		3, 5, 6, Bone Bed /5	Unidentified Artiodactyla	Rib			8	
		4	Unidentified Artiodactyla	Rib			1	
		5	Unidentified Artiodactyla	Carpal/ Tarsal			1	0
		5	Unidentified Artiodactyla	Long Bone	Burned	White	1	
		5	Unidentified Artiodactyla	Long Bone	Butchered	Both Sides. Hand Sawed	1	
		5	Unidentified Artiodactyla	Long Bone	Butchered	Shattered	1	
		5	Unidentified Artiodactyla	Rib	Butchered	Sawed	4	
		5	Unidentified Artiodactyla	Unidentified			1	
		5, 6	Unidentified Artiodactyla	Flat Bone			6	
		Bone Bed /5	Unidentified Artiodactyla	Flat Bone	Butchered	Hand Sawed	1	
		Bone Bed /5	Unidentified Artiodactyla	Flat Bone	Butchered	Chopped (Cleaver)	1	
		Bone Bed /5	Unidentified Artiodactyla	Rib	Butchered	Hand Sawed	2	
		Bone Bed /5	Unidentified Artiodactyla	Rib	Butchered	Hand Sawed, One Full Cut, 2 Partial Cuts	1	
		Bone Bed /5	Unidentified Artiodactyla	Rib	Butchered	Implement Unidentified	1	
		Bone Bed /5	Unidentified Artiodactyla	Rib	Butchered	Chopped (Cleaver)	1	
		Bone Bed /5	Unidentified Artiodactyla	Vertebrae	Butchered	Hand Sawed	1	
		Bone Bed /5	Unidentified Artiodactyla	Vertebrae	Butchered	Implement Unidentified	1	
		Bone Bed /5	Unidentified Artiodactyla	Vertebrae			3	
		Bone Bed /5, 6	Unidentified Artiodactyla	Vertebrae			10	
		6	Unidentified Artiodactyla	Carpal/ Tarsal			2	
		6	Unidentified Artiodactyla	Flat Bone	Butchered	Hand Sawed	1	
		6	Unidentified Artiodactyla	Long Bone	Butchered	Hand Sawed, Both Sides	1	
		6	Unidentified Artiodactyla	Phalanx- Distal			1	
		6	Unidentified Artiodactyla	Vertebrae			3	

		6	Unidentified Artiodactyla	Vertebrae- Caudal			2	
		6	Unidentified Artiodactyla	Vertebrae - Cervical	Butchered	Implement Unidentified	1	
		2	*Sylvilagus audubonii*	Tibia			1	
		4	*Sylvilagus audubonii*	Sacrum			1	1
		5	*Sylvilagus audubonii*	Scapula			1	
		5	Unidentified Pinniped	Flat Bone			1	1
		Bone Bed /5	Unidentified Pinniped	Long Bone	Butchered	2 Partial Cuts, Implement Unidentified	1	
		Bone Bed /5	Unidentified Pinniped	Long Bone	Butchered	Implement Unidentified	1	
		Bone Bed /5, 6	Unidentified Pinniped	Unidentified			8	
		3	Unidentified Rodentia	Phalanx	Burned	Gray	1	
		4	Unidentified Rodentia	Long Bone			1	
		4, 5, 6	Unidentified Rodentia	Cranial			6	0
		5, 6	Unidentified Rodentia	Vertebrae			2	
		6	Unidentified Rodentia	Femur			1	
		6	Unidentified Rodentia	Maxilla			1	
		6	Unidentified Rodentia	Pelvis			1	
		4, 6	Unidentified Rodentia	Teeth			6	
		5	Unidentified Small Carnivore (Cat/ Possum)	Cranial/ Parietal			2	0
		5	Unidentified Small Carnivore (Cat/ Possum)	Maxilla			1	
		5	*Lepus californicus*	Calcaneus			1	1
						Total	**577**	**19**

Table 5.91 Locus B, Unit 111 (Exterior): Faunal (Bone Bed)

Locus	Unit	Context	Taxa	Element	Bone Modifications	NISP	MNI
B	111	Bone Bed /5	*Bos taurus*	Patella		1	1
		Bone Bed /5	*Bos taurus*	Rib	Arthritic	1	
		Bone Bed /5	*Bos taurus*	Rib	Butchered Both Sides. Hand Sawed, Multiple Knife Cuts On Body	1	
		Bone Bed /5	*Bos taurus*	Rib	Butchered- Hand Sawed	2	

		Bone Bed /5	*Bos taurus*	Rib	Butchered- Hand Sawed Both Sides- One Side Partial Cut, Plus Second Partial Cut	1	
		Bone Bed /5	*Bos taurus*	Rib	Butchered- Hand Sawed Both Sides, Knife Marks Both Sides, Scrape Marks	1	
		Bone Bed /5	*Bos taurus*	Rib	Butchered- Hand Sawed- One Full Cut, 2 Partial Cuts	1	
		Bone Bed /5	*Bos taurus*	Rib	Butchered- Knife Cut Mark	1	
		Bone Bed /5	*Bos taurus*	Sacrum	Butchered- Chopped (Cleaver)	1	
		Bone Bed /5	*Bos taurus*	Scapula	Butchered- Hand Sawed	1	
		Bone Bed /5	*Bos taurus*	Ulna	Butchered- Hand Sawed	1	
		Bone Bed /5	*Bos taurus*	Vertebrae	Butchered- Implement Unidentified	1	
		Bone Bed /5	*Bos taurus*	Vertebrae		1	
		Bone Bed /5	*Bos taurus*	Vertebrae		3	
		Bone Bed /5	*Gallus gallus*	Carpo-metacarpus		1	1
		Bone Bed /5	Med Bird	Long Bone		1	1
		Bone Bed /5	*Ovis aries/ Capra hircus*	Humerus	Butchered- Implement Unidentified	1	1
		Bone Bed /5	*Ovis aries/ Capra hircus*	Radius		1	
		Bone Bed /5	*Sus scrofa domestica*	Femur	Butchered- Hand Sawed, 1 Knife Mark	1	1
		Bone Bed /5	*Sus scrofa domestica*	Humerus	Butchered- Chopped (Cleaver)	1	
		Bone Bed /5	*Sus scrofa domestica*	Humerus	Butchered- Shattered, Multiple Knife And Scrape Marks	1	
		Bone Bed /5	*Sus scrofa domestica*	Humerus		3	
		Bone Bed /5	*Sus scrofa domestica*	Phalanx		2	
		Bone Bed /5	*Sus scrofa domestica*	Phalanx		1	
		Bone Bed /5	*Sus scrofa domestica*	Tibia	Butchered- Hand Sawed	1	
		Bone Bed /5	*Sus scrofa domestica*	Vertebrae	Butchered- Implement Unidentified	1	
		Bone Bed /5	*Sus scrofa domestica*	Vertebrae		1	
		Bone Bed /5	Unidentified Pinniped/ Cetacean	Long Bone	Butchered- 2 Partial Cuts, Implement Unidentified	1	1
		Bone Bed /5	Unidentified Pinniped/ Cetacean	Long Bone	Butchered- Implement Unidentified	1	
		Bone Bed /5	Unidentified Pinniped/ Cetacean	Unidentified		7	
		Bone Bed /5	Unidentified Artiodactyla	Flat Bone	Butchered- Hand Sawed	1	
		Bone Bed /5	Unidentified Artiodactyla	Flat Bone	Butchered- Chopped (Cleaver)	1	

		Bone Bed /5	Unidentified Artiodactyla	Rib	Butchered- Hand Sawed	2	
		Bone Bed /5	Unidentified Artiodactyla	Rib	Butchered- Hand Sawed- One Full Cut, 2 Partial Cuts	1	
		Bone Bed /5	Unidentified Artiodactyla	Rib	Butchered- Implement Unidentified	1	
		Bone Bed /5	Unidentified Artiodactyla	Rib		4	
		Bone Bed /5	Unidentified Artiodactyla	Rib	Butchered- Chopped (Cleaver)	1	
		Bone Bed /5	Unidentified Artiodactyla	Vertebrae	Butchered- Hand Sawed	1	
		Bone Bed /5	Unidentified Artiodactyla	Vertebrae	Butchered- Implement Unidentified	1	
		Bone Bed /5	Unidentified Artiodactyla	Vertebrae		3	
		Bone Bed /5	Unidentified Artiodactyla	Vertebrae		4	
		Bone Bed /5	Unidentified	Phalanx		1	
		Bone Bed /5	Unidentified	Rib		2	
		Bone Bed /5	Unidentified	Rib		1	
		Bone Bed /5	Unidentified	Unidentified	Butchered- Hand Sawed	2	
		Bone Bed /5	Unidentified	Unidentified		15	
		Bone Bed /5	Unidentified	Unidentified	Butchered- Sawed	2	
		Bone Bed /5	Unidentified	Unidentified		3	
					Total	**88**	**6**

Table 5.92 Locus B, Unit 111 (Exterior): Chronology

Locus	Unit	Context	Date Attribution (TPQ)	Artifact	Start Date	End Date	Context TPQ	Average Date	Average Context Date
B, Exterior	111	Surface	1860	Two-Piece Mold Bottle	1860	1910		1885	
		Surface	1880	Turn Paste Mold Bottle	1880	1915		1897.5	
		Surface	1870	Amethyst (Manganese) Bottle	1870	1915	1880	1892.5	1891.67
		1	1880	Turn Paste Mold Bottle	1880	1915		1897.5	
		1	1885	Tooled Finish (Amethyst)	1885	1915	1885	1900	1898.75
		2	1891	Johnson Brothers Ceramic	1891	1896		1893.5	
		2	1880	Turn Paste Mold Bottle	1880	1915		1897.5	
		2	1940	Cartridge- Super X	1940	2000	1891	1970	1920.33
		3	1870	Amethyst (Manganese) Bottle	1870	1915		1892.5	
		3	1880	Turn Paste Mold Bottle	1880	1915		1897.5	
		3	1860	Two-Piece Mold Bottle	1860	1910		1885	

		3	1907	Cartridge-Western Cartridge Super X	1907	1960	1880	1933.5	1902.13
		4	1873	George Jones & Sons Ceramic	1873	1891		1882	
		4	1885	Tooled Finish	1885	1915		1900	
		4	1870	Amethyst (Manganese) Bottle	1870	1915		1892.5	
		4	1880	Turn Paste Mold Bottle	1880	1915		1897.5	
		4	1860	Two-Piece Mold Bottle	1860	1910		1885	
		4	1850	Carter's Ink Bottle	1850	1920	1885	1885	1890.33
		5	1885	A.J. Wilkinson	1885	1896		1890.5	
		5	1880	Turn Paste Mold Bottle	1880	1915		1897.5	
		5	1860	Two-Piece Mold Bottle	1860	1910		1885	
		5	1885	Tooled Finish	1885	1915		1900	
		5	1870	Amethyst (Manganese) Bottle	1870	1915		1892.5	
		5	1873	Levi's Jeans Rivet	1873	1950		1911.5	
		5	1855	Minie Ball	1855	1875		1865	
		5	1898	Agateware Enamel Coffee Pot	1898	1955		1926.5	
		5	1866	Turn-Key Can	1866	1950		1908	
		5	1852	"Boss of the Road" Button	1852	1946	1898	1899	1897.55
		6	1870	Mold Blown Bottle	1870	1910	1870	1890	1890

Chapter 6 Tables

Table 6.1 Samuel Adams lime kiln occupants by ownership period and locus

Company/Owner	Locus	Primary Occupant	Company Position/Relation	Location of Birth
Samuel Adams (1858-1862)	Locus T- Foreman's House	Asa Hull	Foreman	New York
		Sarah Hull	House Keeper/ Foreman's Wife	New York
		George Hull	Foreman's Child	California
	Locus F- Workers' Cabin	Joel Slack	Laborer	Nova Scotia
		William McNeasser	Lime Cooker	Pennsylvania
		Alexander McDonald	Cooper	Scotland

		Alex McDonald, Jr.	Master Carpenter	Canada
		Amos Jones	Cooper	Maine
		Gilbert Pease	Day Laborer	Unknown
Samuel Adams (1862-1869)	Locus T- Foreman's House	Alexander McDonald	Foreman	Scotland
	Locus F- Workers' Cabin	Joel Slack◊	Laborer	Nova Scotia
		William McNeasser◊	Lime Cooker	Pennsylvania
		Alex McDonald, Jr.◊	Master Carpenter	Canada
		Amos Jones◊	Cooper	Maine
		Gilbert Pease◊	Day Laborer	Unknown
Davis and Cowell (1870-1879)	Locus T- Foreman's House	Michael Hickey	Foreman	Rhode Island
		Catherine Hickey	House Keeper/ Foreman's Wife	Ireland
		Daniel Hickey	At School/ Foreman's Child	Connecticut
		Minnie Hickey	At School/ Foreman's Child	Connecticut
		John Hickey	Foreman's Child	California
		Mary Hickey	Foreman's Child	California
	Locus S- Foreman's Office	Michael Hickey	Foreman	Rhode Island
	Locus F and G- Workers' Cabins	William Parsons	Teamster	North Carolina
		Milton Wilson	Teamster	Virginia
		Patrick May	Laborer	Ireland
		John Igo	Lime Laborer	Connecticut
		John Quick	Lime Laborer	Ireland
		John Murray	Lime Laborer	Ireland
		John Harrison	Lime Laborer	Ireland
	Locus B- Cookhouse	Ah Soy	Cook	China
Davis and Cowell (1880-1889)	Locus T- Foreman's House	None		

	Locus S- Foreman's Office	Patrick Dorsey[+]	Foreman	Ireland
	Locus F and G- Workers' Cabins	John Nee	Lime Laborer	Ireland
		Patrick Barrey	Lime Laborer	Ireland
		Stephen Logan	Lime Laborer	Ireland
		Michal Mack	Lime Laborer	Ireland
		G. Scanighini	Lime Laborer	Sweden
		W.M. Thayer	Lime Laborer	Michigan
		Manuel Rose	Lime Laborer	Portugal
		Manuel Williams	Lime Laborer	Portugal
		Manuel Lima	Lime Laborer	Portugal
		Antone Cunha	Lime Laborer	Portugal
		Thos Gonsalvo	Lime Laborer	Portugal
		Frank Silva	Lime Laborer	Portugal
		John Teixeira	Lime Laborer	Portugal
	Locus B- Cookhouse	Arc Ban	Cook	China
Henry Cowell and Co. (1890-1899)	*Census Documents Missing*	*Census Documents Missing*	*Census Documents Missing*	*Census Documents Missing*
Henry Cowell Lime and Cement Co. (1900-1909) Overseen by Ernest Cowell after the death of Henry Cowell in 1903	Locus T- Foreman's House	None		
	Locus S- Foreman's Office	Patrick Dorsey[+]	Foreman	Ireland
	Locus F and G- Workers' Cabins	Elandurio Correia*	Lime Laborer	Italy
		Joseph Spindola*	Day Laborer	Azores Islands
		Lorenzo Franciscona*	Day Laborer	Italy
		Manuel Fagundes*	Lime Burner	Azores Islands
		John Cunha*	Lime Burner	Azores Islands
		Petro Naoalino*	Lime Burner	Italy
		Sterri Barratto*	Lime Burner	Italy
		John Gondani*	Lime Burner	Italy
		Petro Pesi*	Lime Burner	Italy

		Lippi Tacapa*	Lime Burner	Italy
		Manuel F. Mello*	Lime Burner	Azores Islands
		Manuel Spindola*	Lime Burner	Azores Islands
		Petro Ceciliani*	Lime Burner	Italy
		Peter Lazzarotte*	Lime Burner	Italy
		Constantine Minanoa*	Lime Burner	Azores Islands
		Antone Cabral*	Lime Burner	Azores Islands
	Locus B-Cookhouse	Ah Toy (possibly Soy)*	Cook	China
		Hoe Hung*	Waiter	China

◊ Based on 1860 Census
+ Family did not live on-site
*Differentiations between Cowell's Bay Street kilns and Samuel Adams (Cowell’s Upper) kilns not clear in census. While these exact laborers may not have been the occupants at the Samuel Adams operation, this population provides insight into the likely demographic make-up of the site around 1900.